

Tax Treatment of Virtual Currency

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Table of Contents

Course Introduction	1
Course Learning Objectives.....	1
Chapter 1 – Nature of Virtual Currency.....	2
Introduction	2
Learning Objectives.....	2
The Lexicon of Virtual Currency	2
Virtual Currency Defined.....	2
Digital Currency.....	3
Obtaining Virtual Currency	5
Virtual Currency Mining.....	5
Purchasing Virtual Currency	5
Storing Virtual Currency.....	7
Storing Cryptocurrency in Cold Storage.....	8
Storing Cryptocurrency in Hot Storage	8
Virtual Currency Transactions.....	9
Confirmations	9
Security	9
Changes in Protocol — Forks	10
Airdrops	11
Blockchain	11
Summary	11
Chapter 2 – Tax Treatment and Reporting	13
Introduction	13
Learning Objectives.....	13
Virtual Currency Transactions.....	13
Determining the Cost Basis of Virtual Currency.....	13
Cost Basis of Purchased Virtual Currency	14
Cost Basis of Virtual Currency Received for Goods or Services	14
Cost Basis of Inherited Virtual Currency	15
Virtual Currency Received as a Gift	17
Cost Basis Summary	18
Tax Treatment of Virtual Currency Received for Services	18
Virtual Currency Received as Wages	18
Virtual Currency Received by an Independent Contractor	19
Mining Virtual Currency.....	21
Tax Treatment of Virtual Currency Transactions	22
Exchanged Virtual Currency	22
Exchange of Virtual Currency for Other Property.....	22
Tax Treatment When Less Than All Virtual Currency Held Is Sold, Exchanged, or Disposed Of	23
Charitable Gifts of Virtual Currency	24
Tax Treatment of Protocol Changes	24
Reporting.....	25
Recordkeeping	26

Blockchain and the Distributed Ledger	26
Summary	27
Glossary of Key Terms	29
Index	33
FINAL EXAM	34

Course Introduction

According to a survey done by the Pew Research Center whose results were published in November 2021, 16% of Americans indicated they personally have invested in, traded or otherwise used virtual currency¹. Additionally, the number of people investing in or engaging in transactions involving virtual currency continue to increase. These statistics strongly suggest that tax preparers must be aware of the nature of virtual currency and its tax treatment. It's to provide that awareness that Tax Treatment of Virtual Currency was written.

Course Learning Objectives

After completing this course, students should be able to:

- recognize the methods of obtaining and storing virtual currency
- describe how transactions involving virtual currency work
- understand the basic nature of blockchains
- apply the existing U.S. tax laws to virtual currency transactions
- identify when and where to report taxable virtual currency events and transactions

¹ The Pew Research Center fact sheet may be accessed at <https://www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/>

Chapter 1 – Nature of Virtual Currency

Introduction

Virtual currency use appears to be increasing continually and, according to a Pew survey, roughly 3 in 10 Americans younger than age 30 indicate they have invested in, traded, or used a virtual currency, such as Bitcoin or Ethereum. As a result, tax preparers are more likely than ever to encounter clients who have engaged in one or more virtual currency transactions during the year and who may have taxable income as a result. This chapter begins the course with a discussion of the nature of virtual currency and how transactions in virtual currency occur and are recorded.

Learning Objectives

When you have completed this chapter, you should be able to:

- describe virtual currency
- explain how central bank digital currency (CBDC) is used
- recognize how stablecoins differ from unbacked cryptocurrency
- describe how virtual currency networks maintain security
- recognize how blockchain is employed with respect to virtual currency transactions

The Lexicon of Virtual Currency

Understanding the U.S. tax treatment of virtual currency requires that we have an understanding of the nature of virtual currency which, in turn, means we need to understand the terms and language used to describe it and the ecosystem in which it exists. To that end, the lexicon, based on the Blockchain Universal Glossary published by the Association of Certified Professional Accountants is included in the Glossary² and is used in the following text.

Virtual Currency Defined

With the flurry of types of currency mentioned in conversations—digital currency, virtual currency, cryptocurrency, and the like—it's often difficult to be sure what people mean when they talk about it. Virtual currency was initially defined by the European Central Bank in a 2012 report³ titled *Virtual Currency Schemes* as “a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.”

In 2014 the IRS, in Notice 2014-21, observed that “virtual currency... is customarily used and accepted as a medium of exchange in the country of issuance—but it does not have legal tender status in any jurisdiction.”⁴ Similarly, in IRS Revenue Ruling 2019-24, the IRS declared that “Virtual currency is a digital representation of value... and a store of value other than a representation of the United States dollar or

² “Blockchain Universal Glossary” may be accessed at

<https://us.aicpa.org/content/dam/aicpa/interestareas/informationtechnology/downloadabledocuments/blockchain-universal-glossary.pdf>

³ *Virtual Currency Schemes* may be accessed at

<https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>.

⁴ IRS Notice 2014-21 may be accessed at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>.

a foreign currency”⁵ and further went on to equate foreign currency with the money of a foreign country designated as legal tender. In short, it reiterated that virtual currency was not the legal tender of any foreign country.

In September, 2021 El Salvador made that statement incorrect by declaring Bitcoin legal tender, giving it a status in the country similar to the U.S. dollar. In light of the historically high level of remittances to Latin American countries and the costs and delays normally associated with cross-border payments, it is possible that virtual currency will become legal tender in additional Latin American and other countries as they observe the effect virtual currency’s status as legal tender has on El Salvador’s banking system and the well-being of its citizens.

One of the characteristics central to the ability of virtual currency to gain acceptance is its adherence to a set of rules to ensure the values recorded in the ledger memorializing virtual currency transactions are correct. That is accomplished through its consensus protocol, the mechanism defining the steps required to achieve agreement on the values recorded by the various participants on the blockchain. The term “protocol,” when used in this sense is generally defined as a set of rules governing the communication and transfer of data between machines, as in a computer system.

Digital Currency

The various notices, rulings and reports refer to virtual currency as “digital.” To forestall confusion and clearly identify the subject of this course, it’s appropriate to briefly examine the relationship of digital currency to virtual currency. Digital currency is a fairly broad term referring to a method of payment existing entirely in an electronic form. As an electronic method of payment, it is transferred to a payee using an online system.

CBDCs – Regulated Digital Currency

Digital currency may be regulated or unregulated. Regulated digital currency is currency issued by a country’s central bank and generally referred to as central bank digital currency (CBDC). Among other uses, CBDCs are employed for monetary transactions between banks and other financial institutions.

The Federal Reserve Board released a paper titled *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* in January 2022 examining the pros and cons of a U.S. central bank digital currency⁶ and inviting public comments. The paper summarizes the domestic payments system, discussing the various digital payment methods and assets, including stablecoins and other types of cryptocurrencies. Without taking a position, the paper examines CBDCs, considers the potential benefits and risks their issuance poses and identifies the policy considerations associated with such a step. For purposes of the paper, a CBDC is defined “as a digital liability of a central bank that is widely available to the general public. In this respect, it is analogous to a digital form of paper money.”

⁵ IRS Revenue Ruling 2019-24 may be accessed at <https://www.irs.gov/pub/irs-drop/rr-19-24.pdf>.

⁶ *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* may be accessed at <https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf>.

Although considerable international effort would be needed, CBDCs could facilitate cross-border payments and reduce costs through the use of new technologies, simplified distribution channels, and by creating additional opportunities for collaboration between countries.

Virtual Currency – Unregulated Digital Currency

Unlike CBDCs that are **regulated** digital currency, virtual currency is **unregulated** and may be either closed virtual currency—virtual currency that is used entirely in a controlled, private ecosystem and which cannot be converted into fiat currency—or open virtual currency. Open virtual currency, in contrast to closed virtual currency, is convertible into other forms of currency, including fiat and may be stablecoins or unbacked cryptocurrency.

Stablecoins – Backed Cryptocurrencies

Stablecoins are digital assets designed to maintain a stable value and are used in the United States to facilitate trading, lending, or borrowing of other digital assets. Although intended principally to provide stability and a level of safety when contrasted with unbacked cryptocurrency, stablecoins can vary from one another with respect to the risks they pose to holders because of the assets they hold as security. Thus, the reserve assets of some stablecoin arrangements are held in deposits at insured depository institutions or in U.S. Treasury bills, while other stablecoins may be backed by commercial paper, corporate and municipal bonds, and other digital assets. Although both offer safety and security uncharacteristic of cryptocurrency, the level of safety provided obviously varies.

As discussed in a FINRA investor insights report titled *Cryptocurrencies: Three Things to Know About Stablecoins* dated April 17, 2020⁷, currently-available stablecoins fall into four main categories:

- **fiat-backed stablecoins** - stablecoins secured by fiat currency are the most prevalent type of stablecoins currently available. Fiat-backed stablecoins are secured by one or more currencies, such as U.S. dollars, Euros, Yen, or some other central bank-issued currency. The value of a fiat-backed stablecoin is typically equal to the value of the collateral held in reserve;
- **commodity-backed stablecoins** - stablecoins backed by commodities are tied to tangible assets, such as silver, gold, or other precious metal and are typically more attractive to investors looking for exposure to physical assets. The value of a commodity-backed stablecoin is normally equal to one unit of the commodity. So, in the case of a commodity-backed stablecoin secured by gold, its value might reasonably be worth one ounce of gold. Similarly, an oil-backed stablecoin could be worth one barrel of oil. The physical commodities used to secure commodity-backed stablecoins are usually held by a third party who stores the assets in reserve;
- **crypto-backed stablecoins** – crypto-backed stablecoins, whose value may be pegged to a fiat currency, are secured by other digital currencies rather than by the fiat currency to which their value is referenced. However, possibly in recognition of the volatility of crypto currency, the value of the reserves held as collateral is greater than the value of the outstanding stablecoins as a way of limiting the crypto-backed stablecoins' volatility; and

⁷ Cryptocurrencies: Three Things to Know About Stablecoins may be accessed at <https://www.finra.org/investors/insights/3-things-stablecoins>.

- **algo-based stablecoins** - unlike other stablecoins, algo-backed stablecoins are not backed by collateral. Instead, they rely on smart contracts to maintain stable value. Smart contracts employ algorithms to adjust the supply of stablecoins based on market demand.

Unbacked Cryptocurrency

Unlike stablecoins that—other than algo-based stablecoins—are cryptocurrencies generally backed by, and whose value is based on, fiat currency, gold or other assets, unbacked cryptocurrencies derive their value principally as a result of the combination of demand and a relatively inelastic supply. Unbacked cryptocurrencies—whether Bitcoin, Ethereum or other unbacked digital currency—have no intrinsic value and are valuable only insofar as they are able to function as a unit of exchange between two people. Accordingly, to the extent a digital currency fails to be a medium of exchange—is not seen as being available to be traded for goods or services, in other words—it will be unable to maintain its value. Because of this lack of intrinsic value and its failure, thus far, to act as a medium of exchange enabling it to be used to purchase a restaurant dinner, purchase groceries, or buy gasoline, speculation has been the principal reason for its ownership.

Obtaining Virtual Currency

Virtual currency may be obtained by a process referred to as “mining” or by the old fashioned method of simply purchasing it.

Virtual Currency Mining

Using the term “mining” to characterize a way of obtaining cryptocurrency suggests that any would-be cryptocurrency miner, if successful, could simply take a pickaxe into the wild and return days, weeks or months later with pockets full of cryptocurrency coins. It should come as no surprise that such is not the case.

Instead, cryptocurrency mining—whether involving Bitcoins, Ethereum, Dogecoins, or some other cryptocurrency—is a process by which transactions involving cryptocurrency are validated on a distributed ledger referred to as a “blockchain.” Accordingly, when an owner engages in a transaction involving cryptocurrency, such as selling a coin, using cryptocurrency to purchase dinner at a restaurant, or using it in some other fashion, the change to the cryptocurrency’s ownership must be recorded. That recording is accomplished by updating the digital ledger:

- crediting the recipient’s account, and
- debiting the cryptocurrency owner’s account

The distributed ledger may only be updated by verified crypto miners for which they receive new coins as compensation. While validation provides income to miners, it is vital to ensuring the security of the blockchain network.

Purchasing Virtual Currency

Virtual currency can be purchased from a number of cryptocurrency exchanges and trading platforms. The exchanges/platforms may vary with respect to levels of service and security provided as well as fees charged. While fees and services are likely to change from time to time, those providing high levels of

security and trustworthiness generally charge commensurately higher fees, while those offering low or no fees tend to provide more limited customer support.

Although not an exhaustive list, some of the more popular exchanges and investing platforms to purchase virtual currency include:

- Coinbase
- Voyager
- Blockfi
- Uphold
- Kraken
- Crypto.com

The process of purchasing virtual currency is normally fairly straightforward. A prospective purchaser will generally open an account at one of the exchanges/ platforms to which he or she can link a credit card or bank account. The customer can then enter a buy order as an amount in U.S. dollars with which to buy a particular cryptocurrency or an amount of a specific cryptocurrency to be purchased. Upon completion of the transaction, the amount of cryptocurrency purchased along with the balance of any U.S. dollars would then be entered into a digital wallet.

In light of the volatility normally associated with virtual currency—and the possibility, however remote, of riding a newly introduced crypto currency to riches—some cryptocurrency investors may be looking to the virtual currency equivalent of an initial public offering (IPO) referred to as an initial coin offering (ICO).

An ICO refers to creating a new virtual coin by an issuer seeking to raise funds. However, unlike the result in an IPO, ICO investors normally don't become owners in the company and may be left with far fewer funds than they started with. Among the concerns with ICOs noted by FINRA in an investor alert⁸ titled "Initial Coin Offerings (ICOs)—What to Know Now and Time-Tested Tips for Investors" are the following:

ICOs offer little investor protection. Issuers in an IPO are normally required to make substantial disclosures. Since many ICOs have been offered outside of the normal investment regulatory systems, those disclosures have often not been made. Accordingly, ICO investors may not be given enough information to make an informed choice as to whether or not to participate. The investor alert states that "the lack of regulation increases the risk for fraudulent schemes and deceptive tactics – and leaves investors with little recourse to recover funds invested or hold parties accountable should a fraud occur."

ICO fraud is real. Willie Sutton is reputed to have said when asked why he robbed banks, "that's where the money is." Other bad actors similarly gravitate toward lucrative areas, such as cryptocurrency, in order to perpetrate fraud. As noted under Storing Virtual Currency below, the Justice Department recently announced the seizure of \$3.6 billion in stolen Bitcoin. In fact the SEC previously halted a fraudulent ICO and alleged that the individuals and the firm promoting it used websites and social media

⁸ Investor Alert may be accessed at <https://www.finra.org/investors/alerts/icos-what-know-now>.

to lie about relationships they had with well-known and respected organizations, including faked customer testimonials they offered to attract investors.

Online platforms that facilitate trading in ICO tokens are not registered exchanges. Some of the platforms giving investors an opportunity to participate in initial coin offerings have been the targets of various problems, including insider trading, market manipulation, and hacking. According to FINRA, the SEC has warned investors that online trading platforms calling themselves exchanges could cause investors to view them as regulated entities subject to the regulatory standards characteristic of those imposed on national securities exchanges. However, the SEC has previously stated it neither regulates the platforms nor reviews their digital assets.

Use of online platforms to engage in ICO purchases have caused investor loss. The FINRA investor alert claims that a study determined that millions of dollars in funds raised in ICOs was either lost or stolen and that ICOs offer multiple areas in which there are cybersecurity vulnerabilities coupled with a distinct lack of regulatory oversight.

A fear of missing out on a windfall may inflate ICO valuations. ICO valuations, according to a study alluded to in the FINRA alert, maybe based on investor fear of missing out on a windfall instead of on market fundamentals, project development forecasts, and the nature of the currency being offered. The combination of factors may leave investors with insufficient information to make an informed decision on the suitability or appropriateness of engaging in an ICO.

Although many ICO issuers publish whitepapers that offer prospective investors information about the ICO, it may be difficult or impossible for potential investors to verify the accuracy of the included information. In fact, a whitepaper issued prior to an ICO may be fraudulent and misleading. Lacking access to a prospectus that would normally provide the disclosures and documents required under federal securities laws—identification of risk factors that should be considered before investing, disclosures about the company and its officers, audited financial statements and other important information, for example—it may be extremely difficult for a potential ICO investor to do more than simply roll the dice when participating in an ICO.

Storing Virtual Currency

Once cryptocurrency is purchased, it must be stored somewhere before being used. A purchaser may choose to store the cryptocurrency on an exchange platform, i.e., in the exchange's wallet, or may store the crypto currency in a wallet under his or her control. In general, it is considered to be more secure—and, normally, more convenient—for the purchaser to maintain the crypto currency in a wallet that is under the purchaser's control.

The U.S. Justice Department⁹ recently announced it had seized Bitcoin valued at more than \$3.6 billion that had been stolen in 2016 when a cryptocurrency exchange had been hacked. The bad actors initiated more than 2,000 unauthorized transactions causing the stolen Bitcoin to be sent to a digital wallet controlled by the thieves.

Storing cryptocurrency securely is central to helping ensure it is not stolen, and that is a function of the keys used to send or transfer crypto currencies. Two types of keys—a public key and a private key—are

⁹ See 2/9/22 Washington Post article titled "Officials arrest couple, seize \$3.6 billion in hacked bitcoin."

used for this purpose. The public key identifies cryptocurrencies received and can be used to send cryptocurrencies to another individual. A far more secret key, referred to as the “private key,” represents the cryptocurrency owner’s password that permits access to his or her cryptocurrency.

Storing and transferring crypto currency can be accomplished using various methods, such as third party online services, mobile applications, specialized hardware, or simply printing the alphanumeric code that is the cryptocurrency owner's private key on a piece of paper. Cryptocurrencies can be stored in various ways, and these ways are usually referred to as “cold” storage and “hot” storage.

Storing Cryptocurrency in Cold Storage

The term “cold storage,” when used in connection with crypto currency storage, refers to storing it in a way not associated with or connected to the Internet. In addition to writing the private key on a piece of paper, other “cold storage” methods can involve using a:

- hardware wallet that is similar to a thumb drive; or
- disconnected hard drive

Although these cold storage methods can usually prevent cryptocurrency hacking by a bad actor, they are not immune to loss. For example, hard drives and USB devices can be lost or fail to work and may be stolen.

Storing Cryptocurrency in Hot Storage

Unlike cold storage that involves no connection to the Internet, hot storage refers to holding private keys in an environment connected to the Internet. The hot storage options available to a cryptocurrency owner are generally described as cryptocurrency “wallets” and refer to the various types of software that may be used on an Internet-connected device storing the owner’s public and private keys, including:

- **a desktop wallet** - software that may be downloaded to the owner’s personal computer or laptop and which allows the owner to store his or her personal key on the computer;
- **a mobile wallet** - a downloadable app permitting the owner to store keys on a mobile device; and
- **online wallets** - downloadable software enabling the owner to access public and private keys from any Internet connected device. Online wallets involve a type of “cloud” storage in which the keys are stored remotely on third-party servers owned by the online wallet’s provider. In the majority of cases, online wallets are associated with crypto currency exchanges.

Although cryptocurrency wallets offer significant convenience—the owner need not memorize the key, write it down or store it somewhere else—they are vulnerable to hackers and other bad actors as is any other service connected to the Internet. Similarly, desktop and mobile app wallets may also leave the owner’s keys vulnerable to theft, destruction, and loss. As an obvious example of the vulnerability of desktop and mobile app wallets, consider the situation involving a permanent loss of the investment that would result if the owner’s telephone has a mobile app wallet and the telephone was lost or stolen.

The online wallets that may be offered by cryptocurrency exchanges are also vulnerable, but to several different risks. In addition, crypto currency exchanges may not be subject to the regulatory oversight

imposed on registered security exchanges leaving them more vulnerable to theft and fraud. Furthermore, the online wallets associated with exchanges are commonly targeted in cyberattacks.

Virtual Currency Transactions

A virtual currency transaction is simply a transfer of ownership of some or all of the virtual currency from an owner to another person. Transactions involving virtual currency occur using specific software applications and take place through secure and dedicated networks. However, since transaction details vary somewhat, depending upon the virtual currency used, we will use Bitcoin transactions to illustrate how virtual currency transactions take place.

In the case of a virtual currency transaction involving Bitcoin, coins stored in one or more wallets are transferred to one or more other wallets on the network. Bitcoin transactions are couched in terms of “inputs” and “outputs.” The amount sent in a Bitcoin transaction is referred to as an input, and the amount received by the recipient is referred to as an output. Bitcoin from multiple wallets may be used in a transaction, but each input (the Bitcoin expended) depends on the availability of unspent output residing in a wallet.

In a simple transaction involving Bitcoin, Phil agrees to pay Patrick in Bitcoin to purchase his truck. To effect the transaction, Phil sends 1 or more Bitcoin from his wallet to Patrick’s wallet.

Confirmations

When a transaction takes place, it is broadcast to all nodes in order to determine the validity of the transaction. A “node” refers to software that runs continually to detect and validate new transactions. With respect to virtual currency, a node is a computer connected to a virtual currency network and supports it through validating and relaying transactions.

Cryptocurrency miners analyze, validate and confirm the transaction. For their efforts, they receive compensation in the form of virtual currency as a “reward.” In short, they have “mined” virtual currency. The amount of the virtual currency received by the miner as a reward is predetermined. Following confirmation of a group of transactions, the miner confirming the transaction then adds a new block to the blockchain. The new block contains all of the relevant information with respect to that virtual currency.

Security

As previously discussed, cryptocurrency is currency that exists digitally or virtually and lacks a central authority, such as a central bank. Lacking that central authority, it should be no surprise that virtual currency would tend to be viewed by criminals as a particularly attractive target for their hacking activities. However, it wouldn't take many stories of virtual currency hacking to become public for prospective virtual currency users to flee. Virtual currency employs encryption—the process of encoding data in such a way to prevent unauthorized access—to enhance security.

In order to maintain the security of a virtual currency network and, specifically, the security of transactions involving virtual currency, it employs various methods. They include:

- Virtual or cryptocurrencies don't have a central issuing or regulating authority; instead, they use a decentralized system to record transactions and issue new units. Decentralization, which

ensures that even if an individual virtual currency user is the victim of a hacking incident, the virtual currency network remains unaffected.

- The address of each individual virtual wallet is protected by a “private key” that the individual must use whenever engaging in a transaction.
- Strong cryptography—the use of secure communications techniques that allow only the sender and intended recipient of a message to view its contents—is employed.

Changes in Protocol — Forks

It was noted earlier that a vitally important characteristic of virtual currency is its adherence to a set of rules, known as its consensus protocol, that help ensure the values recorded in the ledger memorializing virtual currency transactions are correct. However, the protocol under which transactions are recorded may change in response to some event, such as the software being hacked, and that change is referred to as a “fork.” The protocol consensus change may be a hard fork or a soft fork.

Hard Fork

A change considered a “hard fork” is a permanent change in the consensus protocol that is incompatible—not “backwards compatible,” in other words—with older, prior versions of the consensus protocol. As a result of its incompatibility, computers using the former consensus protocol—sometimes referred to as the “legacy” consensus protocol—reject the transactions created under the new consensus protocol. The result is the creation of two blockchains. It may be, but needn’t be, accompanied by an airdrop.

Hard forks may occur intentionally or accidentally; an intentional hard fork may occur for the following reasons:

- to correct a security risk, i.e., to fix the system following a hacking incident
- to reverse transactions on the blockchain
- to add functionality
- to resolve a disagreement in the virtual currency community

Hard forks occurring accidentally may result from more than a single virtual currency miner finding the same block at approximately the same time, and each miner, believing their block to be valid, continues to mine. As a result, two or more blockchains are created until another block is added, causing one block chain to be longer than the others. The longer block chain is adopted to maintain consensus and the others abandoned.

All computers downloading and maintaining a copy of the blockchain, referred to as “nodes,” meant to work in accordance with the new rules need to upgrade their software or they will be unable to process subsequent transactions.

Soft Fork

A soft fork is a change in the consensus protocol that is compatible with older versions of the consensus protocol. Thus, unlike the resulting two blockchains that occur when a hard fork occurs, a soft fork results in only one blockchain and doesn’t result in the creation of a new virtual currency. It may be employed to add additional functions and new features that don’t change the rules followed by the blockchain.

Airdrops

An airdrop is an allocation of digital assets to one or more blockchain addresses for free, i.e., nothing is provided by the blockchain address in return. An entity may use an airdrop as a promotional event to generate interest in a digital asset, and all that is required is that there be a virtual currency wallet.

Blockchain

A blockchain is a method for distributing data over a network. As the term is used in connection with virtual currency, such as Bitcoin or Ethereum, a blockchain is a distributed public ledger and refers to a “public blockchain” that creates a permanent record and history of transactions. A public blockchain, in contrast to a private blockchain whose membership is closely controlled, is entirely decentralized and permits anyone to join. Thus, anybody with access to an Internet connection may become part of it.

The computers that run the blockchain network are referred to as “full nodes.” As a full node, the computer contains all the data in the network, including a complete copy of the history of transactions occurring on the blockchain. Each of these full nodes supports the network and provides security with respect to transactions occurring on it by validating the data.

In addition to full nodes, participating users who must connect to a full node to be able to participate are referred to as “light” or “lightweight nodes.”

Summary

- As initially defined by the European Central Bank, virtual currency is unregulated, digital money, issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.
- As subsequently defined, virtual currency is a digital representation of value... and a store of value other than a representation of the United States dollar or a foreign currency.
- Digital currency refers to a method of payment existing entirely in an electronic form, using an online system to transfer.
- Regulated digital currency is issued by a country's central bank and generally referred to as central bank digital currency (CBDC).
- CBDCs are employed for monetary transactions between banks and other financial institutions and could facilitate cross-border payments.
- Virtual currency is unregulated and may be closed or open.
- closed virtual currency is virtual currency used entirely in a controlled, private ecosystem; it cannot be converted into fiat.
- Open virtual currency, whether stablecoin or cryptocurrency, is convertible into other forms of currency, including fiat.
- Stablecoins are digital assets designed to maintain a stable value and used facilitate trading, lending, or borrowing of other digital assets.
- Unbacked cryptocurrencies derive value by the demand and inelastic supply.
- Cryptocurrency mining is a process by which cryptocurrency transactions are validated.
- Virtual currency can be purchased from cryptocurrency exchanges and trading platforms.
- Purchased cryptocurrency may be stored on an exchange platform or in a wallet under the purchaser's control.

- Virtual currency transactions take place through secure, dedicated online networks.
- Full nodes validate transactions.
- A node is a computer connected to a virtual currency network.
- Cryptocurrency miners analyze, validate and confirm the transaction and receive virtual currency as compensation.
- Virtual currency networks use various methods to maintain security, including
 - a decentralized system to record transactions and issue new units,
 - private keys to protect the address of each virtual wallet, and
 - strong cryptography.
- As used with respect to virtual currency, a public blockchain is a distributed public ledger that creates a permanent record and history of transactions.
- Anybody with Internet access may join a public blockchain.
- Blockchain users who must connect to a full node to be able to participate are referred to as “light” or “lightweight nodes.”
- Changes to existing blockchain protocols may result in a hard fork or a soft fork.
- When a hard fork occurs the blocks using the new consensus protocol are not backwards compatible and result in two blockchains.
- Soft forks are backwards compatible, meaning that addresses with the legacy protocol may see and validate transactions occurring under the new consensus protocol.
- Airdrops are allocations of digital assets to one or more blockchain addresses without anything being provided in return and are often done as a promotional event.

Chapter 2 – Tax Treatment and Reporting

Introduction

Virtual currency is treated as property for federal tax purposes. As such, the general tax principles that apply to property transactions generally apply to transactions using virtual currency. This chapter will examine various transactions and events involving virtual currency and their tax treatment. Among the topics considered are:

- the cost basis of virtual currency held by a taxpayer
- the gain or loss to be recognized on sales or exchanges of virtual currency
- the tax treatment of virtual currency received as a result of virtual currency “mining”
- the charitable deduction available to itemizing taxpayers for donations of virtual currency

Learning Objectives

When you have completed this chapter, you should be able to:

- calculate the adjusted cost basis of virtual currency that is purchased, mined, or received as a gift
- calculate the adjusted cost basis of virtual currency that is Apply existing tax law to transactions involving virtual currency
- describe the tax treatment of virtual currency given as a charitable gift
- recognize the tax treatment given virtual currency when less than all is sold, exchanged, or otherwise disposed of

Virtual Currency Transactions

Transactions involving virtual currency are, for the most part, very similar to transactions involving fiat currency or other property. Thus, just as in other types of property, virtual currency may be:

- purchased
- used to pay for services rendered
- received in payment for services or goods
- sold or exchanged
- given or received as a charitable or noncharitable gift
- inherited

Depending on the type of transaction, the taxpayer involved may have income subject to taxation. Let's consider these transactions and their tax treatment beginning with a discussion of determination of the taxpayer's cost basis.

Determining the Cost Basis of Virtual Currency

Virtual currency is property. Property is divided into two broad types:

- real property—land, anything growing on the land, and any structures permanently attached to it; and

- personal property—all property that is not real property

Thus, virtual currency—not being real property—is deemed personal property and is generally considered a capital asset. Determining the taxable gain resulting from a transaction involving property, including personal property, first requires determining the cost basis the property owner has in the property. Cost basis is the amount of a property owner’s investment in the property for tax purposes. It is used to calculate gain or loss on the sale or other disposition of property, to figure depreciation, amortization, depletion, and casualty losses. Determining cost basis varies, depending on how the property was:

- acquired –
 - purchased
 - received as payment for goods or services
 - inherited
 - received as a gift
- disposed of –
 - sold or exchanged
 - given as payment for goods or services
 - given as a charitable donation

Cost Basis of Purchased Virtual Currency

Investment property purchased by a taxpayer normally has an original basis equal to its cost. A taxpayer’s cost basis in purchased virtual currency is equal to the amount spent to acquire it. It is adjusted by other costs, including:

- fees paid
- commissions paid
- other acquisition costs

As in the case of acquisition of other assets, the taxpayer’s adjusted basis in the virtual currency may be adjusted, i.e., increased by other expenditures and/or decreased by certain deductions or credits.

Cost Basis of Virtual Currency Received for Goods or Services

The cost basis of virtual currency received for goods or services is its fair market value (FMV), measured in U.S. dollars as of the date of receipt of the virtual currency. FMV is the price at which property—in this case virtual currency—would change hands between a buyer and a seller, neither being under any compulsion to buy or sell, and both having reasonable knowledge of all necessary facts.

Determining the FMV at which the virtual currency would change hands between a buyer and seller, for tax purposes, depends on whether or not the virtual currency is traded on any exchange. If traded on an exchange, the virtual currency has a published value that is its cost basis. However, if the virtual currency received in exchange for property or services is **not** traded on an exchange and has no published value, establishing the cost basis of the virtual currency requires that the taxpayer determine the FMV of the virtual currency received based on the value of the property or services exchanged. Thus, in such a case, the FMV of the received virtual currency equals the FMV of the property or services exchanged for it when the transaction occurs.

A taxpayer who receives virtual currency as payment for goods or services must, when computing gross income, include the FMV of the virtual currency, measured in U.S. dollars, as of the date that the virtual currency was received. Thus, an individual receiving virtual currency in a trade or business carried on as other than an employee must include in income the FMV of any virtual currency received, measured in U.S. dollars as of the date of receipt.

For U.S. tax purposes, transactions using virtual currency must be reported in U.S. dollars. Therefore, taxpayers normally will be required to determine the Fair Market Value (FMV) of virtual currency in U.S. dollars as of the date of payment or receipt. If a virtual currency is listed on an exchange and the exchange rate is established by market supply and demand, the FMV of the virtual currency is determined by converting the virtual currency into U.S. dollars (or into another real currency which in turn can be converted into U.S. dollars) at the exchange rate, in a reasonable manner that is consistently applied.

If a taxpayer receives virtual currency in a transaction not involving a virtual currency exchange—a peer-to-peer transaction, for example—the FMV is determined as of the date and time the transaction is recorded on the distributed ledger or would have been recorded on the ledger if it had been an on-chain transaction. The IRS will accept as evidence of FMV the value as determined by a blockchain explorer—specialized software or web-based browser for searching and viewing details of transactions, blocks, and addresses—that analyzes worldwide indices of a cryptocurrency and calculates the value at an exact date and time. If the taxpayer does not use an explorer value, the tax preparer must establish that the value used is an accurate representation of the FMV.

The basis of purchased property is usually what it cost the property owner. However, a property owner may also need to add certain other costs related to buying or producing the property; the costs may need to be capitalized, in other words. Additionally, an owner's original basis in property may also be increased or decreased. Thus, before figuring gain or loss on a sale, exchange, or other disposition of property, or figuring allowable depreciation, depletion or amortization, the taxpayer must usually make certain adjustments to the basis of the property. The result of these adjustments to the basis is the adjusted basis.

Cost Basis of Inherited Virtual Currency

If a taxpayer obtains personal property by inheritance, its FMV is important in figuring the basis. The basis of property inherited from a decedent is generally one of the following:

- the FMV of the property at the date of the individual's death; or
- the FMV on the alternate valuation date if the personal representative for the estate files an estate tax return and chooses to use alternate valuation¹⁰.

If a federal estate tax return doesn't have to be filed, a taxpayer's basis in the inherited property is its appraised value at the date of death for state inheritance or transmission taxes.

Formerly Gifted Inherited Virtual Currency

The above rule doesn't apply to appreciated property inherited from a decedent to whom the property had been given by the inheriting taxpayer or spouse within one year prior to the death of the decedent. In such a case, the inheriting taxpayer's basis in the property is the same as the decedent's adjusted

¹⁰ Information on the alternate valuation date may be found in the Instructions for IRS Form 706.

basis in the property immediately before the decedent's death, rather than its FMV.

For example, suppose John gave his virtual currency to his friend, Harriet, ten months before her death when its value was \$16,000. In the ten months following the gift, the value of the virtual currency soared to \$76,000. Harriet bequeathed the untouched virtual currency to John. John's basis in the inherited virtual currency is the same as Harriet's, i.e. \$16,000.

Community Property

In certain states, known as community property states, married individuals are normally considered to own half the community property. Community property is property that the taxpayer, the taxpayer's spouse, or both acquire during their marriage or registered domestic partnership at the time the taxpayer and spouse (or registered domestic partner) are domiciled in a community property state. It also includes property the taxpayer and spouse agreed to convert from separate to community property as well as property that can't be identified as separate property.

In contrast, separate property is:

- property the taxpayer or spouse owned separately before marriage
- money earned while domiciled in a state other than a community property state
- property either spouse received as a gift or inherited separately during their marriage or registered domestic partnership
- property purchased with separate funds or exchanged for separate property, during the spouses' marriage or registered domestic partnership
- property that the taxpayer and spouse (or registered domestic partner) agreed to convert from community to separate property through an agreement valid under state law
- the part of property purchased with separate funds, if part was bought with community funds and part with separate funds

Community property states are:

- Arizona
- California
- Idaho
- Louisiana
- Nevada
- New Mexico
- Texas
- Washington
- Wisconsin

In these community property states, married individuals are each usually considered to own one-half the community property. When either spouse dies, the entire value of the community property on the date of death generally becomes the basis of the property—even the part belonging to the surviving spouse. In order for this rule to apply, at least one-half the value of the community property interest must be includible in the decedent's gross estate whether or not the estate is required to file a return.

For example, Carl and Lois live in a community property state and acquire virtual currency having a cost basis of \$60,000 that, at the time of Carl's death, has an FMV of \$100,000. The basis of the part of the virtual currency belonging to Carl is stepped up to \$50,000 as is the basis of the part of the virtual currency belonging to Lois. Thus, Lois' basis in the virtual currency is \$100,000, its FMV at the time of Carl's death.

Virtual Currency Received as a Gift

To figure the basis of property the taxpayer receives as a gift, the taxpayer must know its adjusted basis to the donor—the individual making the gift, in other words—just before it was given to the taxpayer and any gift tax paid on it by the donor. A donee's basis in virtual currency received as a gift may vary depending on whether the taxpayer will have a gain or loss when the virtual currency is sold or disposed of.

Cost Basis of Gifted Property When FMV is Less than Donor's Adjusted Basis

If the FMV of the property at the time of the gift is less than the donor's adjusted basis in the property, the donee-taxpayer's basis depends on whether the donee taxpayer has a gain or a loss when disposing of the property. The donee-taxpayer's basis for figuring gain is the same as the donor's adjusted basis plus or minus any required adjustment to basis to reflect costs incurred while held by the donee.

The donee's basis for figuring loss, however, is the gifted property's FMV when the donee received the gift plus or minus any required adjustment to basis while the property was held. If the donee-taxpayer would have a gain on the sale or disposition of property received as a gift, his or her basis is equal to the donor's basis plus taxes paid by the donor.

Cost Basis of Gifted Property When FMV is Equal to or More than Donor's Adjusted Basis

If the FMV of the gifted property is equal to or greater than the donor's adjusted basis in the property, the donee-taxpayer's basis is the donor's adjusted basis at the time the donee received the gift, increased by any gift tax paid, depending upon when the gift was made.

Gifts Received Before 1977

If the gift was received by the donee before 1977, the donee-taxpayer may increase the donor's adjusted basis in the gift by the amount of any gift tax paid. However, the increase in basis resulting from the gift tax payment must not increase the donee's basis in the gifted property to more than the FMV of the gift at the time it was given to the donee. Since virtual currency was not available before 1977, gifts of virtual currency made prior to that time will not arise.

Gifts Received After 1976

If the taxpayer received a gift of virtual currency after 1976, the donor's adjusted basis in the gift may be increased by the part of the gift tax paid on the gift that is due to the net increase in value of the gift. The increase in basis in this case is calculated by multiplying the gift tax paid by the donor by a fraction, the numerator of which is the net increase in value of the gift, and the denominator of which is the amount of the gift. For purposes of the calculation, the net increase in value of the gift is equal to the FMV up the gift less the donor's adjusted basis in the gifted property. The amount of the gift is its value for gift tax purposes after reduction by any annual exclusion and marital or charitable deduction that applies to the gift.

For example, suppose the taxpayer received a gift of virtual currency that had an FMV of \$50,000 in which the donor had an adjusted cost basis of \$20,000. Further suppose the amount of the taxable gift was \$35,000—\$50,000 gift *minus* the applicable \$15,000 gift tax annual exclusion—on which the donor

paid a gift tax of \$7,100. The equation is as follows:

Gift tax	x	<u>Net increase in value</u> Amount of taxable gift	=	Gift tax due to net increase in value
\$7,100	x	$\frac{\$30,000}{\$35,000}$	=	\$6,106

Multiply the \$7,100 gift tax paid by the percentage of the tax due to the net increase in value (86% in the example) and add the result to the donor's \$20,000 adjusted cost basis. The result is the donee-taxpayer's basis in the property equal to \$26,106 $(\$20,000 + (\$7,100 \times .86) = \$26,106)$.

If the donee-taxpayer uses the donor's adjusted basis for determining a gain and the calculation shows a loss and then uses the FMV for determining a loss and the calculation shows a gain, the taxpayer will have neither a gain nor a loss on its sale or disposition.

Requirement for Substantiating Documentation

If the taxpayer does not have any documentation to substantiate the donor's basis, the donee's basis is considered to be zero. A taxpayer's holding period for virtual currency received as a gift includes the period of time that the virtual currency was held by the person from whom the taxpayer received the gift. Thus, virtual currency held by the donor for six months and by the donee for seven months would have been held for thirteen months (6 months + 7 months = 13 months). However, if the donee possesses no documentation that would substantiate a donor's holding period, the donee's holding period will begin the day after he or she received the gift.

Cost Basis Summary

We can summarize how cost basis is determined, based on how acquired, as shown in the following chart:

Virtual Currency Received	Cost Basis
As employee wages	FMV on date of receipt
As payment for independent contractor services	FMV on date of receipt
Inherited, other than in community property state	FMV on date of death or alternate valuation
Inherited in community property state	Stepped-up FMV of deceased and surviving spouse on date of death
As a gift	Donor's adjusted basis
As compensation for mining	FMV on date of receipt

Tax Treatment of Virtual Currency Received for Services

Virtual currency may be received as compensation by an independent contractor or an employee in exchange for services rendered.

Virtual Currency Received as Wages

Virtual currency may be used as a medium of exchange in payment for services, and such payment constitutes wages for employment tax purposes. Generally, the medium in which remuneration for services is paid is immaterial to the determination of whether the remuneration constitutes wages for employment tax purposes. Consequently, the FMV of virtual currency paid as wages is subject to federal income tax withholding, Federal Insurance Contributions Act (FICA) tax, and Federal Unemployment Tax

Act (FUTA) tax. Any wages received as virtual currency must be added to any other wages received and reported in U.S. dollars.

A payment made using virtual currency is subject to information reporting to the same extent as any other payment made in property. Thus, such payments must be reported on Form W-2, *Wage and Tax Statement*. The FMV of investment property received for services are considered a part of the recipient's income and, assuming the taxpayer is otherwise required to file a federal tax return, wages received as virtual currency must be included. The amount included in income then becomes the recipient's basis in the property. If the services were performed for a price that was agreed to beforehand, this price will be accepted as the FMV of the property assuming there is no evidence to the contrary.

If a taxpayer receives property that is subject to certain restrictions in payment for services, his or her basis in the property is generally equal to its FMV at the time it becomes substantially vested. Property becomes substantially vested when it is transferable or is not subject to a substantial risk of forfeiture.

For example, a person who in the course of a trade or business makes a payment of fixed and determinable income using virtual currency with a value of \$600 or more to a U.S. non-exempt recipient in a taxable year is required to report the payment to the IRS and to the payee. Examples of payments of fixed and determinable income include rent, salaries, wages, premiums, annuities, and compensation.

Additional information may be found in IRS Publication 525, *Taxable and Nontaxable Income*.

Virtual Currency Received by an Independent Contractor

It was noted earlier that the cost basis of virtual currency received for goods or services is its fair market value (FMV), measured in U.S. dollars as of the date of its receipt. Accordingly, virtual currency received by an independent contractor for performing services constitutes self-employment income. Thus, the FMV of the virtual currency received for the services performed as an independent contractor, measured in U.S. dollars as of the date of receipt, is considered self-employment income and is, therefore, subject to the self-employment tax. Furthermore, the FMV of the received virtual currency constitutes the independent contractors cost basis in it.

A person who in the course of a trade or business makes a payment of \$600 or more in a taxable year to an independent contractor for the performance of services is required to report that payment to the IRS and to the payee on Form 1099-NEC, *Nonemployee Compensation*. Payments of virtual currency required to be reported on Form 1099-NEC should be reported using the FMV of the virtual currency in U.S. dollars as of the date of payment. The payment recipient may have income even if the recipient does not receive a Form 1099-NEC.

Additionally, payments made using virtual currency are subject to backup withholding to the same extent as other payments made in property. Therefore, payors making reportable payments using virtual currency must solicit a taxpayer identification number (TIN) from the payee. The payor must backup withhold from the payment if a TIN is not obtained prior to payment or if the payor receives notification from the IRS that backup withholding is required.

If a taxpayer pays for a service using virtual currency that is being held as a capital asset, the taxpayer will have exchanged the capital asset for the service purchased. As a result, the taxpayer will have a

capital gain or loss. The gain or loss experienced as a result of using virtual currency to pay for a service is the difference between the FMV of the services received and the taxpayer's adjusted basis in the virtual currency exchanged.

Generally, a taxpayer must pay self-employment (SE) tax and file Schedule SE (Form 1040) if net earnings from self-employment were \$400 or more. Use Schedule SE to figure net earnings from self-employment. If a taxpayer is self-employed as a sole proprietor or independent contractor, use Schedule C (Form 1040) to figure earnings subject to SE tax.

The SE tax rate on net earnings is 15.3% (12.4% social security tax plus 2.9% Medicare tax). For 2023, only the first \$160,200 of a taxpayer's combined wages, tips, and net earnings is subject to any combination of the 12.4% social security part of SE tax, social security tax, or the Tier 1 part of railroad retirement tax. However, all of a taxpayer's combined wages, tips, and net earnings in 2023 are subject to the 2.9%.

If the taxpayer's wages and tips are subject to either social security tax or the Tier 1 part of railroad retirement tax, or both, and total at least \$160,200, do not pay the 12.4% social security part of the SE tax on any net earnings. However, the taxpayer must pay the 2.9% Medicare part of the SE tax on all his or her net earnings.

A 0.9% Additional Medicare Tax may apply to the taxpayer if net earnings from self-employment exceed a threshold amount, based on the taxpayer's filing status, as shown in the chart below:

Filing Status	Threshold Amount
Married filing jointly	\$250,000
Married filing separately	\$125,000
Single	\$200,000
Head of household	\$200,000
Qualifying widow(er)	\$200,000

Consider the following example: Carl, a single filer, has \$145,000 in self-employment income from mining virtual currency and \$130,000 in wages. Carl's wages don't exceed \$200,000. Therefore, Carl's employer didn't withhold Additional Medicare Tax. However, the \$130,000 of wages reduces the self-employment income threshold to \$70,000 (\$200,000 threshold minus the \$130,000 of wages). Carl is liable for Additional Medicare Tax on \$75,000 of self-employment income (\$145,000 in self-employment income minus the reduced threshold of \$70,000). Carl must file Form 8959, *Additional Medicare Tax*.

Additional information may be obtained from Form 8959 and its instructions, Chapter 10 of Publication 334, *Tax Guide for Small Business*, Publication 535, *Business Expenses*, and Publication 525, *Taxable and Nontaxable Income*. See the Instructions to Form 1099-MISC, 1099-NEC and the General Instructions for Certain Information Returns for more information. For payments to non-U.S. persons, see Publication 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*.

Publication 15 (Circular E), *Employer's Tax Guide*, may be accessed for information on the withholding, depositing, reporting, and paying of employment taxes.

Mining Virtual Currency

Cryptocurrency mining is the name given to the process by which transactions involving cryptocurrency are validated on the distributed ledger refer to as a “blockchain.” When a taxpayer successfully “mines” virtual currency, the FMV of the virtual currency received as a result of that activity as of the date of receipt is includible in the miner’s gross income.

In some cases, a taxpayer may mine virtual currency as a trade or business. If a taxpayer’s “mining” of virtual currency constitutes a trade or business, and the “mining” activity is not undertaken by the taxpayer as an employee, the net earnings from self-employment (generally, gross income derived from carrying on a trade or business less allowable deductions) resulting from those activities constitute self-employment income and are subject to the self-employment tax. Additionally, the FMV of the received virtual currency at the time of receipt is the miner’s cost basis in the virtual currency. Costs incurred in the “mining” activity are added to the taxpayer’s cost basis in determining his or her adjusted cost basis.

Tax Treatment of Virtual Currency Transactions

A gain or loss may be realized with respect to virtual currency when it is sold, exchanged or disposed of. A sale is a transfer of property for money or a promise to pay money. An exchange is a transfer of property for other property or services. Virtual currency is disposed of when it is destroyed or stolen.

Exchanged Virtual Currency

When a taxpayer sells or exchanges virtual currency, the gain or loss on the transaction is the difference between the amount received by the taxpayer and the taxpayer's adjusted basis in the virtual currency. The character of the gain or loss generally depends on whether the virtual currency is a capital asset. A taxpayer generally realizes capital gain or loss on the sale or exchange of virtual currency that is a capital asset in the hands of the taxpayer. Almost everything a taxpayer owns and uses for personal purposes, pleasure, or investment is a capital asset, such as stocks and bonds, coin or stamp collections, gems and jewelry, gold, silver, and other metals—and virtual currency. However, a taxpayer realizes ordinary gain or loss, rather than a capital gain or loss, on the sale or exchange of virtual currency that is not a capital asset in the hands of the taxpayer. Inventory and other property held mainly for sale to customers in a trade or business are examples of property that is not a capital asset.

Any gain or loss will be a long term gain or loss depending on how long the virtual currency was held by the taxpayer before being sold or exchanged. Virtual currency held for one year or less before the sale or exchange will result in a short term capital gain or loss. In contrast, the sale or exchange of virtual currency held by the taxpayer for longer than one year before being sold or exchanged will result in a long term capital gain or loss.

If the FMV of property received in exchange for virtual currency exceeds the taxpayer's adjusted basis of the virtual currency, the taxpayer has taxable gain. The taxpayer has a loss if the FMV of the property received is less than the adjusted basis of the virtual currency. If the taxpayer transfers property held as a capital asset, other than U.S. dollars, in exchange for virtual currency, the taxpayer is required to recognize a capital gain or loss. In contrast, if the transferred property is not a capital asset, the taxpayer will recognize an ordinary gain or loss on the transaction. Assuming the exchange constitutes an arms-length transaction, a taxpayer's basis in the property received in the exchange is equal to its FMV at the time the exchange takes place.

If the taxpayer exchanges property for virtual currency, the gain or loss realized is the difference between the market value of the virtual currency when received and the taxpayer's adjusted basis in the property that was exchanged for the virtual currency. In such a case, the taxpayer's basis in the virtual currency is the FMV of the virtual currency, in U.S. dollars, when the virtual currency is received.

Additional information concerning the tax treatment of sales and exchanges, such as whether a loss is deductible, may be obtained from IRS Publication 544, *Sales and Other Dispositions of Assets*.

Exchange of Virtual Currency for Other Property

Similar to the purchaser of services using virtual currency, a taxpayer using virtual currency held as a capital asset in exchange for other property, including another virtual currency, will recognize a capital gain or loss as a result of the exchange. The gain or loss when exchanging virtual currency for other property is equal to the difference between the FMV of the property received and the cost basis of the virtual currency exchanged.

The basis of property a taxpayer buys is usually its cost. However, if the acquired the property by gift, inheritance, or in some way other than buying it, the taxpayer must use a basis other than its cost. Consider the following three examples.

Example 1. Assume Audrey possesses virtual currency with a current FMV of \$100,000 that she is using to exchange for other property valued at \$100,000. If the virtual currency was purchased by Audrey for \$90,000, she would realize a gain of \$10,000 as a result of the exchange (\$100,000 - \$90,000 = \$10,000).

Example 2. However, assuming the same set of facts except that she acquired the virtual currency as a result of an inheritance, and the FMV was \$100,000 at the time it was inherited, the result would be different. In this case she would realize no gain resulting from the exchange because her cost basis in the inherited virtual currency is equal to its FMV at the time of inheritance (\$100,000 - \$100,000 = \$0).

Example 3. In the case of virtual currency received as a gift, there could be a third result. Assume Audrey received the virtual currency with an FMV of \$100,000 as a taxable gift and the donor had previously purchased the virtual currency for \$40,000. The taxable gift would have a gift tax value of \$84,000, i.e., the gift in excess of the applicable annual gift tax exclusion (\$100,000 - \$16,000 = \$84,000). If the gift tax paid by the donor was \$14,400, Audrey would have a cost basis in the gifted virtual currency of \$50,224, the total of the donor's cost basis *plus* the gift tax attributable to the increase in value (\$40,000 + \$10,224 = \$50,224).

Gift tax	x	<u>Net increase in value</u> Amount of taxable gift	=	Gift tax due to net increase in value
\$14,400	x	<u>\$60,000</u> \$84,000	=	\$10,224

Based on Audrey's cost basis in the virtual currency, her exchange of the currency for other property with a \$100,000 FMV would result in a gain of \$49,776 (\$100,000 - \$50,224 = \$49,776).

Tax Treatment When Less Than All Virtual Currency Held Is Sold, Exchanged, or Disposed Of

If a taxpayer owns multiple units of the same kind of virtual currency some of which were acquired at different times and have different cost bases, the taxpayer's selling, exchanging or otherwise disposing of some of them gives rise to questions concerning which units, for tax purposes, are deemed sold, exchanged, or otherwise disposed of. In such a case, a taxpayer may choose which units of virtual currency are deemed sold, exchanged, or otherwise disposed of provided the taxpayer can specifically identify the unit or units of virtual currency involved in the transaction. Once those units are identified, the taxpayer must be prepared to substantiate his or her basis in them.

A taxpayer can identify a specific unit of virtual currency being disposed of by:

- documenting the specific unit's unique digital identifier such as a private key, public key, and address; or
- records showing the transaction information for all units of a specific virtual currency held in a single account, wallet or address that includes –
 - the date and time each unit was acquired,
 - the taxpayer's basis and the FMV of each unit at the time it was acquired,
 - the date and time each unit was sold, exchange, or otherwise disposed of, and
 - the FMV of each unit when sold, exchange, or disposed of and the amount of money or

the value of property received for each unit.

if a taxpayer does not identify specific units of virtual currency that have been sold, exchanged or otherwise disposed of, the units are deemed to have been sold, exchange, or otherwise disposed of in chronological order beginning with the earliest unit of the virtual currency purchased or acquired. In other words, on a first in, first out (FIFO) basis.

Charitable Gifts of Virtual Currency

If a taxpayer donates virtual currency to an eligible charitable organization, the donor may recognize a charitable deduction as a result of the donation. The charitable deduction to which an itemizing taxpayer is eligible is generally equal to the FMV of the virtual currency at the time of the donation if the donor held the virtual currency for more than one year. In contrast, if the donor held the virtual currency for one year or less at the time of the donation, the taxpayer's deduction is equal to the lesser of:

- the donor's basis in the virtual currency, or
- the virtual currency's FMV at the time of the contribution

A donor must obtain a contemporaneous written acknowledgment of the gift if claiming a deduction of \$250 or more for the virtual currency donation. A charitable organization is generally required to sign the donor's IRS Form 8283, Noncash Charitable Contributions, acknowledging receipt of charitable deduction property if the donor is claiming a deduction of more than \$5,000 and if the donor presents the Form 8283 to the organization for signature to substantiate the tax deduction. The donee's signing of the form 8283 does not represent concurrence in the appraised value of the contributed property. Instead, it represents acknowledgement of receipt of the property described on the form on the date specified and that the donee understands the information reporting requirements imposed under the Internal Revenue Code.

Tax Treatment of Protocol Changes

It was noted earlier in chapter one that the consensus protocol—the rules governing validation of virtual currency transactions—may change either accidentally or intentionally in a hard fork in order to:

- correct a security risk
- reverse transactions on the blockchain
- add functionality
- resolve a disagreement in the virtual currency community

...or for some other reason. When that occurs, two blockchains emerge and may be accompanied by an airdrop, an allocation of digital assets without the current or future performance of services or transfer of goods in return. In other words, it is money received for free.

Although the hard fork itself does not result in taxable income, the airdrop does. Thus, if no airdrop occurs, no income results. However, a taxpayer will have gross income that is ordinary in character, rather than capital gain, following a hard fork if the taxpayer receives units of the new virtual currency. IRS Revenue Ruling 2019 - 24 provides the following situation and analysis of an airdrop following a hard fork.

For example, assume that a taxpayer owns 50 units of a cryptocurrency referred to as Crypto A. The distributed Ledger for Crypto A experiences a hard fork and results in the creation of Crypto B, following which 25 units of Crypto B are airdropped to the taxpayer's distributed ledger address, i.e., the taxpayer's wallet, solely because the taxpayer owns Crypto A. The airdrop of 25 units of Crypto B are recorded on the distributed Ledger at a specific date and time, and at that time the FMV of 25 units of Crypto B is \$50.

In the analysis of the above situation, the Revenue Ruling observes that "... except as otherwise provided by law, gross income means all income from whatever source derived, including gains from dealings in property [and] are included in gross income.... In general, income is ordinary unless it is gain from the sale or exchange of a capital asset or a special rule applies."

To determine the amount included in taxable income, the revenue ruling states that "When a taxpayer receives property that is not purchased, unless otherwise provided in the code, the taxpayer's basis in the property received is determined by reference to the amount included in gross income which is the FMV of the property when the property is received."

Based on that reasoning the IRS, in Revenue Ruling 2019 – 24, held that the taxpayer has gross income as a result of the airdrop, and that gross income is ordinary income.

Reporting

Since 2020, individual income tax filers have been required to answer the following threshold question, just below the name block on the tax form:

At any time during [the tax year], did you receive, sell, exchange, or otherwise dispose of any financial interest in virtual currency?

Regardless of whether the taxpayer receives payee statements or information returns, he or she must report the income, gain, or loss arising out of any virtual currency transactions occurring during the tax year.

Income is reported on Form 1040 Schedule 1. Capital gains and losses must be reported on Form 8949, Sales and Other Dispositions of Capital Assets and then summarized on Schedule D, Capital Gains and Losses.

The Taxpayer Advocate Service, an independent organization within the IRS, suggests breaking down this question into the following:

- Did I own any virtual currency (which includes all cryptocurrencies)?
- Have I paid for goods or services with virtual currency?
- Did I receive virtual currency in exchange for goods or services?
- Did I sell virtual currency during the tax year?
- Do I have records documenting all of my purchases, sales, and exchanges?
- Did I report all of my sales and exchanges and calculate my gain or loss resulting from the increase or decrease in the value of my virtual currency?
- Do I report my gains and losses as short-term or long-term?
- What records should I maintain?

If the only cryptocurrency-related activity the taxpayer engaged in during the year was to purchase cryptocurrency with real currency, there is generally no reporting requirement, and the “no” box near the top of the 1040 can be checked.¹¹

The Taxpayer Advocate explains that the IRS is not seeking information from taxpayers that do not have taxable transactions. A “transaction” involving virtual currency would include such events as:

- receiving or transferring virtual currency for free (bona fide gifts would *not* require reporting the amounts as income)
- selling virtual currency
- receiving or exchanging virtual currency for goods or services
- receiving new virtual currency as a result of mining and staking activities
- receiving virtual currency as a result of a hard fork
- exchanging virtual currency for other property, including for another virtual currency
- any other disposition of a financial interest in virtual currency

There is no taxable event if a person merely holds virtual currency in a wallet or account or transfers currency from one of his or her own wallets to another of his or her owned wallets.

Recordkeeping

Recordkeeping is an important part of being able to report and pay tax liabilities. A taxpayer must keep records in order to substantiate the terms of the purchase (or other acquisition) and the sale/exchange (or other disposition). Such records should include the type and value of each unit or partial unit of virtual currency acquired, the amount paid, the cash (or goods and services) received, and the date and time of the transaction. Support for calculations should also be kept. The TAS recommends reviewing the IRS guidance available at [irs.gov](https://www.irs.gov) under “small-businesses-self-employed/virtual-currencies.”

As discussed previously, some virtual currency transaction information is publicly available. Because most virtual currencies use blockchain and distributed ledger technology, the information associated with transactions can be accessed by anyone with the know-how, and in fact, the public nature of the data is part of the appeal of this type of currency. With so many people able to monitor and even mine the data, the transaction information is less susceptible to fraudulent alteration.

Blockchain and the Distributed Ledger

More specifically and in non-technical terms, “blockchain” describes the way financial data is recorded sequentially. A transaction occurs and its data is added to the chain. A new data entry is attached to the data entries already in the chain. Future transactions made by the same parties or others are recorded on the chain. Generally, an accounting “ledger” is a record of transactions, classified by accounts, and represented in terms of debits and credits. With virtual currency, the blockchain transactions are tracked in a ledger, and the ledger is “distributed.” This means that the information is publicly available.

¹¹ <https://www.taxpayeradvocate.irs.gov/news/tas-tax-tip-when-to-check-yes-or-no-for-the-virtual-currency-question-virtual-currency/>

The taxpayer will be able to retrieve some of the information needed to substantiate transactions from the distributed ledger. Nevertheless, it is important to keep additional records – receipts, statements, invoices, etc. – generated contemporaneously with the transactions they represent. Such information is especially important for the many virtual currency users who do not receive information returns (1099-MISC, 1099-K, 1099-B, etc.).

Some transactions are not recorded in the public ledger (for various reasons). These transactions are said to occur “off-chain.” The taxpayer must be able to show the value of property, services, etc. received and the date and time of the transaction – i.e., those pieces of information that would be recorded in an on-chain transaction.

There are also transactions conducted by means of currency exchanges. A currency exchange can be a person or entity that exchanges (usually for a fee) virtual currency for other virtual currency, for fiat currency, or for other funds. An exchange may also provide a means for investors to trade virtual tokens or coins.

It is important to remember that the general rule that income from whatever source derived is subject to taxation by the federal government. Even if there are time lags between the development of tax legislation specifics and the nature of certain types of transactions, the IRS can examine past transactions within at least the standard statutes of limitations deadlines. And there is no statute of limitations on civil tax fraud.

Summary

- Determination of the gain or loss realized on transactions involving virtual currency and other property requires determination of the taxpayer’s cost basis in the property.
- A taxpayer who mines virtual currency or otherwise receives it as an employee or independent contractor will have a basis in it equal to the FMV on the date of receipt.
- Taxpayers inheriting virtual currency upon the death of a decedent have a basis in the virtual currency equal to the FMV at death or date of alternate valuation.
- Taxpayers receiving virtual currency as a gift have a cost basis in the virtual currency equal to the donor’s cost basis adjusted by the part of any gift tax paid attributable to the growth in value.
- The medium in which remuneration for services is paid is immaterial to the determination of whether it constitutes wages for employment tax purposes.
- The FMV of virtual currency paid as wages is subject to federal income tax withholding, Federal Insurance Contributions Act (FICA) tax, and Federal Unemployment Tax Act (FUTA) tax.
- Wages received in virtual currency must be added to any other wages received and reported in U.S. dollars.
- Gain or loss on the sale or exchange of virtual currency is the difference between the amount received by the taxpayer and the taxpayer’s adjusted basis in the virtual currency at the time of the transaction.
- Gain or loss on the sale or exchange of virtual currency will be long term gain or loss depending on how long the virtual currency was held by the taxpayer before being sold or exchanged.
- Virtual currency held for one year or less before the sale or exchange will result in a short term capital gain or loss.

- Sale or exchange of virtual currency held by the taxpayer for longer than one year before being sold or exchanged will result in a long term capital gain or loss.
- When less than all virtual currency is used in a sale or exchange, a taxpayer may choose which units of virtual currency are deemed sold, exchanged, or otherwise disposed of.
- A taxpayer choosing units of virtual currency sold or exchanged must be able to specifically identify the unit or units of virtual currency involved in the transaction.
- Identifying the virtual currency units sold or exchanged requires that the taxpayer be prepared to substantiate his or her basis in them.
- An itemizing taxpayer may recognize a charitable deduction as a result of a donation of virtual currency to an eligible charitable organization.
- The charitable deduction for virtual currency held for more than one year at the time of donation is generally equal to the FMV of the virtual currency at the time of the donation.
- The charitable deduction for virtual currency held for one year or less at the time of the donation is equal to the lesser of the donor's basis in the virtual currency or the virtual currency's FMV at the time of the contribution.
- The rules governing validation of virtual currency transactions, known as the consensus protocol, may change in a hard fork to correct a security risk, reverse transactions on the blockchain, add functionality, resolve a disagreement in the virtual currency community or for some other reason.
- A hard fork causes two blockchains to emerge and may be accompanied by an airdrop.
- An airdrop is an allocation of digital assets without required current or future performance of services or transfer of goods.
- A taxpayer must recognize ordinary income following a hard fork if the taxpayer receives units of new virtual currency.
- Form 1040 has required, since 2020, the filer to indicate (yes/no) whether he or she has engaged in any cryptocurrency transactions during the year.
- For on-chain transactions, there is a great deal of publicly available information on the distributed ledger, and this information can be used by the taxpayer to calculate and later substantiate positions taken on tax issues.
- Contemporaneous records should also be maintained by the taxpayer.
- Although activities conducted through virtual currency exchanges may not have publicly available details on a distributed ledger, but the taxpayer must still report and pay taxes as though such transactions were on-chain.
- The general rule that persons owe income tax on income from "whatever source" applies to income from virtual currency transactions. Statutes of limitations may put a deadline on when the IRS can pursue certain examinations and penalties, but for civil tax fraud, there is no statute of limitations.

Glossary of Key Terms

access control mechanism—a control that allows only authorized persons, organizations, or nodes to participate and/or transact on a given blockchain network. Access control is one of the key differences between public and private blockchains.

bad actor—an allocation of digital assets, to one or more blockchain addresses often done without any consideration from the receiving blockchain addresses. Entities often employ airdrops as a method of generating awareness or interest in a digital asset and may impose certain criteria to receive or claim the airdropped digital assets.

bitcoin—an example of a crypto asset.

block—a collection of digital asset transactions to be recorded on a blockchain.

blockchain technology—a technology that records a list of records, referred to as blocks, that are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp and transaction data.

block explorer—a specialized software or web-based browser for searching and viewing details of transactions, blocks, and addresses.

consensus mechanism—defines the steps to achieve consensus (e.g., the agreement on the values recorded by the various participants in a blockchain) using a set of rules (protocols) or algorithms. (Also referred to as consensus algorithm or consensus protocol.)

crypto asset—a type of digital asset that functions as a medium of exchange and has all the following characteristics:

- not issued by a jurisdictional authority, i.e. sovereign government
- don't give rise to a contract between the holder and another party.
- not considered a security under the Securities Act of 1933 or the Securities Exchange Act of 1934.

These characteristics are not all-inclusive, and other facts and circumstances may need to be considered. Examples of crypto assets meeting these characteristics include bitcoin, bitcoin cash and ether.

cryptographic key (key)—a string of bits used by a cryptographic algorithm to transform plain text into an encrypted message. Cryptographic key pairs are the public and private keys needed to decode and encode encrypted messages on a blockchain network.

cryptography—a technique to secure communication or data.

digital asset—a digital record made using cryptography for verification and security purposes on a digital decentralized ledger (referred to as a blockchain). A digital asset is characterized by its ability to be used for a variety of purposes, including as a means of exchange, as a representation to provide or access goods or services, or as a financing vehicle, such as a security, among other uses.

digital asset ecosystem—all entities participating or involved with digital assets. This may include entities engaged in various elements of the ecosystem, including development, maintenance, use (e.g., the purchase, sale, investment, trading, or exchange); custody or security (e.g., hot or cold wallet providers, qualified custodians, or other custodial services); or validation.

digital signature—the combination of the private key, public key, message and hashing generates a digital signature. A digital signature is unique for every transaction and is a way to prove that the originator of the message has access to the private key.

distributed ledger technology (DLT)—a broad umbrella term covering all blockchain technology and variations of the technology that does not use blocks or blockchains. All blockchains are DLT, but not all DLT are blockchains.

encryption—the process of encoding data in such a way to prevent unauthorized access.

Ethereum—a blockchain platform and smart contract platform upon which other applications may be built. Ether is the crypto asset that runs on Ethereum.

exchanges—a platforms for buying and selling digital assets, including crypto assets.

fiat currency—a generally accepted legal tender issued by a sovereign government (e.g., dollar, pound and euro).

fork—a change to the consensus protocol.

hard fork—a fork that may not be backwards compatible with older versions of the consensus protocol, such that computers using the legacy consensus protocol will reject transactions created under the new consensus protocol.

hashing—a process used to convert data into a string of numbers and letters.

hybrid blockchain—a network with a combination of characteristics of public and private blockchains where a blockchain may incorporate select privacy, security and auditability elements required by the implementation.

immutability—the characteristic of not being capable of or susceptible to change. In a blockchain network, this refers to the notion that certain features of blockchain technology prevent a transaction that has been previously validated from being subsequently modified or changed.

key generation or key ceremony—the process to generate public and private keys.

key management risk—the risk that private keys are not properly secured or backed up, resulting in a loss of data or digital assets.

node—a participant that downloads and maintains a full or partial copy of the blockchain, validates blocks and can relay transactions.

off-chain transactions—transactions recorded outside the underlying blockchain (e.g., transfers by third-party wallet service providers between their users that are not recorded on a public blockchain).

on-chain transactions—transactions recorded on the underlying blockchain.

peer-to-peer network—a decentralized network where participants have equal privileges and make certain resources directly available to other network participants.

private key—a cryptographic key that is privately held and is required to be used in conjunction with a public key to decipher encrypted messages.

public key—a cryptographic key that is available to anyone to encrypt messages intended for a recipient.

privacy coins—blockchain digital asset with limited ability to determine the identities of the transacting parties by observing the blockchain.

private blockchain (permissioned)—a restricted access network controlled by an entity or group which is similar to a traditional centralized network.

pseudo-anonymous—used to describe the circumstance whereby, in blockchain environments, digital assets are exchanged between blockchain addresses, and specific names and identities of those parties transacting are not explicitly identified with those addresses.

public address (blockchain address)—a unique identifier which is used to record receipts of digital assets on a public blockchain. Blockchain addresses are derived from cryptographic manipulation (that is, hashing) of the public key and can be shared with anyone to receive messages.

public blockchain (permissionless)—an open network where participants can view, read and write data, and no one participant has control (e.g., Bitcoin, Ethereum).

sharding—using encryption techniques to split data.

smart contracts—a digital code containing a set of rules under which the participants agree to interact with each other. If and when the predefined rules are met, the agreement is automatically enforced by the code. The smart contract code facilitates, verifies and enforces the performance of an agreement or transaction after which the results of the transaction are written in a blockchain.

soft fork—a fork that is backwards compatible with older versions of the consensus protocol, such that transactions created using the new consensus protocol are accepted by computers using a legacy consensus protocol.

stablecoins—digital assets that include mechanisms designed to minimize price volatility by linking their values (e.g., a “peg”) to the value of another asset such as a fiat currency, a commodity, a digital asset or basket of assets.

validator—a participant in a blockchain network and component of a consensus mechanism responsible for validating transactions. For certain blockchains that use Proof of Work, validators are referred to as miners.

wallet—a medium used to store private keys and their associated public keys or blockchain addresses, some of which allow participants to send transactions to the peer-to-peer network and receive digital assets from others. There are different types of wallets as follows:

- **cold storage wallet**—a wallet that is not connected to the internet, also referred to as an offline wallet.

- **hardware wallet**—a hardware (physical) device that generates private keys instead of software.
- **hot storage wallet**—a wallet that is accessible to the internet. This is the most common implementation of a wallet, which may be referred to as just a wallet.
- **mobile wallet**—a wallet that is accessed via a mobile app.
- **multisig (multisignature) wallet**—a wallet that requires two or more signatures to transfer a digital asset from a wallet address.
- **physical wallet**—any medium used to store keys offline in physical form (e.g., paper wallet).
- **software wallet**—anything other than a hardware or physical wallet.
- **third-party hosted wallet service**—a third-party service provider who holds an entity's digital assets, also referred to as custodial wallet.

Index

- Airdrop, 11
- Algo-based stablecoins, 5
- Basis in virtual currency received as a gift, 17
- Basis of inherited virtual currency, 15
- Blockchain, 11
- Central bank digital currency (CBDC)., 3
- Charitable gifts of virtual currency, 23
- Cold storage, 8
- Commodity-backed stablecoins, 4
- Community property, 16
- Confirmations, 9
- Cost basis, 14
- Cost basis in purchased virtual currency, 14
- Cost basis of virtual currency received for goods or services, 14
- Crypto-backed stablecoins, 4
- Cryptocurrency exchanges and trading platforms, 5
- Cryptocurrency mining, 5, 21
- Desktop wallet, 8
- Digital currency, 3
- Distributed ledger, 5
- Documentation to substantiate donor's basis, 18
- Exchanges of virtual currency, 21
- Fair market value (FMV), 14
- Fear of missing out, 7
- Federal Reserve Board, 3
- Fiat-backed stablecoins, 4
- Hard fork, 10
- Hot storage, 8
- ICO fraud, 6
- Initial coin offering (ICO), 6
- Mobile wallet, 8
- Online platforms, 7
- Online wallets, 8
- Protocol changes, 23
- Purchasing virtual currency, 6
- Reporting income, gain, or loss, 24
- Security, 9
- Soft fork, 10
- Stablecoins, 4
- Storing virtual currency, 7
- Unbacked cryptocurrencies, 5
- Virtual currency, 2
- Virtual currency in payment for services, 18
- Virtual currency transaction, 9
- Virtual currency transactions, 13
- When less than all virtual currency held is sold, exchanged or disposed of, 22

FINAL EXAM

Tax Treatment of Virtual Currency

The following exam is attached only for your convenience. To access the official exam for this self-study course, please log into your account online and take the Final Exam from the course details page. A passing score of 70 percent or better will receive course credit and a Certificate of Completion.

- 1. How is virtual currency generally defined?**
 - A. as legal tender
 - B. as a digital representation of value
 - C. as digital currency used to make interbank transfers
 - D. as a fiat-secured method of international payment
- 2. What is a central bank digital currency used for?**
 - A. for taxpayers to make international virtual currency transactions
 - B. as a stable store of value for investors
 - C. to facilitate trading, lending, or borrowing of other digital assets
 - D. for interbank transactions
- 3. Which of the following is a characteristic of stablecoins but not of other cryptocurrency?**
 - A. They offer a level of safety.
 - B. They derive their value principally from a combination of demand and a relatively inelastic supply.
 - C. It maintains its value only to the extent it is a medium of exchange.
 - D. It has no intrinsic value.
- 4. How do virtual currency networks seek to maintain security?**
 - A. by oversight performed by a central issuing or regulating authority
 - B. the address of each individual virtual wallet is protected by a public key
 - C. by using techniques that allow only the sender and intended recipient of a message to view its contents
 - D. by reliance on the FDIC
- 5. What is the purpose of a blockchain with respect to virtual currency transactions?**
 - A. It serves as a permanent record and history of transactions.
 - B. It maintains transaction security by limiting its use only to blockchain members.
 - C. It serves as an exchange permitting members to easily convert virtual currency into cash.
 - D. It functions as a public database that may be accessed to identify individuals who transact virtual currencies.
- 6. What is the cost basis of inherited virtual currency?**
 - A. zero
 - B. the cost basis the decedent had in the inherited virtual currency
 - C. the decedent's cost basis *plus* the estate tax paid on the value of the virtual currency
 - D. the fair market value of the virtual currency on the date of the death of the decedent

7. Karen purchased land valued at \$100,000 with virtual currency she had been given by her father who purchased it for \$60,000. The virtual currency had a value on the date of the gift equal to \$85,000 (i.e., a taxable gift of \$69,000) on which he paid a \$17,940 gift tax. What income, if any, must Karen recognize as a result of her purchase?
- A. zero
 - B. \$15,000
 - C. \$33,500
 - D. \$40,000
8. John made a charitable gift of virtual currency in which he had a cost basis of \$40,000 and which had a fair market value of \$50,000. For what tax deduction, if any, is he eligible, assuming he held the virtual currency for two years?
- A. zero
 - B. \$10,000
 - C. \$40,000
 - D. \$50,000
9. Sheila owns \$100,000 of virtual currency she had purchased at various times. If she sold less than all her virtual currency but cannot identify when purchased, what tax treatment will the sale receive?
- A. FIFO
 - B. LIFO
 - C. capital gains
 - D. any gain realized is tax free until all virtual currency has been sold
10. Arthur received a gift of virtual currency with a fair market value of \$25,000 from his friend, Julie, who has no documentation to substantiate her basis. If the annual tax exclusion amount was \$16,000 at the time of the gift, what is Arthur's basis?
- A. zero
 - B. \$9,000
 - C. \$16,000
 - D. \$25,000