CRYPTOCURRENCIES: Implications For The Future of Accounting

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Cryptocurrencies, the most well-known of which is Bitcoin, present overt and major challenges to the accounting profession. Major issues for financial accounting purposes include measurement, recognition, presentation and disclosure. For auditing and other attestation services, the major issues include risk assessment, assessment of identified risks, internal controls (including IT controls) and selection of appropriate audit methodologies. Tax issues involve appropriate classification of digital currencies for tax purposes, as well as taxability of digital transactions. There are also a host of other issues that remain as yet unaddressed. There is little or no extant guidance for use by controllers, chief financial officers, internal auditors, tax accountants and external auditors.





efore we dive into the audit and accounting issues, let's consider some background information on cryptocurrencies and the underlying technology. The Chamber

of Digital Commerce (The Chamber) is a leading trade association of the blockchain industry. The Chamber is self-proclaimed to be the world's largest trade association representing the blockchain industry, whose mission is to promote the acceptance and use of digital assets and blockchainbased technologies. Membership is comprised of over 100 companies innovating with, and investing in, blockchain-based technologies, including financial institutions. exchanges, software companies, top consultancies and cutting edge fintech start-ups.

the Chamber: According to "Digital currency transactions rely on underlying technology called blockchain technology. Blockchain technology uses a peer-to-peer decentralized and distributed network that allows parties that do not know each other to transact securely without the use of an intermediary. Transactions are recorded on a public digital ledger which is shared with all other computers connected to the network. Each computer, or 'node,' on the network maintains a full copy of the historical ledger and participates in the maintenance of an accurate and secure ledger."

The Chamber continued: "Transactions are encrypted and cannot be changed or deleted after a 'mining' node has posted a 'block' of transactions to the network and the rest of the network has validated the block of transactions. The first blockchain application was the digital currency called bitcoin. What makes the bitcoin digital currency so unique is that it is based entirely on mathematics. In other words, consumers no longer need to rely on a financial institution to settle transactions; the settlement process is integrated into the software network, via complex math verification features, making sending money instant, globally accessible and extremely cost-effective."

When we talk about digital currencies, such as bitcoin, it is important to make a distinction between bitcoin the currency and the blockchain. Bitcoin is like a railroad car and blockchain is like the rails it rides on. Blockchain is a digital ledger of economic transactions that are transparent and continuously updated by countless global users.

Blockchain is considered difficult to corrupt because a hacker would need to overpower private exchanges across the internet; i.e., "distributed ledger technology" (Thomason) that interact and update the ledger. "In theory it cannot be hacked because that would require overpowering all the computers that contribute to and update the ledger network – a feat akin to hijacking the entire internet" (Carlozo).

Cryptocurrencies, like bitcoin, are virtual currencies that use cryptography for security. A digital currency is a digital asset and represents a method of exchange that does not physically exist, but rather exists digitally. The most widely used digital currency is bitcoin, but it is not the only digital currency (Chamber).

According to the Chamber, new products and services derived from

blockchain technology may lead to a paradigm shift in many industries – including banking, government records, title and asset ownership, digitization and encryption of medical records, digital identity, trading, clearing and settlement, secure voting systems, and many others. Blockchain technology is a newly created medium – an operating system for money (or anything of value, for that matter) and allows for digital currencies to be programmable.

While there are numerous exchanges and they operate in different ways, all cryptocurrencies share common characteristics. According to Reuters, individuals or entities wishing to transact in cryptocurrencies must create an account and deposit some type of currency or cryptocurrency into it. The entity then initiates transactions from this account and records those transactions on the blockchain digital ledger – either in a "hot" (online) wallet or a "cold" (offline) wallet. The online or hot wallet is more vulnerable to hacking than the cold wallet. The virtual exchange charges for each trade, typically as a percentage of the transaction. Finally, because there are multiple exchanges with varying prices, arbitrage opportunities exist.

The newness (less than 10 years) of cryptocurrencies and their "inherently pseudo-anonymous" nature has led to a high level of skepticism on the part of the Internal Revenue Service (IRS) and other regulators, as well as predictions

FIGURE 1.

Cryptocurrencies With Largest Market Capitalization Values

Name	Market Cap	Price	Volume (24h)	Change (24H)
BITCOIN	\$181,789,618,320	\$10,775.40	\$8,210,340,000	6.93%
eTHEREUM	94,189,661,210	964.29	2,436,410,000	2.65%
RIPPLE	46,385,468,461	1.19	1,118,200,000	5.08%
BITCOIN CASH	25,966,803,846	1,529.89	665,698,000	1.84%
Litecoin	12,594,821,806	227.91	867,588,000	(.39)%
cardano	10,797,172,963	0.42	334,686,000	3.21%
NEO	8,777,665,000	135.04	280,898,000	5.49%
STELLAR	8,678,516,207	0.47	102,622,000	3.90%
IOTA	6,027,022,284	2.17	39,169,400	4.00%
dash	5,769,357,563	731.20	113,254,000	5.75%

Note: Market capitalization is calculated by multiplying price by the circulating supply. Price is calculated by taking the volume weighted average of all prices reported at each market. Circulating supply is an approximation of coins circulating in the market and in the general public.

Source: CoinMarketCap's webpage Cryptocurrency Market Capitalizations

of dramatic transformations in multiple industries (IRS News). "No one was talking about it before 2008," said Boomer, the chief strategist for Boomer Consulting. "Then in 2013 we started to see the rise of bitcoin, a blockchain consortium in 2015 and proof of concept in 2016."

Boomer expects that blockchain may begin to replace legacy accounting systems around 2023, "and by 2025, it will be widely accepted" (Carlozo). The cryptocurrencies with the largest market capitalization values as defined by multiplying price by the circulating supply as of Feb. 8, 2018 are shown in Figure 1.

CoinMarketCap is one of several "price checking" sites for cryptocurrency. According to Sedgwick, there are viable, and perhaps more robust, entities that provide data that reflect on market capitalization and the valuation of the various cryptocurrencies, including:

- Onchainfx
- Coincodex
- Cryptocompare
- Bitinforcharts
- Coincheckup
- Coingecko
- Coincap
- Coinlib

Accounting Issues

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То emphasize how early cryptocurrencies are in terms of stage of development, the Financial Accounting Standards Board (FASB) has not yet taken a position on just what type of asset cryptocurrencies are. For example, the Chamber requested, in a letter dated June 8, 2017, that FASB create guidance on the measurement, recognition, presentation and disclosure for digital currencies and related transactions. "We request that the Financial Accounting Standards Board add to the Board's or Emerging Issues Task Force's (EITF) agenda a project to address the accounting for

THE IRS PLANS TO ISSUE WARNINGS ABOUT THE TAXABLE NATURE OF CRYPTO TRANSACTIONS

digital currencies."

More than six months later, FASB Chairman Andy McMaster reported to the Financial Accounting Standards Advisory Council (FASAC) on Dec. 14, 2017, that the staff has performed research on digital currency. (FASAC) The research and due diligence process promises a protracted timeline for the development of authoritative accounting guidance.

Meanwhile. businesses must account for both the use of digital currencies when used as consideration in exchange transactions and account for valuation of such currencies when held at the financial reporting date. With no authoritative literature under U.S. GAAP for digital assets, including digital currencies, the recognition, measurement, presentation and disclosure of digital currencies by companies cause management and the company's auditors to face a deep conundrum.

Armed with no specific guidance for measurement and disclosure of such currencies, accounting professionals mostly find that they must return to the non-authoritative Concepts Statements, as well as the FASB Accounting Standards Codification to attempt to make reasonable analogies. In their letter to FASB requesting accounting guidance, the Chamber of Digital Commerce suggests there are four Codification topics that may be appropriate; however, the Chamber ultimately concludes that a new subtopic is the more probable path to relevant accounting guidance.

The Chamber identified the following Accounting Standards Codification (ASC) topics as potentially appropriate for accounting for digital currencies:

- ASC 305, Cash and Cash Equivalents;
- ASC 330, Inventory;
- ASC 350, Intangibles;
- ASC 825, Financial Instruments.

Based on the FASB Conceptual Framework, it is relatively easy to conclude that digital currencies are an asset based on the concept of assets as probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events (FASB Concept 6). However, none of the potential topics listed above satisfactorily address relevance and faithful representation – the fundamental qualitative characteristics of U.S. GAAP's conceptual framework.

Consequently, the Chamber suggested that a new subtopic could create a "model under which an organization would recognize the digital currency when it controls the associated economic benefits and measures the digital currency each period at fair value with changes in fair value recognized in income."

FASB operates in a particular political and cultural environment – including, but not limited to, SEC regulations. The results of the FASB research and subsequent deliberations is eagerly anticipated by practitioners who must prepare the financial statements and the marketplace analysts as they prepare to buy/sell stock. Pricewaterhouse Coopers (PwC), for example, applauds FASB for "... researching this topic in consideration

of potential standard-setting and encourages them to undertake a project to consider the accounting for cryptocurrencies" ("Point of View: Cryptocurrencies").

Tax Considerations

The IRS mandates that digital currencies be treated as property. For example, prior to the use of a digital currency to effect an economic transaction (like purchasing inventory), the company must recognize that, in substance, the company has an investment property and has sold it. This sale of property prompts recognition of either a gain or loss as of the date of the receipt/ payment. IRS Notice 2014-21 indicates that the sale transaction is measured at the fair value of the virtual currency in U.S. dollars and must be reported on the entity's federal tax return.

The IRS plans to issue warnings about the taxable nature of crypto transactions, because the anonymous nature of transactions effected in a digital currency may tempt taxpayers to avoid recognizing the transaction on their tax returns. Failure to report transactions in digital currencies and the associated gains (losses) in earnings can subject a taxpayer to penalties and interest and may extend to criminal prosecution. (IRS News Release IR-2018-71).

The IRS plans to issue warnings about the taxable nature of crypto transactions. However, according to Thomason, thorny issues remain. Examples include whether section 1031, allowing for deferral of gains and losses from token exchanges, applies to digital currency transactions. In addition, hard forks cause a blockchain to split into more than one version. According to Investopedia, a hard fork is:

[A] permanent divergence from the previous version of the blockchain and nodes running previous versions will no longer be accepted by the newest version. This essentially creates a fork in the blockchain: one path follows the new, upgraded blockchain and the other path continues along the old path. Generally, after a short period of time, those on the old chain will realize that their version of the blockchain is outdated or irrelevant and quickly upgrade to the latest version.

Lapat indicates that tax preparers looking for guidance should consider taking aggressive positions in this period of uncertainty.

SEC Considerations

The Securities and Exchange Commission (SEC) has defined virtual currencies as a "digital representation of value that can be digitally traded and functions as a medium of exchange, unit of account or store of value" (SEC Investor Alert). However, no initial coin offerings (ICOs) have been registered with the SEC. The agency has yet to approve for listing and trading any exchange-traded products (such as ETFs) holding cryptocurrencies or other assets related to cryptocurrencies, according



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The SEC warns that "cryptocurrency markets span national borders and may include significant trading on systems outside the United States. Invested funds may quickly travel overseas without the investor's knowledge. As a result, risks can be amplified, including the risk that market regulators, such as the SEC, may not be able to enforce United States laws in dealing with transactions denominated in a cryptocurrency" (Clayton).

Due to these considerations, the SEC (Clayton) recommends the following questions be considered when considering a cryptocurrency or ICO investment opportunity:

- Who exactly am I contracting with?
- Who is issuing and sponsoring the product, what are their backgrounds and have they provided a full and complete description of the product? Do they have a clear written business plan that I understand?
- Who is promoting or marketing the product, what are their backgrounds and are they licensed to sell the product? Have they been paid to promote the product?
- Where is the enterprise located?
- Where is my money going and what will it be used for? Is my money going to be used to "cash out" others?
- What specific rights come with my investment?
- Are there financial statements? If so, are they audited and by whom?
- Is there trading data? If so, is there some way to verify it?
- How, when and at what cost can I sell my investment? For example, do I have a right to give the token or coin back to the company or to receive a refund? Can I resell the coin or token and if so, are there any limitations on my ability to resell?

THE SIZE, SCOPE AND COMPLEXITY OF AUDITS CHANGE WHEN AN ENTITY HOLDS AND TRANSACTS BUSINESS USING A CRYPTOCURRENCY.

- If a digital wallet is involved, what happens if I lose the key? Will I still have access to my investment?
- If a blockchain is used, is the blockchain open and public? Has the code been published and has there been an independent cybersecurity audit?
- Has the offering been structured to comply with the securities laws and, if not, what implications will that have for the stability of the enterprise and the value of my investment?
- What legal protections may or may not be available in the event of fraud, a hack, malware or a downturn in business prospects? Who will be responsible for refunding my investment if something goes wrong?
- If I do have legal rights, can I effectively enforce them and will there be adequate funds to compensate me if my rights are violated?

Those who decide to transact business or invest in digital currencies are stringently warned by the SEC as to the risks that such transactions bring and the responsibilities of "Main Street" investors and market professionals (broker-dealers, etc.) to deal with those risks in a prudent and consistent manner.

Auditing and Attestation Issues

When an entity holds any form of a cryptocurrency, accountants who prepare financial statements and CPAs who perform attestation services face unique challenges in addressing the informational needs of investors and other stakeholders. The size, scope and complexity of audits change when an entity holds and transacts business using a cryptocurrency. The risk assessment process during planning and throughout the remainder of the audit should consider relevant management assertions, including existence/occurrence, valuation, rights and obligations, and completeness.

Auditors must develop appropriate audit strategies, which may include the prospect of reducing the auditor's role in verifying blockchain transactions because of the inherent security of the digital ledger maintained by a network of users. However, regulations for the industry have not yet been addressed at high levels. This suggests that some regulatory actions by the SEC and other regulators may be forthcoming.

The primary risk assessment should focus on information technology (IT) risks. The best control environments have IT systems that maintain private security keys and access to such keys is restricted to a limited number of individuals who have been properly vetted as to qualifications and necessity. According to Nabors, a senior IT analyst at Weaver, a nationally oriented accounting firm's general IT controls should include:

- 1.Backups A backup should be maintained of the private key. The backup should be restricted and protected the same as any connect device.
- 2. Anti-virus/anti-malware The machine that contains the private key is free of malware that could expose the private key.
- 3. Vulnerability monitoring The infrastructure and network should be monitored for vulnerabilities and remediated when identified.
- 4. Restricted access Access to information should be restricted to only those who need to know.
- 5. Encryption Data at rest and intransit should be encrypted.
- 6. Assess and monitor the service provider – Identify and use a trusted wallet software,

specifically one that is used in deterministic mode. This allows for protection of a master private key, child private keys and public keys that can be shared (Nabors, "Risk Considerations").

Specific audit considerations include the type of audit program that may need to be modified to address the risk of misstatement in an entity's financial reporting. If a cryptocurrency is considered an intangible asset that is measured at fair value (remember, we have not made this specification as a profession yet), specific audit questions may include the following audit activities as outlined in standard audit programs for intangible assets like Thomsen Reuters proprietary audit programs available through Checkpoint [™]. Intangible asset audit programs often include the following steps.

- 1. Inquire whether cryptocurrencies have been tested for impairment and review the results of the impairment tests.
- 2. Ensure that workpapers include the information needed to support required financial statement disclosures related to fair value measures and the information has been subjected to audit procedures.
- 3. Consider the need to apply additional procedures and whether the results of audit procedures indicate internal control matters, specifically in the area of IT controls that are required to be communicated to management and others.
- 4. Determine whether insurable risks have been considered.
- 5. Compare values to independent sources of valuation and consider if values can be confirmed.
- 6.Consider whether any loans exist with cryptocurrency serving as collateral and whether loans can be confirmed.
- 7. Consider whether asset protection is in place and operating effectively. This may include verifying whether transactions are protected with the necessary security and encryptions that are

in place and up to date. An audit firm will likely need to create not only diverse audit teams with professionals other than CPAs, but also update the firm's quality control policy and procedures to require that each member of the audit team is trained in cyber and software auditing.

8. Document the integrity of the audited entity's IT systems, applications and controls through risk assessment of the clients and relevant third parties, such as brokers, or the exchanges themselves.

The external auditor's most valuable role often lies in the advice provided to mitigate risks. Hacking and theft have caused conservative investors to avoid the asset class. Thomason at the Richey May accounting firm recommends that "clients consider holding a certain percentage of fund net asset value in fiat currency in commercial bank accounts that provide FDIC insurance and thereby add another layer of protection due to the bank's controls."

Thomason also advises auditors to be aware of steps taken by digital currency exchanges to reduce the risk for investors. For example, some exchanges perform proof of reserves testing. These tests are designed to prove that the currency in exchanges: "matches the amount required to cover an anonymized set of customer balances. With these audits, exchanges hope to provide transparency as a means to reassure investors of the security of their digital assets. Stakeholders should also recognize the reduced risk associated in offline wallets, known as cold storage, where the assets are held through a qualified custodian. Other considerations (although expensive) include insurance on digital assets."

Recently, a group of the world's 20 largest economies, including China, the United States and Japan, convened to discuss the regulation of cryptocurrencies, among other topics. The central message was the commitment to regulate, but not ban the market.

We anticipate the rails of blockchain

will continue to serve as a source of innovation perhaps with financial institutions finding ways to adopt the technology, but the cars – Bitcoins and others – may face turbulent times as new designs are developing. For risk adverse investors, this seems like a good time to ensure their exposure to the asset is limited.

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