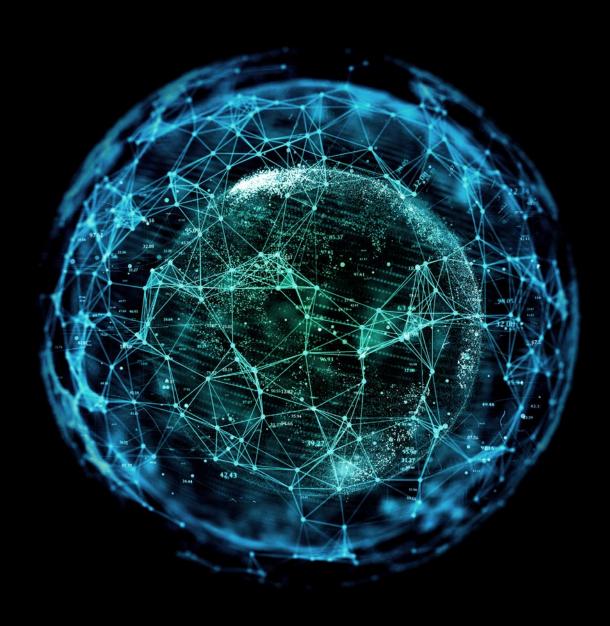# Deloitte.
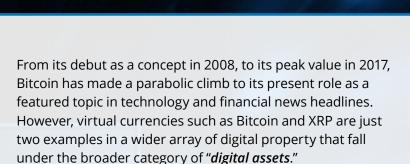
Uncharted territory
The state income tax implications of
blockchain technology and cryptocurrency

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From its debut as a concept in 2008, to its peak value in 2017, Bitcoin has made a parabolic climb to its present role as a featured topic in technology and financial news headlines. However, virtual currencies such as Bitcoin and XRP are just two examples in a wider array of digital property that fall under the broader category of "*digital assets*."

While mature companies across a range of industries are investing heavily in cryptocurrencies and *blockchain* technology, emerging disruptors[1] are using Bitcoin-like assets called *tokens* (which are also digital assets) to finance operations. Distributed ledger technology (DLT), frequently using blockchain, is the engine behind every digital asset. Taxpayers are using digital assets in creative ways that raise significant state and local tax issues across a range of taxes— including corporate income, sales and use, and gross receipts taxes. However, the lack of clear guidance regarding the state and local income tax treatment of cryptocurrency and other digital assets, combined with a patchwork of laws drafted long before the creation of DLT, has created an uncertain environment for taxpayers to navigate.

This article provides a high-level overview of DLT and digital asset concepts and outlines the potential corporate income tax challenges at the state tax level, from nexus and net operation loss provisions to the calculation of tax base and the treatment of foreign earnings. Our goal is to help taxpayers gain a better understanding of the corporate income tax issues around digital assets and how they can plan for the potential impacts to their planning and compliance activities.

Definitions

Digital assets
The term digital assets refers to the broad category of intangible property which layers on encryption technology to securely perform various personal and business transactions.

Blockchain
Blockchain is a distributed ledger technology that allows digital assets to be transacted, shared, and recorded across a network of participants in near-real time and in a tamper-proof manner.

Tokens
Tokens are digital assets that offer a secure, decentralized experience that often mimics the functionality of fiat currency. However, a token has features beyond acting as a functional currency, as a token can have value derived from what it represents such as company equity or access to a service. Equity tokens, utility tokens, and cryptocurrencies are three common types of tokens.

See complete definitions - page 17.

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Federal income tax treatment of digital assets

We now turn to the tax treatment of digital assets. In the state corporate income tax world, the federal government plays a large role in defining the terms for the states to follow. Accordingly, it is very important for state corporate income tax purposes to understand how the federal government will treat digital assets.

Until 2014, a key question was not answered for tax purposes: Just what is a digital asset? For example, is Bitcoin a currency, like the US dollar? Or is it property, like a car or a stock certificate? With Notice 2014-21, the Internal Revenue Service (IRS) provided initial guidance on the federal income tax treatment of virtual currencies. Notice 2014-21 does not contemplate potential tax-related issues created by the varying types of tokens/digital assets that have emerged. Instead, in Notice 2014-21, the IRS stated that, in general, virtual currencies are treated as property, and therefore, the applicable tax principles that apply to property or barter transactions apply to transactions of virtual currency.[2] As such,

The IRS defined a "virtual currency" to mean "a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value."[4] As defined in Notice 2014-21, the term virtual currency covers a wide range of currencies, such as simple IOUs of issuers (e.g., airline miles), virtual currencies backed by assets like gold, and cryptocurrencies like Bitcoin. However, virtual currencies such as Bitcoin are unique in that they have no item of value backing them and no trusted intermediary for holders to rely upon.[5]

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the sale or exchange of digital assets to pay for goods or services could be a taxable event for federal income tax purposes. For example, a taxpayer who seeks to purchase a new car—or a cup of coffee—with a highly appreciated cryptocurrency would, upon exchanging the crypto for the car, recognize taxable income equal to the amount of the difference in the fair market value of the crypto and the taxpayer's basis in the crypto.[3]

On October 9, 2019, the IRS released Revenue Ruling 2019-24[6] and a set of frequently asked questions (FAQs)[7] which supplement the guidance issued on virtual currency in Notice 2014-21. Revenue Ruling 2019-24 addresses common questions associated with the tax treatment of a cryptocurrency "hard fork"[8] as well as an "airdrop."[9] This guidance regarding hard forks and airdrops raises complex issues of state taxation, including apportionment/sourcing of taxable income, application of sales and use taxes, and state conformity to federal tax guidance which are beyond the scope of this article but will be analyzed in depth in a forthcoming article.

The FAQs provide several additional examples that build on the federal income tax principles applicable to virtual currency as established in Notice 2014-21: that virtual currency is "property," not "currency." Accordingly, in several key areas (e.g., determining gain or loss on sales or exchanges of virtual currency, determining basis on the purchase of virtual currency, the treatment of the receipt of virtual currency as remuneration for services or wages, etc.), the IRS has affirmed and expanded upon its previous guidance.[10]

Recent developments seem to indicate that the IRS is beginning to pay more attention to digital assets. The IRS has begun sending letters to taxpayers who have engaged in virtual currency transactions but who may have failed to report income and pay the resulting tax from virtual currency transactions or did not report such transactions properly.[11]

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State tax issues surrounding digital assets

As a result of the rise in use and popularity of cryptocurrencies in recent years, there has been an increased acceptance of crypto as a form of payment. For example, as of the date of this article, Ohio has begun to accept Bitcoin and Bitcoin cash as payment for taxes and other fees,[12] and some companies now accept cryptocurrencies as a form of payment for goods or services purchased.

Despite the growing acceptance of Bitcoin and other cryptocurrencies, the majority of states have provided no guidance on the taxation of digital assets, and the guidance that has been issued is not extensive. While states will not automatically adopt the federal treatment outlined in the IRS guidance published as of this writing, it is generally expected that the states will view it as persuasive authority. States that have not yet adopted crypto-specific tax laws or regulations may simply attempt to apply their current rules to this new digital medium, similar to how many jurisdictions responded to taxing Internet-based transactions and digital goods. The lack of crypto-specific state tax laws causes uncertainty and may create traps for the unwary company.

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Income tax nexus

A threshold consideration for every company is whether a "nexus" has been established between the taxpayer and a particular taxing jurisdiction: Has the business engaged in sufficient business activity in the state to be subject to its taxing authority? Absent nexus, the state lacks the authority to impose an income tax on the business.[13] Historically, states have aggressively asserted that virtually any type of in-state business activity creates nexus for an out-of-state company.[14] However, a state's authority to assert nexus over an out-of-state company is limited by the Due Process and Commerce Clauses of the US Constitution, as well as the federal government's plenary power to regulate interstate commerce.[15] Under these clauses of the US Constitution, the Supreme Court has determined that nexus requires "some minimum connection between a state and the person, property, or transaction it seeks to tax" and the "income attributed to the State for tax purposes must be rationally related to values connected with the taxing State."[16] Furthermore, states are prohibited from enacting laws that unduly burden or otherwise inhibit the free flow of trade among the states. In particular, the Supreme Court has ruled that the Commerce Clause prohibits a state from taxing an out-of-state company unless it has a "substantial nexus" in the state.[17]

Asserting jurisdiction
Bearing in mind the constitutional foundation of nexus, there are a variety of bases for states to assert jurisdiction to impose an income tax on a company. Traditionally, nexus was established when a company established physical presence in a state, mainly through operating a business location in a state,[18] owning real or tangible personal property in a state,[19] or maintaining employees in a state.[20] However, there are other ways a state can assert nexus over an out-of-state company. For example, the in-state activities of agents or affiliates can create a taxable nexus for an out-of-state taxpayer.[21]

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Additionally, despite the lack of any physical presence, the licensing of intellectual property for use in a state has been sufficient to establish income tax nexus.[22] For example, in *Lanco, Inc. v. Director, Division of Taxation*,[23] the New Jersey Appellate Division held that New Jersey had the authority to subject an out-of-state corporation that lacked a physical presence in the state to the corporate income tax based on the corporation's licensing of intellectual property to a retailer located in the state.[24] A similar result was reached in *Tax Commissioner v. MBNA Am. Bank, N.A.*,[25] in which the West Virginia Supreme Court upheld West Virginia's assertion of nexus over an out-of-state bank with no physical presence in the state.[26] Accordingly, the vast majority of states have adopted "economic nexus" standards for income tax purposes.[27]

A number of states have enacted so-called "factor-based" economic presence nexus standards, under which an entity is considered to have nexus if its activities within the state exceed a certain dollar threshold. These thresholds are generally focused on the amount of property, payroll, or sales that an entity has in the state. Factor nexus was first recommended by the Multistate Tax Commission (MTC), which initially approved a model factor nexus statute in 2002 that provided that a taxpayer has "substantial nexus" with a state if its in-state property, payroll, or sales meet one of the following tests: $50,000 of property; $50,000 of payroll; $500,000 of sales; or 25 percent of total property, payroll, or sales.[28] Most states that have adopted a factor nexus threshold for income tax purposes have adopted a standard similar to, or in many cases the same as, the MTC model statute.[29]

The impact of *South Dakota v. Wayfair, Inc.*

In addition to the development of factor nexus thresholds, the Supreme Court recently decided *South Dakota v. Wayfair, Inc.*,[30] a decision that overruled Court precedent dating back to the 1990s, which limited states' power to impose sales and use tax collection obligations on out-of-state sellers where the seller lacked a physical presence in the state.[31] The Court in *Wayfair* clearly established that "[p]hysical presence is not necessary to create a substantial nexus."[32] Although at issue in *Wayfair* was the state's ability to impose a sales and use tax collection responsibility, the Court's rationale applies to income taxes as well and effectively affirms the economic nexus standards that have been widely adopted for state income taxes.

Applying nexus to digital assets

Businesses relying on digital assets may face nexus issues created by any of the bases identified above. Frequently, income tax nexus arises when a business makes material sales of digital assets into a jurisdiction that has adopted either a general economic nexus test or a factor-based nexus threshold. However, a business may also establish income tax nexus through its relationship with miners, validators, and/or nodes. If the contract between the business and the miner, validator, and/or node is sufficient to create an agency or contractor relationship, which may often be the case as such parties are often compensated for the role that they serve, state and local governments may assert a taxable nexus with the out-of-state business based solely on the locational operation of the miners, validators, and/or nodes, as nexus generally follows where an agent works for the taxpayer.[33]

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Exploring a hypothetical fact pattern illustrates how these concepts can be applied. Let's assume that a startup company, ABC Crypto Inc. (ABC Crypto), is established by a group of founders located in states A, B, and C. Assume further that ABC Crypto issues tokens to investors in states X, Y, and Z. States X and Y have both statutorily adopted the MTC's factor-based presence nexus standard. State Z has not adopted a factor-based presence nexus standard, but instead provides that nexus is established where a taxpayer regularly takes advantage of the state's economy to produce income and may be established through the significant economic presence of a taxpayer in the state. Total sales of tokens to all investors located in each state exceeds $500,000.

ILLUSTRATIONS

ABC Crypto Inc.

Scenario 1:
As the Court's decision in *Wayfair* makes clear, a physical presence is not necessary to establish "substantial nexus." Therefore, states X and Y are likely to assert income tax nexus over ABC Crypto based solely on the amount of sales of tokens to investors located within each state. Additionally, as ABC Crypto derives a significant amount of receipts from the use of intangible property in state Z, this state will likely assert income tax nexus as well.

The new challenge for taxpaying companies: However, this presumes that ABC Crypto has access to information showing the location of each token holder. In reality, this may not be the case, making it challenging for ABC Crypto to fully understand its income tax filing obligations in light of factor-based nexus thresholds.

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Scenario 2:

Continuing with our hypothetical, let's assume ABC Crypto is a corporation formed under the laws of state A that enters into a contract with an unrelated third-party mining company, DEF Mining Inc. (DEF Mining). DEF Mining is a corporation headquartered in state D, but employs miners and owns mining property located in states D, E, and F. The physical presence and activities of DEF Mining in states D, E, and F may be imputed to ABC Crypto and be sufficient to create nexus for income tax purposes. A formal agent-principal relationship need not exist for a state to assert nexus. If the activities performed in the state on behalf of ABC Crypto are significantly associated with the taxpayer's ability to establish and maintain a market for sales in the state, an agency relationship and/or independent contractor relationship may be inferred.[34]

The new challenge for taxpaying companies: Arguably, the activities of DEF Mining in states D, E, and F enable ABC Crypto to offer its tokens and establish a market in all states. However, ABC Crypto may not have information or control over where DEF Mining's miners are located.

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Life cycle of an emerging disruptor

Within the life cycle of a business, it is common to experience taxable losses, sometimes substantial, in the early years of operation. The net operating loss (NOL) deduction serves as a response to fluctuations in income from year to year. For federal income tax purposes, taxpayers are allowed to carry forward an NOL deduction indefinitely to offset up to 80 percent of taxable income in subsequent years.[35] Many states have similar NOL provisions. For a business with the typical life cycle, the NOL deduction promotes long-term growth by allowing the business to use losses sustained in early years (during the startup phase) to offset most of the income tax due when the business first becomes profitable.

For typical businesses, state income taxes may not be a priority, as the taxpayer is merely spreading its losses across the states where it has nexus. While taxpayers should file in every jurisdiction where they have established nexus, the penalties for failure to file tax returns to report losses may not be significant and the startup business may be focusing on "life or death" issues for the business. In reality, state income tax compliance may not be at the top of every startup business's priorities.

Contrast this with the typical life cycle of an emerging disruptor, which often has a token launch early in its business life cycle that can generate a massive amount of taxable income. Unlike the typical taxpayer with merely state losses to report in early years, a business which relies heavily on digital assets may have significant taxable income in its first year or two of existence, and a failure to properly report this income in each state where the business has nexus may lead to significant unpaid taxes with corresponding penalties and interest. Accordingly, such a startup business may need to pay much more attention to state tax compliance issues than a typical (i.e., loss-generating) startup. This issue is more pronounced in states that do not allow NOLs to be carried back to prior years.[36] For these reasons, it is critical for an emerging disruptor to be vigilant of state tax issues prior to the launch. However, this can be challenging for a business in its infant years that may not have dedicated internal tax professionals. In the absence of an in-house tax department, tax decisions and responsibilities are often delegated to the finance and legal departments, as well as external tax consultants.

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Tax base

Generally, states that impose an income tax on business entities adopt all or part of the Internal Revenue Code (IRC or the Code) in determining the state's tax base or use federal taxable income as a starting point in computing state taxable income.[37] After determining the state starting point for calculating a state's tax base, most states then require specific adjustments be made to reflect differences between the state's tax code and the IRC. Therefore, it is of critical importance to consider state conformity to the IRC and whether income generated by virtual currencies would be included in a company's state tax base.

As many digital asset businesses involve multinational ownership structures, careful consideration must be given to the treatment of foreign companies and foreign income for state income tax purposes.

Foreign companies and treaty protections
When a foreign company establishes income tax nexus in a particular state, the question then becomes what income of the foreign corporation is subject to state income taxation. This answer will depend largely upon the state involved, as states can vary widely with respect to how income from a foreign corporation is taxed. Before analyzing state income tax treatment, it's helpful to discuss the relevant federal income tax rules.

The United States has entered into income tax treaties with a number of foreign countries. As a result, the existence of a tax treaty between a foreign company's home jurisdiction and the United States may shield some of that foreign corporation's income from federal income taxation. In many cases, the treaty can result in a foreign corporation paying federal income tax only on income that is effectively connected with a US trade or business and is attributable to a permanent establishment.[38]

States are generally not parties to US tax treaties. As a result, treaty protection does not extend to the imposition of state corporate income taxes. A business with a foreign company in its structure that assumes treaty protection extends to state corporate income taxes may be at risk of noncompliance, leading to the potential for unpaid taxes, interest, and penalties. Certain states use federal taxable income as the starting point for computing state taxable

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income and require no modification to add back income subject to treaty protection. This may offer some protection for noncompliant taxpayers. However, other states require a foreign company to recalculate a foreign entity's federal taxable income as if no treaty was in effect. For example, in Oregon, foreign corporations doing business in Oregon that are exempt from federal income taxes pursuant to treaties between the United States and a foreign country are not exempt from Oregon corporation excise and income taxes.[39]

In addition to taxing income of a foreign company that created nexus in a particular state, states seek to levy income tax on the activities of a foreign company in other ways as well.

Filing Methods
Worldwide
Generally speaking, states either require separate filing or combined/consolidated reporting, in which the members of a state "unitary" group must calculate their taxable income on a combined or consolidated basis. In the case of unitary returns, certain states allow taxpayers to file on a worldwide basis, which would include the income of all unitary affiliates, regardless of the country of incorporation.[40] In a small number of combined reporting states, the use of worldwide filing is the default filing methodology unless a water's edge election is properly filed with the state.[41] Therefore,

a foreign company within an ownership structure that includes domestic entities filing a unitary return may find itself included in a state worldwide combined return unless careful attention is paid to the water's edge election requirements. Under the requirement to file a worldwide return, income from a token sold by a foreign unitary affiliate may be included in the state income tax base.
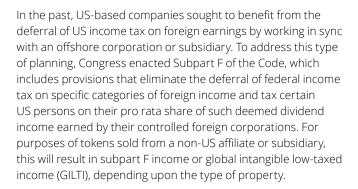
Water's edge
In a jurisdiction which requires an election to file a return on a water's-edge basis, the election must be made on a timely filed original return. The importance of the election may be even more critical for a business that relies heavily on digital assets which, unlike most businesses, may generate significant income early in their business life cycle. Under a water's edge filing methodology, the taxpayer's filing group generally consists of domestic corporations. However, in certain circumstances, a portion of the income and apportionment factors of certain foreign affiliates are included in the water's-edge group's combined income. For example, a state may require a foreign-related corporation with domestic income or business activities that are greater than or equal to 20 percent of their total income or business activities to be included in the water's edge filing.[42] Other states require foreign affiliates that are incorporated or doing business in a "tax haven" jurisdiction to include all or a portion of their income in the water's edge return.[43]

States are generally not parties to US tax treaties. As a result, treaty protection does not extend to the imposition of state corporate income taxes. A business with a foreign company in its structure that assumes treaty protection extends to state corporate income taxes may be at risk of noncompliance, leading to the potential for unpaid taxes, interest, and penalties.

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Income
considerations

In the past, US-based companies sought to benefit from the deferral of US income tax on foreign earnings by working in sync with an offshore corporation or subsidiary. To address this type of planning, Congress enacted Subpart F of the Code, which includes provisions that eliminate the deferral of federal income tax on specific categories of foreign income and tax certain US persons on their pro rata share of such deemed dividend income earned by their controlled foreign corporations. For purposes of tokens sold from a non-US affiliate or subsidiary, this will result in subpart F income or global intangible low-taxed income (GILTI), depending upon the type of property.

States take varying approaches to taxing Subpart F income. If the state uses federal taxable income as its starting point, the deemed dividend income included by Subpart F is integrated in the state tax base. However, only a minority of states tax Subpart F income, and those that do generally tax less than 100 percent of the income. California, for example, takes a unique approach with regard to foreign-source income. The state requires that a water's-edge filer include a portion of the income and apportionment factors of controlled foreign corporations.[44] In states such as California, the inclusion of income and apportionment factors of the foreign affiliates of an emerging disruptor in the water's-edge combined return may result in a "higher-than-anticipated" state income tax liability.
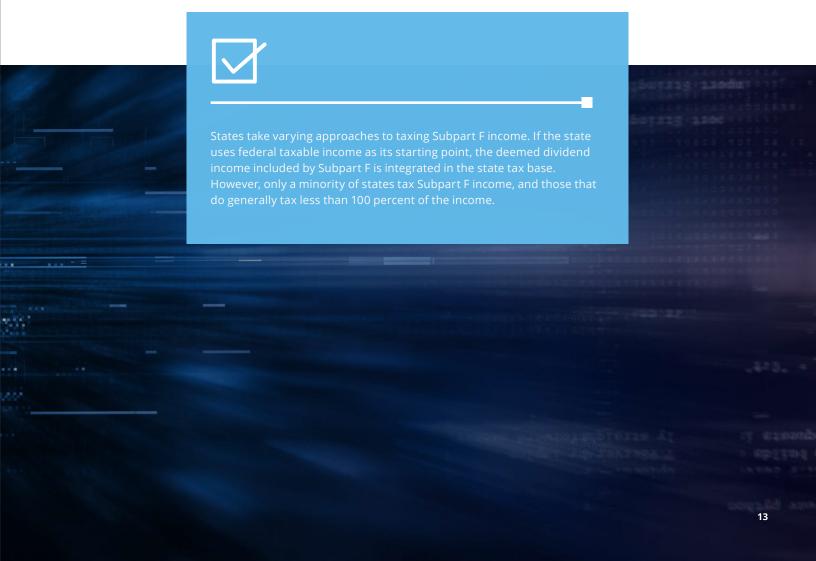
Federal tax reform legislation
On December 22, 2017, federal tax reform legislation was signed into law (the Tax Cuts and Jobs Act or TCJA). Among other changes, the TCJA resulted in the enactment of new provisions that apply to multinational companies, including:

GILTI is a new category of income. Under the GILTI provisions, the income of a foreign affiliate may generate current income for US taxpayers for federal and state income tax purposes. At the state level, however, the treatment may be different than at the federal level (e.g., Massachusetts treats GILTI as a dividend and allows most taxpayers to take a 95 percent dividends-received deduction).[45]

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Foreign-derived intangible income (FDII) is a new deduction that encourages US taxpayers to make export sales through domestic entities. Just as with GILTI, many states conform to FDII. Any restructuring of operations to take advantage of the new GILTI-FDII provisions must include an analysis of the corresponding state issues.

Careful consideration should be given to the state income tax consequences of federal tax reform, which is constantly evolving as states react to the new legislation and respond by passing new legislation and releasing administrative guidance. Understanding the complexities and implications of US tax reform on state and local income taxes is often an afterthought. However, some of the changes, including the limitation on the deduction of interest under IRC § 163(j), have potentially far-reaching effects on state and local income taxes and require close attention of an emerging disruptor that involves a multinational ownership structure and/or one that has taken on debt.

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Apportionment

When a business operates in multiple states, the Due Process and Commerce Clauses of the US Constitution limit how much of the business's income each state may tax to an apportioned share of the business's total income. The factors used to apportion income among the states, in theory, should reflect the factors that produce the income being apportioned.[46] However, the formula used to determine the percentage of a business's income that is apportioned to a particular state varies. At one time, a majority of states adopted a three-factor apportionment formula which averaged the ratios of property, payroll, and sales within the state to the totals everywhere.[47] However, in recent years, states have increasingly moved toward using an apportionment formula that gives greater or even exclusive weight to the sales factor.

In calculating the apportionment factor, all types of businesses must consider state apportionment rules and how those rules apply to the facts of its unique business. For certain companies, the apportionment analysis can be straightforward. For example, a brick-and-mortar business with activities in multiple states that sells products through brick-and-mortar stores to customers will have a fairly straightforward apportionment calculation.

The apportionment analysis can quickly become complex for a business which relies heavily on cutting-edge technology such as blockchain. In the absence of specific guidance, states would apply their existing statutes, rules, and regulations to the new digital medium. As one might expect, the fit between new technology and the current regime may not be precise. To date, the majority of states have not issued guidance on the apportionment treatment of digital assets.

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Sales Factor: Some states may treat tokens as tangible personal property (TPP) and source receipts from token transactions based on the destination of the sale (i.e., the state in which the TPP is delivered to the customer). However, some tokens take on the characteristics of a service or an intangible asset, and therefore may be sourced by a state as a sale of a service or property "other than TPP." Generally speaking, there are two types of methods adopted by states for sourcing sales of other than TPP: market-based and cost of performance. In recent years, a majority of states have adopted a market-based sourcing approach to apportioning receipts other than TPP. However, as every state adopts distinct rules to determine the "market" for a given transaction, there can be wide variances among states as to how receipts are sourced.

In California, a market-based sourcing state, sales from intangible property are sourced to the state and included in the numerator of the sales factor only if the respective property is used in the state.[48] Furthermore, sales from services are sourced to California if the customer receives the benefit of the service within the state.[49] For example, when a business sells digital assets to raise funds for operations, a state such as California may treat the asset as intangible property and source the receipts based on where that property is used.

Consider, however, a business that provides custodial services for digital assets. Such services may include holding of assets, arranging settlement of purchases, sales, deliveries, collecting information on the income from assets, maintenance of accounts, etc. Although the custodian may directly contract with banks and other financial institutions to perform such services, the indirect customer may arguably be the account holder, whose funds are invested in digital assets. Under these circumstances, California may look through to the indirect/end customer (i.e., the account holder in this case) for purposes of sourcing receipts from such services.

It is also possible that transactions involving digital assets may qualify for special industry apportionment rules (e.g., financial institutions), further increasing the complexity of the apportionment issues involved.

Property Factor: Currently, most states do not outline specific guidelines for including digital assets or intangible personal property in their apportionment factor.[50] Except for financial organizations,

most taxpayers that own intangible personal property are required to exclude it from their apportionment calculation. However, in some states, exceptions exist whereby intangible property is included in the property factor. For example, for purposes of calculating the property factor for financial corporations in California, intangible property is included in the computation.[51]

One of the reasons intangible property is included in the property factor for financial corporations in certain states is that, arguably, the intangible property is so vital to the core business that its exclusion would result in an inaccurate representation of a business's presence in a state. This theory may be applicable to an emerging disruptor, which relies on intangible assets and technology at its core. Therefore, it's plausible that states may adopt rules to require digital assets to be included in the property factor.

Payroll Factor: Most states include only compensation paid to W-2 employees in the factor and exclude payments to independent contractors and other nonemployee representatives of the taxpayer.[52] Therefore, the threshold question for apportionment purposes is whether an individual is classified as an employee or an independent contractor. It is not uncommon for emerging disruptors to compensate their employees with the digital asset the company develops, which complicates this analysis.

The apportionment analysis can quickly become complex for a business which relies heavily on cutting-edge technology such as blockchain. In the absence of specific guidance, states would apply their existing statutes, rules, and regulations to the new digital medium. As one might expect, the fit between new technology and the current regime may not be precise. To date, the majority of states have not issued guidance on the apportionment treatment of digital assets.

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Conclusion

Over the course of the past decade, the investment in and use of digital assets has grown tremendously. As the IRS begins to pay more attention to transactions involving cryptocurrency and other digital assets, it is reasonable to assume that states will follow suit. Emerging disruptors will continue to find new applications for digital assets and DLT that raise a number of critical state and local tax issues. However, businesses which rely heavily on digital assets should not be fooled into a false sense of security that state and local income taxes are applied consistently with the federal income tax. State income tax regimes diverge from the federal income tax regime in significant ways. Furthermore, the lack of guidance from states regarding the income tax treatment of digital assets makes it extremely challenging for a business to understand and properly comply with its state and local income tax obligations.

This article has outlined some of the most important income tax issues that emerging disruptors face, but by no means is this discussion all-inclusive. In this dynamic environment where the state and local tax treatment of digital assets is expected to evolve considerably, working with experienced state and local tax advisors is highly recommended.

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Definitions

1. Blockchain[53]
Blockchain is a distributed ledger technology that allows digital assets to be transacted, shared, and recorded across a network of participants in near real time and in a tamper-proof manner. Essentially, blockchain records that a transaction happened, when it happened, and that it happened correctly. Data on the blockchain is stored in time-stamped blocks that are chronologically linked by cryptographic hashes, which ensures that after-the-point manipulation of data is prevented. Accuracy, traceability, and trust are key blockchain advantages.

Blockchain also includes a smart contract feature, which are digitally coded contracts that self-execute when contract conditions are satisfied. This capability has significant impacts and benefits across an array of industries, as it enables both the buyer and the seller to encrypt the terms and provisions of their contract into code within the blockchain network, thus alleviating costs associated with the transaction and ensuring strict compliance with the contract's performance.[54]

2. Digital assets[55]
For purposes of this article, digital assets refers to the broad category of intangible property which layers on encryption technology to securely perform various personal and business transactions. For example, through encryption capabilities, digital assets could be used by parties to send a payment, settle complex financial transactions, or to automatically execute the terms of a contract. Digital assets include, but are not limited to, cryptocurrencies, equity tokens, and utility tokens (defined below).

3. Mining[56]
There are several methods of shared consensus through which a transaction is validated and posted to the blockchain network. In a public blockchain network such as Bitcoin, this consensus of nodes (computers) is completed through "proof of work." These nodes will race to solve complex mathematical equations, and upon reaching the solution, the system generates a hash (encryption method) and verifies these transactions. As a reward, the nodes will be compensated with the blockchain's native token or coin (e.g., Bitcoin), thereby incentivizing users to support the

network's operation. These activities are referred to as "mining" because they essentially create the coins or tokens utilized by the system, thereby increasing the supply of coins or tokens circulating the market.

The "proof of stake" mechanism was introduced to combat the issue of computing power required to perform "proof of work." In proof of stake, mining power is based on the percentage of coins held by a miner. The miner will stake a token(s) to validate the block in return for rewards from the network. If you forge a transaction, your tokens are taken away as a penalty—hence having a "stake" in the process.

In permissioned enterprise blockchains, the requirement for complex mining processes is not required, as the degree of trust among the participants is higher. Therefore, consensus is achieved through "proof of authority" or a round-robin validation of blocks by validated or authorized nodes in the network. Practical Byzantine Tolerance is another consensus mechanism often deployed in permissioned blockchains, where 67 percent of the authorized validators/nodes must agree on the validity of a block in order for it to be posted to the network.

4. Tokens
Tokens are digital assets that offer a secure, decentralized experience that often mimics the functionality of fiat currency.[57] However, a token has features beyond acting as a functional currency, as a token can have value derived from what it represents, such as company equity or access to a service.[58] Three common types of tokens are discussed below:

Equity tokens are analogous to stock in a company. Equity tokens represent ownership of an asset, comparable to a corporate bond or a share of company stock. By implementing blockchain technology and smart contracts, a company can issue shares and voting rights over the blockchain.

Utility tokens confer the right to access and participate in a network or platform-based ecosystem developed by a company. In other words, a utility token serves a gateway to accessing a product or service being sold. Utility tokens are typically sold in

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an Initial Coin Offering (ICO, defined below) as a means to incentivize new product users, allowing the users to participate in the ecosystem and augment the utility of their technology.

Cryptocurrencies are designed to solve interborder transactional and payment problems. They enable cross-border payment within seconds while providing the parties an end-to-end visibility throughout the whole process (e.g., XRP, Ether, Bitcoin).

5.   Initial Coin Offering (ICO) and Initial Exchange Offering (IEO)
An ICO and an IEO are analogous to an IPO, but rather than issue shares in a new publicly traded company, the entity raises capital by issuing a digital asset.[59] Compared to an IPO, which is subject to extensive and rigorous regulations, an ICO/IEO can streamline funding for operations of digital assets for emerging disruptors. With an ICO, a business conducts the fundraising event itself, generally through a sale of its own digital assets. Initially popular as an attractive fundraising option that was not subject to extensive regulation, the ICO has become increasingly regulated due to perceived risks of fraud and manipulation.[60] Through this regulation, several ICOs have been structured as "security token offerings," or STOs, where the digital assets distributed in the offering are actual securities. STOs are, by their very nature, more cumbersome than the traditional ICO, but are intended to be more secure for investors.

As the ICO has become more scrutinized and regulated, IEOs have become increasingly popular as well-known exchange platforms have begun administering fundraising on behalf of startups through what's referred to as an IEO. Rather than being administered by the emerging disruptor itself, in an IEO the digital assets are sold through the exchange platform. In theory, the exchange's business model is far more extensive than the success or failure of a single emerging disruptor, so the exchange will vet the underlying company before participating in the IEO—a fraudulent or manipulated IEO could destroy the credibility of the exchange. The launched digital asset will also be listed on the exchange after the IEO, providing a ready market for the digital asset. While more expensive and cumbersome than the ICO, the IEO is a more nimble process than an STO.

The question of whether to pursue an IPO, ICO, or an IEO raises considerable and complex legal and business issues and should not be entered into lightly. In addition, due to the fact that digital assets are considered "property" (and not necessarily equity) by the IRS, there are several tax issues to consider before a company seeks to raise capital through an ICO or an IEO.

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Endnotes

1. For purposes of this article, the term "emerging disruptors" is used in reference to companies that are heavily invested in or reliant upon DLT.

2. Notice 2014-21, Sec. 4, A-1; Internal Revenue Service, "Frequently Asked Questions on Virtual Currency Transactions," https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions #2.

3. Internal Revenue Service, "Frequently Asked Questions on Virtual Currency Transactions," https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions #6.

4. Notice 2014-21, Sec. 2; Rev. Rul. 2019-24, https://www.irs.gov/pub/irs-drop/rr-19-24.pdf.

5. Ibid. Notice 2014-21 explains that a virtual currency that acts as a substitute for real currency is referred to as "convertible virtual currency." Bitcoin is one example of a convertible virtual currency because it can be digitally traded between users and can be purchased for, or exchanged into, US dollars, Euros, and other real or virtual currencies.

6. Rev. Rul. 2019-24, https://www.irs.gov/pub/irs-drop/rr-19-24.pdf.

7. Internal Revenue Service, "Frequently Asked Questions on Virtual Currency Transactions," https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions.

8. A "hard fork" occurs "when a cryptocurrency on a distributed ledger undergoes a protocol change resulting in a permanent diversion from the legacy or existing distributed ledger. A hard fork may result in the creation of a new cryptocurrency on a new distributed ledger in addition to the legacy cryptocurrency on the legacy distributed ledger." Rev. Rul. 2019-24.

9. An "airdrop" is "a means of distributing units of a cryptocurrency to the distributed ledger addresses of multiple taxpayers. A hard fork followed by an airdrop results in the distribution of units of the new cryptocurrency to addresses containing the legacy cryptocurrency. However, a hard fork is not always followed by an airdrop." Rev. Rul. 2019-24.

10. FAQs published by the IRS are not authoritative and can be updated or changed by the IRS with little notice to taxpayers.

11. IR-2019-132, "IRS has begun sending letters to virtual currency owners advising them to pay back taxes, file amended returns; part of agency's larger efforts," https://www.irs.gov/newsroom/irs-has-begun-sending-letters-to-virtual-currency-owners-advising-them-to-pay-back-taxes-file-amended-returns-part-of-agencys-larger-efforts.

12. Paul Vigna, "Pay Taxes With Bitcoin? Ohio Says Sure," *Wall Street Journal,* 2018, https://www.wsj.com/articles/pay-taxes-with-bitcoin-ohio-says-sure-1543161720.

13. This same concept applies to other state and local taxes and will be addressed in a subsequent article.

14. Nexus standards are generally the same regardless of the form of business entity utilized by the taxpayer, so any reference to "company" should be construed to include a C corporation, S corporation, partnership, limited liability company, etc., unless the context dictates otherwise.

15. The Due Process Clause provides that "…[N]o state shall…deprive any person of life, liberty, or property without due process of law." United States Constitution, Amendment XIV, Sec. 1. The Commerce Clause provides that "Congress shall have the power…[t]o regulate commerce with foreign nations, and among the several states, and with the Indian tribes." United States Constitution, Art. I, Sec. 8, Cl. 3.

16. *Quill Corporation v. North Dakota,* 504 U.S. 298, 309 (1992).

17. *Complete Auto Transit v. Brady,* 430 U.S. 274 (1977).

18. *Northwestern States Portland Cement Co. v. Minnesota,* 358 US 450 (1959).

19. *Truck Renting & Leasing Ass'n v. Commissioner of Revenue,* 433 Mass. 733 (2001).

20. *Standard Pressed Steel Co. v. Department of Revenue,* 419 US 560 (1975).

21. *Tyler Pipe Indus., Inc. v. Washington Dep't of Revenue,* 483 US 232 (1987).

22. *Geoffrey, Inc. v. South Carolina Tax Commissioner,* 437 S.E. 2d 13; S.C., cert. denied, 114 S. Ct. 550 (1993).

23. *Lanco, Inc. v. Director, Div. of Taxation,* 379 NJ Super. 562, 879 A2d 1234 (App. Div. 2005), aff'd; 188 NJ 380, 908 A2d 176, 177 (2006), cert. denied; 551 US 1131, 127 S. Ct. 2974 (2007).

24. Lanco, Inc. licensed trademarks, trade names, and service marks to a clothing retailer located in New Jersey. Lanco owned no property in the state and no employees of the company were located in the state.

25. *Tax Commissioner v. MBNA Am. Bank,* N.A., 220 W. Va. 163, 640 SE2d 226 (2006), cert. denied; 551 US 1141, 127 S. Ct. 2997 (2007).

26. MBNA America Bank was a Delaware-based bank that issued and serviced credit cards for customers throughout the United States. The company promoted its business in West Virginia through mail and telephone but owned no property in the state and had no employees located in the state.

27. Cite PA and TX as rare examples of states that still apply physical presence tests.

28. Multistate Tax Commission, *Factor Presence Nexus Standard for Business Activity Taxes,* October 17, 2002.

29. For example, Alabama law provides, effective for tax years beginning after December 31, 2014, that factor-based presence nexus standards exist for business activity for purposes of business privilege tax, income taxes, and financial institution excise taxes if any of the following thresholds are exceeded during the tax period: (1) $50,000 of property; (2) $50,000 of payroll; (3) $500,000 of sales; or (4) 25 percent of total property, total payroll, or total sales. Act 505 (H.B. 49), First Special Session, Laws 2015.

30. *South Dakota v. Wayfair, Inc.,* 138 S. Ct. 2080 (2018).

31. *Quill Corp. v. North Dakota,* 504 US 298 (1992).

32. *South Dakota v. Wayfair, Inc.,* 138 S. Ct. at 2093.

33. *Scripto, Inc. v. Carson,* 362 U.S. 207, 212 (1960).

34. *Tyler Pipe Industries, Inc.,* 483 U.S. at 249.

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35. IRC § 172(a)-(b).

36. For example, California recently enacted legislation (A.B. 91) that disallows
     NOL carrybacks (with limited exceptions) for tax years beginning on or after
     December 31, 2018.

37. Some states adopt the provisions of the Code in effect for the current year,
     while other states adopt the Code, or certain provisions of the Code, in effect
     in prior years. For example, California conforms to the Code in effect on
     January 1, 2015. Cal. Rev. & Tax. Code §§ 23051.5(a), 17024.5(a)(1)(P).

38. A thorough discussion of the federal income tax rules applicable to foreign
     corporations is beyond the scope of this article.

39. Oregon Admin. R. 150-317-0050(1).

40. For example, in Massachusetts, the taxable members of a combined group
     engaged in a unitary business may elect to file on a worldwide basis. See 830
     Code Mass. Regs. 63.32B.2(5)(a).

41. Some of the states that use worldwide filing as the default combined filing
     methodology include California, Idaho, and Montana.

42. California's rule requires any corporation, other than a bank, be included in
     the California water's edge return if the average of its property, payroll, and
     sales apportionment factors in the United States is 20 percent or more. Cal.
     Rev. & Tax. Code § 25110(a)(1)(B).

43. Conn. Gen. Stat. § 12-218(a).

44. Cal. Rev & Tax Code § 25110(a)(2)(A)(ii).

45. Mass. Gen. Laws. c. 63, § 30(4), as amended by H.4930; Mass. Gen. Laws c. 63,
     § 38(a)(1).

46. In 1977, the Supreme Court established the foundational precedent for
     when a state tax will be sustained under the Commerce Clause of the US
     Constitution when it (1) is applied to an activity with a substantial nexus with
     the taxing state, (2) is *fairly apportioned,* (3) does not discriminate against
     interstate commerce, and (4) is fairly related to the services provided by the
     state. *Complete Auto Transit, Inc. v. Brady,* 430 U.S. 274 (1977) (emphasis added).
     Furthermore, the Supreme Court has said that "the factor or factors used in
     the apportionment formula must actually reflect a reasonable sense of how
     income is generated." *Container Corp. of Am. v. Franchise Tax Bd.,* 463 U.S. 159,
     169 (1983).

47. Many states adopted, in whole or in part, the three-factor apportionment
     formula established by the Uniform Division of Income for Tax Purposes Act
     ("UDITPA").

48. Cal. Rev. & Tax Code § 25136(a)(2).

49. Cal. Rev. & Tax Code § 25136(a)(1).

50. In some states, exceptions exist whereby intangible property is included in the
     property factor. For example, for purposes of calculating the property factor
     for financial corporations in California, intangible property is included in the
     computation. 18 Cal. Code Regs. § 25137–4(c)(1)(A)(i).

51. UDITPA § 10.

52. Va. Dept. of Taxn., Ruling of the Comr. P.D. 03-24.

53. Arjun Kharpal, "Everything You Need to Know About the Blockchain," CNBC,
     2019, https://www.cnbc.com/2018/06/18/blockchain-what-is-it-and-how-
     does-it-work.html, which discusses pertinent definitions within the crypto
     sphere and potential impact on varying industries; Nigel Gopie, PhD, "What
     are Smart Contracts on the Blockchain?," IBM, 2018, https://www.ibm.com/
     blogs/blockchain/2018/07/what-are-smart-contracts-on-blockchain, which
     outlines smart contracts and their corresponding benefits.

54. Ethereum, for example, established a blockchain that allows programming
     code of decentralized applications to be run on the platform.

55. https://publications.parliament.uk/pa/cm201719/cmselect/cmtreasy/910/910.
     pdf.

56. Josiah Wilmoth, "*The Difference Between Utility Tokens and Equity Tokens,*"
     StrategicCoin.com, 2019, https://strategiccoin.com/difference-utility-tokens-
     equity-tokens, which highlights varying token types and corresponding value.

57. Ibid.

58. Ibid.

59. Ibid.

60. A detailed discussion of the regulation of ICOs is beyond the scope of this
     article. Additional information is available in many public sources, such as the
     Securities and Exchange Commissions's website, sec.gov/ICO.

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