Income Taxation of Cryptocurrency — A Country Comparison

by Jasmin Kollmann, Liu Qichao, and Wu Fangbei

Jasmin Kollmann is a senior international tax consultant with EY in Munich. Liu Qichao is a researcher at the Institute of Digital Taxation, Renmin University of China. Wu Fangbei is a research assistant at the Center for Research in Fiscal and Tax Law of China University of Political Science and Law.

In this article, the authors examine the relationship between cryptocurrencies and legal tender, outline key taxable events, and explain how treating cryptocurrencies as assets subjects them to various taxes.

Over the last few years, cryptocurrencies have hit the headlines mainly because of their ups and downs on global markets. For example, in 2021 Tesla CEO Elon Musk's tweets caused several sharp rises and falls of Dogecoin. A government's attitude also affects the price of cryptocurrency. Earlier this year, China cracked down on cryptocurrency, which led to a sharp price decline.[1] The legal status of cryptocurrencies varies significantly among countries, but El Salvador is the only country that recognizes Bitcoin as legal tender. According to CoinMarketCap, as of October 31, there were 13,334 cryptocurrencies and 424 exchanges, and the market cap of cryptocurrencies had reached 2 trillion, illustrating their increasing mainstream use.

Cryptocurrency is characterized not only by hefty price fluctuations but also by continuous innovations. Facebook unveiled its Libra encrypted cryptocurrency program in June 2019.[2] Facebook's high user base gives it a unique position to make Libra a real force in this increasingly cashless world and even compete with banks. Further, Facebook's global infrastructure allows it to handle 1,000 transactions a second, compared with just seven a second for Bitcoin. Libra's launch might raise concerns, especially for banks, which fear lower revenues from cross-border payments.

With cryptocurrencies, it is possible to achieve high price gains, which tax authorities want to tax. But it is unclear how cryptocurrencies should be treated for income tax purposes, and several issues are associated with cryptocurrencies: First and foremost, taxpayers may not properly identify income earned through cryptocurrencies as taxable income. Even if they are aware that they might have a tax liability, they may be uncertain about the proper treatment. For example, cryptocurrency transactions might be considered barter transactions, which have special requirements for reporting and paying tax. Also, calculating the basis for any taxable gain may be difficult. Moreover, because crypto transactions are inherently hard to track, including identifying the true parties to the transaction, third-party information reporting may be difficult or prohibitively burdensome for some cryptocurrency issuers to administer.[3] Finally, tax evasion can be a problem. Because transactions can be difficult to trace and many cryptocurrencies offer some level of anonymity,

[1] In May the China Internet Finance Association, the China Banking Association, and the China Payment and Clearing Association issued a joint statement warning of the risk of cryptocurrency transactions. *See* Eileen Yu, "China Reiterates Warning Against Cryptocurrency Use in Transactions," ZDNet, May 18, 2021.

[2] Barry He, "User Base Gives Facebook Currency an Edge," *China Daily*, July 2, 2019.

[3] Jasmin Kollmann, Liu Qichao, and Wu Fangbei, "The EU VAT Treatment of Cryptocurrencies and Extended Problems," International Taxation in China (2021) (in Chinese).

taxpayers might use them to hide taxable income.[4]

This article attempts to answer some questions regarding the taxation of cryptocurrencies by describing their general characteristics and how countries treat crypto trading and mining for income tax purposes. It concludes that the absence of concrete cryptocurrency rules will lead to the heterogeneous treatment of similar cases and should be remedied immediately.

I. General Cryptocurrency Characteristics

Cryptocurrency is unregulated digital money that does not exist in the form of legal tender — that is, banknotes and coins — but solely as electronic codes in computer systems. Further, there is no central instance — that is, a central bank — that can issue and control them.

A. Crypto and Virtual Currencies

There are many different virtual currency schemes; the most relevant characteristic for taxation is the currency's interactions with legal tender and the real economy. Accordingly, the European Central Bank has grouped virtual currencies into three categories.[5] First, closed virtual currency schemes have no link to the real economy and cannot be used outside a specific virtual community. Those are not a new phenomenon — consider Monopoly and other board games that feature in-game money. For tax purposes, closed virtual currency schemes are not relevant because they cannot interact with the real economy.[6] Second, virtual currency schemes with a unidirectional flow can be purchased using real currency but cannot be exchanged back to the original currency. And third, virtual currency schemes with a used-as-consideration bidirectional flow can be bought and sold according to special exchange rates with real currency.[7]

There are two types of bidirectional virtual currencies. First is virtual money that can be used in only one specific online game or community. For example, the Linden Dollar is unique to the online game Second Life, which has its own virtual economy.[8] Players can use the Linden Dollar to buy and sell goods and services. Linden Dollars can be purchased with legal tender and changed back to legal tender when they are no longer needed or at any time at the discretion of the gamer.[9] Linden Lab, the creator of Second Life, is responsible for issuing Linden Dollars and controls the virtual currency system.

The second type of bidirectional virtual currency is virtual money that can be used to acquire goods and services in the real economy — commonly called cryptocurrency.[10] Cryptocurrencies are not linked to any specific virtual reality, nor are they issued by any central authority. They are most similar to other convertible currencies because they can be acquired and sold in exchange for legal tender and used as consideration for traditional goods and services.[11] The most well-known example of cryptocurrency is Bitcoin, which has attracted the attention of various scholars in the field of direct and indirect taxation.[12]

This article examines cryptocurrencies only.

B. Cryptocurrencies and Legal Tender

In general, it is unclear whether cryptocurrencies should be treated similarly to legal tender or as assets. According to the European Central Bank, legal tender has three core features:

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[4] U.S. Government Accountability Office, "Virtual Economies and Currencies: Additional IRS Guidance Could Reduce Tax Compliance Risks," GAO-13-516 (May 2013).

[5] European Central Bank, "Virtual Currency Schemes," at 13-14 (Oct. 2012).

[6] That is because they cannot be involved in a transaction with the real economy, bought with legal tender, or be subject to a barter transaction. *See* Oskar Henkow, "VAT and Virtual Reality: How Should Cryptocurrencies Be Treated for VAT Purposes?" in *VAT/GST in a Global Digital Economy* 49 (2015).

[7] It is possible to restrict the amount of virtual currency that can be exchanged back to legal tender. That depends, however, on the specific system in which the virtual currency operates. *See* IMF, "Virtual Currencies and Beyond: Initial Considerations," SDN/16/03, at 7 (2016).

[8] European Central Bank, *supra* note 5, at 6.

[9] Exchanging Linden Dollars back to legal tender is subject to approval of the Linden Lab, and there must be a buyer.

[10] *See, e.g.*, OECD, "Addressing the Tax Challenges of the Digital Economy, Action 1 — 2015 Final Report," at 43 (2015).

[11] European Central Bank, *supra* note 5, at 14. There is no central authority for approving exchange transactions with virtual currencies. All that needs to be done is finding a buyer or a seller for the specific currency.

[12] For further discussion, see Section III, *infra*.

- it can be used as a medium of exchange to avoid the inconveniences of a barter system;
- it can be used as a unit of account, acting as a standard numerical unit for simplifying the measurement of value and costs; and
- it can be used for storing value when money is saved and retrieved in the future.[13]

The EU's Electronic Money Directive (2009/110/EC) defines the term:

> "Electronic money" means electronically, including magnetically, stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions . . . and which is accepted by a natural or legal person other than the electronic money issuer.

By referring to the function of money, which is to facilitate trade in the economy, the Court of Justice of the European Union has said the key characteristic of money is to use it as a means of payment in the real economy.[14]

The European Central Bank's criteria for legal tender are general criteria that apply for all types of legal tender globally. Based on the bank's definition, it seems that cryptocurrencies should be treated similarly to legal tender because they are used for the same functions.[15]

II. Key Taxable Crypto Events

A. Creation of Cryptocurrencies

The creation of cryptocurrencies is the first taxable event. Cryptocurrencies may be created by mining or initial airdrops or coin offerings. Cryptocurrencies received via airdrops may be of little value, so tax compliance would not raise much concern.

Mining, which describes what can be called the creation of crypto from legal tender, has attracted the most attention from tax policymakers. Because cryptocurrencies are unrelated to any virtual game or community and there is no central authority responsible for supervising and issuing, this unique way of creating units of cryptocurrencies is substantially different from legal tender.

Cryptocurrencies are based on a peer-to-peer network; anyone can download the free and open-source software and participate in the network. The software allows cryptocurrency to be stored in a digital wallet on the computer.[16] Because cryptocurrencies exist only electronically, spending them means transmitting them from one user's electronic wallet to another's. That is similar to sending money from one bank account to another. The payment process is generally protected by special encryption software.[17]

Because there is no central authority, users must perform all the tasks of a central bank themselves. Thus, when a payment is made, servers of other users must confirm that the transaction is valid by verifying that the specific currency token was not copied, forged, or spent more than once. Technically, each payment transaction is broadcasted to the central network and included in a public ledger that records which units have already been spent. For every transaction, the software produces a unique code (hash) and publishes it so that it takes its (chronological) place in the blockchain.

Hashing leads to one-way codification of the data — that is, data cannot be de-codified. A transaction's place in the blockchain becomes definitive once the transaction is verified. A set number of transactions is grouped together and, by solving an algorithm, creates a new block of the cryptocurrency. That mining process requires extremely fast and powerful computers. Users provide mining services to receive new units of the cryptocurrency as a reward for their server activities.[18]

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[13] European Central Bank, *supra* note 5, at 10.

[14] *Sweden v. Hedqvist*, C-264/14 (CJEU 2015), para. 24, referring to the July 2015 opinion of Advocate General Juliane Kokott in the case.

[15] For further discussion, see Section III, *infra*.

[16] European Central Bank, *supra* note 5, at 21.

[17] *Id*. at 23. *See also* Aleksandra Bal, "Taxing Virtual Currency: Challenges and Solutions," 43(5) *Intertax* 380, 381 (2015).

[18] European Central Bank, *supra* note 5, at 21. It was easier to mine bitcoins when they were introduced. As the number of bitcoins on the market rose, the crypto became harder to mine; individuals that before could mine at home had to give way to large operators that invest substantial money in mining farms. *See* "The Magic of Mining," *The Economist*, Jan. 10, 2015; and Piergiorgio Valente, "Bitcoin and Virtual Currencies Are Real: Are Regulators Still Virtual?" 46 *Intertax* 541-549 (2018).

Mining for new crypto units resembles the mining of other commodities, such as gold or copper. Over time, new units of the cryptocurrency are slowly made available, but as the number of tokens in circulation grows, the computing power required for verifying transactions increases, and a miner's reward with new tokens decreases.[19] Still, the analogy to scarce and precious commodities might be misleading. The fact that new tokens are created is a mechanism to provide for the security and safety of the system because it encourages users to act honestly. Technically, more computer power would be needed to steal existing tokens than to mine new ones.[20] Even so, the absolute number of tokens is limited, so that at some point, new units can no longer be created.[21] Therefore, mining will eventually be rewarded only with transaction fees paid by the parties who engage in the transaction.

B. Cryptocurrency Disposal

The disposal of cryptocurrencies is also likely to lead to a taxable event, with three acts involving cryptocurrencies having possible tax implications: exchanging legal tender for cryptocurrency, exchanging one cryptocurrency for another, and exchanging goods and services for crypto. Cryptocurrency is mostly used as an investment vehicle, so its exchange with legal tender and other cryptocurrencies has become the most common disposal activity, and the income generated in the process may give rise to income tax.[22]

With the expansion of the market value of Bitcoin and the improvement of market recognition, more and more enterprises have recognized it as a valid form of payment, which might also raise income tax issues.

[19] Bal, *supra* note 17, at 381; and Ittay Eyal and Emin Gün Sirer, "Majority Is Not Enough: Bitcoin Mining Is Vulnerable," in *Financial Cryptography and Data Security* 439 (2014).

[20] European Central Bank, *supra* note 5, at 24.

[21] For technical details, see Christoph Sorge and Artus Krohn-Grimberghe, "Bitcoin: Erste Einordnung," 36 *Datenschutz und Datensicherheit* 482 (2012) (in German); and Dennis Assenmacher, "Bitcoin und E-Commerce," 6 (2013).

[22] Liu, Han Dexin, Jiang Weijia, "Virtual Currency Taxation Is Becoming a Hot Issue in the World," *China Financial and Economic News*, Dec. 22, 2020 (in Chinese).

III. Country Overview

The following subsections overview the tax treatment of cryptocurrencies by a sample of countries and serve as a way to filter out similarities and best practices.

A. Australia

The Australian Taxation Office has provided detailed and regularly updates guidance on the tax treatment of cryptocurrency. All documents are published on the ATO website and contain multiple examples and references to sources in which additional information on specific topics can be found.

In Australia, the income tax treatment of cryptocurrency depends on whether the currency is held for business, investment, or private purposes. If crypto is kept or used mainly to purchase items for personal use or consumption, it may be a personal use asset. It is not a personal use asset if it is kept or used mainly as an investment, in a profit-making scheme, or in carrying on a business, so the taxpayer has to pay tax on any capital gain he makes on its disposal. Only capital gains that taxpayers make from personal use assets acquired for less than $10,000 are disregarded for capital gains tax purposes. However, all capital losses taxpayers make on personal use assets are disregarded.[23]

If mining is a business activity, any cryptocurrency generated is treated as trading stock income, and changes in the value of trading stock throughout the year are included in income or losses. If the mining is not carried out as part of a business activity, the mined cryptocurrencies are taxed first under the CGT regime on disposal.[24]

The ATO's guidance includes a brief reference to airdrops, stating that the creator of a new block is rewarded with additional tokens when the new block is created. The additional tokens are received from holding the original tokens, and their monetary value is ordinary income of the creator when they are derived.

[23] ATO, "Tax Treatment of Cryptocurrencies in Australia — Specifically Bitcoin: Personal Use Asset" (2021).

[24] ATO, "Tax Treatment of Cryptocurrencies in Australia — Specifically Bitcoin: Staking Rewards and Airdrops" (2021).

The ATO guidance also explains the tax treatment of new cryptocurrency received as a result of a chain split, with the treatment depending on whether the new currency is held as an investment or in a business carried on by the holder. In general, new tokens resulting from a chain split are treated similarly to those obtained through mining, with additional considerations in determining whether the cryptocurrency is a new asset or a continuation of the original.[25]

B. Brazil

The Brazilian Federal Revenue Service recently issued guidance for investing in cryptocurrencies.[26] According to this guidance, cryptocurrencies are not deemed as legal tender, but rather as a financial asset.

According to the rules for financial assets, the purchase and ownership of cryptocurrency must be reported to Brazilian tax authorities on an individual's annual income tax return. Each type of cryptocurrency must be reported separately at cost basis. Generally, the cost basis is the purchase price of the asset, so the taxpayer needs to provide information on that price. Appreciation needs to be reported only when realized, and capital gains realized from the sale will be subject to a tax rate of 15 to 22.5 percent, depending on the amount of income. Capital losses resulting from the sale of cryptocurrencies cannot be offset.

Offshore investments that exceed the value of $100,000 held by Brazilian residents must be reported and disclosed to the Brazilian Central Bank. It is unclear whether cryptocurrencies can be regarded as offshore investments and if so, under what circumstances.

The Federal Revenue Service guidance does not address crypto barter transactions or mining. Even so, under general tax principles, if a taxpayer buys a good or service or another cryptocurrency with cryptocurrency, that should be treated like a barter transaction.[27] Accordingly, if the taxpayer acquired a cryptocurrency and it appreciated, the taxable gain consists of the difference between the crypto's market value and cost basis.

In Brazil, it is unclear whether a taxpayer providing mining services receives income from those services. That might hold true for transaction fees, which the miner receives, and they should be taxed the same way as gross income.

Another view could apply to the newly mined tokens: The miner could be treated as someone conducting self-work, such as an artist, who does not realize any taxable income during the production phase.[28] Accordingly, only on disposition of the new token will there be taxable gain.

Brazil has a monthly de minimis income tax exemption for sales of assets realizing less than BRL 35,000 (about $6,190). The threshold includes the total sale value of all assets realized in a given month; if the amount is below it, gains arising from the sales will not be taxed. According to the Brazilian tax authorities, cryptocurrencies fall under the tax exemption. Brazilian investors with more than BRL 5,000 worth of cryptocurrency must report the funds on their income tax declarations.[29] Even so, any realization events should be indicated on the taxpayer's annual return.

The combined Brazilian rate for corporate income tax and for social contributions is 34 percent, and all corporate profits and gains are taxed at that rate. Similar to individual taxation, gains and losses should be taxed only on realization.

The Brazilian transaction tax on foreign exchange transactions likely does not apply to transactions exchanging legal tender into cryptocurrency. Thus, it is assumed that cryptocurrency can be used to circumvent foreign exchange tax. For example, if Brazilian real is directly converted to Chinese yuan renminbi, the tax on currency transactions applies. If, however, Brazilian real is converted into cryptocurrency

[25] ATO, "Tax Treatment of Cryptocurrencies in Australia — Specifically Bitcoin: Chain Splits" (2021).

[26] Flavio Rubinstein and Gustavo Gonçalves Vettori, "Taxation of Investments in Bitcoins and Other Virtual Currencies: International Trends and the Brazilian Approach," 20 *Derivatives & Fin. Instruments* 3 (2018).

[27] *Id.*

[28] *Id.*

[29] *See* Marcos Ferreira, "Cryptocurrency in Brazil: A Fiscal Guide for Those Who Want to Invest in Virtual Money," Drummond Accounting blog, Sept. 2, 2021.

that is then converted into Chinese yuan renminbi, it is likely that no foreign exchange tax can be levied. However, the Brazilian Central Bank said in November 2017 that international money transfers must be made through official channels.[30] In other words, if cryptocurrency is used, it also needs to be done via official channels, which might lead to a situation in which foreign exchange tax would still apply.

C. Germany

Germany's Federal Financial Supervisory Authority (BaFin) defines cryptocurrencies as financial instruments.[31] In accordance with the German banking act, crypto is a form of private money, and although it is not considered legal tender, some rules applicable to foreign currencies also apply to it.

The federal tax authorities have provided no guidance on the income tax treatment of cryptocurrencies. The tax authorities of North Rhine-Westphalia have issued guidance on how to tax individuals on their investments in and mining of cryptocurrencies.[32] In general, cryptocurrencies are treated as intangible assets, so their acquisition and disposal could lead to income from private sales transactions that will be taxed if the period between acquisition and disposal does not exceed one year. The exchange of one cryptocurrency into another also triggers the same taxation as the exchange into legal tender or the use of cryptocurrency as a means of payment (barter transaction).

If several acquisitions and sales transactions were made at different times, the first-in, first-out method should be applied.

When the sum of all private sales transactions — including crypto sales — does not exceed the exemption limit of €600 in the respective calendar year, the income is tax exempt. Once the exemption limit has been exceeded, all profits are taxable. Losses incurred on the purchase and sale of cryptocurrencies may be offset only against profits from other private sale transactions in the same calendar year. They may also be carried back to the immediately preceding calendar year or forward indefinitely and be offset only against profits from private sale transactions.

The tax authorities regularly assume that mined tokens and any proceeds thereof constitute income from business operations because of the required initial investments (such as high computing power and increasingly complex cryptographic tasks). If cryptocurrencies are traded as part of a commercial activity, any proceeds are taxed under the rules of trade and business profits, irrespective of whether the crypto was held more or less than one year. Regardless of whether the income is generated from private sales transactions or from a trade or business, the marginal tax rate ranges from 0 to 45 percent.

The tax authorities asked miners to report cases of commercial crypto mining and provide information on possible difficulties in determining the facts, as well as the amount of profit or loss. Under the EU anti-money-laundering (AML) directive ((EU) 2015/849), respective AML obligations apply to cryptocurrency exchange and digital wallet service providers.

In June the Federal Ministry of Finance published a draft of instructions for reporting the tax treatment of cryptocurrencies that summarizes the tax events in each operational link of cryptocurrency and the relevant tax rules, including traditional and emerging problems, such as mining and disposal.[33]

D. India

Cryptocurrencies are neither authorized nor regulated by any central authority in India. In 2018 the Reserve Bank of India prohibited banks and other financial institutions from engaging in any crypto-related activities. In early 2020 the Supreme Court reversed the order, allowing cryptocurrency trading. It is unclear whether cryptocurrencies are illegal in India. There are no

[30] Rubinstein and Gonçalves Vettori, *supra* note 26.

[31] "OFD Nordrhein-Westfalen v. 20.04.2018: Ertragsteuerliche Behandlung von virtuellen Währungen (Kryptowährungen)," NWB Datenbank (Apr. 20, 2018) (in German).

[32] "Finanzbehörde Hamburg vom 11. Dezember 2017 (S 2256-2017/003-52): Ertragsteuerliche Behandlung des Handels mit Bitcoins auf der privaten Vermögenssphäre," NWB Datenbank (Dec. 11, 2017) (in German). *See also* "OFD Nordrhein-Westfalen," *supra* note 31.

[33] Oberste Finanzbehörden der Länder, "Einzelfragen zur ertragsteuerrechtlichen Behandlung von virtuellen Währungen und von" (2021) (in German).

rules for how to tax them, so the following analysis is based on an interpretation of general Indian tax rules.

Cryptocurrencies may be regarded as capital assets or stock in trade. If considered capital assets, buying and selling cryptocurrencies will lead to capital gains. Depending on the holding period — that is, either less or more than 36 months — the gains might be either short- or long-term. In general, long-term gains are taxed at approximately 20 percent, and short-term gains are taxed at 25 to 30 percent.[34] If the taxpayer trades in cryptocurrencies with comparably short holding periods of just several days to a few months,[35] they could be held as stock in trade. If so, it might be possible to tax income from a transfer or sale as business income.

Some observers think using crypto as a means of payment should not be regarded as a barter transaction and that the cryptocurrency represents a fiat currency.[36] Accordingly, only the underlying transaction (the supply of a good or a service) should be taxed — that is, should lead to business income or capital gains. That view is not convincing. If cryptocurrency is treated as an asset or as stock in trade, paying with it should lead to a realization of either capital gains or business income. Similarly, when receiving it as consideration, the cryptocurrency would need to be activated in the balance sheet. Trading one cryptocurrency against another constitutes trading of assets or stock triggering capital gains or business income.[37]

Because there is no official guidance from the Indian tax authorities, it is unclear how mining cryptocurrencies should be treated. It still needs to be determined when tax should be due: When the cryptocurrency is mined or when it is sold? If the answer is not when mined, the income would be characterized as business income and taxed under Chapter IV-D of the Income Tax Act, 1961.[38]

Even so, it seems more likely that mining can be treated similarly to the production of assets, which would lead to capital gains taxation under Chapter IV-E of the ITA. The capital gain is the sales proceeds less the cost of acquisition, but it is still unclear how the cost of acquisition should be calculated and thus whether a capital gains tax can be computed at all.

E. Singapore

In April 2020 the Inland Revenue Authority of Singapore issued guidance on the income tax treatment of cryptocurrency.[39] Because there is no capital gains tax in Singapore, any gains derived from long-term crypto investments are not subject to tax. Depending on the trading frequency and holding periods, those gains could also be characterized as trading gains and would be subject to corporate income tax.

The miner's profits will be taxed on disposal of the payment token instead of on mining it: Although miners are entitled to a right to own a payment token when they successfully mine, simply holding cryptocurrency does not enable them to earn income. The income of a company engaging in mining activities for profit will be regarded as trade income, so the company will be taxed on profits when it sells the mined token, and the mining expenses can be deducted. If an individual engages in mining activities as a hobby, capital gains from the sale of the mined tokens are not taxable.

The guidance also stipulates the income tax treatment for airdrop and hard forks. It defines an airdrop as the distribution of tokens for free for marketing purposes. If the airdrop was not given in return for any goods or services, it is not taxable. It would not be regarded as income subject to tax, but the gains from the subsequent disposal would be taxable. The guidance defines a hard fork as splitting a cryptocurrency to create a second cryptocurrency that operates separately from and alongside the original. Owners of the existing cryptocurrency might receive a second token for free, and the recipient will be taxed at

[34] For more on capital gains rates, see EY, "India," *Worldwide Corporate Tax Guide* (2019).

[35] Compare the High Court of Kerala's judgment in *Equity Intelligence India Pvt. Ltd. v. ACIT*, [2015] 61 taxmann.com 256 (Ker) (HC), regarding trading shares as business income.

[36] Sunny Kishore Bilaney, "Taxing Time for Cryptocurrencies," 20(4) *Fin. & Cap. Markets* 4 (2018).

[37] *Id.*

[38] *Id.*

[39] IRAS, "E-Tax Guide: Income Tax Treatment of Tokens" (last revised Oct. 9, 2020).

the point of disposal instead of at the point of receipt.

F. South Africa

In 2018 the South African Revenue Service said it will apply normal income tax rules to cryptocurrencies. Unlike other countries, South Africa has not released a separate interpretation on how to tax crypto; depending on the nature of the transaction, taxpayers can seek guidance through channels such as binding private rulings.

South Africa does not regard cryptocurrency as legal tender or a standard unit for payment but as an intangible asset. Following the South African income tax rules, income derived from cryptocurrency transactions should be taxed on the revenue account as gross income. Alternatively, it may also be taxed as capital gain.

G. The United Kingdom

In December 2018 HM Revenue & Customs released a paper detailing cryptocurrency tax guidelines for individuals,[40] in November 2019 it published its policy paper on the tax treatment of cryptocurrency for companies and other businesses, and in 2021 it integrated and updated those policy documents and issued a cryptocurrency manual.

The guidance focuses not only on cryptocurrencies but also on other types of tokens. HMRC said it will provide further guidance on the tax treatment of cryptoasset transactions involving businesses and companies.

For individuals who own cryptocurrency for capital appreciation, capital gains tax is due on disposition. Capital gains tax is collected only on assets disposed of for more than £6,000. Disposal is regarded to be everything from using cryptocurrency as a means of payment to exchanging it for other types of crypto or legal tender.

There may be times when an individual is carrying on a business of financial trade in cryptocurrencies and will therefore have taxable trading profits. That is likely to be unusual, but in those cases, income taxation of the trading profits would take priority over the capital gains tax rules.

Any fees or rewards received in return for mining are also subject to income taxation, either as trading or miscellaneous income[41] depending on the degree of activity, or the organization, risk, or commerciality. If the awarded tokens are not disposed of immediately, any increase in value will give rise to a chargeable gain on disposal for capital gains tax purposes or, for a trade, get taken into account in computing any trading profits for income tax purposes.

In general, losses can be used to reduce the income tax liability of trading income against future profits or other income. If profits from activities are taxable as miscellaneous income, it might be possible to carry losses forward.

Further, for inheritance taxes, cryptocurrencies will be considered property and not currency or money.

HMRC has asked two cryptocurrency exchanges to provide data, seeking information about U.K. customers, including names, addresses, and transaction data, to ensure tax compliance.[42] It has said the collected data are used to improve the integrity of the tax system and identify taxpayers that have failed to declare their gains.

H. The United States

The United States was one of the first countries to publish administrative guidance on the tax treatment of cryptocurrency transactions. Notice 2014-21, 2014-16 IRB 938, explained how to apply the principles of U.S. taxation to cryptocurrency. In November 2016 the Treasury Inspector General for Tax Administration reported (2016-30-083) that the IRS should formulate more detailed cryptocurrency tax rules. IRS Notice 2019-21, 2019-14 IRB 1, solved some remaining problems and explained the income tax treatment of hard forks and airdrops.

In 2021 the IRS updated the frequently asked questions on its website, expanding on the examples in Notice 2014-21 and applying long-

[40] HMRC, "Tax on Cryptoassets," Policy Paper (2018).

[41] Computed as the pound sterling value at the time of receipt of the newly mined token.

[42] Stephanie Soong Johnston, "Cryptocurrency Traders Confirm U.K. Tax Authority Data Hunt," *Tax Notes Int'l*, Aug. 19, 2019, p. 754.

standing tax principles to additional situations. On August 10 the Senate passed the Infrastructure Investment and Jobs Act (H.R. 3684), which is expected to raise an additional $28 billion in tax revenue from cryptocurrency.

The IRS guidance notes that cryptocurrency is a digital representation of value that functions as a medium of exchange, a unit of account, or a store of value, but it does not have legal tender status in any jurisdiction. For U.S. tax purposes, cryptocurrency is treated as property, so it is not possible to generate foreign currency gains or losses with cryptocurrency.

If a taxpayer receives cryptocurrency, that will result in gross income — that is, the taxpayer must include the fair market value of the cryptocurrency, measured in U.S. dollars, as of the date received. Accordingly, when a taxpayer exchanges cryptocurrency for property or legal currency, he may have a gain or loss on the transaction, which is calculated by subtracting the cost basis from the proceeds.

The gain (or loss) can be characterized as capital or ordinary. When a taxpayer invests in cryptocurrency, it is treated as a capital asset and can be considered short- or long-term gain (or loss). In general, capital losses may offset only capital gains, not ordinary income. Long-term capital gains benefit from favorable rates of 0, 15, or 20 percent, while short-term capital gains are taxed as ordinary income. A taxpayer generally realizes ordinary gain or loss on the sale or exchange of cryptocurrency that is not a capital asset in his hands — for example, for inventory and other property held mainly for sale to customers in a trade or business.

When a taxpayer mines cryptocurrency, the FMV as of the date of receipt is includable in gross income. If a taxpayer's cryptocurrency transactions constitute a trade or business and are not undertaken by the taxpayer as an employee, they constitute self-employment income. Net earnings are calculated as the gross income derived from carrying on a trade or business less allowable deductions. Necessary business expenses can be deducted from self-employment income.

Similarly, cryptocurrency paid by an employer as remuneration for services constitutes wages for employment tax purposes because the medium in which remuneration is paid is immaterial to whether it constitutes a wage. Accordingly, the FMV of cryptocurrency paid as wages is subject to federal income tax withholding, insurance contribution tax, and unemployment tax and must be reported on the respective wage tax form.

Information reporting applies to the same extent as to any other property transaction, and payments made using cryptocurrency are subject to backup withholding to the same extent as other payments made in property.[43] There are also IRS information reporting requirements for a person who settles payments made in cryptocurrency on behalf of merchants that accept cryptocurrency from their customers. By contracting with a substantial number of unrelated merchants to settle payments, the third party must report payments made to a merchant on a specific form.

For hard forks, if a taxpayer did not receive units of the new cryptocurrency from the hard fork, she would not have accession to wealth or have gross income under IRC section 61. If the taxpayer received new units of cryptocurrency in the airdrop following the hard forks, she has accession to wealth and ordinary income in the tax year in which the new cryptocurrency is received.

In 2018 the IRS announced a campaign to address tax noncompliance stemming from the use of cryptocurrency through outreach and taxpayer examinations. In 2021 the U.S. District Court for the Northern District of California authorized the IRS to issue John Doe summonses to crypto exchange operators Kraken to find users who conducted at least $20,000 of transactions in cryptocurrency from 2016 to 2020. The IRS did the same thing in 2016, when it went after Coinbase cryptocurrency transaction information from 2013 to 2015. The IRS used that information to send letters to taxpayers with crypto transactions that potentially failed to report income and pay the resulting tax or did not report their transactions properly. The letters were meant to help taxpayers understand their tax and filing obligations and how to correct past errors.

[43] IRS, "Topic No. 307 — Backup Withholding."

The regulations established by the Financial Crimes Enforcement Network apply to cryptocurrency trading platforms. The network is responsible for preventing money laundering and terrorist financing.[44] Persons engaged in cryptocurrency trading and initial coin offerings must comply with requirements and rules applicable to AML and combating the financing of terrorism.

I. Other International Trends

Jurisdictions other than those discussed have also found ways of addressing cryptocurrencies. For example, Japan passed the Virtual Currency Act in early 2017, becoming the first country to recognize cryptocurrency as a legal method of payment.[45] Its tax agency has reportedly created a database on cryptocurrency investors, and teams based in Tokyo and Osaka are closely watching electronic trading.[46]

In countries where cryptocurrencies can be traded, tax authorities have increased their control over cryptocurrency investors. For example, Australia's tax authorities collect records from Australian cryptocurrency service providers, including cryptocurrency purchase and sale information, as part of a data-matching program to ensure people trading in cryptocurrency are paying the right amount of tax. Belgium has opened several investigations into citizens who have traded on foreign exchanges.[47] In Denmark, which treats gains from speculation with cryptocurrencies as income,[48] the tax agency was authorized to obtain from three domestic exchanges tax information on trades or exchanges of fiat currencies for crypto and trades or transfers of one cryptocurrency for another.[49] South Korea's National Tax Service began investigating the country's leading cryptocurrency exchanges, demanding data on financial transactions and related accounting books.[50]

Many countries, including Algeria, Bangladesh, Bolivia, Colombia, Ecuador, Egypt, Iran, Macedonia, Morocco, Nepal, Venezuela, and Vietnam, ban cryptocurrencies.[51] Because crypto trading takes place online without banks or governments being involved and cannot be strictly controlled by the authorities, it is unclear to what extent bans are enforced or successful.

As a result of the wide differences in the treatment of cryptocurrencies, calls for international coordination and cooperation among regulators to address risk management measures are growing. Worldwide cooperation could take place at the G-20 level[52] or in a framework under the auspices of the IMF.[53] In the absence of international cooperation, the European Central Bank may address cryptocurrencies and issue its own regulations. Along those lines, the OECD has recently called for international cooperation on new frameworks for addressing the tax consequences of cryptocurrencies and blockchain, cautioning that they pose risks to gains made in tax transparency in the last decade.[54] So far, however, no compromise for harmonized treatment has surfaced.

Emerging issues, such as stable coins and central bank digital currencies (CBDC), could bring about different tax policy implications. Take the stable coin. Facebook's Libra is the most well-known stable coin project. Whether stable coins should have tax policies similar to classic cryptocurrencies is an important question that policymakers should consider. Further, several countries are considering issuing their own

[44] IRS, "Request for Administrative Ruling on the Application of FinCEN's Regulations to a Virtual Currency Trading Platform," FIN-2014-R011 (Oct. 28, 2014).

[45] The Japanese Financial Services Agency has already accredited several cryptocurrency exchanges. *See* Emiko Terazono, "Bitcoin Gets Official Blessing in Japan," *Financial Times*, Oct. 17, 2017.

[46] Molly Jane Zuckerman, "Japanese Crypto Investors to Pay Tax of Up to 55 Percent on Profits," *Cointelegraph*, Feb. 9, 2018.

[47] The Special Tax Inspectorate is reportedly auditing cases of Belgian investments in virtual currencies. *See* Lubomir Tassev, "Belgian Tax Authority Going After Crypto Investors," Bitcoin.com, Mar. 3, 2018.

[48] J.P. Finet, "Bitcoin Trade Gains Are Personal Income, Tax Board Says," *Tax Notes Int'l*, Apr. 9, 2018, p. 352.

[49] Alexander Lewis, "Danish Tax Agency Collecting Cryptocurrency Information," *Tax Notes Int'l*, Jan. 21, 2019, p. 334.

[50] Yoon Yung Sil, "Tax Investigation Into Bitcoin Exchanges," *BusinessKorea*, Jan. 11, 2018.

[51] Evan Ezquer, "Bitcoin Regulations by Country (Updated for 2020)," *Bitcoin Market Journal*, Apr. 12, 2020.

[52] "France, Germany to Make Joint Bitcoin Regulation Proposal at G20 Summit," Reuters, Jan. 18, 2018.

[53] Zahraa Alkhalisi, "IMF Chief: Cryptocurrency Regulation Is 'Inevitable,'" CNN Money, Feb. 11, 2018.

[54] *See* OECD, "OECD Secretary-General Report to G20 Finance Ministers and Central Bank Governors" (Mar. 2018).

CBDCs. CBDCs and other cryptocurrencies have fundamental differences because CBDCs can be considered legal tender, so countries may want to treat CBDCs similarly to legal tender for tax purposes.[55]

IV. Conclusion

From the country overview, one can see that many countries' tax authorities are interested in cryptocurrencies. Some have issued guidance on the tax treatment of crypto transactions, and many regard cryptocurrencies as a form of property for income tax purposes. Taxable events include the creation and disposal of cryptocurrencies.

Most countries consider the receipt of a new token via mining, exchanging legal tender for cryptocurrencies, and exchanging cryptocurrencies for others as generating taxable events. Accordingly, trading with and mining cryptocurrencies often leads to income taxation or capital gains taxation. In rare cases, the assets are treated as generating business or miscellaneous income.

However, cryptocurrency treatment is not always clear in some countries. To reduce the level of tax liability unawareness, tax authorities must issue guidance to explain to taxpayers that transacting in digital currencies does not relieve them of tax obligations.

Aside from providing clear guidance, the main challenge tax authorities face seems to be enforcing reporting obligations and tax rules because crypto transactions remain mostly decentralized and anonymous. From studying the practices of Japan, South Korea, and the United States, one can see that tax authorities request the help of trading platforms to enforce tax rules and identify unreported transactions. Like banks, cryptocurrency trading platforms can help obtain customer information and transaction records.

Some countries ban cryptocurrencies because they are concerned about money laundering and the financing of illegal activities.[56] However, those kinds of bans are more likely to cause additional difficulties because unregulated offshore exchange platforms might be used to circumvent them. Those platforms cannot be controlled or supervised by regulatory authorities. Moreover, investors trading or mining via offshore platforms and servers will be less likely to pay any taxes on their crypto income and gains because they are conducting illegal activities.

Rather than banning cryptocurrency, it might be more efficient to pursue tax policies that create tax incentives for investors to report cryptocurrency transactions. One solution would be to offer a preferential capital gains rate for crypto transactions that are reported upfront. By ensuring preferential tax treatment for more cryptocurrency transactions, regulatory agencies might encourage users to report their transactions.

Further, cryptocurrency exchange platforms must be subject to the rules of regulatory authorities and will need to report transactions involving larger sums, allowing countries to reduce the illegal transactions and tax fraud that occur on cryptocurrency exchanges. ■

[55] Liu, Han, and Jiang, *supra* note 22.

[56] The People's Bank of China, "Notice on Further Preventing and Dealing With Risks of Speculation in Virtual Currency Transactions" (Sept. 24, 2021) (in Chinese).