Office of Chief Counsel
Internal Revenue Service
Memorandum

Number: **202316008**
Release Date: 4/21/2023

CC:ITA:B04
POSTN-114641-22

UILC: 1001.00-00

date: March 27, 2023

to: Michael R. Fiore
Area Counsel 1 (Boston)
(Small Business/Self-Employed)

from: Alexa T. Dubert
Senior Technician Reviewer, Branch 4
(Income Tax & Accounting)

---

subject: Digital Assets - Change of Consensus Mechanism

This Chief Counsel Advice responds to your request for non-taxpayer specific advice regarding the tax consequences to an individual who holds a cryptocurrency native to a blockchain distributed ledger that undergoes a protocol upgrade. This document should not be used or cited as precedent.

ISSUES

1. Does an individual taxpayer ("T"), who holds 10 units of C, a cryptocurrency native to a distributed ledger that undergoes a protocol upgrade (as defined below) that changes the consensus mechanism by which transactions are validated, realize gain or loss on those units under section 1001 of the Internal Revenue Code ("Code") as a result of the protocol upgrade?

2. Does T have an item of gross income under section 61(a) of the Code as a result of the protocol upgrade?

CONCLUSIONS

1. No, T does not realize gain or loss under section 1001 of the Code on T's 10 units of C as a result of the protocol upgrade to the distributed ledger to which C is native.

2. No, T does not have an item of gross income under section 61(a) of the Code as a result of the protocol upgrade.

FACTS

K is a blockchain that uses distributed ledger technology to record transactions involving cryptocurrency pursuant to K's underlying protocol. The K blockchain protocol is a set of rules that includes a consensus mechanism for adding new blocks of transactions to K, including those involving units of C. Participants that successfully add new blocks of transactions to K receive a block reward in accordance with K's underlying protocol.

On Date 1, T purchases 10 units of C and stores the private keys in an unhosted wallet. On Date 2, K changes its consensus mechanism used to select who may validate transactions and add blocks of transactions to the K blockchain from proof-of-work ("PoW") to proof-of-stake ("PoS") (the "protocol upgrade").

After the protocol upgrade on Date 2, K's protocol requires that transactions be validated and that new blocks be added to K's blockchain exclusively through the PoS consensus mechanism. The protocol upgrade does not affect or otherwise change the transaction history of any blocks prior to Date 2, and new blocks will be added to K pursuant to the changed protocol. Units of C remain unchanged following the protocol upgrade, and T continues to hold the same 10 units of C. T does not receive any cash, services, or property (including additional units of C) as a result of the protocol upgrade.

DISCUSSION

Background

Digital assets are defined under section 6045(g)(3)(D) as digital representations of value that are recorded on a cryptographically secured distributed ledger.[1] Digital assets do not exist in physical form and include, but are not limited to, property the Service has previously referred to as convertible virtual currency and cryptocurrency. See Notice 2014-21, 2014-16 I.R.B. 938; Rev. Rul. 2019-24, 2019-44 I.R.B. 1004. Notice 2014–21 provides that convertible virtual currency is treated as property and that

---

[1] The Infrastructure Investment and Jobs Act ("the Act"), Pub. L. 117-58, div. H, title VI, section 80603(b)(1)(B), added new section 6045(g)(3)(D), which uses this definition of a digital asset for purposes of information reporting by brokers effective January 1, 2023. The Act provides the Secretary with the authority to further define the term "digital asset."

general tax principles applicable to property transactions apply to convertible virtual currency.

Cryptocurrency is a type of virtual currency that utilizes cryptography to secure transactions that are digitally recorded on a distributed ledger, such as a blockchain. Units of cryptocurrency are generally referred to as coins or tokens. Distributed ledger technology uses independent digital systems to record, share, and synchronize transactions, the details of which are recorded in multiple places at the same time with no central data store or administration functionality. See Rev. Rul. 2019-24.

Section 1001 provides rules for the computation and recognition of gain or loss related to the sale or other disposition of property. Treas. Reg. § 1.1001-1(a) provides that the gain or loss realized from the exchange of property for other property differing materially either in kind or in extent is treated as income or as loss sustained.

An exchange of property is a realization event under § 1001 only if the exchange results in the receipt of property that is materially different from the property transferred. For properties to be "different" in the sense of being "material" for purposes of section 1001, they must embody legally distinct entitlements. See Cottage Savings Assn. v. Commissioner, 499 U.S. 554, 564-565 (1991).

Section 61(a) provides the general rule that, except as otherwise provided by subtitle A of the Code, gross income means all income from whatever source derived, including gains from dealings in property. Under section 61, all gains or undeniable accessions to wealth, clearly realized, over which a taxpayer has complete dominion, are included in gross income. See Commissioner v. Glenshaw Glass Co., 348 U.S. 426, 431 (1955). As stated by the Supreme Court in discussing an earlier version of this section, "[t]he income taxed is described in sweeping terms and should be broadly construed in accordance with an obvious purpose to tax income comprehensively." Commissioner v. Jacobson, 336 U.S. 28, 49 (1949).

In general, the excess of the fair market value of property or services over which the taxpayer has dominion and control reduced by the amount, if any, paid by the taxpayer shall be includible in gross income.

Gross income includes income realized in any form, whether in money, property, or services. Income may be realized, therefore, in the form of services, meals, accommodations, stock, or other property, as well as in cash. Treas. Reg. § 1.61-1(a).

Analysis

The protocol upgrade affects the consensus mechanism by which future transactions are validated and blocks are added to K after Date 2. The protocol upgrade does not alter past transactions or blocks previously validated and added to K, including T's 10 units of C. Furthermore, the existing units of C remain unchanged by

the protocol change and there is not an exchange of the units of C under section 1001. Accordingly, T continues to own the same 10 units of C before and after the upgrade and the protocol upgrade does not result in a realization event from which T realizes gain or loss on T's existing 10 units of C.

Similarly, T derives no accession to wealth from the upgrade. T's 10 units of C remain unchanged after the upgrade, and T does not derive any separable economic benefits, in the form of cash, services, or other property (including other cryptocurrencies) from it. In the absence of an accession to wealth to T, the protocol upgrade does not result in T having an income inclusion within the meaning of section 61(a).

If you have any questions, please call Alina Lewandowski at (202) 317-7006.

Sincerely,

_____

Alexa T. Dubert
Senior Technician Reviewer, Branch 4
Office of Associate Chief Counsel
(Income Tax & Accounting)