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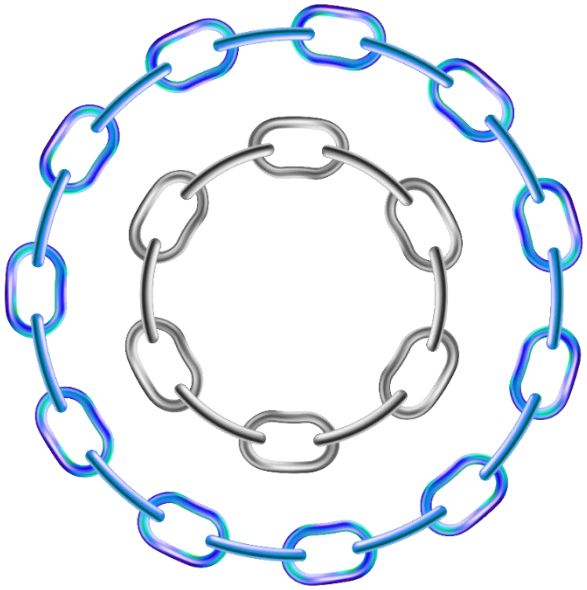
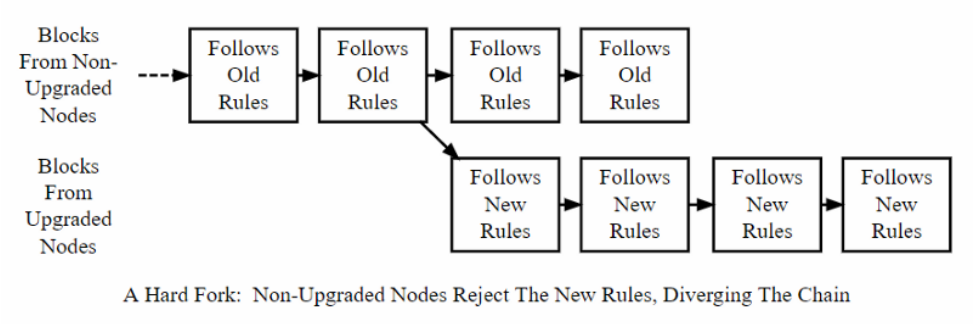


When (and If) Income is Realized from Bitcoin Chain-Splits

While income can be realized from a chain-split, it need not be realized at the time of the chain-split, or, possibly, ever, for federal income tax purposes.

A chain-split is a permanent branching of the Bitcoin blockchain.[1] This can occur when blocks of transactions are created by nodes operating a new version of Bitcoin having less restrictive consensus rules. [2]These blocks do not meet the stricter consensus rules of, and are rejected by, non-upgraded nodes; however, the blocks are treated as valid, and appended to the blockchain, by nodes operating the new version.[3]



A Hard Fork: Non-Upgraded Nodes Reject The New Rules, Diverging The Chain

Image source: Bitcoin Developer Guide, "Consensus Rule Changes."

Recent examples of Bitcoin chain splits include Bitcoin Cash (Aug 1, 2017), and Bitcoin Gold ("snapshot hard fork" on Oct 24, 2017). A taxpayer controlling the credentials to bitcoin prior to either chain-split will control a corresponding number of bitcoin cash or bitcoin gold after the chain-split. Thus, for example, a taxpayer having 10 bitcoin prior to the Bitcoin Cash chain-split will have 10 bitcoin cash, along with his 10 bitcoin, after the chain-split. No payment of money or exchange of property occurs, nor does the taxpayer give up any rights.[4]

Bitcoin owners are not required to take action upon the occurrence of a chain-split, and, generally, a chain-split can create significant risks that must first be evaluated by owners, wallet developers, exchanges, and other businesses. Many take no action until the risks have been sufficiently evaluated and mitigated, and some may never take any action. The most often cited risks are security, generally, and replay attacks, specifically.[5] A replay attack occurs if a

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[1] Recommended texts and resources: Andreas M. Antonopoulos, *Mastering Bitcoin: Programming the Open Blockchai*n, O'Reilly Media, Inc. (2d ed. 2017); Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller & Steven Goldfeder, *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*, Princeton University Press (2016); Jerry Brito, Andrea Castillo, *Bitcoin: A Primer for Policymakers*, Mercatus Center at George Mason University (Kindle Edition) at 79–81; Coin Center.

[2] See Bitcoin.org, "Consensus Rules," ("The block validation rules that full nodes follow to stay in consensus with other nodes"). See generally Jerry Brito, Andrea Castillo, *Bitcoin: A Primer for Policymakers*, Mercatus Center at George Mason University (Kindle Edition) at 79–81.

[3] See Bitcoin.org, Glossary, "Hard Fork"; see, also, Peter Van Valkenburgh, Coin Center, "What are Forks, Alt-coins, Meta-coins, and Sidechains?"

[4] Coins corresponding to pre-split bitcoins will be referred to as "chain split coins" unless otherwise specifically noted as chain split bitcoin cash or bitcoin gold. While chain splits caused by Bitcoin Cash and Bitcoin Gold are well known, obscure transactions which are similar in nature, and sometimes referred to as "airdrops," can and do occur. Taxpayers are often unaware of these events and/or unwilling to take necessary actions due to actual or perceived risks. See, also, Peter Van Valkenburgh, Coin Center, "A token airdrop may not spare you from securities regulation."

[5] See, e.g., Jimmy Song, "Replay Attacks Explained."

transaction is valid on both chains. In such a case, transferring a chain-split coin can cause the unintended transfer of the corresponding pre-split bitcoin, and vice versa. Transactions are irreversible, and where no or uncertain replay protection is provided, a taxpayer would need to carefully evaluate and activate precautions that prevent replay attacks. In addition, even if replay protection is provided, chain-split coins cannot be transferred unless the corresponding credentials are held in a wallet supporting the chain-split, or the user is willing and able to import the necessary credentials into such a wallet.

Summary of federal income tax consequences

Two federal income tax consequences are discussed in this article, and are summarized as follows:

- Taxable income is realized if the owner of pre-split bitcoin exercises dominion and control over the corresponding chain-split coins; and
- The income realized will be equal to the value of the chain-split coins at that time.

The character of income realized, other tax considerations (including applicability of the tax on net investment income), and effects of more complex transactions will be discussed in the future.[6]

Chain-splits and hard forks

Anyone can copy the Bitcoin Core software, make modifications to it, and create their own version of Bitcoin. Changes do not affect Bitcoin Core unless the changes are accepted.[7] Modifications to a copy that changes the consensus rules do not cause a split in the Bitcoin blockchain unless the new version is actually adopted and activated by miners, intermediary nodes, and wallets. If that occurs, the result is a permanent branching of the blockchain on which transactions are recorded. One branch is valid under Bitcoin, but invalid under the rules of the new version, and vice versa, and miners choosing to operate under the new rules will add blocks that are no longer valid, and will be rejected by, Bitcoin nodes.[8]

The modifications to Bitcoin Core made by the developers of Bitcoin Cash and Bitcoin Gold included changes to the consensus rules. In the case of Bitcoin Cash, its developers modified Bitcoin Core by increasing the maximum base block size, adding decreasing difficulty adjustments in the case of a low hash rate, and removing the segregated witness functionality (or SegWit, BIP91/BIP148) from Bitcoin.[9] Bitcoin Gold adopted a proof-of-work algorithm (Equihash) intended to be resistant to specialized mining equipment, or ASICs (Application Specific Integrated Circuits). Equihash enables mining using more ubiquitous graphics processing units (GPUs).[10]

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[6] All section references are to the Internal Revenue Code of 1986, as amended, and the regulations thereunder, unless otherwise specified.
[7] See Github, GitHub Glossary, (a fork is a copy of a repository).
[8] See, generally, Andreas M. Antonopoulos, *Mastering Bitcoin: Programming the Open Blockchain*, O'Reilly Media, Inc. (2d ed. 2017).
[9] See "Bitcoin Improvement Proposals," (BIPs).
[10] Mining is the process of adding transactions to the blockchain, see Bitcoin Wiki, Mining.

While it may seem that the Bitcoin blockchain was copied by Bitcoin Cash or Bitcoin Gold, in fact, a permanent fork from the pre-existing blockchain is created and the pre-split transaction history is shared. Thus, for example, a Bitcoin Cash wallet will identify spendable transactions—UTXOs—recorded on the Bitcoin blockchain based upon pre-existing Bitcoin UTXO addresses associated with the credentials controlled by that wallet. While a pre-existing Bitcoin UTXO is referenced by a Bitcoin Cash transaction, the UTXO is recorded as sent only for purposes of the Bitcoin Cash blockchain. The Bitcoin network will reject the Bitcoin Cash transaction as being invalid, and the Bitcoin Cash transaction will not remove the corresponding Bitcoin transaction from the Bitcoin UTXO set. This means that a Bitcoin UTXO existing prior to the chain-split can be spent as a Bitcoin Cash UTXO after the chain-split, but doing so will not consume—that is, remove—the corresponding Bitcoin UTXO from the blockchain.[11]

Federal income taxation of unsolicited rights and property

Virtual currency is treated as property for federal income tax purposes.[12] The dominion and control doctrine applies to rights and property received, but not paid for, by a taxpayer, including unsolicited property such as free samples and security purchase rights. Chain-split coins are unsolicited property that may be claimed by taxpayers if they have sufficient credentials; however, nothing compels them to claim these coins immediately or ever. And, normally, the most prudent course of action is no action at all until the risks associated with the chain-split have been sufficiently evaluated and mitigated.

First, chain-split coins are not gifts. While a bitcoin owner may be able to claim bitcoin cash or bitcoin gold at no cost, these were never intended to be a gift and cannot be excluded from income on that basis.[13] Second, chain-split coins are not found property. Bitcoin owners know, should know, and may even anticipate that by holding bitcoin they will be entitled to chain-split coins; thus, these are not found property.[14]

The property is, however, an economic gain that, if and when the taxpayer exercises dominion and control, will be realized income.[15] Unsurprisingly, this is not the first time taxpayers have received property or rights to property without payment. Moreover, the long-standing position of the Internal Revenue Service has been that such rights and property are realized as income only if and when the taxpayer exercises dominion and control.[16] Moreover, when the

[11] Bitcoin Cash transactions use a flag, SIGHASH_FORKID, which prevent Bitcoin Cash transactions from being replayed on the Bitcoin blockchain, and vice versa. See Jimmy Song, "Bitcoin Cash: What You Need to Know." Bitcoin Gold states that it will do so as well, see https://bitcoingold.org. See Jimmy Song, "Bitcoin Gold: What you need to know."
[12] Notice 2014–21, 2014–1 C.B. 938 (Q&A-1, "virtual currency is treated as property").
[13] *Commissioner v. Duberstein*, 363 U.S. 278 (1960) (the Supreme Court held that a gift, in the statutory sense, proceeds from a detached or disinterested generosity out of affection, respect, admiration, charity, or like impulses).
[14] For a thorough treatment of the subject, see Joseph M. Dodge, "*Accessions to Wealth, Realization of Gross Income, and Dominion and Control: Applying the 'Claim of Right Doctrine' to Found Objects, Including Record-Setting Baseballs*," 4 Fla. Tax Rev. 725 (2000).
[15] *Commissioner v. Glenshaw Glass Co.*, 348 U.S. 426 (1955).
[16] Rev. Rul. 63–225, 1963–2 C.B. 339; Rev. Rul. 70–498, 1970–2 C.B. 6; see, also, GCM 36639 (Mar. 22, 1976) ("… it is clearly the position of the Service that the mere receipt of

courts have considered the issue, the decisions are consistent with the IRS's position.[17]

The dominion and control doctrine has been applied by the IRS in business transactions similar to a chain-split. In both published and private rulings, rights received by a taxpayer without payment to purchase shares in an unrelated corporation were not treated as taxable upon receipt.[18]

Dominion and Control

In Rev. Rul. 63–225, a taxpayer, by virtue of being a shareholder of M corporation, received from an unrelated corporation, N, at no cost to himself, rights to purchase debentures and common stock of N corporation.[19] The taxpayer in the ruling did not hold the rights as a dealer in options and he sold the rights immediately. The debentures and stock would have been capital assets in his hands if he had exercised the rights. The taxpayer was treated as not realizing any taxable income upon his receipt of the rights from N corporation, and his basis in such rights, for determining gain or loss upon their sale, was zero. The IRS held that the proceeds received from the sale of the rights constituted short-term capital gain under §1234; however, see the discussion below concerning the character of income.[20]

A sale of rights, as in Rev. Rul. 63–225, is not the only method of exercising dominion and control; however, by selling the taxpayer made it plainly evident that he was able to, and, in fact, did exercise dominion and control over the

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[free samples] does not constitute income. Rather, the inclusion of the value of the [free samples] in income is dependent on the taxpayer accepting them as his own.").

[17] *Haverly v. United States*, 513 F.2d 224 (7th Cir. 1975) ("intent to exercise complete dominion over unsolicited samples is demonstrated by donating those samples to a charitable institution […]."); *Holcombe v. Commissioner*, 73 T.C. 104 (1979) (court indicated it might have decided based upon Rev. Rul. 70–498 had the taxpayer not failed to show that the IRS erred in its determination of the year of inclusion with respect to donated non-gift items received without cost).

[18] Rev. Rul. 63–225, 1963–2 C.B. 339; GCM 32441 (Nov. 19, 1962) (concurring with Rev. Rul. 63–225); see, also, PLR 8821082, PLR 8811034, and PLR 8801053 (citing Rev. Rul. 63–225, certain account holders did not recognize income upon receipt of subscription rights distributed without payment as part of a conversion of mutual savings banks or associations); GCM 7246: C. B. VIII-2–4461 (1929) (same rationale for purposes of realization; however, character of income was ordinary based on then current law); compare, e.g., with Rev. Rul. 70–521, 1970–2 C.B. 72 (distribution of share purchase rights by a corporation to its shareholders was realized under §301); GCM 37452 (Mar 9, 1978) (dominion and control was presumed to occur when unilaterally extended warrants were exercised after the expiration of the original warrants, sold, exchanged, or otherwise disposed of (e.g., by gift or charitable contribution)).

[19] N and M held assets received from the liquidation of a third corporation, P. N made a public offering of debt and stock and issued purchase rights to shareholders of M. The funds raised by N financed the purchase of the P property held by M. P was not related to M, and neither P nor M held stock in N. Arguably, there is a distinction between the expectations of the taxpayer in Rev. Rul. 63–225, and those of a bitcoin holder. While shareholders typically do not acquire shares anticipating the receipt of property from an unrelated corporation, a bitcoin holder might anticipate, or, at least, should not consider a chain split unusual.

[20] See GCM 32441 (Nov 19, 1962) (compare Rev. Rul. 63–225 as issued that states that the rights were sold immediately to the original draft that had stated the rights were held for less than the long-term holding period prior to sale); see GCM 37452 (Mar 9, 1978) (recommending that the holding of Rev. Rul. 63–225 be modified to indicate that ordinary income is recognized when dominion and control is exercised over such rights; however, Rev. Rul. 63–225 has not been modified as recommended).

rights at the time of sale. Had the taxpayer allowed the rights to expire worthless, and without otherwise exercising dominion and control, he would not have recognized a taxable loss because he had no basis in the rights. He would only have had basis if he recognized income or gain by exercising dominion and control over the rights in a manner other than by disposition of all the rights.

A transfer of some but not all of the unsolicited property received by a taxpayer may demonstrate the taxpayer's intent to exercise dominion and control over it all. For example, in two PLRs, the IRS held that the fair market value of all complimentary tickets received by a taxpayer were includible in income in the year in which he demonstrated intent to exercise dominion. In PLR 8109003, involving the gift by the taxpayer of most of one of two separate sets of season tickets, and all of the second, the fact that the taxpayer had given away most, but not all, of the complimentary tickets demonstrated his intent to exercise dominion over all of the tickets.[21] In PLR 8109004, the IRS treated the transfer of any of one series to a third party and the personal use of any of the other series as demonstrating an intent to exercise dominion over all of the tickets.

Character of Income

While Rev. Rul. 63–225 may be applied to chain-splits for purposes of timing, it should be read cautiously for purposes of character. The IRS treated the rights in the ruling as options subject to §1234. Option contracts, including those subject to §1234, are limited to "unilateral agreements that are inflexibly binding upon the purported vendor."[22]

In addition, while the IRS did treat the proceeds from the sale of the rights as short-term capital gain, it later recommended that the conclusion be modified to treat the gain as ordinary.[23] Though the revenue ruling was not modified, presumably, the right could still have been treated as an option subject to §1234, but would have had a basis equal to the ordinary income recognized when dominion and control was exercised by the taxpayer—the sale of the right. As a result, there would have been no further gain which could have been treated as short-term capital gain.

Conclusion

While income is often realized from a chain-split, it need not be realized at the time of the chain-split, or, possibly, ever, for federal income tax consequences. Taxable income is realized only if and when the taxpayer demonstrates his intent to exercise dominion and control over the chain-split coins.

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[21] PLR 8109003 (gift by the taxpayer of most of one of two separate sets of season tickets, and all of the second).

[22] *Saunders v. United States*, 450 F.2d 1047, 1049 (9th Cir. 1971); Lawler v. CIR, 78 F.2d 567, 568 (9th Cir. 1935); Malden Knitting Mills v. CIR, 42 T.C. 769, 777 (1964); Blick v. CIR, 31 T.C. 611, 622 (1958), aff'd 271 F.2d 928 (3rd Cir. 1959); Moore v. CIR, T.C. Memo. 1968–266.

[23] GCM 37452 (Mar 9, 1978) (the conclusion in Rev. Rul. 63–225 was not modified; however, GCM 32441 (Nov 19, 1962), which considered Rev. Rul. 63–225, was to be modified).

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