Disappearing Forks and Magical Airdrops

by David G. Chamberlain, Rodney P. Mock, and Kathryn Kisska-Schulze

David G. Chamberlain is an assistant professor of accounting, and Rodney P. Mock is the graduate tax program director and a professor of accounting, at California Polytechnic State University. Kathryn Kisska-Schulze is an assistant professor in the School of Accountancy at Clemson University.

In this article, the authors argue that the IRS misguides taxpayers because it confuses cryptocurrency hard forks and airdrops in newly issued Rev. Rul. 2019-24.

Introduction

On August 1, 2017, bitcoin cash (BCH) entered the cryptocurrency scene because of a hard fork in the bitcoin blockchain. The hard fork was the product of a dispute within the bitcoin community over whether to modify the software protocol underlying the cryptocurrency to increase the block size and improve scalability. The blockchain forked, and every bitcoin investor became the owner of one coin of BCH for each bitcoin owned. BCH opened at $294.60, reached a high of $426.11, and closed at $380.01 — the initial market capitalization for BCH was about $6.3 billion.

Thus, the stakes are high for correct tax treatment of the BCH fork. If the entire $6.3 billion is treated as income and taxed at the highest individual income tax rate, nearly $2.5 billion in potential Treasury revenue is at stake. The statute of limitations remains open for those who misreported their income and penalties could apply.

On October 9, the IRS released Rev. Rul. 2019-24, 2019-44 IRB 1004, which purports to address the tax treatment of hard forks. The ruling indicates that taxpayers who own a cryptocurrency that experiences a hard fork can be taxed on the full fair market value of the new cryptocurrency that emerges from the fork. The IRS construes the new cryptocurrency as “free money” — similar to prizes or treasure trove. The receipt of a new cryptocurrency in a hard fork, however, as this article illustrates, is by no means equivalent to receiving free stuff.

Receiving anything for nothing in this world is rare, except perhaps when it comes from Grandma. Anything free is typically of negligible value — a far cry from the $294.60 per bitcoin owned. In other words, receiving free money is

---

1 BCH is the official ticker for bitcoin cash. BTC is the ticker for bitcoin.
3 See Luke Graham, “A New Digital Currency Is About to Be Created as the Bitcoin Blockchain Is Forced to Split in Two,” CNBC, July 31, 2017. The maximum block size for bitcoin transactions was (and is) one megabyte. Under the BCH software protocol, block sizes up to eight megabytes are possible.
4 For simplicity, we refer to full cryptocurrency coins as the unit of measure. It is possible to own a fractional unit of a coin. For example, a satoshi — the smallest unit of bitcoin — is worth one 100-millionth of a bitcoin. All statements regarding bitcoin or BCH coins apply to fractional coins as well.
5 Data from coinmarketcap.com.
like coming across a flying unicorn or a Bigfoot sighting. We dream them to be true, but their existence is highly unlikely. The forked coins resulting from a hard fork come at a cost — namely, the dilution of the original cryptocurrency. If a new coin like BCH were truly free, at no cost to the underlying legacy coin, why not fork to infinity and beyond?

**Cryptocurrency Hard Forks**

Each time a hard fork occurs, another cryptocurrency is created. The cryptocurrency is only “new,” however, in the sense that it has a new name and is traded independently from the legacy coin. The forked cryptocurrency shares the same base software protocol as the legacy currency and, more importantly, the same digital history on the blockchain. Airdropped coins do not carry such electronic genetics.

To understand the difference between an airdropped coin and a forked coin, it is essential to first understand how cryptocurrency hard forks work. A cryptocurrency coin is a tradable digital asset that is created and transferred on a digital ledger known as the blockchain. As the name indicates, a blockchain is a series of blocks linked to each other in an append-only data structure. Each block contains ledger entries recording transactions involving the cryptocurrency — specifically, transactions that create or transfer coins.

In bitcoin (and BCH), blocks are created and transactions verified through a process known as mining: Miners compete with each other to solve cryptographic puzzles that give them the right to add a new block to the official blockchain, and are rewarded with a fixed number of newly minted bitcoins. All transactions involving the cryptocurrency that have ever occurred are recorded on the blockchain ledger, multiple copies of which are maintained by participating users on a public peer-to-peer network.

Every cryptocurrency is governed by a software protocol that specifies all aspects of the currency architecture, including block size, method of creating new coins, and format for transaction entries. Most cryptocurrencies are supported by a group of developers who maintain the software code, periodically making minor and major updates. When a major upgrade is released, all the miners generally agree to update their software, and mine future blocks under the modified protocol. Thus, software updates do not result in the creation of a new cryptocurrency.

But sometimes a split occurs among groups of miners and developers who disagree about the future direction of the cryptocurrency. In this case, the cryptocurrency undergoes a hard fork and splits into two cryptocurrencies: the legacy cryptocurrency and the forked cryptocurrency. The legacy currency will be governed by the original software while the forked currency will be governed by software modified by the renegade developers. The hard fork occurs at a specific block in the historic blockchain. From that point, each currency will be maintained on a separate blockchain: Some miners will add new blocks to the legacy blockchain, while others will add blocks to the forked blockchain. Because both cryptocurrencies share the same blockchain (that is, history of transactions) up to the point of the fork, all owners of a coin of the original currency will automatically own both a coin of the legacy currency and a coin of the forked currency. It is this juncture at which the IRS is incorrect in its recent revenue ruling.

---

10For an easily understandable discussion of the inner workings of cryptocurrencies like bitcoin, see Jan Felix Hoops, “An Introduction to Public and Private Distributed Ledgers,” in *Proceedings of the Seminars Future Internet (F) and Innovative Internet Technologies and Mobile Communication (ITM) 41-48* (Sept. 2017/2019). For a good description from the perspective of tax professionals, see Mary F. Voce and Pallav Raghuvanshi, “Blockchain and Cryptocurrency: Federal Income Tax Issues,” *Tax Notes*, Nov. 26, 2018, p. 1077. Note: Voce and Raghuvanshi mix up the terms “soft fork” and “hard fork” in their initial explanation at page 1081, but correct themselves when they analyze the tax effects of forks at pages 1089-1090.

11Mining is the only way new coins are created in bitcoin (and BCH). Other cryptocurrencies use other methods to create new blocks, such as proof-of-stake, which involves validators instead of miners. For simplicity, we use the term “miners” in this article.

12Such an update is what some might call a “soft fork,” especially if the miners do not all upgrade their software at once and the blockchain temporarily splits. Unlike “hard fork,” there is no single agreed-on definition of “soft fork” in the cryptocurrency community. A key distinction, however, is that a soft fork never results in a permanent split of the blockchain or the creation of a new cryptocurrency.

13However, the owner may not have dominion and control over the forked currency if, for example, the owner holds the original currency on an exchange that does not immediately recognize the new currency.
Hard Forks vs. Airdrops

A hard fork is nothing more than a split of the blockchain that results in the division of the original cryptocurrency’s coins. The mere division of an asset does not rise to the level of a realization event. After a hard fork, the legacy coin and the forked coin share a common history on the historic blockchain. The pre-fork events that gave rise to a specific coin of the original currency or resulted in its transfer are part of the common history of both coins. That is, even though the legacy coin and the forked coin can only be transferred separately after the fork, each coin was literally created and transferred in the same transactions that occurred before the fork.

In some respects the historic blockchain is similar to the DNA that a racehorse dam shares with her newborn foal. It is like the common chain of title that two lots share following the division of a parcel of land (regardless of whether it was voluntarily partitioned). In Gamble, the Tax Court did not offer an opinion on whether income was realized on the birth of the foal, which had been in utero when the dam was purchased. Likewise, in Heiner, the Supreme Court did not consider whether the partition of the parcel gave rise to a realization event. In neither case did the courts consider whether the taxpayers were receiving something for free. The foal’s birth and the land partition were clearly non-realization events. Both cases instead addressed the issue of how the taxpayer’s basis should be allocated. In Gamble, although the foal was clearly different in kind than the dam (like the forked and legacy cryptocurrencies), the Tax Court found that a portion of the price paid by the taxpayer to acquire the dam at auction should be allocated to the foal when it was later sold.

Before Rev. Rul. 2019-24, the only official guidance regarding cryptocurrency was Notice 2014-21, 2014-16 IRB 938, which was issued before the BCH hard fork had occurred, and thus unsurprisingly did not address the issue. In the absence of administrative guidance, various legal theories have developed on the proper tax treatment of hard forks. The American Bar Association and the American Institute of CPAs have weighed in on the issue. Both suggest that the IRS provide a safe harbor or election for 2017 under which the BCH fork (and other forks that occurred during that year) are treated as realization events. Unlike the IRS, both groups recommend that the value of the forked currency be recognized as zero at the time of the fork.

Although academics and commentators held differing views regarding hard forks, one clear issue was the proper treatment of an airdrop. An airdrop occurs when the holder of a cryptocurrency receives an unrelated currency on a promotional basis. This typically results from a marketing strategy by the creators of a new cryptocurrency to attract attention to an initial coin offering. Coins or tokens issued in an initial coin offering often entitle the owners to use a product or service that the issuer provides, so the promotional coins are intended to attract attention to those products or services in addition to promoting the new coin itself.

Airdrops can be equated to free food samples offered at Costco — largely worthless initially. They have zero historical linkage on the blockchain to the cryptocurrency holdings they are dropped on. In the tax world, airdrops are most similar to the receipt of a prize or treasure trove. They should be treated as ordinary income equal to their FMV under section 61. While not expressly listed in section 61, prizes, treasure trove, and airdrops all fall within the broader category of “income from whatever source derived.”

For more Tax Notes® Federal content, please visit www.taxnotes.com.
Crossing the Analytical Streams

The IRS fundamentally confuses hard forks with airdrops, reminiscent of crossing the streams in the 1984 movie Ghostbusters. As Harold Ramis informs Bill Murray in the movie, crossing the streams is “bad . . . very bad!” But, like Murray, the IRS appears “fuzzy on the whole good/bad thing.” Intending to address the proper tax treatment for the BCH hard fork (and other hard forks), the ruling provides two examples that demonstrate the IRS’s misunderstanding of the distinction between an airdrop and a hard fork.

The examples clearly illustrate that the IRS does not understand that owners of an original coin automatically become owners of the forked coin (on a 1:1 basis) as a result of a hard fork. Instead, the IRS suggests the original coin owners can come to own forked coins only if they later receive them through an airdrop. Readers of the ruling who are knowledgeable about cryptocurrency are left scratching their heads in both examples about what happened to the coins created through the hard fork. The forked coins seem to have disappeared — only to reemerge if the fork is followed by an airdrop. It is anybody’s guess who, if anyone, owns the disappearing forked coins immediately after the fork.

In the first example, the ruling describes a situation in which Taxpayer A owns 50 units of a cryptocurrency (Crypto M). The ruling indicates that Crypto M experiences a hard fork, resulting in the creation of a new currency (Crypto N), but then states, “Crypto N is not airdropped or otherwise transferred to an account owned or controlled by A.” The ruling then concludes that the taxpayer does not have gross income under section 61 because no units of the new cryptocurrency were received. The ruling shows that the IRS does not understand that the taxpayer will automatically own the new cryptocurrency if the original currency does indeed undergo a hard fork.

In the second example, the ruling describes a situation in which a different taxpayer (B) owns 50 units of a cryptocurrency (Crypto R). This cryptocurrency also experiences a hard fork, resulting in the creation of a new currency (Crypto S). In this example, the taxpayer does receive units of the new cryptocurrency, but the units are received through an airdrop instead of by virtue of the hard fork itself. To be specific, the taxpayer receives 25 units of Crypto S that are worth $50. The airdrop is the sole way the taxpayer obtains ownership of units of Crypto S. This is clear because the example states that the taxpayer owns only 25 units of Crypto S rather than the 75 units the taxpayer would own if 50 units had automatically been created in the hard fork. The ruling concludes that this taxpayer realizes and recognizes $50 of ordinary income because Crypto S represents an accession to wealth that the taxpayer has dominion and control over.

The problem with the ruling is that it blurs the analytical lines between a hard fork and an airdrop. The tax law is clear on airdrops. An airdrop involves an entirely unrelated cryptocurrency that is received for free. Any holder of a cryptocurrency can receive an airdrop — receipt eligibility has nothing to do with whether the currency has undergone a hard fork. Currency received in a hard fork, on the other hand, is not free in any sense of the term. It comes at a cost borne by the legacy currency. As discussed above, a hard fork is similar to the partition of a parcel of land into lots. It is also similar to a nontaxable stock split.

Circling back to Ramis’s warning that something very bad will happen if you cross the streams: While all life as we know it may not stop

---

23 It is also clear that the IRS is not mixing up hard forks and soft forks because a soft fork would not result in the creation of a new cryptocurrency. See supra note 12. Nor is the IRS implying that the taxpayer does not own the forked currency merely because the currency is dropped on a wallet managed through a cryptocurrency exchange that does not recognize the new currency and therefore does not credit it to the taxpayer’s account. Although the ruling specifies that taxpayers in that situation would not have income because they do not have “dominion and control” over the income, the second example by its terms involves a case in which the taxpayer does have dominion and control and yet the ruling still misconstrues how coin ownership works in the context of a hard fork.

---

Note that, as explained in this article, the forked coin is not “otherwise transferred” through the fork. There is no “transfer” any more than there is when an ownership interest in a parcel of land is divided into ownership of two lots after a partition. The same owner continues to own the coins or the land throughout.
and every molecule in our bodies may not explode at the speed of light as a consequence of crossing these analytical streams, there is up to $2.5 billion in potential 2017 tax revenue at issue. The IRS must get this one right. Perhaps once the IRS understands how hard forks work, it may lean more toward a division analysis. Despite that, if the IRS really believes that obtaining forked currency is a realization event, it is imperative that the agency accurately describes the event taking place. It is entirely possible that taxpayers and practitioners will take the position that the ruling does not apply to their situations because their BCH coins were not received via an airdrop, but rather a hard fork.

The Realization Requirement

It is worrisome that the IRS is fuzzy on distinguishing between an airdrop and a hard fork. That confusion indicates that the IRS does not fully appreciate or understand the event or non-event transpiring when a hard fork occurs. The IRS’s legal analysis makes no mention of the seminal U.S. Supreme Court case, Macomber.24 As clarified by the Court, the mere division of an asset (such as a stock split) does not give rise to a realization event. The taxpayer receives nothing new — and nothing is taken away — when an asset merely splits. While one may have what appears to be a new asset, it is fundamentally nothing more than a part of the old asset. For example, when one takes the tires off of a vehicle, no one would argue there should be any income tax consequences.

Although the IRS failed to mention Macomber in its ruling, the U.S. Supreme Court’s holding in Glenshaw Glass25 was referenced. Glenshaw Glass provides that income is realized when there is an “undeniable accession to wealth, clearly realized, over which a taxpayer has complete dominion.” Macomber and Glenshaw Glass work together: They are two sides of the same coin. The airdropping of free cryptocurrency into a bitcoin owner’s electronic wallet would indeed be an event that meets the Glenshaw Glass requirements. Obtaining cryptocurrency from a hard fork is an entirely different matter — it does not constitute an accession to wealth but is instead a division of an existing asset that is not a realization event, consistent with the stock dividend in Macomber that merely diluted (that is, divided) the taxpayer’s stock holding.

Conclusion

It is unreasonable for the IRS to create an artificial realization event for taxpayers who received BCH. Many bitcoin holders had no voice in the creation of BCH. It is inequitable to require them to realize income because of an asset division that was forced upon them by unrelated parties. Those who received forked BCH and who held onto it should not have income tax consequences. The IRS is manufacturing a nonexistent realization event: A division is not a realization event.

Airdrops, in contrast, result in clear realization because cryptocurrency owners are receiving something new. Hard forks, however, are significantly more complicated. Their creation strikes at the heart of our constitutional notions of income. Forcing realization creates taxpayer fairness issues, administrative issues, and wherewithal-to-pay issues. These magical airdrops of cryptocurrency in the context of hard forks — as the IRS suggests in the ruling — simply do not occur. We recommend the IRS revoke the ruling and go back to the drawing board on hard forks. Leave the airdrops to the food sampling stations at Costco.

---