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Report No. 1478
June 18, 2023

The Honorable Lily Batchelder
Assistant Secretary (Tax Policy)
Department of the Treasury
1500 Pennsylvania Avenue, NW
Washington, DC 20220

The Honorable Daniel I. Werfel
Commissioner
Internal Revenue Service
1111 Constitution Avenue, NW
Washington, DC 20224

The Honorable William M. Paul
Principal Deputy Chief Counsel
and Deputy Chief Counsel
(Technical)
Internal Revenue Service
1111 Constitution Avenue, NW
Washington, DC 20224

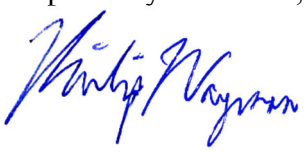
Re: Report No. 1478 - Report on Notice 2023-27 and Nonfungible Tokens (NFTs)

Dear Ms. Batchelder and Messrs. Werfel and Paul:

I am pleased to submit Report No. 1478 of the Tax Section of the New York State Bar Association, discussing Notice 2023-27 and nonfungible tokens (NFTs).

We appreciate your consideration of our Report. If you have any questions or comments, please feel free to contact us and we will be glad to assist in any way.

Respectfully submitted,



Philip Wagman
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Enclosure

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Report No. 1478

New York State Bar Association Tax Section

REPORT ON NOTICE 2023-27 AND NONFUNGIBLE TOKENS (NFTs)

June 18, 2023

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Report on Notice 2023-27 and Nonfungible Tokens (NFTs)

The New York State Bar Association Tax Section is submitting this report (the "***Report***")[1] to provide comments on Notice 2023-27 (the "***Notice***") issued by the Internal Revenue Service (the "***IRS***") on March 21, 2023, which announces that the Department of the Treasury ("***Treasury***") and the IRS intend to issue guidance on the treatment of nonfungible tokens ("***NFTs***") as collectibles under section 408(m) of the Internal Revenue Code of 1986, as amended (the "***Code***")[2] and proposes a "look-through analysis" for purposes of making this determination. The Notice requests comments on the proposed look-through analysis as well as on certain related questions regarding the tax treatment of NFTs.

We commend Treasury and the IRS for their significant and ongoing efforts to provide guidance regarding the tax treatment of digital assets. The recommendations in this Report are principally intended to ensure that the guidance set forth in the Notice, as well as any related future guidance, is refined to (x) reflect the technological and legal limitations of blockchain-based digital assets and (y) avoid potentially unintended inferences with respect to the tax treatment of conventional financial derivatives as well as the scope of broker information reporting under section 6045.

Part I of the Report provides relevant background on NFTs, section 408(m) and the Notice. Part II summarizes our recommendations and Part III contains a detailed discussion of each recommendation.

I. Background

A. NFTs

Like a fungible cryptocurrency, an NFT is a digital ledger entry on a blockchain that can be owned by and transferred between network participants using the blockchain's decentralized consensus mechanism to verify ownership and transfers. As described in our 2022 report on cryptocurrency and other fungible digital assets (the "***2022 Report***"), the two essential features of a blockchain that enable this decentralized consensus are the distributed ledger and the consensus mechanism.[3]

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[1] The principal author of this Report is Lorenz Haselberger. Helpful comments were provided by Andy Braiterman, Peter Benesch, Garrett Brodeur, Robert Cassanos, Peter Connors, Lucy Farr, Jason Factor, Jonathan Gifford, Robert Kantowitz, Jiyeon Lee-Lim, Eric Lowenstein, John Lutz, Andrew Meiser, David Miller, Gillian Moldowan, John Narducci, Eschi Rahimi-Laridjani, Arvind Ravichandran, Yaron Reich, Jason Sacks, Gil Shauly, Michael Schler, Linda Swartz, Nathan Tasso, Philip Wagman, Daisy Wang, Libin Zhang and Katsiaryna Zinavenka. This Report reflects solely the views of the Tax Section of the New York State Bar Association ("***NYSBA***") and not those of NYSBA's Executive Committee or House of Delegates.

[2] Except as otherwise indicated, all references to sections herein are to sections of the Code.

[3] *See* New York State Bar Association Tax Section, *Report on Cryptocurrency and Other Fungible Digital Assets*, Report No. 1461 (April 18, 2022).

A distributed ledger can be thought of as a spreadsheet that is broadcast to network participants describing the public network address of the current owner of every digital asset on the blockchain and the history of transactions on the blockchain. In turn, a consensus mechanism is a decentralized, cryptographically secured process of agreement by which a majority of network participants can assent to one "true" global dataset of ownership and transaction history — a so-called "blockchain" — to be recorded on the distributed ledger. As described in our 2020 report on cryptocurrency (the "***2020 Report***"), each public network address is controlled through an associated "private key," which is tied to the public address through cryptography and can be used to pseudonymously receive and transfer digital assets in the public address.[4]

Very generally, an NFT has a unique identifying number or string of characters (a "***token ID***") that renders it readily distinguishable from other digital ledger entries on the applicable blockchain. Thus, for example, if Taxpayer A transfers an NFT to the public blockchain address of Taxpayer B, which already holds 10 NFTs, it is possible for Taxpayer B to return to Taxpayer A the NFT that Taxpayer A originally transferred.[5] In contrast, if Taxpayer A transfers a unit of fungible cryptocurrency to the public blockchain address of Taxpayer B, which already holds 10 units of that cryptocurrency, and Taxpayer B re-transfers a unit of the cryptocurrency to Taxpayer A, we understand that it may be difficult to determine whether Taxpayer A received the same unit it originally transferred to Taxpayer B or units already held through Taxpayer B's public blockchain address.[6]

An NFT may embed or reference a digital image or other digital file. In some cases, the data that comprises the digital file is inscribed directly on the blockchain ledger entry comprising the NFT (for example, a simple, pixelated image). However, because the amount of data that can be stored within a blockchain ledger entry is limited, we understand that NFTs typically reference digital files by embedding a link to a publicly accessible webpage that hosts the digital file. The NFT may cease to reference the digital file at any time if the weblink is corrupted or the underlying webpage is removed or altered (in which case the NFT continues to exist as a blockchain ledger entry, much as a browser bookmark or social media post with a broken weblink continues to exist even after the underlying website becomes inaccessible).[7] In such

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4 *See* New York State Bar Association Tax Section, *Report on the Taxation of Cryptocurrency*, Report No. 1433 (Jan. 26, 2020).

5 This tracing is possible even if each of the 11 NFTs reference an identical digital file (for example, an identical image).

6 We note in this regard that the distinction between NFTs and fungible cryptocurrencies is not entirely clear and may change over time based on new technological developments. For example, although Bitcoin has historically been viewed as a fungible cryptocurrency, we understand that in view of certain alterations to the Bitcoin blockchain protocol, it may now be possible to assign a unique identifying number to each "satoshi" (the smallest unit of Bitcoin that can be transferred) and inscribe the satoshi with unique data. *See, e.g.*, Binance Academy, *What Are Ordinals? An Overview of Bitcoin NFTs* (Mar. 21, 2023), *available at* https://academy.binance.com/en/articles/what-are-ordinals-an-overview-of-bitcoin-nfts.

7 *See, e.g.*, Mason Marcobello, *Are Your NFTs Safe? How to Protect Digital Assets From Disaster*, Decrypt (May 6, 2023), *available at* https://decrypt.co/138676/are-your-nfts-safe-how-to-protect-digital-assets-from-disaster; Chandraveer Mathur, *Million-Dollar NFTs Could Disappear With Time If They Aren't*

circumstances, the NFT holder may have no legal recourse unless it entered into a separate, off-blockchain agreement with a third party requiring the third party to maintain the website.

In general, an NFT can be created ("***minted***") on a blockchain by paying a transaction fee denominated in digital assets and providing a digital media file to be embedded in or referenced by the blockchain ledger entry. Since any image or digital file can be minted into an NFT pseudonymously, the creator of the NFT is not necessarily the creator of the underlying content represented by the digital file and does not necessarily hold any copyright or other legal right to the underlying content.

We understand that an NFT generally does not, in and of itself, convey a copyright in a referenced digital file or the underlying content represented by the digital file.[8] Under Federal copyright law, a copyrighted work and its copyright are separate interests: transfer of a copyrighted work does not transfer the related copyright absent an express agreement to assign or license the copyright.[9] In addition, a person who buys a physical copy of a copyrighted work from the copyright owner (for example, purchases a painting from its painter) has the right to display, sell or otherwise dispose of that purchased copy under the "first-sale" doctrine.[10] It is possible that the first-sale doctrine also applies when a person buys an NFT that references digital content, such as an image. However, our understanding is that it is not clear whether or to what extent the first-sale doctrine applies in such a case.[11]

Maintained, NewsBytes (March 28, 2021); *available at* https://www.newsbytesapp.com/news/science/expensive-nfts-are-also-prone-to-url-decay/story.

[8] *See, e.g.*, Michael D. Murray, *Transfers and Licensing of Copyrights to NFT Purchasers*, 6 Stan. J. Blockchain L. & Policy 119, 121 (2023) ("An NFT does not automatically provide ownership or control of the copyright to the artwork linked to the NFT."); *Memes for Sale? Making Sense of NFTs*, Harvard Law Today (May 19, 2021) (interview with Professor Rebecca Tushnet) ("From an IP perspective, NFTs don't change anything. If you didn't have the rights to distribute a work before, you don't have them now. . . . In one sense, the purchaser [of an NFT] acquires whatever the art world thinks they have acquired. They definitely do not own the copyright to the underlying work unless it is explicitly transferred. Any licensing would have to happen separately, though if the copyright owner consented to the creation of the NFT there is probably at least an implicit license to make whatever copies are required for the ordinary operation of the NFT process.").

[9] *See* 17 U.S. Code section 202 ("Ownership of a copyright, or of any of the exclusive rights under a copyright, is distinct from ownership of any material object in which the work is embodied. Transfer of ownership of any material object, including the copy or phonorecord in which the work is first fixed, does not of itself convey any rights in the copyrighted work embodied in the object; nor, in the absence of an agreement, does transfer of ownership of a copyright or of any exclusive rights under a copyright convey property rights in any material object."). In general, in the case of a visual work of art, relevant rights under a copyright of that art would include *inter alia* the rights (i) to reproduce the copyrighted work in copies; (ii) to prepare derivative works based upon the copyrighted work; (iii) to distribute copies of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending; and (iv) to display the copyrighted work publicly. *See* 17 U.S. Code section 106.

[10] *See* 17 U.S. Code section 109 (codifying the first-sale doctrine).

[11] *See, e.g.*, Stuart Levi et al., *NFTs Raise Novel and Traditional IP and Contract Issues*, Bloomberg Law Practical Guidance (Mar. 2021).

To obtain the copyright, or a license of copyright rights, in a digital file referenced by an NFT, the NFT owner can enter into an off-blockchain legal arrangement with the owner of the copyright. Certain NFTs are supported by off-blockchain sponsors that state, in user agreements or terms of service, that they grant the owners of their NFTs copyright rights in the content referenced by the NFTs. In addition, some NFTs are created and sold on centralized marketplaces pursuant to user agreements or terms of service that state the NFT creator grants certain rights to the NFT owner in the digital content referenced by the NFT, including the right to make a display of that content for personal, noncommercial purposes and specified other display rights. However, in some cases it may be unclear whether such arrangements are legally effective (for example, because there may be uncertainty regarding whether the sponsor or creator of an NFT holds a copyright in the content referenced by the NFT).

In addition, we understand that an NFT generally cannot convey ownership of, or legal rights in, underlying physical assets or services absent enforceable off-blockchain legal arrangements. Certain NFTs are supported by off-blockchain sponsors that hold themselves out as giving NFT holders access to physical assets or services (for example, through user agreements or marketing materials published on a public website). Examples include NFTs marketed as exchangeable for physical artwork, gems or consumer goods and NFTs marketed as providing access to digital or non-digital services like web applications or concerts. However, in such cases, it may be unclear whether the NFT holder has a legal entitlement to the proffered assets or services or is simply relying on the reputation or non-binding marketing materials of the sponsor for the ability to redeem or utilize the NFT.

The characteristics of NFTs described above can be illustrated through an example: the now-famous "Beeple" NFT, which sold for $69.3 million in an auction by Christie's in March 2021.[12] The asset acquired by the auction purchaser can be described as follows:

- The Beeple NFT was minted by or on behalf of digital artist Mike Winkelmann, also known as Beeple. Beeple created digital images over a period of 5,000 days and subsequently assembled them into a single digital collage, which is hosted on public webpages that are referenced by the NFT in the manner described below.

- The NFT is a digital ledger entry on the Ethereum blockchain that uses the so-called "ERC-721" nonfungible token standard. Each ERC-721 ledger entry has an alphanumeric "contract address" and numeric token ID that, taken together, render the ledger entry uniquely identifiable on the blockchain. The contract address and token ID for the Beeple NFT are 0x2a46f2ffd99e19a89476e2f62270e0a35bbf0756 and 40913, respectively.[13]

- The data inscribed on the ledger entry constituting the Beeple NFT is publicly accessible through the NFT's contract address and token ID. That data reads as follows:

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[12] *See* Online Auction 20447 (Beeple | The First 5000 Days), Christie's (last accessed June 12, 2023 10:15am), https://onlineonly.christies.com/s/beeple-first-5000-days/beeple-b-1981-1/112924.

[13] *See id.*

{“title”: “EVERYDAYS: THE FIRST 5000 DAYS”, “name”: “EVERYDAYS: THE FIRST 5000 DAYS”, “type”: “object”, “imageUrl”: “https://ipfsgateway.makersplace.com/ipfs/QmZ15eQX8FPjfrtdX3QYbrhZxJpbLpvDpsgb2p3VEH8Bqq”, “description”: “I made a picture from start to finish every single day from May 1st, 2007 - January 7th, 2021. This is every [redacted] one of those pictures.”, “attributes”: [{“trait_type”: “Creator”, “value”: “beeple”}], “properties”: {“name”: {“type”: “string”, “description”: “EVERYDAYS: THE FIRST 5000 DAYS”}, “description”: {“type”: “string”, “description”: “I made a picture from start to finish every single day from May 1st, 2007 - January 7th, 2021. This is every [redacted] one of those pictures.”}, “preview_media_file”: {“type”: “string”, “description”: “https://ipfsgateway.makersplace.com/ipfs/QmZ15eQX8FPjfrtdX3QYbrhZxJpbLpvDpsgb2p3VEH8Bqq”}, “preview_media_file_type”: {“type”: “string”, “description”: “jpg”}, “created_at”: {“type”: “datetime”, “description”: “2021-02-16T00:07:31.674688+00:00”}, “total_supply”: {“type”: “int”, “description”: 1}, “digital_media_signature_type”: {“type”: “string”, “description”: “SHA-256”}, “digital_media_signature”: {“type”: “string”, “description”: “6314b55cc6ff34f67a18e1ccc977234b803f7a5497b94f1f994ac9d1b896a017”}, “raw_media_file”: {“type”: “string”, “description”: “https://ipfsgateway.makersplace.com/ipfs/QmXkxpwAHCtDXbbZHUwqtFucG1RMS6T87vi1CdvadfL7qA”}}}[14]

- The data includes several links to publicly accessible webpages that display Beeple’s collage, shown as underlined. Any member of the public can access the same webpages and underlying Beeple collage using those same weblinks.

- Each ERC-721 ledger entry also contains a variable “owner” field that reflects the public wallet address through which the ledger entry is “held” or “owned” at any given time. The ledger entry comprising the Beeple NFT currently reflects that it is held through public wallet address 0x8bB37fb0F0462bB3FC8995cf17721f8e4a399629.[15]

We understand that in the March 2021 auction, Christie’s effected the transfer of the Beeple NFT to the purchaser by changing the public wallet address associated with the above-

[14] The data comprising an ERC-721 ledger entry can be accessed on Etherscan, an Ethereum blockchain explorer, by entering the ledger entry’s token ID into the “tokenURI” field. *See* Etherscan (last accessed June 12, 2023), https://etherscan.io/token/0x2a46f2ffd99e19a89476e2f62270e0a35bbf0756#readContract.

[15] The public wallet address of the “owner” of a particular ERC-721 ledger entry can be accessed on Etherscan by entering the ledger entry’s token ID into the “ownerOf” field. *See supra* note 14.

referenced ledger entry from a public wallet address maintained by Christie's and/or the seller of the NFT to a public wallet address controlled by the purchaser. In the absence of off-blockchain legal arrangements,[16] we understand that the entirety of what the purchaser acquired for $69.3 million is the foregoing change in the ledger entry's associated public wallet address (as well as the concomitant ability to further change that address by controlling the private keys associated with the purchaser's public wallet address).

B. Section 408(m)

Section 408(m) provides that the acquisition of any "collectible" by an individual retirement account or an individually directed account in a section 401(a) qualified plan is treated as a distribution from the account equal to the cost of the collectible. For these purposes, section 408(m)(2) defines the term "collectible" as:

> (A) any work of art,
> (B) any rug or antique,
> (C) any metal or gem,
> (D) any stamp or coin,
> (E) any alcoholic beverage, or
> (F) any other tangible personal property specified by the Secretary for purposes of [section 408(m)].

Section 408(m) was enacted as part of the Economic Recovery Tax Act of 1981.[17] The House Ways and Means Committee Report accompanying the Act provided the following explanation of section 408(m):

> In recent years there has been increasing interest in investing retirement savings in collectibles (coins, antiques, art, stamp collections, etc.) under IRAs and individually-directed accounts in qualified plans. The committee is concerned that collectibles divert retirement savings from thrift institutions and other traditional investment media and that investments in collectibles do not contribute to productive capital formation.[18]

In 1984, Treasury issued proposed regulations under section 408(m) that would have expanded collectibles to include any musical instrument and any historical object and broadly defined an impermissible "acquisition" within the meaning of section 408(m) to include "any method by which an individual retirement account or individually-directed account may directly

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[16] We are not aware of any such off-blockchain legal arrangements. *See* Taylor Locke, *Millionaire Artist Beeple: This Is The Very Important Thing 'I Think People Don't Understand' About Buying NFTs*, CNBC (Mar. 29, 2021), *available at* https://www.cnbc.com/2021/03/26/digital-artist-beeple-common-misunderstanding-about-nfts.html.

[17] Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, section 314(b)(1), 95 Stat. 172, 286.

[18] H.R. Rep. No. 97-201 at 143 (1981).

or indirectly acquire a collectible."[19] The proposed regulations were never finalized and never became effective.

Congress later amended section 408(m) on three separate occasions to exclude certain coins and metals from the definition of collectible:

- The Tax Reform Act of 1986 added section 408(m)(3), which excluded certain gold and silver coins from the definition of collectible.[20]

- The Technical and Miscellaneous Revenue Act of 1988 amended section 408(m)(3) to exclude state-issued coins from the definition of collectible.[21]

- The Taxpayer Relief Act of 1997 further amended section 408(m)(3) to exclude gold, silver, platinum and palladium bullion, as well as platinum coins, from the definition of collectible.[22]

There is little legislative history explaining Congress's rationale for excluding coins and bullion from the definition of collectible. The Senate Finance Committee Report accompanying the 1997 amendment of section 408(m)(3) noted only that the Senate Finance Committee "believes that IRAs should not be precluded from investing in bullion."[23]

The Taxpayer Relief Act of 1997 also lowered the highest individual long-term capital gains tax rate from 28 percent to 20 percent, except for capital gains from collectibles as defined in section 408(m)(2), without regard to the exclusions in section 408(m)(3) for coins and bullion. Accordingly, under section 1(h)(4), the highest individual long-term capital gains tax rate from the disposition of section 408(m) collectibles, as well as coins and bullion otherwise excluded from the definition of collectible under section 408(m)(3), is currently 28 percent. Hereinafter, we refer to collectibles subject to the 28 percent tax rate as "***section 1(h)(4) collectibles***."

Although the legislative history of the Taxpayer Relief Act of 1997 does not specifically address why the higher 28 percent rate was retained for section 1(h)(4) collectibles, the Senate Finance Committee report accompanying the Act explained the rate reduction for non-collectible capital gain assets as follows:

> The Committee believes it is important that tax policy be conducive to economic growth. Economic growth cannot occur without saving, investment, and the willingness of individuals to take risks. The greater the pool of savings, the

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19 *See* Proposed Treasury regulations section 1.408-10(b), 49 F.R. 2081 (Jan 23, 1984).

20 *See* Tax Reform Act of 1986, Pub. L. No. 99-514, section 1144(a), 100 Stat. 2085, 2490.

21 *See* Technical and Miscellaneous Revenue Act of 1988, Pub. L. No. 100-647, section 6057(a), 102 Stat. 3342, 3698.

22 *See* Taxpayer Relief Act of 1997, Pub. L. No. 105-34, section 304(a), 111 Stat. 788, 831.

23 S. Rep. No. 105-33 at 29 (1997).

> greater the monies available for business investment. It is through such investment that the United States' economy can increase output and productivity. It is through increases in productivity that workers earn higher real wages. Hence, greater saving is necessary for all Americans to benefit through a higher standard of living.
>
> The Committee believes that, by reducing the effective tax rates on capital gains, American households will respond by increasing saving. The Committee believes it is important to encourage risk taking and believes a reduction in the taxation of capital gains will have that effect. The Committee also believes that a reduction in the taxation of capital gains will improve the efficiency of the capital markets, because the taxation of capital gains upon realization encourages investors who have accrued past gains to keep their monies "locked in" to such investment even when better investment opportunities present themselves. A reduction in the taxation of capital gains should reduce this "lock in" effect.

As commentators have observed, the statutorily enumerated categories of collectibles set forth in section 408(m) may not cover many items that fall within the conventional understanding of the term collectible, including sports and trading cards, dolls and figurines, comic books, magazines, stuffed animals and video games.[24] Conversely, certain assets that do not appear to fall within the conventional definition of the term collectible — such as gold bullion — are treated as section 1(h)(4) collectibles.

C. The Notice

The Notice proposes a "look-through analysis" for purposes of determining whether an NFT constitutes a section 408(m) collectible:

> An NFT is a unique digital identifier that is recorded using distributed ledger technology and may be used to certify authenticity and ownership of an associated right or asset. Ownership of an NFT may provide the holder a right with respect to a digital file (such as a digital image, digital music, a digital trading card, or a digital sports moment) that typically is separate from the NFT. Alternatively, NFT ownership may provide the holder a right with respect to an asset that is not a digital file, such as a right to attend a ticketed event, or certify ownership of a physical item. For purposes of this notice, the right that an NFT provides or the ownership of an asset that an NFT certifies is referred to as the NFT's associated right or asset.
> . . .
>
> Pending the issuance of . . . guidance, the IRS intends to determine whether an NFT constitutes a section 408(m) collectible by analyzing whether the NFT's associated right or asset is a section 408(m) collectible (referred to in this notice

[24] *See, e.g.*, Libin Zhang, *Taxation of Collectibles and Other Actual Physical Things*, Tax Notes Federal (May 23, 2022).

> as the "look-through analysis"). Under the look-through analysis, an NFT constitutes a section 408(m) collectible if the NFT's associated right or asset is a section 408(m) collectible. For example, a gem is a section 408(m) collectible under section 408(m)(2)(C), and therefore an NFT that certifies ownership of a gem constitutes a section 408(m) collectible. Similarly, an NFT does not constitute a section 408(m) collectible if the NFT's associated right or asset is not a section 408(m) collectible. For example, a right to use or develop a "plot of land" in a virtual environment generally is not a section 408(m) collectible, and therefore, an NFT that provides a right to use or develop the "plot of land" in the virtual environment generally does not constitute a section 408(m) collectible.
>
> Applying the look-through analysis to an NFT if its associated right or asset is a digital file raises the question as to whether the digital file constitutes a "work of art" under section 408(m)(2)(A) (in which case, the NFT would be a section 408(m) collectible). The Treasury Department and the IRS are considering the extent to which a digital file may constitute a "work of art" under section 408(m)(2)(A).

The Notice also observes in a footnote that "[a] digital file is not the same as a digital asset, as defined in section 6045(g)," and that "[f]or purposes of reporting by brokers under section 6045(g), a digital asset is defined as, except as provided by the Secretary, any digital representation of value that is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary."

The Notice asks for comments on "any aspects of NFTs that might affect the treatment of an NFT as a section 408(m) collectible," and it includes a list of questions relating to its proposed "look-through analysis" and other issues concerning NFTs.[25]

The recommendations in this Report relate principally to the proposed look-through analysis and whether it provides an appropriate framework for determining the classification of NFTs and other digital assets as section 408(m) collectibles. In this regard, we note that the acquisition of digital assets by a retirement account may raise other issues not addressed by this Report, including the application of the rules for prohibited transactions under section 4975 (which prohibit, among other things, the personal use of account assets by a beneficiary and may cause an otherwise qualifying individual retirement account that enters into a prohibited transaction to lose its status as such under section 408(e)(2)) as well as non-tax restrictions that may apply to investments by retirement accounts in NFTs or other digital assets.

II. Summary of Recommendations

This Report's recommendations are summarized as follows:

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[25] In our discussion of issues in Part III below, we have indicated the questions in the Notice to which each section of the discussion responds.

A. We do not believe it is necessary to define the term "NFT" for purposes of issuing guidance on the application of section 408(m) to digital assets, or that such guidance should be limited to nonfungible digital assets. However, if Treasury and the IRS define the term NFT for these purposes, they should adopt a definition that (a) is consistent with the definition of "digital asset" in section 6045(g) and (b) does not imply that a digital asset, in and of itself (that is, in the absence of off-blockchain legal arrangements), necessarily conveys legal rights or entitlements in underlying off-blockchain assets or services. For example, Treasury and the IRS could reasonably define the term NFT as "any nonfungible digital representation of value that is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary."

B. As regards the determination of whether an NFT that references a digital file constitutes a section 408(m) "work of art":

1. Treasury and the IRS should expressly consider the threshold question of whether a section 408(m) "work of art" can be intangible, taking into account the text and structure of section 408(m) as well as applicable authorities on statutory construction.

2. Assuming that Treasury and the IRS conclude that a section 408(m) "work of art" can be intangible, they should replace the Notice's "look-through analysis" with guidance on the considerations relevant to the determination of when an NFT constitutes a "work of art." Because an NFT is a digital blockchain ledger entry that may not convey rights in a referenced digital file or the underlying content represented by the file, it may not be clear what "associated rights" to "look through" to in applying the look-through analysis; and the question of what "associated rights" the NFT holder possesses in any event appears not to be the only consideration that is relevant to the determination of whether an NFT constitutes a "work of art." Although we do not recommend a particular alternative approach, we believe that one reasonable approach would be to treat an NFT that references a digital file as a "work of art" if (a) the NFT is minted or promoted by the creator of the content represented by the digital file, (b) such content would constitute a section 408(m) "work of art" in its original manifestation or if the creator had created it in physical form and (c) the NFT holder has a right to display such content, generally comparable to the display right that the purchaser of a physical work of art obtains. In cases where it is uncertain whether the NFT holder has a legally enforceable display right, Treasury and the IRS could consider whether an NFT can nonetheless, at least in some circumstances, constitute a "work of art."

3. In addition to or in place of the foregoing recommendations, Treasury and the IRS should consider requesting that Congress (x) evaluate whether some or all digital assets should be treated as section 408(m) collectibles

and (y) if appropriate, expand the scope of section 408(m) to specifically identify such digital assets as collectibles.

C. Treasury and the IRS should clarify that with respect to an NFT that references or purports to reference an underlying physical asset such as a painting, gem or metal, the determination of whether and to what extent the NFT is a section 408(m) collectible is made under existing tax-ownership principles.

D. Treasury and the IRS should clarify the treatment of "airdrops" of NFTs as gross income. Consistent with our recommendations in the 2020 Report, although we do not recommend a specific approach to the taxation of airdrops of NFTs, we recommend that if Treasury and the IRS treat fungible digital assets received as a consequence of airdrops or hard forks as accessions to wealth, they also treat NFTs received in airdrops as accessions to wealth.

E. Treasury and the IRS should clarify that an NFT may be a "digital asset" for purposes of section 6045 even if it references a digital file that is not a digital asset.

F. Treasury and the IRS should provide guidance with respect to:

1. The tax treatment of NFT creators,

2. The application of the 1998 software regulations to NFTs, and

3. The treatment of NFTs that participate in an underlying algorithmic activity.

III. Discussion

A. Definition of NFT[26]

1. Overview

The Notice defines an NFT as "a unique digital identifier that is recorded using distributed ledger technology and may be used to certify authenticity and ownership of an associated right or asset." We agree in principle that an NFT is "a unique digital identifier that is recorded using distributed ledger technology." However, the remainder of the Notice's definition could be understood to imply that an NFT can, in and of itself, convey legal rights or entitlements to off-blockchain assets or services. As described in Part I.A, an NFT is a digital blockchain ledger entry that may not convey legal rights or entitlements to off-blockchain assets or services absent enforceable, conventional legal arrangements that convey such rights.

[26] Part III.A responds to question 1 in the Notice: "Does this notice provide an accurate definition of an NFT or are there other definitions of NFTs that should be used in future guidance?"

2. Recommendation

We do not believe it is necessary to define the term NFT or distinguish NFTs from fungible digital assets for purposes of issuing guidance on the application of section 408(m) to digital assets, or that such guidance should be limited to nonfungible digital assets.

As described in more detail in Part III.B.2 of the Report, the determination that a particular digital asset qualifies as a "work of art" for purposes of section 408(m) inherently appears to require that the digital asset be distinguishable from other, similar digital assets, not least to establish some factual connection between the digital asset and a particular artist and her or his artistic content. In other contexts, however, a fungible digital asset could constitute a section 408(m) collectible — for example, if the fungible digital asset is treated as tax ownership of an underlying collectible that is or may be fungible (such as a metal or gem) under the principles discussed in Part III.C.

If Treasury and the IRS believe it is necessary to define the term NFT for purposes of section 408(m), we recommend that they adopt a definition that is (a) consistent with the definition of "digital asset" in section 6045(g) — which defines that term as "any digital representation of value that is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary" — and (b) does not imply that a digital asset, in and of itself (that is, in the absence of off-blockchain legal arrangements), necessarily conveys legal rights or entitlements in underlying off-blockchain assets or services. For example, Treasury and the IRS could reasonably define an NFT as "any nonfungible digital representation of value that is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary."

B. NFTs That Reference Digital Files[27]

Under the Notice's look-through analysis, "an NFT constitutes a section 408(m) collectible if the NFT's associated right or asset is a section 408(m) collectible." In the case of an NFT that references a digital file, the Notice observes that the NFT "may provide the holder a right with respect to [the] digital file . . . that is typically separate from the NFT" and that "[a]pplying the look-through analysis to an NFT if its associated right or asset is a digital file raises the question as to whether the digital file constitutes a 'work of art.'"

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[27] Parts III.B and C respond to the following questions in the Notice: "2. With respect to the look-through analysis— a) Are there instances in which there are concerns with applying the analysis and in which an alternate analysis may be more appropriate? b) What burdens does the analysis impose?"; and "3. Are there other factors to consider when determining whether an NFT is a section 408(m) collectible?"

In addition, Parts III.B.3 and III.C.2 also contain a discussion addressing the Notice's question 2.c): "How might the analysis be applied to an NFT with more than one associated right or asset (for example, if one of the associated rights or assets of an NFT is a section 408(m) collectible but another one is not a section 408(m) collectible)?"

1. Intangibles as Section 408(m) "Works of Art"

A threshold question raised by the Notice's look-through analysis is whether an intangible digital asset — that is, an NFT or a digital file it references — can be a "work of art" within the meaning of section 408(m). There is no administrative or judicial guidance on the meaning of the term "work of art" for these purposes.[28] In the absence of guidance, undefined terms in the Code generally are given their ordinary meaning.[29] Merriam-Webster defines a "work of art" as "a product of one of the fine arts" or "something giving high aesthetic satisfaction to the viewer or listener." This definition would appear to cover both tangible assets like paintings and intangible assets like music.

However, as commentators have observed, the text and structure of section 408(m) could be interpreted to limit collectibles to tangible assets.[30] Section 408(m)(2) defines the term "collectible" to mean:

> (A) any work of art,
> (B) any rug or antique,
> (C) any metal or gem,
> (D) any stamp or coin,
> (E) any alcoholic beverage, or
> (F) any other tangible personal property specified by the Secretary for purposes of [section 408(m)].

The inclusion of the word "other" in the final category of collectible for "any other tangible personal property specified by the Secretary" arguably implies that the preceding categories of collectibles are themselves tangible personal property.[31]

We believe there are plausible arguments why the statute should not be interpreted in this restrictive manner. First, it is possible to give meaning to the word "other" in clause (F) by

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[28] In other contexts, the Code explicitly defines the term "work of art" in a manner that is limited to tangible assets. For example, section 2055(e), which provides that a "work of art" and its "copyright" are treated as separate properties for estate tax purposes, defines a "work of art" as "any tangible personal property with respect to which there is a copyright under Federal law." Similarly, section 2503(g), which excludes certain loans of "qualified work[s] of art" from treatment as a transfer, defines the term "qualified work of art" as "any archaeological, historic or creative tangible personal property."

[29] *Perrin v. United States*, 444 U.S. 37, 42 (1979); *Gates v. Commissioner*, 135 T.C. 1, 6 (2010); *Keene v. Commissioner,* 121 T.C. 8, 14 (2003).

[30] *See, e.g.*, Lee Sheppard, *Tiptoeing Around Tax Treatment of NFTs*, Tax Notes Federal (April 3, 2023) ("The phrase 'other tangible assets' implies that the concept of tangible controls all prohibited assets."); Kathryn S. Windsor, *When Is a Collectible Not a "Collectible"? NFTs and Internal Revenue Code Section 408(m)(2)*, The Practical Tax Lawyer (May 2022) ("[S]ection 408(m)(2)(F) includes in the definition of collectible 'any other tangible personal property specified by the Secretary.' The plain language of the statute would seem to exclude intangible property.").

[31] That is, if the preceding categories were not limited to tangible personal property, the final category could have been stated as "any tangible personal property specified by the Secretary."

interpreting it as an acknowledgment that some, but not all, of the enumerated categories of assets in clauses (A) through (E) are tangible. For example, the word "other" could be understood as referring back to the "alcoholic beverage" category that immediately precedes clause (F), without necessarily restricting the "work of art" category in clause (A).

Second, under the so-called "rule of the last antecedent" that the Supreme Court has repeatedly applied when interpreting statutes, "a limiting clause or phrase . . . should ordinarily be read as modifying only the noun or phrase that it immediately follows."[32] In *Barnhart v. Thomas*, the Supreme Court illustrated this rule with the following example:

> Consider, for example, the case of parents who, before leaving their teenage son alone in the house for the weekend, warn him, "You will be punished if you throw a party or engage in any other activity that damages the house." If the son nevertheless throws a party and is caught, he should hardly be able to avoid punishment by arguing that the house was not damaged. The parents proscribed (1) a party, and (2) any other activity that damages the house.[33]

The Court went on to explain that the descriptive clause "that damages the house" only modifies the "last antecedent" clause — that is, "any other activity."[34] According to the Court, the rule "reflects the basic intuition that when a modifier appears at the end of a list, it is easier to apply that modifier only to the item directly before it."[35] Applying the rule of the last antecedent to the list of collectibles set forth in section 408(m)(2), it appears that the adjective "tangible" in the phrase "other tangible personal property" in clause (F) should not be treated as modifying the specifically enumerated categories of collectibles in clauses (A) through (E).[36]

However, the arguments that a section 408(m) "work of art" must be tangible also appear plausible. For instance, in *Paroline v. United States*,[37] the Supreme Court explained that the *Barnhart* rule is not immutable and can be overridden by contextual evidence that a contrary meaning was intended. *Paroline* related to the interpretation of a criminal restitution statute that defines the victim's losses as including:

> (A) medical services relating to physical, psychiatric, or psychological care;
> (B) physical and occupational therapy or rehabilitation;

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32 *Barnhart v. Thomas*, 540 U.S. 20, 26 (2003) (quoting 2A Norman J. Singer, Sutherland on Statutory Construction § 47.33, at 369 (6th rev. ed. 2000)).

33 *Id.* at 27.

34 *Id.* at 27–28.

35 *Lockhart v. United States*, 136 S. Ct. 958, 963 (2016).

36 This becomes more apparent by considering how the rule would apply if, instead of referring to "other tangible personal property," clause (F) had referred to "other personal property that is tangible." In this case, the clause "other personal property" is antecedent to the descriptive clause "that is tangible."

37 572 U.S. 434 (2014).

(C) necessary transportation, temporary housing, and childcare expenses;
(D) lost income;
(E) attorneys' fees, as well as other costs incurred; and
(F) any other losses suffered by the victim as a proximate result of the offense.[38]

At issue was whether the phrase "as a proximate result of the offense" in clause (F) of the statute modified only the "any other losses" described in clause (F) or each of the specifically enumerated losses in clauses (A) through (E).[39] The Court rejected the government's argument that the proximate cause requirement only modified the losses described in clause (F) and distinguished *Barnhart*, observing that:

> The victim argues that because the "proximate result" language appears only in the final, catchall category of losses set forth at §2259(b)(3)(F), the statute has no proximate-cause requirement for losses falling within the prior enumerated categories. She justifies this reading of §2259(b) in part on the grammatical rule of the last antecedent, "according to which a limiting clause or phrase . . . should ordinarily be read as modifying only the noun or phrase that it immediately follows." *Barnhart v. Thomas*, 540 U. S. 20, 26 (2003). But that rule is "not an absolute and can assuredly be overcome by other indicia of meaning." *Ibid.* The Court has not applied it in a mechanical way where it would require accepting "unlikely premises." *United States v. Hayes*, 555 U. S. 415, 425 (2009)."[40]

The Court explained that reading the statute to impose a general proximate-cause limitation on all items in the statutory list was a "very effective" way to foreclose liability where there was only an "attenuated" link between the defendant's conduct and the plaintiff's damages.[41] That explanation, in turn, can be seen as building on the Court's emphasis at the outset of the opinion on the deep roots of the "proximate cause" concept in criminal law and tort law.[42]

It is not entirely clear how to reconcile the result in *Paroline* with that in *Barnhart*. On one hand, *Paroline* is an example of a case where the last-antecedent rule was not applied, and a modifier in the final item in a statutory list was found to limit all the preceding items in the list.

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38 18 U.S.C. section 2259(b)(3).

39 *See Paroline*, 572 U.S. at 446–47.

40 *Id*.

41 *Id.* at 448.

42 *See id.* at 446 ("Proximate cause is a standard aspect of causation in criminal law and the law of torts. See 1 LaFave §6.4(a), at 464–466; W. Keeton, D. Dobbs, R. Keeton, & D. Owen, Prosser and Keeton on Law of Torts §41, p. 263 (5th ed. 1984) (hereinafter Prosser and Keeton). Given proximate cause's traditional role in causation analysis, this Court has more than once found a proximate-cause requirement built into a statute that did not expressly impose one."). *Barnhart* by comparison involved interpretation of a statute providing disability insurance benefits; the Court there noted that the result obtained by applying the rule of last antecedent could reasonably be viewed as in keeping with the policy behind the statute. *See* 540 U.S. at 28–29.

It could be argued that a similar outcome is appropriate in the case of section 408(m)(2), especially since the list of specifically enumerated items in sections 408(m)(2)(A) through (E) consists largely of tangible assets, and since other statutes define "work of art" in a manner that is limited to tangible assets. On the other hand, we believe a reasonable interpretation of *Paroline* is that because the statute under consideration there was a criminal restitution statute, and because federal courts have regularly implied proximate cause requirements in the criminal context even in the absence of express statutory requirements, the Court believed there were appropriate reasons in that particular case to depart from the last-antecedent rule. By comparison, in the case of section 408(m), to the extent that one concludes that an NFT that was created by an artist and references a digital version of the artist's work is substantively the same as or similar to a traditional, physical "work of art" and that the congressional policy underlying section 408(m) supports treating these assets similarly under the statute, that conclusion may lead one to decide section 408(m)(2)(F) should not be read to limit the scope of clause (A) and that it is appropriate to apply the rule of last antecedent as in *Barnhart*.

The next subsection of this Report assumes that a section 408(m) "work of art" can be intangible and turns to consider the conceptually distinct question of whether and under what circumstances an NFT constitutes a work of art.

2. "Look-Through Analysis" for NFTs that Reference Digital Files

The Notice's "look-through analysis" would treat an NFT as a section 408(m) "work of art" if its "associated right" is a section 408(m) "work of art." Applying this analysis literally, it is not clear whether many NFTs currently in circulation would qualify as section 408(m) "work of art." An NFT that references a digital file may not convey copyright rights or other rights in the file or underlying content represented by the file, in which case it would appear to lack an "associated right" altogether.[43] Moreover, assuming that the NFT is supported by an enforceable off-blockchain legal arrangement that licenses or assigns a copyright in the underlying content to the NFT owner, the license or copyright is an intangible intellectual property right that should not itself qualify as a section 408(m) "work of art" or other category of section 408(m) collectible.[44] In either case, then, the Notice's look-through analysis would appear to lead to the conclusion that the NFT is not a section 408(m) "work of art."

This approach could be underinclusive. By way of example, suppose that a famous artist draws a digital image using computer software, prints a physical copy of the image, signs the copy in wet ink and sells it to a taxpayer who displays the signed copy in her home. We believe it is sensible to treat the signed copy as a "work of art" for purposes of section 408(m) even

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[43] *See supra* notes 8–11 and accompanying text.

[44] As discussed in Part I.A above, under Federal copyright law, a physical work of art and its copyright are separate interests: transfer of the physical work does not transfer the copyright or a license therein absent a separate assignment or license agreement. *See supra* note 9 and accompanying text. Presumably for this reason, other Code sections refer to a work of art and its copyright as separate interests. For example, section 1221(a)(3) refers separately to an "artistic composition" and a "copyright." Similarly, section 2055(e) provides that a "work of art" and its "copyright" are treated as separate properties for estate tax purposes.

though ownership of the physical copy conveys no copyright or other rights in the underlying image. Now suppose that instead of printing and signing a physical copy of the image, the artist uploads a copy of the image to a webpage, mints an NFT embedding a weblink to the webpage — which, in view of its uniqueness, can be thought of as an electronic signature of the digital image — and sells the NFT to a taxpayer who displays it on a social media platform. By analogy to the signed physical copy, we believe it is sensible to treat the NFT as a section 408(m) "work of art" even if it conveys no copyright or other legal rights in the image or the webpage (other than the limited right to display the NFT as just described).[45]

Another possible interpretation of the Notice is that an NFT that references a digital file is a section 408(m) "work of art" if the content represented by the file constitutes a work of art in its original manifestation. Thus, for example, if a taxpayer mints and sells an NFT that includes a weblink to an image of Van Gogh's *Starry Night*, the NFT would be a work of art because *Starry Night* is a work of art. Although such an approach may have the advantage of simplicity, its factual basis is not clear. Aside from the fact that an NFT may not convey any rights in a referenced digital file or the content represented by the file (much less a physical manifestation of that content), the person that mints or promotes an NFT is not necessarily the person that created the underlying content referenced by the NFT. If the term "work of art" is to have any limiting principle, it would appear that some factual connection between the NFT and an artist or creative process ought to be required.[46]

3. Recommendation

For the reasons discussed above, the treatment of an NFT that references a digital file as a section 408(m) "work of art" turns in the first instance on whether a section 408(m) "work of art" can be intangible. Accordingly, we recommend that Treasury and the IRS expressly consider this question in future guidance, taking into account the text and structure of section 408(m) as well as applicable authorities on statutory construction.[47]

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[45] As another analogy, consider the case of a landscape photographer that sells a limited number of certified physical copies of her photos. Assuming the certified physical copies qualify as section 408(m) works of art, it is not clear why the outcome should be different if the photographer instead mints limited-edition NFTs that include a weblink to a digital version of the photo.

[46] Because an NFT that has no connection to the creator of the content referenced by the NFT may not have material value, it is not clear whether this fact pattern is likely to be significant in practice. However, there are plausible reasons why an NFT may have collectible value separate and apart from its connection to an artist or their art. For example, given that it appears possible to assign identifying numbers to Bitcoin satoshis based on the order in which they were mined, it appears that collectors may ascribe more value to "old" satoshis than to "newer" satoshis. *See, e.g.*, Lugui Tillier, *Bitcoin Fragments Could Become More Valuable Than Full Bitcoins*, Cointelegraph (May 31, 2023), *available at* https://cointelegraph.com/news/bitcoin-fragments-more-valuable-than-full-bitcoins.

[47] In the Notice, question 3.b) asks, "[w]hat factors might be used to determine whether an asset is "tangible personal property" under section 408(m)(2)(F), particularly in the context of digital files?" We do not believe that Treasury or the IRS have regulatory authority to identify NFTs as a type of "other tangible personal property" for these purposes. While physical embodiments of intangible property (such as films, video tapes, and books) may qualify as tangible personal property, an NFT that references a digital file does not inherently convey ownership of (or any rights in) a tangible embodiment of the digital file and should not be treated as a tangible asset except under the principles of our Recommendation C, discussed in Part

Assuming that a section 408(m) "work of art" can be intangible, we believe the Notice's look-through analysis is inappropriate for purposes of determining whether an NFT that references a digital file constitutes a "work of art." As described above, that analysis appears to turn solely on evaluating whether an "associated right" in the digital file that is "separate from the NFT" constitutes a "work of art." However, because an NFT is a digital blockchain ledger entry that may not convey rights in a referenced digital file or the underlying content represented by the file, it may not be clear what "associated rights" to "look through" to in applying the look-through analysis; and the question of what "associated rights" the NFT holder possesses in any event appears not to be the only consideration relevant to the determination of whether the NFT constitutes a "work of art."

Instead, we recommend that Treasury and the IRS provide guidance on the specific considerations relevant to the determination of when an NFT that references a digital file constitutes a "work of art." Although we do not recommend a particular approach, we believe that one reasonable approach would be to treat the NFT as a "work of art" if (a) the NFT is minted or promoted[48] by the creator of the content represented by the digital file, (b) such content would constitute a section 408(m) "work of art" in its original manifestation or if its creator had created it in physical form and (c) the NFT holder has a right to display such content, generally comparable to the display right that the purchaser of a physical work of art obtains. With respect to such display right, it is possible an NFT owner may obtain such a right under the first-sale doctrine; however, as discussed in Part I.A, it is unclear whether and to what extent that doctrine applies to purchases of NFTs that reference digital content. In addition, an NFT owner may obtain such a display right through a contractual grant of rights by the sponsor or creator of the NFT. However, in some situations, it may be uncertain whether such a purported grant of rights is legally enforceable. In cases where there is uncertainty in this regard, Treasury and the IRS could consider whether an NFT may nonetheless, at least in some circumstances, constitute a "work of art." For instance, Treasury and the IRS could consider requiring only that the NFT holder has a reasonable expectation that the holder is entitled to display the digital content.

Under this type of approach, if an artist mints or promotes an NFT that references a digital image of her work, the NFT may constitute a work of art even if it conveys no rights in the digital image (other than a limited display right as described above) and no rights to a physical manifestation of that image. In contrast, the *Starry Night* NFT described above would not constitute a work of art because it was not minted or promoted by or on behalf of Van Gogh.[49]

III.C. *Cf.* section 263A(b)(2) (providing that for purposes of the cost capitalization requirements of section 263A, "tangible personal property" includes "a film, sound recording, video tape, book, or similar property").

[48] We believe it is reasonable to provide consistent results where an artist either herself mints the NFT referencing her work or instructs or authorizes another person to do so and promotes the creation and sale of that NFT.

[49] We are aware that certain NFTs may reference artistic works that inherently cannot exist in physical form, such as music. Although we take no view on whether such NFTs may constitute section 408(m) "works of

If an NFT that references a digital file qualifies as a "work of art" under the approach proposed above and also conveys other, off-blockchain legal rights or entitlements to its holder (such as rights to tangible assets or to services), we believe it is reasonable to bifurcate the NFT for purposes of determining its classification as a section 408(m) collectible, treating the portion of the fair market value of the NFT attributable to the blockchain ledger entry and the digital file it references (that is, any value other than the value attributable to off-blockchain legal rights or entitlements) as a section 408(m) "work of art," and separately analyzing the section 408(m) treatment of the other off-blockchain rights and entitlements under the principles discussed in Part III.C of this Report. We also believe Treasury and the IRS could reasonably adopt a *de minimis* rule under which the NFT is treated as a section 408(m) "work of art" in its entirety if the fair market value of such off-blockchain assets or services is small relative to the aggregate value of the NFT.

We acknowledge that from a policy perspective, a simple, administrable rule that treats most or all NFTs as section 408(m) collectibles may be preferable to the approach suggested by this Report, to the extent that investments in NFTs are viewed as unproductive uses of capital or inappropriate for individual retirement accounts. However, because the only statutory category of collectible that plausibly can cover such intangible assets is the category for a "work of art," the implementation of such a rule may require Congressional legislation.[50] In this regard, we observe that under current law, section 408(m) may not apply to many tangible assets commonly understood as collectibles, including sports and trading cards, dolls and figurines, comic books, magazines, stuffed animals and video games. The policy arguments for extending section 408(m) to NFTs presumably apply with equal force to such tangible assets, which have been bought and sold for prices comparable to the prices commanded by the most sought-after NFTs.[51] Yet although section 408(m)(2)(F) authorizes Treasury to identify additional categories of tangible collectibles, Treasury has never exercised that authority. In view of this history, it may appear somewhat incongruous to take an expansive approach to the application of the

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art," we believe the analysis under section 408(m) should be the same as in the case of tangible manifestations of intangible artistic works such as vinyl records or CDs.

50 The current administration as well as Congressional lawmakers from both major parties have repeatedly expressed interest in legislative initiatives regarding digital assets. *See, e.g.*, Department of the Treasury, General Explanation of the Administration's Fiscal Year 2024 Revenue Proposals (Mar. 9, 2023) (including legislative proposals to extend the wash sale rules and certain mark-to-market and nonrecognition provisions to digital assets); Press Release, House Financial Services Committee, Statement on Joint Efforts to Create Clear Rules of the Road for Digital Assets (Apr. 17, 2023) (noting that the House Financial Services Committee and the House Agriculture Committee "are embarking on an unprecedented joint effort to pass and sign into law clear rules of the road for the digital asset ecosystem.").

51 *See, e.g.*, Dan Hajducky, *1952 Topps Mickey Mantle Card Sells for $12.6 Million, Shattering Record*, ESPN (Aug. 28, 2022), *available at* https://www.espn.com/mlb/story/_/id/34473632/1952-topps-mickey-mantle-card-sells-126-million-shattering-record; Scottie Andrew, *A Page of Spider-Man Comic Book History Just Sold for $3 Million*, CNN (Jan. 14, 2022), *available at* https://www.cnn.com/2022/01/14/entertainment/spider-man-black-suit-comic-3-million-cec/index.html; Kellen Browning, *A Super Mario Bros. Game Sells for $2 Million, Another Record for Gaming Collectibles*, N.Y Times (Aug. 6, 2021), *available at* https://www.nytimes.com/2021/08/06/business/super-mario-bros-sale-record.html.

statutory section 408(m) category for "works of art" to a novel digital asset class, particularly where the factual predicates for doing so are not readily apparent. In addition, the same policy reasons that may make it desirable to treat NFTs as collectibles could apply to cryptocurrencies and other fungible digital assets, which would militate in favor of a comprehensive legislative solution.

In view of the considerations discussed in the preceding paragraph, we recommend that Treasury and the IRS consider requesting that Congress (x) evaluate whether some or all digital assets should be treated as section 408(m) collectibles and (y) if appropriate, expand the scope of section 408(m) to expressly apply to such digital assets.

C. NFTs That Reference Physical Assets

1. "Look-Through Analysis" for NFTs that Reference Physical Assets

The Notice states that "NFT ownership may provide the holder a right with respect to an asset that is not a digital file, such as a right to attend a ticketed event, or certify ownership of a physical item." Under the Notice's "look-through analysis," the determination of whether such an NFT is a section 408(m) collectible is made on the basis of whether the NFT's associated right or physical item is a section 408(m) collectible.

The Notice does not specify what it means for an NFT to certify ownership of or provide a right with respect to an underlying tangible asset that is a section 408(m) collectible. One possible interpretation of the Notice is that an NFT does not certify ownership of or provide a right with respect to an underlying collectible unless the NFT is treated as ownership of the collectible under existing tax-ownership principles. Under those principles, a contractual arrangement that gives a taxpayer a legal claim to an underlying asset may be treated as ownership of the asset if (x) the taxpayer possesses benefits and burdens substantially equivalent to those a legal owner of the asset would have and (y) the contractual claim runs against a counterparty that holds the asset for exchange with the holder.

For example, an American Depositary Receipt ("***ADR***") — which gives the holder a claim to an underlying share of stock of a non-U.S. issuer held by a depositary, including the right to vote the stock and exercise other shareholder rights, and is readily exchangeable for the stock — generally is treated as ownership of the underlying stock for tax purposes.[52] In contrast, if the ADR depositary does not in fact hold the underlying shares, we believe the ADR holder generally should not be treated as the tax owner of the shares, as the depositary holds no shares whose ownership can be attributed to the ADR holder. Similarly, a taxpayer's mere expectation that a counterparty will provide an underlying asset — such as in the case of a coupon that purports to be redeemable for clothing or groceries — generally cannot give rise to tax ownership of the proffered asset because the taxpayer does not have a legal claim to the asset.

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[52] *See, e.g.*, Revenue Ruling 65-218, 1965-2 C.B. 566 (ruling that ADR holders are treated as holding underlying shares directly for foreign tax credit and tax treaty purposes); Revenue Ruling 72-271, 1972-1 C.B. 369 (ruling that ADRs constitute an interest in stock within the meaning of section 4920(a)(2) of the Code).

Under this interpretation of the Notice, an NFT that references an underlying tangible section 408(m) collectible (for example, a painting or gem) generally should not itself be treated as a section 408(m) collectible unless off-blockchain legal arrangements are in place that give the NFT holder a legal claim to the underlying collectible. Thus, if an NFT holder enters into a binding user agreement with a sponsoring legal entity that entitles the holder to exchange the NFT for a painting at any time, and the sponsor holds the painting in custody for redemption by the holder, the NFT may be treated as ownership of the painting. In contrast, if the sponsor does not own the painting but must first commission and purchase it from an artist prior to delivering it in exchange for the NFT, the NFT may not be treated as ownership of the painting but as a contractual right to cause the sponsor to procure the painting. If the sponsor does not offer a binding user agreement but merely promotes the NFT as exchangeable for a painting in non-binding marketing materials, the NFT should not convey tax ownership of (or any legal rights in) the painting to the holder.

However, the Notice is also susceptible to a broader interpretation under which an NFT is a section 408(m) collectible as long as the NFT gives its holder "rights" in a section 408(m) collectible, whether or not the NFT is treated as tax ownership of the underlying collectible. Indeed, if the Notice had simply intended to reaffirm existing tax-ownership principles, it is not clear why the Notice's "look-through analysis" is necessary, because an NFT that references an underlying collectible would be a collectible only in cases where the NFT *is treated for tax purposes as the underlying collectible*.[53]

We do not believe this broader interpretation of the Notice would be consistent with the text of section 408(m). Subject to the tax-ownership principles described above, a contractual "right" in an enumerated collectible, such as a metal or gem, is not itself a metal or gem for tax purposes. Congress has recognized this principle in numerous Code provisions including section 1260 (which treats certain derivatives with respect to financial assets as "constructive ownership transactions"), section 1256 (which subjects regulated futures contracts and certain other derivatives to mandatory mark-to-market tax accounting) and section 1221(a)(6) (which excludes certain commodities derivatives held by commodities dealers from the definition of capital assets). Indeed, in the context of section 408(m), the IRS has extended this principle more broadly than in other contexts, concluding that a share in a grantor trust that holds gold is not treated as a "collectible" for purposes of section 408(m) unless and until the share is in fact redeemed for physical gold,[54] even though interests in a grantor trust generally are treated for tax purposes as ownership of a pro rata share of the trust's assets.

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[53] We note in this regard that numerous Code provisions adopt explicit look-through rules that deliberately override general tax-ownership principles. For example, in the collectibles context, section 1(h)(5)(B) provides that collectibles gain subject to the highest 28 percent individual capital gains rate includes gain from the sale of an equity interest in a passthrough entity to the extent the gain from the sale is attributable to unrealized appreciation in collectibles owned by the passthrough entity. In contrast, section 408(m) does not, by its terms, provide a look-through rule for purposes of determining whether a retirement account has acquired a prohibited category of collectible. Although the 1984 proposed regulations under section 408(m) would have applied broadly to "direct or indirect" acquisitions of a prohibited collectible, those regulations were never finalized and never became effective.

[54] *See* Private Letter Ruling 201446030; Private Letter Ruling 200732026. The rationale of the private letter rulings is not entirely clear and this Report expresses no view on their merits.

Relatedly, the above-referenced interpretation of the Notice could result in significant differences between the taxation of digital assets on the one hand and the taxation of conventional financial derivatives on the other hand. Under existing law, a financial derivative that references a fungible financial asset or commodity, such as a forward or futures contract, option or total return swap, is ordinarily respected as a financial contract separate from the underlying asset. Thus, a gold futures contract generally should be taxable as a financial contract that must be marked to market under section 1256, rather than as a section 1(h)(4) collectible, even though the contract gives its holder the right to acquire gold at a specified price on a specified date in the future. Similarly, a total return swap that references gold bullion generally should be taxable as a financial contract that is not a section 1(h)(4) collectible,[55] even though it gives the holder the right to price appreciation in the referenced gold during the term of the swap. If the Notice's "look-through analysis" is intended to cause an NFT to be treated as a collectible merely because it gives its holder rights in an underlying asset that qualifies as a collectible, it is not clear why the same approach should not apply to conventional financial derivatives.

2. Recommendation

We recommend that the IRS clarify that with respect to an NFT that references or purports to reference an underlying tangible asset that is a section 408(m) collectible (like a painting, gem or metal), the determination of whether and to what extent the NFT is itself a section 408(m) collectible is made under existing tax-ownership principles.

If the NFT is treated as tax ownership of an underlying section 408(m) collectible and also conveys other rights that are not section 408(m) collectibles (such as rights to assets that are not collectibles or to services), we recommend that only the portion of the fair market value of the NFT attributable to the underlying section 408(m) collectible should be treated as a collectible for purposes of section 408(m), similar to the approach described in Part III.B.3 above. However, the IRS could reasonably adopt a *de minimis* rule under which such NFT is treated as a section 408(m) collectible in its entirety if the fair market value of the rights that are not collectibles is small relative to the aggregate value of the NFT.

As discussed in Part III.A.2 above, some fungible digital assets may provide rights to underlying tangible collectibles that are or may be fungible (for example, gems or metal). Our recommendations in this Part III.C.2 apply equally to such fungible digital assets.

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[55] *Cf.* Treasury regulations section 1.446-3 (setting forth a method of accounting for notional principal contracts).

D. Treatment of NFT "Airdrops" as Gross Income

1. Overview

The Notice asks for comments on the treatment of "the potential for the owner of an NFT to receive additional rights or assets (such as additional NFTs) due to ownership of the NFT (even in the absence of a specific contractual right under the NFT)."[56]

We understand this question to be directed principally at the treatment of so-called "airdrops" (giveaways) of NFTs. As discussed in our 2020 Report, an "airdrop" typically refers to the free distribution of digital assets to some subset of public network addresses on a particular blockchain, usually for promotional purposes.[57] Thus, for example, a sponsor or promoter of a new digital asset may "airdrop" the digital asset to any persons who express interest in receiving the asset by providing their public wallet addresses. Similarly, a sponsor or promoter of an existing digital asset may airdrop a new digital asset to all public addresses that already hold the existing digital asset, in proportion to their holdings of the existing digital asset. Digital assets distributed in airdrops can include both fungible digital assets like cryptocurrencies and NFTs.

Very generally, Revenue Ruling 2019-24 provides that an "airdrop" of "cryptocurrency" is an accession to wealth taxable at the fair market value of the airdropped cryptocurrency when it is received.[58] However, as we observed in the 2020 Report, the ruling appears to conflate the receipt of digital assets in an "airdrop" with the receipt of digital assets pursuant to a so-called "hard fork," which is conceptually distinct from a free giveaway of digital assets and occurs when there is a contentious "split" of an underlying blockchain, resulting in the duplication of digital assets across two independent blockchains.[59] Accordingly, it is not entirely clear whether the guidance in the ruling is intended to apply only to new digital assets received in a hard fork or also to new digital assets received in an airdrop.[60] We concluded our discussion of airdrops in

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56 Notice Question 2.d).

57 *See* 2020 Report at 7–8.

58 Revenue Ruling 2019-24, 2019-44 I.R.B. 1004.

59 *See* 2020 Report at 11–12. More specifically, a hard fork occurs when the participants in a blockchain-based cryptocurrency protocol disagree as to the rules that should apply to the protocol and cause the blockchain to "fork" into two separate blockchains (one for the original digital asset and one for a new digital asset complying with the new rules). Because the blockchain history of ownership and transactions is identical on each blockchain up until the hard fork, each holder of the original digital asset at the time of the hard fork receives a corresponding amount of the new digital asset while continuing to own its original digital asset. For a detailed analysis of Revenue Ruling 2019-24 and hard forks, *see* Arvind Ravichandran and Maurio A. Fiore, *Cryptocurrency Forks: A Response to the IRS's Recent* Guidance, Tax Notes (Feb. 24, 2020).

60 In Chief Counsel Advice 202114020, which related to the 2017 hard fork of Bitcoin into legacy Bitcoin and Bitcoin Cash, the IRS appeared to acknowledge the distinction between hard forks and airdrops and noted that "[t]he specific means by which the new cryptocurrency is distributed or otherwise made available to a taxpayer following a hard fork does not affect [Revenue Ruling 2019-24's] holding." However, the Chief Counsel Advice did not directly address the treatment of airdrops.

the 2020 Report by noting that "while we do not recommend a specific approach to the taxation of giveaways, we recommend that if Treasury and the Service treat coins available after a contentious hard fork as 'accessions to wealth,' they also treat coins received in giveaways as accessions to wealth."[61]

2. Recommendation

In view of the extensive discussion of airdrops in the 2020 Report, we limit our observations to the following special considerations that may apply to airdrops of NFTs:

- First, to the extent that the IRS's existing guidance on airdrops is limited to "cryptocurrency," it is not clear that airdrops of NFTs are covered by that guidance. Revenue Ruling 2019-24 defines "cryptocurrency" as "a type of virtual currency that utilizes cryptography to secure transactions that are digitally recorded on a distributed ledger" and "virtual currency" as "a digital representation of value that functions as a medium of exchange, a unit of account and a store of value."[62] Given that NFTs are non-fungible and may have functionality aside from acting as a medium exchange, unit of account or store of value, such as aesthetic appeal or the ability to be redeemed for goods or services, it may not be clear whether NFTs qualify as cryptocurrency.

- Second, treating airdrops of NFTs as accessions to wealth taxable upon receipt may pose particularly challenging valuation issues for taxpayers. As we observed in the 2020 Report, airdrops of fungible digital assets may pose difficult valuation issues if no trading market in the airdropped digital asset exists at the time of the airdrop, as we understand is frequently the case. These valuation issues may be magnified in the case of an airdrop of unique digital assets that definitionally cannot trade in the market as a fungible asset alongside other assets of their kind. Thus, although an NFT may be of a series or type of NFT that trades in the market (for example, one of many NFTs supported by the same off-blockchain sponsor), assessing the value of any particular NFT may be difficult and require an appraisal.[63]

In keeping with our 2020 Report, although we do not recommend a specific approach to the taxation of giveaways, we recommend that if Treasury and the IRS treat fungible digital assets received as a consequence of hard forks or airdrops as accessions to wealth, they also treat NFTs received in giveaways as accessions to wealth.

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61 2020 Report at 29.

62 Revenue Ruling 2019-24, 2019-44 I.R.B. 1004.

63 Similar valuation issues may arise in the case of found property. *See, e.g.*, Lawrence A. Zelenak and Martin J. McMahon, Jr., *Professors Look at Taxing Baseballs and Other Found Property*, Tax Notes (Aug. 30, 1999).

E. Treatment of NFTs as "Digital Assets" For Purposes of Section 6045[64]

The Notice observes in a footnote that "[a] digital file is not the same as a digital asset, as defined in section 6045(g)," and that "[f]or purposes of reporting by brokers under section 6045(g), a digital asset is defined as, except as provided by the Secretary, any digital representation of value that is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary. Although not entirely clear, because the Notice's "look-through analysis" appears to equate ownership of an NFT that references a digital file with ownership of "a right with respect to [the] digital file," the Notice could be interpreted as providing that such NFTs are not "digital assets" for purposes of section 6045.

This interpretation of the Notice would be inconsistent with other informal guidance that the IRS has provided regarding the treatment of NFTs. For example, the IRS's instructions to the 2022 Form 1040 provide that "[d]igital assets are any digital representations of value that are recorded on a cryptographically secured distributed ledger or any similar technology" and that "digital assets include nonfungible tokens (NFTs) and virtual currencies, such as cryptocurrencies and stablecoins."[65] Similarly, a recent IRS news release states that "[a] digital asset is a digital representation of value which is recorded on a cryptographically secured, distributed ledger," and that "common digital assets include convertible virtual currency and cryptocurrency[,] [s]tablecoins[, and] [n]on-fungible tokens (NFTs)."[66]

1. Background on Section 6045

Under section 6045(g), a "broker" that effects the sale of a "covered security" is required to report the gross proceeds from the sale and certain other information to the IRS. Section 6045 was originally enacted by the Tax Equity and Fiscal Responsibility Act of 1982.[67] The Joint Committee on Taxation's report accompanying the Act indicates that Congress enacted section 6045 in response to an IRS estimate indicating that the compliance rate among taxpayers for self-reporting capital gains was below 60 percent.[68] According to the report, "Congress determined that compliance in this area could be substantially improved by requiring that transactions carried out through brokers and other middlemen be reported" to the IRS.[69]

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64 Parts III.D and E respond to question 5 in the Notice: "What other guidance relating to NFTs would be helpful?"

65 IRS, Instructions for Form 1040 (2022), *available at* https://www.irs.gov/pub/irs-pdf/i1040gi.pdf.

66 IR-2023-12 (Jan. 24, 2023), *available at* https://www.irs.gov/newsroom/irs-updates-to-question-on-digital-assets-taxpayers-should-continue-to-report-all-digital-asset-income.

67 Pub. L. No. 97-248, 96 Stat. 324.

68 Joint Committee on Taxation, General Explanation of the Revenue Provisions of the Tax Equity and Fiscal Responsibility Act of 1982, JCS-38-82 at 194.

69 *Id.*

Historically, the statutorily enumerated categories of "covered security" in section 6045 were limited to corporate stock, debt, and commodities and commodity derivatives. The Infrastructure Investment and Jobs Act of 2021[70] expanded the definition of "covered security" to include any "digital asset," defined as "any digital representation of value which is recorded on a cryptographically secured distributed ledger or any similar technology as specified by the Secretary."[71] In addition, the Act expanded the definition of "broker" to include "any person who (for consideration) is responsible for regularly providing any service effectuating transfers of digital assets on behalf of another person."[72] Under the Act, these changes do not apply to information returns required to be filed or furnished prior to January 1, 2024.[73] In Announcement 2023-02,[74] Treasury and the IRS announced a transition rule under which brokers are not required to report additional information with respect to dispositions of digital assets under section 6045 until new final regulations are issued under that section.

2. NFTs as Section 6045 "Digital Assets"

As a blockchain ledger entry, an NFT definitionally meets the requirement of being "recorded on a cryptographically secured distributed ledger." Accordingly, an NFT should qualify as a digital asset for purposes of section 6045 as long as it constitutes a "digital representation of value." It could be argued that NFTs may not meet this requirement because unlike fungible cryptocurrencies, NFTs may have aesthetic appeal or other functionality separate and apart from serving as a representation of value.[75] By analogy, although a painting may have value, it is arguably not principally a "representation of value" but an artistic expression.

We believe that an NFT can constitute a "digital representation of value" even if it has aesthetic appeal or functionality aside from its monetary value. If Congress had intended to limit information reporting to digital assets that function solely or principally as a store of value or medium of exchange, it could have done so explicitly. In this regard, it appears significant that Notice 2014-21 defines "virtual currency" as "a digital representation of value that functions as a medium of exchange, a unit of account, and a store of value other than a representation of the United States dollar or a foreign currency,"[76] and that Revenue Ruling 2019-24 defines

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70 Pub. L. No. 117-58, 135 Stat. 429 (Nov. 15, 2021).

71 *Id.* 135 Stat. 429, 1340 (Code section 6045(g)(3)(B)(iv)).

72 *Id.* 135 Stat. 429, 1340 (Code section 6045(c)(1)(D)).

73 *Id.* 135 Stat. 429, 1341.

74 I.R.-2022-227 (Dec. 23, 2022).

75 *See* Jason Schwartz, *Misconceptions Around NFTs*, Tax Notes Today (Apr. 10, 2023) ("[The broker reporting] rules define digital assets as digital representations of value. Although some NFTs might represent value in the abstract, most represent images, provenance, access passes, in-game items, licenses, and property titles. It is not at all clear that Congress intended those things to be subject to the broker reporting rules.").

76 2014-16 IRB 938 (Mar. 25, 2014).

"cryptocurrency" as "a type of virtual currency that utilizes cryptography to secure transactions that are digitally recorded on a distributed ledger, such as a blockchain." If Congress had intended for information reporting under section 6045 to be limited to virtual currency or cryptocurrency, it could have used those defined terms rather than creating the new term "digital asset" and defining it to cover any cryptographically secured "digital representation of value."[77] Indeed, the Joint Committee on Taxation report that accompanied the 2021 amendments to section 6045 quotes the definition of "virtual currency" in Notice 2014-21 and observes that it is "the only digital asset" within the scope of the notice, suggesting that Congress's decision not to limit section 6045 information reporting to "virtual currency" or "cryptocurrency" was deliberate and that the term "digital asset" is intended to have a broader reach.[78]

A separate but related question is whether NFTs that fall within existing, non-digital asset categories for substantive tax purposes, such as ownership of an underlying physical asset or equity in a deemed entity, should be treated as "digital assets" for section 6045 information reporting purposes. In general, we believe that such NFTs should be treated as digital assets for these purposes. First, as a textual matter, we see no conceptual difficulty in concluding that an NFT that qualifies as ownership of a physical asset or equity in a deemed entity for substantive tax purposes also meets the section 6045 definition of "digital asset" that applies for information reporting purposes. Second, Congress's policy rationale for enacting section 6045 was that self-reporting of capital gains can be improved by requiring reporting with respect to transactions effected through brokers. Provided that the sale of an NFT is effected through a broker, this

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[77] Although not dispositive, treating NFTs as assets that are not "digital assets" would also appear to run contrary to common usage. *See, e.g.*, Investopedia, *What is a Digital Asset?* (June 30, 2022), *available at* https://www.investopedia.com/terms/d/digital-asset-framework.asp (listing NFTs as an example of digital assets). Moreover, since it appears that Bitcoin satoshis can be NFTs, it may be difficult to draw an administrable distinction between fungible cryptocurrencies and NFTs. *See supra* note 6.

[78] *See* Joint Committee on Taxation, Technical Explanation of Section 80603, "Information Reporting For Brokers and Digital Assets," of the Infrastructure Investment and Jobs Act (Aug. 3, 2021). This inference is also supported by a colloquy between Senator Portman and IRS Commissioner Rettig during an April 2021 hearing before the Senate Finance Committee:

> Sen Portman: Can you give us any specific suggestions on what reporting would be helpful on the cryptocurrency side, and would that help in closing the tax gap?
>
> Commissioner Rettig: Absolutely, reporting with respect to cryptocurrencies would be important. . . . It is replicating itself constantly. And so now we have these non-fungible tokens, which are essentially collectables in the crypto world. These are not visible items by design. The crypto world is not visible. . . .
>
> Sen. Portman: Great. We would like your input on it and to get some technical advice. We are working on the bill; it is meant to be bipartisan and something that can help to close the tax gap in that area.

U.S. Senate, Hearing Before the Committee on Finance, S. Hrg. 117-336 (April 13, 2021); *see also*, *e.g.*, U.S. House of Representatives, Hearing Before a Subcommittee of the Committee on Appropriations (Feb. 16, 2021) (quoting Chairman Mike Quigley) ("The market for non-fungible tokens, cryptocurrencies, and other digital assets has exploded. While these have created significant wealth and value, these markets also feel like a virtual Wild West.").

rationale would appear to apply with equal force if the NFT represents ownership of an underlying physical asset or deemed equity in an entity.

However, if a transfer of the underlying asset or deemed equity represented by the NFT would itself be subject to reporting under section 6045 or a different section of the Code, treating the NFT as a digital asset could result in duplicative and overlapping information reporting requirements. Accordingly, Treasury and the IRS should provide appropriate ordering rules to ensure that only one level of information reporting applies to such transfers.

3. Recommendation

We recommend that the IRS clarify that an NFT may be a "digital asset" for purposes of section 6045 even if it references a digital file that is not a digital asset.

F. Other Areas Where Guidance on NFTs Is Needed

1. Treatment of NFT Creators

a. *Character of Gain or Loss on Disposition of Self-Created NFT*

If a taxpayer mints (creates) an NFT and subsequently sells or disposes of the NFT in a taxable transaction, the character of the taxpayers' gain or loss depends on whether the NFT is an ordinary asset or capital asset in the hands of the taxpayer.

Under section 1221(a)(3), an ordinary asset includes "a patent, invention, model or design (whether or not patented), a secret formula or process, a copyright, a literary, musical, or artistic composition, a letter or memorandum, or similar property, held by a taxpayer whose personal efforts created such property." Although we have identified no judicial or administrative guidance on the meaning of the term "artistic composition" for these purposes, the determination of whether an NFT qualifies as an "artistic composition" in the hands of the NFT's creator would appear to raise similar issues to the determination of whether an NFT constitutes a "work of art" in the hands of a collector for purposes of section 408(m).[79]

We recommend that the IRS further study and provide guidance with respect to the determination of whether and under what circumstances an NFT may qualify as an "artistic composition" or "similar property" within the meaning of section 1221(a)(3).[80] In particular, if Treasury and the IRS retain the Notice in its current form or provide additional guidance on the determination of whether an NFT qualifies as a "work of art" for purposes of section 408(m), we

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[79] An NFT could also qualify as an ordinary asset if, among other things, it constitutes "stock in trade of the taxpayer or other property of a kind which would properly be included in the inventory of the taxpayer if on hand at the close of the taxable year, or property held by the taxpayer primarily for sale to customers in the ordinary course of his trade or business." Section 1221(a)(1).

[80] Treasury regulations section 1.1221-1(c)(1) currently provides that "the phrase *similar property* includes for example, such property as a theatrical production, a radio program, a newspaper cartoon strip, or any other property eligible for copyright protection (whether under statute or common law) . . . ."

recommend that Treasury and the IRS explicitly clarify whether similar principles apply in determining whether an NFT constitutes an "artistic composition" in the hands of its creator for purposes of section 1221(a)(3).

b. *Character and Source of NFT "Royalties"*

The blockchain ledger entry comprising an NFT may specify that an amount must be paid to the NFT's original creator each time the NFT is transferred, typically expressed as a percentage of the sales price paid by the transferee (a so-called "***NFT royalty***").

We understand that as originally conceived, NFT "royalty" payments were intended to be enforceable automatically through "on-blockchain" transactions intermediated by smart contracts that settle in digital assets, without the need for any centralized enforcement mechanism. However, as a practical matter, it appears that such decentralized enforcement mechanisms are easily subverted.[81] As a consequence, an NFT creator's receipt of such payments may depend on enforcement by centralized NFT exchanges or marketplaces that are operated through juridical entities. As a corollary, the amount received by an NFT creator may be different than the amount specified in the NFT ledger entry, or may be zero, depending on the particular policies of the exchange or marketplace on which the NFT is transferred.

It is not clear whether such payments should be characterized as royalties for U.S. federal income tax purposes. Although there is no universal tax definition of the term "royalty," a royalty is typically defined as a payment for the use of intellectual property like a copyright or trademark, such as a payment by a publisher to an author to use the copyright to her work to sell books or a payment by a music label to an artist to use the copyright of her work to sell albums.[82] Like NFT "royalties," such payments are often expressed as a percentage of sales proceeds from each copyrighted article sold. However, unlike NFT royalties, such payments are made in exchange for the use of intellectual property like a copyright, rather than for each transfer of a unique, nonfungible digital asset.

As a tangible analogy, consider a brick-and-mortar art exchange that allows taxpayers to acquire and sell physical artwork, deducts a percentage of the sale proceeds from each sale and pays it to the artist that created the artwork. The payment received by the artist is not a royalty because it is not paid for the use of intangible property. Although it might be characterized as rent for the use of tangible property (the artwork), this characterization would require treating the artist as leasing the painting to each taxpayer that acquires the painting. Such a characterization may be difficult to sustain, particularly if it is possible for a purchaser to resell the painting in a bilateral transaction without using the exchange. A more natural characterization of the payment

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[81] *See, e.g.*, *Why NFT Royalties Are Almost Impossible to Enforce On-Chain*, The Block (Oct. 21, 2022), *available at* https://www.theblock.co/post/178603/why-nft-royalties-are-almost-impossible-to-enforce-on-chain.

[82] *See, e.g.*, Notice of Proposed Rulemaking, *Rules Regarding Certain Hybrid Arrangements*, REG-104352-18 (83 F.R. 67612) (observing in preamble that "there is no universal definition of royalty under the Code" and that the proposed regulations under section 267A define the term "royalty" as "amounts paid or accrued as consideration for the use of, or the right to use, certain intellectual property and certain information concerning industrial, commercial or scientific experience.").

might be as a promotional payment made by the exchange to support artists and encourage artists and collectors to sell paintings through the exchange. Alternatively, the payments might be viewed as services income or contingent sale proceeds of the artist.

The source of NFT royalty payments would vary depending on their character. If the payments are characterized as discretionary promotional payments made by a centralized exchange, they should presumably be sourced either to the tax residence of the payor (the centralized exchange) or the payee (the NFT creator).[83] If the payments are services income of the NFT creator, they would be sourced to the location where the services are "performed,"[84] which presumably is the location where the NFT or the underlying content it references were created. If the payments are contingent sale proceeds of the NFT creator, they should generally be sourced to the tax residence of the NFT creator unless the NFT is inventory property.[85] Lastly, if the payments are rents or royalties, they should be sourced to the jurisdiction where the NFT is "located" or "used."[86] Under this last characterization, it may be unclear whether the location or place of use of the NFT should be determined by reference to the location the NFT purchaser, the location of the NFT seller, the location of the exchange through which the sale of the NFT is effected, the location of the underlying computers or servers on which the blockchain transfer occurs, or some other metric.

We recommend that the IRS further study NFT royalty payments and provide guidance on the character and source of such payments.

2. Application of Software Regulations to NFTs

Treasury regulations section 1.861-18 (hereinafter, the "***software regulations***") provides rules for determining the character and source of income from transactions relating to computer programs for purposes of Code provisions dealing with international taxation, including the rules under subchapter N of chapter 1 of the Code that impose gross basis tax and withholding on certain U.S. source payments to non-U.S. persons.

The software regulations generally classify such transactions as falling within one or more of the following four categories: (1) the transfer of a "copyright right," (2) the transfer of a "copyrighted article," (3) the provision of services for the development or modification of a computer program or (4) the provision of know-how relating to computer programming techniques.[87] For these purposes, any transaction involving a computer program which consists of more than one of the aforementioned transactions is disaggregated into separate transactions,

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83 *Cf.* section 861(a) (generally sourcing interest and dividends to tax residence of payor); Treasury regulations section 1.863-7 (sourcing swap income to residence of recipient).

84 *See* section 861(a)(3).

85 *See* section 865.

86 *See* section 861(a)(4).

87 Treasury regulations section 1.861-18(b)(1).

provided that any transaction that is *de minimis* taking into account the overall transaction and the surrounding facts and circumstances is treated as part of a broader transaction.[88]

The regulations provide that the transfer of a "copyright right" occurs upon the transfer of all or some subset of the copyright rights in the computer program, such as the right to make copies of the program for distribution to the public.[89] In contrast, a transfer of a "copyrighted article" occurs when a copy of a computer program is transferred, such as when a floppy disk containing the program is sold to a consumer.[90] The transfer of a "copyright right" may be characterized as either a sale or exchange or a license generating royalty income,[91] whereas the transfer of a "copyrighted article" may be characterized as either a sale or exchange or a lease generating rental income.[92] In either case, the determination of whether a sale or exchange has occurred is made by evaluating the facts and circumstances to determine whether there has been a transfer of substantially all of the rights in the copyright (in the case of a copyright right) or a transfer of the benefits and burdens of ownership (in the case of a copyrighted article).[93]

The regulations define a "computer program" as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."[94] As an NFT is a digital ledger entry that contains data that can be used on a computer to bring about a particular result (for example, to display an image file), it appears that an NFT may qualify as a computer program for these purposes. If an NFT qualifies as a computer program, it would appear that a transfer of the NFT could be characterized as a transfer of a "copyrighted article" rather than a transfer of a "copyright right," if there are no off-blockchain legal arrangements in place that convey copyright rights in data associated with the NFT to the NFT holder.

If the transfer of an NFT constitutes the transfer of a "copyrighted article," it follows that if all benefits and burdens of ownership are conveyed to the transferee, the transfer is a sale or exchange (such that gain or loss generally should be sourced to the tax residence of the transferor unless the NFT is inventory property).[95] However, as discussed above, an NFT may specify that a "royalty" must be paid to the NFT creator each time the NFT is transferred, typically expressed as a percentage of the sales price paid by a transferee. If such NFT "royalty" arrangements are

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88 Treasury regulations section 1.861-18(b)(2).

89 Treasury regulations section 1.861-18(c)(1)(i).

90 Treasury regulations section 1.861-18(c)(1)(ii).

91 Treasury regulations section 1.861-18(f)(1).

92 Treasury regulations section 1.861-18(f)(2).

93 *See* Treasury regulations section 1.861-18(f).

94 Treasury regulations section 1.861-18(a)(3).

95 *See* Treasury regulations 1.861-18(f)(2) ("Income from transactions that are classified as sales or exchanges of copyrighted articles will be sourced under sections 861(a)(6), 862(a)(6), 863, 865(a), (b), (c), or (e), as appropriate."); section 865.

viewed as a retention by the original NFT creator of some of the benefits of ownership of the NFT, the initial transfer of an NFT from its creator to a secondary purchaser (and any subsequent transfer) could instead be characterized as a lease by the NFT creator of a copyrighted article (with the result that the source of any gain or loss on the initial sale of the NFT, as well as any subsequent "royalty" payments to the NFT creator, should be characterized as rental income sourced to the jurisdiction where the NFT is "located" or "used").[96] To the extent that NFT royalty payments are paid at the discretion of centralized NFT exchanges or marketplaces rather than because of any legal or blockchain-based entitlement retained by the NFT creator, characterizing the royalty arrangements as a lease generally appears inappropriate.

We recommend that Treasury and the IRS further study and provide guidance on the application of the software regulations to NFTs, including on whether and under what circumstances NFTs qualify as "computer programs" for those purposes.[97]

3. Treatment of NFTs that Participate in Underlying Algorithmic Activity

We understand that certain NFTs may represent interests in "smart contracts" that algorithmically perform an underlying digital activity. Very generally, a smart contract is a self-executing blockchain-based software protocol that automatically and irreversibly settles using blockchain-based digital assets once the conditions agreed to by network participants are met. For example, certain smart contracts colloquially known as "liquidity pools" act as automated market makers. In such arrangements, "liquidity providers" deposit pairs of digital assets with the liquidity pool in exchange for "liquidity tokens," which may be NFTs or fungible digital assets. In turn, the liquidity pool trades the deposited digital assets with other market participants based on a constant-product algorithm and earns transaction fees from each trade. The liquidity providers can exchange ("***burn***") their liquidity tokens at any time for a specified portion of digital assets and trading fees earned by the pool.

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96 *See id.* ("Income derived from the leasing of a copyrighted article will be sourced under section 861(a)(4) or section 862(a)(4), as appropriate.").

97 Treasury and the IRS should also consider whether and how the 2019 proposed cloud computing regulations apply to NFTs. *See* Notice of Proposed Rulemaking, *Classification of Cloud Transactions and Transactions Involving Digital Content*, REG-130700-14 (84 F.R. 40318). The proposed regulations supplement the software regulations and address the character and source of income from cloud computing transactions for purposes of certain international provisions of the Code. *See* Proposed Treasury regulations section 1.861-19(a). Very generally, the regulations define cloud computing transactions as transactions in which a taxpayer obtains on-network access to computer hardware, digital content or other similar resources and classify such transactions as either a lease of property or a provision of services, based on all the facts and circumstances. *See* Proposed Treasury regulations section 1.861-19(b), (c). Accordingly, to the extent that an NFT provides access to digital content, the character and source of income from the NFT may be addressed by the regulations. For example, if a taxpayer mints and sells NFTs that function as "membership cards" to access certain online content provided by the taxpayer through a website, the proposed regulations may treat proceeds the taxpayer receives for selling the NFT as services income that should be sourced to the location where the services are performed. *Cf.* Proposed Treasury regulations section 1.861-19(d), Example 4 (providing web access to customer relationship management software constitutes provision of services).

The Notice does not address such NFTs or how they should be characterized. Several characterizations appear possible depending on the particular facts and circumstances, including treating the NFT as ownership of a specified share of the underlying digital assets deposited in or earned by the smart contract or as equity in a deemed entity.[98] We recommend that the IRS further study and provide guidance on the tax treatment of such NFTs.

[98] *Cf.* Treasury regulations section 301.7701-1(a)(2) ("A joint venture or other contractual arrangement may create a separate entity for federal tax purposes if the participants carry on a trade, business, financial operation, or venture and divide the profits therefrom.").