

TAXING THE METAVERSE

112 GEORGETOWN LAW JOURNAL (forthcoming 2024)

*Young Ran (Christine) Kim**

The buzz surrounding the Metaverse has been growing steadily for the past couple of years, but the tax implications of this novel ecosystem remain fuzzy to most tax scholars. Such uncertainty is concerning, given the potential and momentum of this emerging technology. Although the Metaverse evolved from online video games focused only on user consumption, it now allows users to produce income and accumulate wealth entirely within the Metaverse. Current law seems to defer taxation of such until a realization or cash-out event. This paper challenges this approach.

This paper offers novel arguments justifying Metaverse taxation. Because economic activity within the Metaverse satisfies the Haig-Simons and *Glenshaw Glass* definitions of income, its exclusion will create a tax haven. Tax policy can also play an essential role in regulating the virtual economy. Furthermore, this emerging technology allows policymakers to modernize the tax system. The Metaverse's ability to record all digital activity and track individual wealth can offer governments a unique opportunity to tax income immediately upon receipt and thus, overcome the traditional realization requirement and its incentive for tax deferral. Immediate taxation, such as a mark-to-market system, would be a more efficient and fairer approach so long as it could overcome intrinsic valuation and liquidity problems.

Therefore, this paper proposes that income and wealth within the Metaverse should be subject to immediate taxation. As support, it considers the tax implications of self-created virtual assets (like NFTs), loot drops, intra-metaverse exchanges, inter-metaverse exchanges, and cash-for-virtual goods exchanges. It also endorses the proposal for unliquidated tax reserve accounts (ULTRAs) as a mark-to-market taxation suitable to resolve

* Professor of Law, Benjamin N. Cardozo School of Law, Yeshiva University. For helpful comments, I am grateful to Reuven Avi-Yonah, Eric Chason, Brian Galle, David Gamage, Ariel Jurow Kleiman, Omri Marian, Shayak Sarkar, participants of Saint Louis University School of Law Faculty Workshop, the Sixth Annual Junior Faculty Forum for Law and STEM (Stanford Law School), William & Mary Law School Faculty Colloquium, Columbia Law School Tax Policy Colloquium, NYU School of Law Tax Policy and Public Finance Colloquium, Cambridge University Tax Research Network Conference, Cardozo Law School Faculty Workshop, Michigan State University College of Law Faculty Workshop, Association of Mid-Career Tax Law Professors Conference, Critical Tax Conference, and BYU Winter Deals Conference. Camden Crystal, Maurice Elbaz, J. Garrett Huntington, and Rebecca Kreiser provided excellent research assistance.

immediate taxation’s valuation and liquidity issues. Finally, it demonstrates that governments can use the Metaverse as a laboratory for experimenting with cutting-edge policy, which may benefit broader audiences beyond tax policymakers interested in the Metaverse’s future.

| | |
|--|-----------|
| INTRODUCTION | 3 |
| I. DEFINING THE METAVERSE..... | 12 |
| A. Virtual Economy..... | 12 |
| B. Economic Activities in the Metaverse | 14 |
| II. SHOULD THE METAVERSE BE TAXED? | 17 |
| A. Challenges..... | 18 |
| 1. Size..... | 18 |
| 2. Volatility..... | 19 |
| B. Rationales for Taxation | 20 |
| 1. Theoretical Reasons | 20 |
| 2. Regulatory Reasons..... | 22 |
| III. TAX BASE: WHAT TO TAX? | 26 |
| A. Earnings and Profits..... | 26 |
| B. Self-Created or Produced Assets..... | 28 |
| 1. Imputed Income..... | 28 |
| 2. Clarifying the Creation in the Metaverse | 30 |
| C. Rewards..... | 31 |
| D. Gains Derived from the Virtual Assets | 34 |
| IV. TIMING OF TAXATION: WHEN IS IT TAXABLE? | 37 |
| A. Three Paradigm Cases | 38 |
| 1. Income Within a Single Ecosystem..... | 38 |
| 2. Exchanges Between Ecosystems | 40 |
| 3. Cashing Out to Real World | 41 |
| B. Policy Debates on Realization | 42 |
| C. Mark-to-Market Taxation in the Metaverse | 44 |
| 1. In Support of Mark-to-Market Taxation..... | 44 |
| 2. ULTRAs: A Method for Mark-to-Market Taxation | 47 |
| 3. Applying the ULTRAs to the Metaverse..... | 50 |
| V. COMPLIANCE: HOW TO TAX? | 52 |
| A. Tax Jurisdictions..... | 53 |
| 1. Source Taxation: Using the Server as a Proxy | 53 |
| 2. Residence Taxation | 54 |
| B. Enforcement Mechanism | 55 |
| CONCLUSION | 56 |

INTRODUCTION

On October 28, 2021, Facebook rebranded to Meta and declared that its long-term goal was to “bring the Metaverse to life and help people connect, find communities and grow businesses.”¹ This bold announcement brought the term ‘Metaverse’ into the collective public consciousness.² Although academics struggle to provide a standard definition,³ the Metaverse is commonly understood as “an expansive network of digital spaces, including immersive 3D experiences in augmented, virtual, and mixed reality, that are interconnected and interoperable so you can easily move between them, and in which you can create and explore with other people who aren’t in the same physical space as you.”⁴ Any metaverse will likely rely heavily on blockchain assets such as cryptocurrency and non-fungible tokens (NFTs).⁵

Polls suggest experts are split on the future value and development of the Metaverse and its related technologies.⁶ Many believe “the Metaverse has the potential to have substantial, beneficial economic impacts in multiple dimensions—including contributing to GDP growth, creating jobs, increasing productivity, and improving consumer welfare through other dimensions in both developed and developing countries.”⁷ However, others are not convinced.⁸ Since announcing its goal to “bring the Metaverse to life,”

¹ *Introducing Meta: A Social Technology Company*, META (Oct. 28, 2021), <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/>.

² Chart of Google Search Requests for the Word Metaverse from January 1, 2004 to February 8, 2023, GOOGLE TRENDS, <https://trends.google.com/trends/explore?date=2004-01-01%202023-02-08&geo=US&q=metaverse> (suggesting interest in the term ‘Metaverse’ spiked on the date Facebook rebranded to Meta).

³ See Josef Erl & Matthias Bastian, *Here Are 10 Metaverse Definitions, Take Your Pick*, MIXED (Sept. 3, 2022), <https://mixed-news.com/en/here-are-10-metaverse-definitions-take-your-pick/>.

⁴ LAU CHRISTENSEN & ALEX ROBINSON, *THE POTENTIAL GLOBAL ECONOMIC IMPACT OF THE METAVERSE* 5 (2022).

⁵ See, e.g., Ava Jones, *The Connection Between the Metaverse, Cryptocurrencies, And NFTs*, LINKEDIN (Dec. 20, 2021), <https://www.linkedin.com/pulse/connection-between-metaverse-cryptocurrencies-nfts-ava-jones/>.

⁶ See JANNA ANDERSON & LEE RAINIE, *THE METAVERSE IN 2040* 6 (PEW RESEARCH CENTER, Jun. 30, 2022).

⁷ See, e.g., CHRISTENSEN & ROBINSON, *supra* note 4, at 37, 44 (“if the metaverse were to be adopted and grow in a similar way as mobile technology, then we would expect it to be associated with a 2.8% contribution to global GDP after 10 years”); ANDERSON & RAINIE, *supra* note 6 (“Innovative developers are likely to drawn to the wide range of economic and manipulative opportunities in the metaverse... individual economically-driven enterprises offering competing capabilities, experiences and visions of the future will continue to be the structure of the metaverse in 2040... [the Metaverse] should have real economic and societal benefits”).

⁸ See ANDERSON & RAINIE, *supra* note 6, at 123, 125, 146 (“VR will be simply too much

Facebook Meta has seen a steady decrease in market value.⁹ Indeed, the lackluster participation in existing online virtual worlds such as Second Life,¹⁰ Decentraland,¹¹ and The Sandbox,¹² combined with a struggling NFT and Cryptocurrency market recently culminating in the collapse of FTX,¹³ calls into question the future viability of the Metaverse.

The future of the Metaverse is uncertain. Nevertheless, the lack of existing regulations governing both current and potential economic activity in the Metaverse and the resulting social chaos – as demonstrated by the dramatic failure of FTX – justifies the present discussion on Metaverse taxation.

added trouble for too little gain... The metaverse is mostly hype... The metaverse is just a marketing term being applied to things we already have.”).

⁹ See Aimee Picchi, *Meta's Value has Plunged by \$700 billion. Wall Street Calls it a "Train Wreck,"* CNBC (Oct. 28, 2022, 10:11 AM) <https://www.cbsnews.com/news/meta-stock-down-earnings-700-billion-in-lost-value/>; Ian Luke, *Why Facebook (Nasdaq: META) Stock Is Down So Much in 2022*, LINKEDIN (Nov. 27, 2022), <https://www.linkedin.com/pulse/why-facebook-nasdaq-meta-stock-down-so-much-2022-ian-luke/>; Mike Isaac, *6 Reasons Meta Is in Trouble*, N.Y. TIMES (Feb. 3, 2022), [https://www.nytimes.com/2022/02/03/technology/facebook-meta-challenges.html#:~:text=6%20Reasons%20Meta%20Is%20in%20Trouble%201%20User,..%206%20The%20specter%20of%20antitrust%20looms.%20;20;James%20Clayton,%20Facebook%20Owner%20Meta%20Sees%20Biggest%20Ever%20Stock%20Market%20Loss,%20BBC%20\(Feb.%204,%202022\),%20https://www.bbc.com/news/business-60255088](https://www.nytimes.com/2022/02/03/technology/facebook-meta-challenges.html#:~:text=6%20Reasons%20Meta%20Is%20in%20Trouble%201%20User,..%206%20The%20specter%20of%20antitrust%20looms.%20;20;James%20Clayton,%20Facebook%20Owner%20Meta%20Sees%20Biggest%20Ever%20Stock%20Market%20Loss,%20BBC%20(Feb.%204,%202022),%20https://www.bbc.com/news/business-60255088).

¹⁰ See Dan Heath & Chip Heath, *Why Second Life Failed*, SLATE (Nov. 8, 2011, 10:05 AM), <https://slate.com/business/2011/11/why-second-life-failed-how-the-milkshake-test-helps-predict-which-ultrahyped-technology-will-succeed-and-which-wont.html>; Gene Yoon, *Why Second Life Failed*, MEDIUM (Nov. 12, 2011), <https://medium.com/ginsudo/why-second-life-failed-699ea0073bb7>; ANDERSON & RAINIE, *supra* note 6, at 125 (“[The Metaverse] is mostly going to be like Second Life, which became populated by a lot of crazy people, sexists, racists, bigots and furies. Wired magazine was full of breathless articles every time some giant company decide to open a store in Second Life, but almost no one covered it when all of those companies quietly quit the platform since it was really quite problematic”).

¹¹ See Cam Thompson, *It's Lonely in the Metaverse: DappRadar Data Suggests Decentraland Has 38 'Daily Active' Users in \$1.3B Ecosystem*, COINDESK (Oct. 7, 2022, 1:21 PM, Updated Oct. 13, 2022, 1:52 PM), <https://www.coindesk.com/web3/2022/10/07/its-lonely-in-the-metaverse-decentralands-38-daily-active-users-in-a-13b-ecosystem/>.

¹² See *id.*

¹³ See Kalley Huang, *Why Did FTX Collapse? Here's What to Know.*, N.Y. TIMES (Nov. 10, 2022, Updated Nov. 18, 2022), <https://www.nytimes.com/2022/11/10/technology/ftx-binance-crypto-explained.html>; Ari Levy & MacKenzie Sigalos, *Crypto Peaked a Year Ago — Investors have Lost More Than \$2 Trillion Since*, CNBC (Nov. 11 2022 7:00 AM, Updated Nov. 14 2022 3:07 AM), <https://www.cnbc.com/2022/11/11/crypto-peaked-in-nov-2021-investors-lost-more-than-2-trillion-since.html>; Sidhartha Shukla, *NFT Trading Volumes Collapse 97% from January Peak*, BLOOMBERG (Sept. 28, 2022, 4:49 AM) <https://www.bloomberg.com/news/articles/2022-09-28/nft-volumes-tumble-97-from-2022-highs-as-frenzy-fades-chart>.

A productive discussion regarding Metaverse taxation first requires establishing a more concrete definition of the Metaverse. Since the United States primarily relies on income taxation, this paper argues that such a definition should align with the time-tested Haig-Simons definition of income, which includes “gains or increases in wealth over a particular period regardless of whether spent on consumption or saved.”¹⁴ Many digital worlds and online video games that may be considered a prelude to the Metaverse exist for the users’ *consumption*. For example, using real currency, Fortnite allows players to purchase various skins, weapons, and in-game currency.¹⁵ On the other hand, the Metaverse allows users to *produce real income and accumulate wealth* in addition to consumption, inviting the normative discussion on whether such income and wealth should be subject to taxation and how.

Thus, for this paper, the term Metaverse is used to describe any network of virtual worlds wherein participants engage in economic activity, including the ability to consume, create, trade, and accumulate digital items with real economic value.¹⁶ An item has real economic value if it can be converted or at least valued in a taxable currency such as crypto or the US dollar.¹⁷ Under this narrower definition, only virtual worlds that go above and beyond traditional video games are considered a part of the Metaverse.¹⁸

For example, consider the online virtual world known as Second Life. Users initially create an avatar to interact within this virtual world in ways

¹⁴ The Haig-Simons formula for income can be simplified to consumption plus savings. See JOHN A. MILLER & JEFFERY A. MAINE, *THE FUNDAMENTALS OF FEDERAL TAXATION* 21 (2018).

¹⁵ Brian Lloyd, *What is ‘Fortnite’ and Why is it so Popular?*, ENTERTAINMENT.IE, <https://entertainment.ie/gaming/fortnite-explained-388238/>.

¹⁶ The author has chosen to capitalize the word “Metaverse” when referring to the entire Metaverse. However, when referring to various metaverses within the Metaverse, the author has chosen to leave the “m” in its lower-case form. Throughout this paper’s body, it is self-understood that the Metaverse refers to all potential virtual worlds, whereas “metaverse(s)” refers to individual metaverses.

¹⁷ The ability to convert an item into crypto or cash often indicates economic value. However, direct conversion in the sense of participants trading a certain digital item for cash may not be necessary to identify economic value. It may be that the virtual world itself does not have a method of directly converting digital items or currency into crypto or cash, yet third parties still place value in terms of crypto or cash on such items. An example of this is the popular mobile multiplayer strategy game known as Clash of Clans. There is no way to sell or trade items for crypto or cash within the virtual world, yet because it takes so much time to build a virtual village, some people resort to purchasing fully developed Clash of Clans accounts online. See *Clash of Clans Accounts for Sale - CoC Bases & ID*, PLAYERAUCTIONS, <https://www.playerauctions.com/clash-of-clans-account/>.

¹⁸ See *infra* Part I.

similar to reality, including listening to music and watching movies.¹⁹ More importantly however, Second Life allows users to engage in a variety of economic transactions using virtual currency known as Lindens.²⁰ Users can earn Lindens in a variety of ways. Some of the more traditional methods include getting a job, creating your own business and selling things you collect or create, or hosting events for other players and charging a small fee.²¹ Users can also earn Lindens as a prize for winning various games or by stumbling upon what are called Money trees.²² The economic activity in Second Life has already produced a real-life millionaire.²³

This last example illustrates that there is no significant difference between how users earn income and accumulate wealth in the Metaverse and reality. Various economic activities within the Metaverse not only satisfy the Haig-Simons definition of income but also resemble the types of gross income found in Section 61 of the Internal Revenue Code (I.R.C. or the Code) and expanded by *Glenshaw Glass*.²⁴ Hence, Metaverse income and wealth are theoretically within the right of any sovereign to tax.²⁵ Furthermore, Metaverse taxation can play a significant regulatory role by enhancing information reporting and transparency in the virtual economy.²⁶

Nevertheless, imposing a tax on the Metaverse is uncharted territory with questions of varying complexity. In that vein, this paper discusses the taxability of self-created assets, rewards, and intra-Metaverse transactions.²⁷ Although these income categories satisfy the definition of Haig-Simons income and gross income under *Glenshaw Glass*, further issues arise when dealing with complex or unique assets lacking an established market, such as virtual assets or currency in the Metaverse.²⁸ Namely, the timing of

¹⁹ Kristin Kalning, *If Second Life isn't a Game, What is It?*, NBC NEWS (Mar. 11, 2007, 6:23 PM), <https://www.nbcnews.com/id/wbna17538999>.

²⁰ *How to Earn Real Money in Second Life 2021?*, TAX TWERK (Sept. 30, 2021), [https://taxwerk.com/how-to-earn-real-money-in-second-life-2021/#:~:text=One%20of%20the%20most%20fun%20ways%20to%20earn,win%20at%20these%20events%20varies%20quite%20a%20bit](https://taxwerk.com/how-to-earn-real-money-in-second-life-2021/#:~:text=One%20of%20the%20most%20fun%20ways%20to%20earn,win%20at%20these%20events%20varies%20quite%20a%20bit;); See also Rob Berger, *How to Earn a Second Income in Your 'Second Life'*, DOUGH ROLLER (Dec. 27, 2020, 2:15 PM), <https://www.doughroller.net/personal-finance/make-money/how-to-earn-a-second-income-in-your-second-life/>.

²¹ See *How to Earn Real Money*, *supra* note 20.

²² See *id.*

²³ Berger, *supra* note 20.

²⁴ See *Commissioner v. Glenshaw Glass Co.*, 348 U.S. 426 (1955); MICHAEL J. GRAETZ & ANNE L. ALSTOTT, *FEDERAL INCOME TAXATION, PRINCIPLES AND POLICIES* 76 (9th ed. 2022).

²⁵ See *infra* Part II.B.1.

²⁶ See *infra* Part II.B.2.

²⁷ See *infra* Part III.

²⁸ See Brian Galle, David Gamage & Darien Shanske, *Solving the Valuation Challenge: The ULTRA Method for Taxing Extreme Wealth*, 72 DUKE L.J. ___, 7 (forthcoming 2023).

taxation—whether economic gains within the Metaverse should be taxed immediately upon receipt or deferred until realization or cash-out from the Metaverse.²⁹

There is neither a clear rule nor a full-fledged discussion on taxing income and wealth within the Metaverse. However, there is an analogous discourse on taxing income from cryptocurrency transactions or virtual income in the pre-Metaverse era.³⁰ Many scholars take a practical stance of imposing a tax on individuals only when they cash out their virtual assets or wealth.³¹ IRS guidance expands the taxability of cryptocurrency by taking a stance that the gain of cryptocurrency by mining and as payment of goods or services should also be included in gross income.³² Still, the IRS's stance is limited to cryptocurrency and by the realization requirement. Hence, taxation of the Metaverse income and wealth would inevitably be deferred until realization or cash-out from the Metaverse.³³ It would only be taxed upon receipt if the Metaverse income and wealth took the form of a cryptocurrency. As a result, various economic activities in the Metaverse, such as minting an NFT, receiving a loot drop, and value appreciation of virtual property,³⁴ would yet be subject to taxation.

²⁹ See *infra* Part IV.

³⁰ See e.g. Leandra Lederman, “*Stranger Than Fiction*”: *Taxing Virtual Worlds*, 82 N.Y.U. L. REV. 1620 (2007); Adam Chodorow, *Ability to Pay and the Taxation of Virtual Income*, 75 TENN. L. REV. 695 (2011); Bryan Camp, *Taxation of Electronic Gaming*, 77 WASH. & LEE L. REV. 661 (2020) (endorsing tax deferral until cash-out for income from electronic gaming); Reuven S. Avi-Yonah & Mohanad Salaimi, *A New Framework for Taxing Cryptocurrencies*, U. Mich. Pub. L. Research Paper No. 22-014 (2022) (endorsing tax deferral of cryptocurrency until realization). Cf. Omri Marian, *Law, Policy, and the Taxation of Block Rewards*, 175 TAX NOTES FED. 1493 (2022) (endorsing taxation upon receipt of crypto assets immediately).

³¹ See Alex Gailey & Kendall Little, *Yes, Your Crypto is Taxable. Here’s How to Report Cryptocurrency to the IRS in 2022*, TIME (May 23, 2022), <https://time.com/nextadvisor/investing/cryptocurrency/cryptocurrency-tax-guide/>; *Frequently Asked Questions on Virtual Currency Transactions*, IRS, <https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions>.

³² I.R.S. Notice 2014–21, 2014-16 I.R.B. 938.

³³ Many websites explaining tax consequences of NFT transactions explain that creating an NFT is not a taxable event, but selling or exchanging them is. Here, realization or cash-out includes exchanging NFTs for cryptocurrency. See e.g., Tom Blake, *NFT Taxes: How Taxes on NFTs Work (And How to Track It)*, THE COLLEGE INVESTOR, <https://thecollegeinvestor.com/39239/how-taxes-on-nfts-work/> (last updated July 18, 2023); Alicia Tuovila, *NFT Tax Guide*, INVESTOPEdia, <https://www.investopedia.com/nft-tax-guide-5222726> (published Dec. 5, 2022).

³⁴ Debra Kamin, *The Next Hot Housing Market is Out of This World. It’s in the Metaverse*, N.Y. TIMES, <https://www.nytimes.com/2023/02/19/realestate/metaverse-vr-housing-market.html> (Feb. 19, 2023) (indicating the dramatic price increases of virtual real estate that neighbors parcels owned by celebrities and big-name brands.).

To be sure, postponing taxation of economic gains within the Metaverse until realization or cash-out makes some sense under the existing tax law, given that digital assets are often difficult to value, and their illiquid nature can result in taxpayers lacking the cash to pay taxes.³⁵ Historically, the tax law resolved these valuation and liquidity issues by implementing the realization requirement.³⁶ For more complex cases, like a record-breaking baseball or a fisherman's fish, the timing of taxation might be further delayed until the sale of the property,³⁷ thus making it easier to ascertain the asset's value and ensuring the taxpayer has the liquidity to pay the tax.³⁸

However, realization is not without its flaws. Realization is not a holy rule that is required by Constitution like the taxpayers argue in the pending *Moore v. United States*.³⁹ Rather, realization is a policy choice for an income tax system in the real world, where implementing an ideal income tax system based on the Haig-Simons definition of income is practically difficult.⁴⁰ Perhaps the most significant flaws of realization is incentivizing taxpayers to hold onto assets and reinvest the money they saved to mitigate or avoid taxes.⁴¹ The realization approach also *inefficiently* influences taxpayer decisions to buy and sell property.⁴² A taxpayer might hold onto appreciated property to avoid paying taxes or sell depreciated property to take advantage of deductions, even if it would otherwise make more sense to do the

³⁵ See Galle, Gamage & Shanske, *supra* note 28, at 8, 16.

³⁶ See *id.*

³⁷ See Steven Daly, *Trinket or Treasure: Applying Taxes to a Home-Run Baseball Audience Catch*, TOMPKINS WEEKLY (Nov. 16, 2022), <https://www.tompkinsweekly.com/articles/trinket-or-treasure-applying-taxes-to-a-home-run-baseball-audience-catch/>.

³⁸ See Galle, Gamage & Shanske, *supra* note 28, at 8.

³⁹ 36 F.4th 930 (9th Cir. 2022), *reh'g and reh'g en banc denied*, 53 F.4th 507 (9th Cir. 2022), *cert. granted* (U.S. June 26, 2023) (No. 22-800). For scholarly discussion of *Moore*, see e.g., John R. Brooks & David Gamage, *Moore v. United States and the Original Meaning of Income* (2023), <https://ssrn.com/abstract=4491855> (showing “that contemporary definitions of income did not incorporate—and could not have incorporated—the contemporaneous definition of realization, and that they in fact incorporated unrealized gain”). Cf. Brief of Petitioner at 17–21, *Moore, et ux. v. United States*, No. 22-800 (Feb. 21, 2003); Reply Brief of Petitioner at 9–11 (May 30, 2003).

⁴⁰ Therefore, the legislature can make exceptions to the realization requirement and include unrealized gain in the income tax base. See e.g., Reuven S. Avi-Yonah, *If Moore Is Reversed*, 110 TAX NOTES INT'L 1725 (2023) (illustrating various Code sections that impose tax on unrealized gains). This position is not limited to the United States. The Constitutional Court of South Korea held that realization is not a conceptual element of income and that it is a matter of legislative policy to either require realization for certain income or to include unrealized gains in the tax base. See e.g., Hunbeobjaepanso [Const. Ct.], July 29, 1994, 92Hunba49 (consol.) (S. Kor.).

⁴¹ See *id.* at 11.

⁴² See *id.* at 18–19.

opposite.⁴³ Taxpayers may even forgo new profitable investment opportunities if it requires selling appreciated property because the added cost of taxation outweighs the benefits.⁴⁴ Deferring taxation until the sale of an asset is also infamously *inequitable* since it primarily allows the wealthy to take advantage of lower capital gains rates or avoid paying taxes altogether.⁴⁵ Lastly, the complex rules and exceptions accompanying the realization principle impose a significant *administrative* burden.⁴⁶

Hence, this paper argues that assets or wealth in the Metaverse should be taxed immediately upon receipt. More precisely, it asserts that the digital nature of the Metaverse allows tax administrations to move away from the realization requirement and its resulting inefficiencies, inequalities, and administrative burdens. For immediate taxation, this paper pushes for a mark-to-market method known as the ULTRAs system to overcome the intrinsic valuation and liquidity challenges of Metaverse taxation.

ULTRAs stands for unliquidated tax reserve accounts.⁴⁷ The ULTRA system gives the government a notional percentage stake in a taxed asset upon receipt but defers actual taxation until the sale of the asset.⁴⁸ Thus, if an asset goes up in value, the tax on that asset goes up by a proportional amount, essentially charging the taxpayer an interest rate equivalent to their internal rate of return.⁴⁹ Taxing the Metaverse under the ULTRA system will skillfully resolve the valuation and liquidity issues relating to immediate taxation while removing the incentive for tax deferral accompanying the realization requirement. Although the ULTRA system requires closely tracking changes in net wealth and value in unliquidated assets, the digital world records all digital activities, affording new methods of monitoring and tracking individual wealth.⁵⁰ Thus, the Metaverse, in conjunction with the ULTRA system, might present the perfect opportunity to experiment with taxing income that has escaped the tax base or deferred due to administrative reasons. However, even if the ULTRA system is rejected, this paper still urges policymakers to push for immediate taxation of exchanges between

⁴³ *Id.*

⁴⁴ *Id.* at 19 (“Often, it is economically rational to refuse to invest in a profitable new opportunity, because the present value of switching is less than the cost of paying taxes on the swap.”).

⁴⁵ *Id.* at 19–21.

⁴⁶ See Galle, Gamage & Shanske, *supra* note 28, at 21.

⁴⁷ *Id.* at 70. The method behind the ULTRAs was proposed by Brian Galle, David Gamage, and Darien Shanske as a comprehensive annual wealth tax reform proposal for the state of California. See *id.* at 13.

⁴⁸ *Id.* at 10–12.

⁴⁹ *Id.*

⁵⁰ See e.g., Young Ran (Christine) Kim, *Blockchain Initiatives for Tax Administration*, 69 UCLA L. REV. 240 (2022) (explaining how the digital footprint in the blockchain helps improving tax administration).

Metaverses (e.g., trading crypto for a virtual good).

Lastly, this paper explores potential compliance issues in taxing the Metaverse.⁵¹ The first step is to identify the proper tax jurisdiction—the residence of the taxpayer or the source of the income. The tax authority will likely rely on the users'/gamers' IP addresses for residence taxation. However, it will be challenging to find the correct address since individuals can easily disguise their IP addresses. For source taxation, the Metaverse's server location is a highly plausible tax nexus. However, it is still only a proxy for the Metaverse, which has no physical location. In some ways, the Metaverse is everywhere and nowhere all at once. If server location is considered an improper nexus for sourcing income, the locations of Metaverse platform companies might be a good and practical option.⁵² Also, since these platforms create and run the new virtual world, their roles in tax compliance and administration may have to be strengthened. Therefore, it is worth considering introducing a withholding tax system for Metaverse income.

This paper provides various contributions to the scholarship on tax and technology. First, it offers a comprehensive and original analysis of the Metaverse's various tax issues. It explains the economic activities by which new value is created within the Metaverse and shows why the Metaverse is a new virtual world where the traditional tax rules focusing primarily on the consumption aspect of the virtual economy cannot apply as is. This paper argues that the new rule for properly taxing the Metaverse should be the immediate taxation of Metaverse income. To support this normative argument, it clarifies the potential tax base for various categories of Metaverse income. It also provides three paradigm cases to distinguish between intra-Metaverse income, inter-Metaverse income, and cashing out to the real world.

Second, this paper ambitiously challenges the traditional norm of realization in tax law and modernizes the policy debate concerning emerging technology. Scholars and policymakers seem to agree that the current tax law needs realization due to valuation and liquidity problems, despite its inefficient and inequitable consequence of allowing people to defer taxation while accumulating wealth through holding assets. When applying the traditional rules to emerging technology, such as cryptocurrency, the position has even further retreated by deferring taxation until cash-out events. This paper argues that the Metaverse offers a unique opportunity to finally overcome the realization requirement by taking advantage of the digital

⁵¹ See *infra* Part V.

⁵² See Roxanne Bland, *Taxing Income in the Metaverse*, FORBES (Oct. 24, 2022, 11: 39 AM), <https://www.forbes.com/sites/taxnotes/2022/10/24/taxing-income-in-the-digital-world/?sh=3ed08350199d>.

world's feature to record all activity and value virtual wealth in real-time. The Metaverse also allows for experimenting with novel mark-to-market taxation methods, such as the ULTRA system.

Finally, this paper's position that the Metaverse can be a laboratory for experimentation with cutting-edge policy might benefit broader audiences interested in the future of the Metaverse. Given the Metaverse's current status, tax authorities may feel it convenient to continue to wait for individuals to cash out. However, at some point, tax authorities may have to admit the technology is such that the Metaverse is no longer a supplement to the real world but an actual part of it.⁵³ If such an event occurs, the questions become how quickly and to what extent the Metaverse will take over. The answer to these questions is uncertain.⁵⁴ That said, there is a reason that Facebook has recently chosen to rebrand as Meta, and Microsoft has acquired Activision.⁵⁵ Despite the protests of old-timers and individual lawmakers, the Metaverse is likely to prevail if society continues on its current path. This paper's argument for implementing ULTRAs in the Metaverse will be even more relevant when it does. Moreover, the Metaverse's potential as a regulatory

⁵³ John M. Ghlionn & Brad Hamilton, *Metaverse Clothing, Travel, Plastic Surgery: Experts Predict Life in 2030*, N.Y. POST (Jan. 8, 2022), <https://nypost.com/2022/01/08/experts-predict-living-in-the-metaverse-by-2030/> (“By 2030, ‘a large proportion of people will be in the metaverse in some way’ . . . Some will simply use it ‘only to fulfill work or educational obligations’ . . . Others ‘will live the majority of their waking hours “jacked in.” Using a ‘blend of physical and behavioral biometrics, emotion recognition, sentiment analysis, and personal data,’ the metaverse will be able to create a customized and enhanced reality for each person.”).

⁵⁴ According to a survey conducted by the Pew Research Center, 54% of experts said that they expect by 2040 the metaverse will be a much-more-refined and truly fully-immersive, well-functioning aspect of daily life for a half billion or more people globally. On the other hand, 46% said that they expect by 2040 the metaverse will not be a much-more-refined and truly fully-immersive, well-functioning aspect of daily life for a half billion or more people globally. See *The Metaverse in 2040*, PEW RSCH. CTR. (June 30, 2022), <https://www.pewresearch.org/internet/2022/06/30/the-metaverse-in-2040/>.

⁵⁵ An article on Mark Zuckerberg's decision to rebrand Facebook as Meta stated the following:

Whether Meta will stick as a brand depends on how the company will use the new name. For example, think of Alphabet, which is a holding company, not a consumer brand. As such, it hasn't become a household name. Meta will be less likely to stick if it is not attached to a product or service. It needs to become a brand that is relevant to consumers. Mark Zuckerberg, founder of Facebook/Meta, has linked the new brand name to his strategic plan to create a metaverse — a virtual world in which consumers spend increasing parts of their lives, based on AI and virtual reality (VR) technology. This is an important new phase in the digital world.

Klaus Wertenbroch, *Why Facebook is Rebranding Itself as Meta*, KNOWLEDGE INSEAD (Jan. 24, 2022), [https://knowledge.insead.edu/marketing/why-facebook-rebranding-itself-meta#:~:text=It%20needs%20to%20become%20a,virtual%20reality%20\(VR\)%20technology.](https://knowledge.insead.edu/marketing/why-facebook-rebranding-itself-meta#:~:text=It%20needs%20to%20become%20a,virtual%20reality%20(VR)%20technology.)

laboratory may extend beyond tax policy.

The remainder of this paper proceeds as follows. Part I offers a narrow definition of the Metaverse and discusses the economic activity occurring within that invites the question of taxation. Part II acknowledges the inherent challenges accompanying Metaverse taxation due to its uncertain future and volatile nature while also providing normative policy arguments justifying such a tax. Part III then analyzes the tax base of various categories of Metaverse income, including earnings and profits, imputed income, rewards, and gains derived from dealings in virtual assets. Part IV examines the timing of Metaverse taxation. More specifically, it criticizes the position to defer taxation until a subsequent realization or cash-out event. Instead, it proposes the introduction of a mark-to-market system, such as the ULTRAs method. Lastly, Part V examines compliance issues accompanying Metaverse taxation, such as applying source or resident taxation and tax withholding. This paper concludes that the Metaverse allows tax authorities to test the consequences of modern tax policies, such as immediately taxing income that the law currently defers due to administrative reasons.

I. DEFINING THE METAVERSE

Facebook's rebranding to Meta brought attention to the Metaverse, but what exactly does the term Metaverse mean? From a technological standpoint, the Metaverse is the digital world.⁵⁶ If we were to accept such a broad characterization, the Metaverse would include virtual reality, augmented reality, and any digital world accessible outside those means.⁵⁷ However, this paper avoids such a broad characterization because a productive scholarly discussion requires a more concrete definition. As this paper aims to discuss the taxation of the Metaverse, the focus will be on its economic feature.

A. Virtual Economy

The Metaverse is a nebulous term with many meanings.⁵⁸ Almost all

⁵⁶ See Eric Ravenscraft, *What is the Metaverse, Exactly?*, WIRED (Apr. 25, 2022, 7:00 AM) <https://www.wired.com/story/what-is-the-metaverse/>; Luke Lango, *Meta's Version of the Metaverse Is a Joke. But This Emerging VR Tech Holds Great Promise*, NASDAQ (Sept. 24, 2022, 8:01 AM), <https://www.nasdaq.com/articles/metaverse-version-of-the-metaverse-is-a-joke.-but-this-emerging-vr-tech-holds-great-promise>.

⁵⁷ See Ravenscraft, *supra* note 56.

⁵⁸ See, e.g., Charles R. Macedo et al., *The Metaverse: From Science Fiction to Commercial Reality—Protecting Intellectual Property in the Virtual Landscape*, 31 NYSBA

literature on the Metaverse begins by mentioning that Neil Stephenson coined the term in his 1992 science fiction novel *Snow Crash*.⁵⁹ After that, the academic literature struggles to provide a uniform definition.⁶⁰ While some academics believe it is “meaningless to put effort into a clear and concise definition” of the Metaverse,⁶¹ others have made attempts. One article explains the Metaverse as “a 3D-based virtual reality in which daily activities and economic life are conducted through avatars representing the real themselves.”⁶² Another defines the Metaverse as:

[A]n interconnected web of ubiquitous virtual worlds partly overlapping with and enhancing the physical world. These virtual worlds enable users represented by avatars to connect and interact with each other, to experience and consume user-generated content in an immersive, scalable, synchronous and persistent environment. An economic system provides incentives for contributing to the Metaverse.⁶³

Furthermore, some authors have gone as far as to argue that “[M]etaverse means a world in which virtual and reality interact and co-evolve, and social, economic, and cultural activities are carried out in it to create value.”⁶⁴

Despite the lack of an objective definition, it is clear from the above discussion that the Metaverse is something more than a simple online playground, like video games. It is more than a social network where people participate in virtual social activities. It also differs from a virtual copy of real economies, such as Facebook Marketplace or Craigslist. Rather, in the Metaverse, unique economic activities take place by inputting virtual goods and labor and producing virtual goods and services. For example, users may purchase digital real estate with unique digital currencies⁶⁵ and law firms and

BRIGHT IDEAS 13 (2022); Markus Weinberger, *What is Metaverse?—A Definition Based on Qualitative Meta-Synthesis*, 14 FUTURE INTERNET 1, 2 (2022); Bokyoung Kye, et al., *Educational Applications of Metaverse: Possibilities and Limitations*, 18 J. EDUC. EVALUATION FOR HEALTH PROF. 1 (2021).

⁵⁹ See, e.g., Macedo et al., *supra* note 58, at 13 (The term “Metaverse” itself comes from author Neal Stephenson’s 1992 novel *Snow Crash*, which describes it as an immersive world”).

⁶⁰ *Id.* See also Erl & Bastian, *supra* note 3.

⁶¹ See Weinberger, *supra* note 58, at 2.

⁶² See Kye, et al., *supra* note 58, at 2.

⁶³ Weinberger, *supra* note 58, at 13.

⁶⁴ Kye, et al., *supra* note 58, at 2.

⁶⁵ Mark Maurer, *Accounting Firms Scoop Up Virtual Land in the Metaverse*, WALL ST. J. (Jan. 7, 2022, 6:53 PM), <https://www.wsj.com/articles/accounting-firms-scoop-up-virtual-land-in-the-metaverse-11641599590>.

accounting firms can open virtual offices and offer services.⁶⁶

This paper focuses on the underlying economic activities within virtual worlds to define the Metaverse more narrowly and develop a theory of taxation. Given the United States' current reliance on income taxes, such a definition should track closely with the widely accepted Haig-Simon's definition of income, which includes "gains or increases in wealth over a particular period regardless of whether spent on consumption or saved."⁶⁷ In other words, income is equal to a taxpayers' consumption plus changes in their net worth. Many digital worlds and games traditionally considered part of the Metaverse allow for consumption. For example, using real currency, Fortnite allows players to purchase various skins, weapons, and in-game currency.⁶⁸ Nevertheless, only the worlds allowing players to *produce income and accumulate wealth* are relevant to taxation.

Thus, for this paper, the term 'Metaverse' is used to describe any network of virtual worlds wherein participants engage in economic activity, including the ability to consume, create, trade, and accumulate digital items with real economic value. An item has real economic value if it can be converted or at least valued in a taxable currency such as crypto or the US dollar.

B. Economic Activities in the Metaverse

Under this narrower definition, only virtual worlds that go above and beyond traditional video games can be considered a part of the Metaverse. For example, consider the online virtual world known as Second Life. Users initially create an avatar to interact within this virtual world in ways similar to reality, including listening to music, watching movies, and having sex.⁶⁹

⁶⁶ *How PwC is Building the Business Metaverse for Our People and Our Clients*, PRICEWATERHOUSECOOPERS' (Nov. '3, '2022), [https://www.law.com/americanlawyer/2022/02/15/arent-fox-buys-property-in-the-metaverse-becoming-first-big-law-firm-with-serious-presence-in-the-virtual-world/?slreturn=20230015031106](https://www.pwc.com/us/en/tech-effect/innovation/building-trust-and-delivering-value-in-metaverse.html?WT.mc_id=CT3-PL300-DM1-TR1-LS2-ND30-PRG7-CN_CryptoMetaverse-Metaverse&gclid=CjwKCAiA5Y6eBhAbEiwA_2ZWIWmq_okmFit-he8wB-I7WtFu8hNRHSesVs2BrlogM2UXd_kW9RmNOhoCsokQAvD_BwE&gclsrc=aw.ds; Bruce Love, <i>Aren't Fox Buys Property in the Metaverse, Becoming First Big Law Firm With Serious Presence in the Virtual World</i>, AM. LAW. (Feb. 15, 2022, 5:00 AM), <a href=).

⁶⁷ MILLER & MAINE, *supra* note 14, at 21; HENRY C. SIMONS, *PERSONAL INCOME TAXATION* 50 (1938).

⁶⁸ *See* GAMESTOP: FORTNITE 1,000 V-BUCKS, <https://www.gamestop.com/pc-gaming/pc-games/products/fortnite-v-bucks/11097408.html#:~:text=Fortnite%20players%20or%20gifters%20can,the%20card%20has%20been%20redeemed.>

⁶⁹ Kalning, *supra* note 19.

More importantly, however, Second Life allows users to engage in a various economic transactions using a virtual currency known as Lindens (L), which can be exchanged with dollars at a rate varying between 280L and 350L per dollar.⁷⁰ Users can earn Lindens in a variety of ways. The more traditional methods include getting a job, creating your own business and selling things you collect or create, or hosting events for other players and charging a small fee.⁷¹ Users can also earn Lindens as a prize for winning various games or events or even stumble upon Lindens by finding money trees.⁷² Interestingly, the economic activity in Second Life has already produced a real-life millionaire.⁷³

The Entropia Universe is also an example of an online virtual world that would fall under this paper's narrower definition of the Metaverse. The Entropia Universe is an open world made up of a complex planetary system that boasts a "universal Real Cash Economy system" reliant upon an in-game currency known as PED.⁷⁴ Each PED is exchangeable for real-world dollars at a fixed rate of ten PED per dollar.⁷⁵ While one can purchase PED directly, the in-game possibilities to earn PEDs are endless. Traditional methods include creating, gathering, looting, or purchasing items of value (e.g., raw resources, clothing, or property) and either selling them to the in-game terminal at a fixed price or auctioning them off to other players at a premium.⁷⁶ Participants also have the opportunity to earn PEDs as a reward or prize for participating in various activities.⁷⁷ For players less interested in playing the game directly, they can earn PEDs by taking on service roles, such as a merchant who runs a store for other players or a pilot who delivers players to different areas of the map.⁷⁸ Perhaps the most intriguing aspect of the Entropia Universe's economy is the ability to earn passive income. Players can purchase and manage virtual land, earning revenue from all player activity in that area.⁷⁹ One such property was famously bought for

⁷⁰ *How to Earn Real Money*, *supra* note 20; Berger, *supra* note 20.

⁷¹ *How to Earn Real Money*, *supra* note 20.

⁷² *Id.*

⁷³ Berger, *supra* note 20.

⁷⁴ *The Universe: More Than a Game*, ENTROPIA UNIVERSE, <https://www.entropiauniverse.com/entropia-universe/>; Frank, *14 Ways to Earn Money in Entropia Universe*, GOOD MISERY (Jul. 16, 2020), <https://goodmisery.com/14-ways-to-earn-money-playing-entropia-universe/>.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Get Paid to Play Entropia Universe*, EXPLORE ENTROPIA UNIVERSE, BLOG, <https://www.exploreentropia.com/blog/get-paid-to-play-entropia-universe#:~:text=Entropia%20Universe%20has%20so%20many%20ways%20to%20make,as%20long%20as%20the%20entire%20summer%20More%20items.>

⁷⁹ *Id.*; Frank, *supra* note 74.

\$330,000 in 2009.⁸⁰ Another way to earn passive income is by purchasing virtual land deeds or shares of stock, which earn user's an expected return of five to eight percent per year.⁸¹

As a final illustration, consider the online battle video game Axie Infinity. At its core, the game allows players to breed digital creatures known as Axies and use them to fight other players.⁸² Interestingly, each Axie is an NFT that can be sold separately in an NFT marketplace.⁸³ The game also has an in-depth economy that allows players to buy, sell, and trade resources for one of two types of Ethereum-based-in-game cryptocurrencies, namely AXS and SLP.⁸⁴ Players can earn in-game cryptocurrency by playing the game (i.e., winning battles) or raising and selling Axies.⁸⁵ Another unique way to earn in-game cryptocurrency is to provide new players with scholarships.⁸⁶ Axie Infinity has a high upfront fee (\$400-\$600) to purchase an Axie, which inevitably disqualifies lower-income users.⁸⁷ To overcome this barrier, users can accept a scholarship from an existing player whereby they accept a free Axie in exchange for giving their sponsor a cut of their winnings.⁸⁸ Like Second Life and the Entropia Universe, Axie Infinity players can earn significant income from these online economic activities.⁸⁹

As Parts II and III will discuss in more detail, there is no meaningful difference between how players accumulate economic wealth in the Metaverse versus reality. Thus, it is worth considering whether such activities should be taxed and, if so, how. Simply ignoring these questions because the Metaverse exists on a plane foreign to many lawmakers cannot be excused.⁹⁰

Note that most of this paper is limited to activities that remain entirely

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² Sam Greenspan, *The Complete Guide to Make Money with Axie Infinity (Plus: How Much Can You Earn?)*, KNOJI (Jan. 11, 2022), <https://knoji.com/article/make-money-with-axie-infinity/>.

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*; Ekta Mourya, *Here's How Axie Infinity Players are Earning Nearly \$500/Month in 'Crypto' Rewards*, FXSTREET (Aug. 19, 2021, 8:44 AM), <https://www.fxstreet.com/cryptocurrencies/news/heres-how-axie-infinity-players-are-earning-nearly-500-month-in-crypto-rewards-202108190844>.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ Lily Hay Newman, *The Future of Tech Is Here. Congress Isn't Ready for It*, WIRED (Jan. 7, 2022, 2:57 PM), <https://www.wired.com/story/will-hurd-tech-regulation-american-reboot/> (discussing author and former congressman Will Hurd's call for "the US government and state and local legislatures across the country to sharpen their understanding of the role of technology as misinformation, data abuse, and emerging technologies like AI become increasingly influential in domestic affairs and geopolitics").

within the boundaries of the Metaverse. In other words, this paper does not focus on the entrance to and exit from the Metaverse. Instead, it concentrates on economic activities and transactions between parties within the Metaverse such as when Metaverse participants generate income by renting out virtual land or completing online tasks. Transactions can also be limited to the confines of the Metaverse. For instance, Fortnite players who experience server outages may be compensated with V-Bucks which they can use to purchase various in-game items such as outfits.⁹¹ None of the parties involved in these scenarios need to exit the Metaverse to receive something of economic value.

II. SHOULD THE METAVERSE BE TAXED?

Building upon the definition of the Metaverse, the next logical step is to ask whether the Metaverse should be subject to taxation. The Metaverse's digital nature and uncertain future might tempt some to answer that question negatively. However, this paper argues the opposite for two reasons. First, certain economic activities in the Metaverse satisfy the Haig-Simons definition of income. The Metaverse offers many opportunities for earning regular and imputed income, receiving rewards, and transacting.⁹² Hence, at least theoretically, such income should be subject to taxation. Otherwise, income generated therein becomes so-called “stateless income,” making the Metaverse another tax haven.⁹³ Second, as observed in the recent collapse of cryptocurrency markets,⁹⁴ which are closely related to the Metaverse, introducing taxation may enhance transparency and regulatory monitoring. Thus, the Metaverse should be subject to taxation.

However, this conclusion inevitably raises the more practical questions of whether it is even possible to tax the Metaverse and, if so, whether it is

⁹¹ Kussal Mehta, *Fortnite Players Could be Getting 1,000 Free V-Bucks Due to Server Issues*, FIRST SPORTZ (Oct. 8, 2022), <https://firstsportz.com/esports-news-fortnite-fortnite-players-could-be-getting-1000-free-v-bucks-due-to-server-issues/>.

⁹² See, e.g., Brian Mieggs, *How to Make Money in the Metaverse (20 Proven Ways)*, MY MILLENNIAL GUIDE (July 6, 2022), <https://www.mymillennialguide.com/how-to-make-money-in-the-metaverse/>; Jeffrey Craig, *How to Make Passive Income in the Metaverse?*, PHEMEX (Oct. 12, 2022), <https://phemex.com/blogs/passive-income-metaverse/>; Kristi Waterworth, *How Do I Make Money in the Metaverse?*, THE MOTLEY FOOL (May 3, 2022, 5:36 PM), <https://www.fool.com/investing/2022/05/03/how-do-i-make-money-in-the-metaverse/>.

⁹³ For stateless income, tax havens, and related tax problems, see Edward D. Kleinbard, *Stateless Income*, 11 FLA. TAX REV. 700 (2011).

⁹⁴ Wayne Duggan, *Crypto Crash: Why Is Crypto Down Today?*, FORBES ADVISOR (Nov. 10, 2022, 10:09 AM), <https://www.forbes.com/advisor/investing/cryptocurrency/why-is-crypto-down-today/>.

worthwhile. Indeed, various issues relating to sovereignty, sustainability, liquidation, valuation, and convertibility arise. Although this paper does not claim to have the perfect answer to all of these questions, this Part will introduce the different problems and provide possible rationales for taxation to fuel further conversation on this topic.

A. Challenges

1. Size

One of the biggest issues facing the taxation of the Metaverse is that it has a relatively small tax base and an even smaller number of taxable transactions. The Metaverse is currently estimated to have 400 million active monthly users.⁹⁵ The player base of three popular video games—Roblox, Minecraft, and Fortnite—comprises approximately 90% of these users.⁹⁶ While these games are considered a part of the Metaverse, they are not the idealistic versions being propagated to the masses by the likes of Mark Zuckerberg.⁹⁷ Meta’s own flagship metaverse platform, Horizon Worlds, has an unimpressive (relative to their investment) monthly average users of less than 200,000.⁹⁸ Many other Metaverse platforms that try to create the idealistic version of the Metaverse have similarly minuscule and often declining populations.⁹⁹

All this to say, most of the Metaverse is people playing three video games predominantly marketed to and used by children. A tiny minority of participants are taxable users engaging in taxable economic activity. Thus,

⁹⁵ Geri Mileva, *52 Metaverse Statistics | Market Size & Growth (2023)*, INFLUENCER MARKETING HUB (Jan. 4, 2023), <https://influencermarketinghub.com/metaverse-stats/>; Metaversed, *The Metaverse Reaches 400m Monthly Active Users*, LINKEDIN (Mar. 12, 2022), https://www.linkedin.com/pulse/metaverse-reaches-400m-monthly-active-users-metaversed/?trk=pulse-article_more-articles_related-content-c. See also Q4 Metaverse Universe Update, METAVERSED, <https://metaversed.webflow.io/blog/q4-universe-chart-update>.

⁹⁶ Mileva, *supra* note 95 (“There are 400 million monthly active users dwelling on the Metaverse. The largest chunk comes from Roblox (230 million), followed by Minecraft (165 million), and Fortnite (85 million)”).

⁹⁷ See Carmela Chirinos, *Mark Zuckerberg Defies Haters of the Metaverse, Reveals His Vision for a Digital World Where You Can Make Eye Contact with Others*, FORTUNE (Mar. 25, 2022, 5:24 PM), <https://fortune.com/2022/03/25/mark-zuckerberg-metaverse-plans/>.

⁹⁸ James Batchelor, *Meta’s Flagship Metaverse Horizon Worlds Struggling to Attract and Retain Users*, GAMES INDUSTRY (Oct. 17, 2022), <https://www.gamesindustry.biz/metaverse-flagship-metaverse-horizon-worlds-struggling-to-attract-and-retain-users>; Akira Ming, *Meta’s Horizon Worlds is Reportedly Struggling to Retain Users*, PLAYTOEARN (Oct. 18, 2022) <https://playtoearn.net/news/metaverse-horizon-worlds-is-reportedly-struggling-to-retain-users>.

⁹⁹ Thompson, *supra* note 11; Batchelor, *supra* note 98.

some may argue that a tax on the Metaverse in its current form may not even be worth the costs of the implementation. Additionally, at the rate the industry is going, the Metaverse is years, if not decades, away from reaching a scale where this population will significantly change.

2. Volatility

Another issue with taxing the Metaverse is the volatility of digital assets. One need only look at the cryptocurrency market's 70% devaluation (\$2 trillion loss) over the past year to see that digital assets are highly volatile.¹⁰⁰ As the past year decimated the crypto and NFT markets, and as most Metaverses are quickly burning through capital with little revenue, it is unclear how long the Metaverse will continue to remain in the public sphere and receive support in its development.¹⁰¹ One can also argue that the Metaverse is merely a fad rekindled by Facebook's rebrand to Meta in 2021.¹⁰² The Metaverse was popular a decade ago through the advent of Second Life and other online platforms.¹⁰³ It later faded from the public consciousness and went into obscurity.¹⁰⁴ If it happened once before, there is no reason it cannot happen again.¹⁰⁵ Even a few years ago, there was a massive boom in augmented reality with Google Glasses and Snapchat Spectacles. After realizing there was no substantial public interest, these projects mostly died.¹⁰⁶ Perhaps Meta is only carrying on the virtual reality and metaverse push because companies like Google and Apple dominate their traditional ad-supported business models.¹⁰⁷ Regardless, it could be only a matter of time before out-of-touch idealists stop pushing the façade of the Metaverse and abandon it like many other unsuccessful projects before.

Furthermore, a series of scandals in the digital currency exchanges cast doubts on the future of the Metaverse. For example, in December 2022, the

¹⁰⁰ Levy & Sigalos, *supra* note 13.

¹⁰¹ *Id.*; Shukla, *supra* note 13; Picchi, *supra* note 9.

¹⁰² *Introducing Meta*, *supra* note 1; Chart of Google Search Requests, *supra* note 2.

¹⁰³ Toin Villar, *What Is Second Life? A Brief History of the Metaverse*, MAKEUSEOF (Apr. 11, 2022) <https://www.makeuseof.com/what-is-second-life-history-metaverse/>.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ See Dani Di Placido, *Why Snapchat's Spectacles May Succeed Where Google Failed*, FORBES (Sep 24, 2016, 3:57 PM), <https://www.forbes.com/sites/danidiplacido/2016/09/24/snaps-spectacles-may-succeed-where-google-failed/?sh=378fd72e12fc>; Patrick Kulp, *Snap Lost \$40 Million on Spectacles*, MASHABLE (Nov. 7, 2017), <https://mashable.com/article/snap-unsold-spectacles>.

¹⁰⁷ Kurt Wagner, Mark Bergen & Matthew Townsend, *Meta Is Now Calling Out Google Over Apple's App Privacy Rules*, BLOOMBERG (Feb. 9, 2022, 10:00 AM), <https://www.bloomberg.com/news/articles/2022-02-09/apple-critic-meta-turns-ire-toward-google-over-app-privacy-rules#xj4y7vzkg>.

digital currency exchange FTX experienced a major collapse, leading to significant investor losses.¹⁰⁸ This event underscores the potential risks of investing in the volatile world of crypto-assets and highlights the need for careful regulation of the industry. The collapse of FTX also serves as a reminder of the importance of due diligence for investors and the need for robust reporting and transparency requirements for digital currency exchanges.¹⁰⁹ These issues are particularly relevant in the context of the Metaverse, where the use of digital currencies and assets is increasingly common.¹¹⁰ The FTX collapse serves as a cautionary tale for those looking to invest in the Metaverse and highlights the need for careful consideration and oversight of the industry.

B. Rationales for Taxation

1. Theoretical Reasons

Despite its challenges, there are both theoretical and practical justifications to support taxing the Metaverse. First, let us examine the theoretical reasons. Much of the economic activity occurring within the Metaverse falls under the widely accepted Haig-Simons definition of income, which is defined as "the algebraic sum of (1) the market value of rights exercised in consumption and (2) the change in the value of the store of property rights between the beginning and end of the period in question."¹¹¹ As demonstrated in Part I.B. and further discussed in Part III, participants of the Metaverse earn income, such as business profits, salary, rewards and windfalls, investment income, and gains from property dealings. Such activity falls under the Haig-Simons conception of income as participants can spend and accumulate in-game currency and other digital items that hold real economic value.

Further strengthening this argument is that many of these activities closely resemble the various types of gross income found in Section 61 of the Internal Revenue Code and expanded by *Glenshaw Glass*.¹¹² For example,

¹⁰⁸ Huang, *supra* note 13.

¹⁰⁹ Sean Stein Smith, *FTX's Collapse Highlights The Need For Better Crypto Reporting Requirements*, FORBES (Nov. 14, 2022, 5:47 AM), <https://www.forbes.com/sites/seansteinsmith/2022/11/14/ftxs-collapse-highlights-the-need-for-better-crypto-reporting-requirements/?sh=eea3b882fc21>.

¹¹⁰ See Emma Lee & Henry Hon, *Travelling the Metaverse Through NFTs and Digital Assets*, CRYPTO.COM (Nov. 30, 2021), <https://crypto.com/research/travelling-metaverse-through-nfts-digital-assets>.

¹¹¹ SIMONS, *supra* note 67, at 50.

¹¹² *Commissioner v. Glenshaw Glass Co.*, 348 U.S. 426 (1955); GRAETZ & ALSTOTT, *supra* note 24, at 76.

earning in-game currency by running a profitable store or transporting other players to different parts of the map looks like gross income derived from a business and compensation for services.¹¹³ Moreover, selling appreciated digital property or land falls under gains derived from dealings in property.¹¹⁴ Even selling a self-created digital item for profit or stumbling upon a valuable reward resembles imputed income and a windfall.¹¹⁵

Moreover, a sovereign with the implicit right to tax economic activity outside the Metaverse has the same right to tax mirror transactions within the digital space. Many scholars believe that “the right to tax is intrinsically associated with sovereign status,” as it is the primary means for a government to support itself.¹¹⁶ Numerous countries, including the United States, choose to exercise this inherent right under the income theory of taxation. As a result, the sovereign state should theoretically tax any gains associated with such activities.

With taxation, the economic activity within the Metaverse can potentially become a significant revenue source. Without taxation, it runs the risk of becoming a new tax haven. Illustrative of this is the story of Julian Dibble, author of the book *Play Money: Or, How I Quit My Day Job and Made Millions Trading Virtual Loot*.¹¹⁷ In the book, Julian recounts how he sought IRS guidance on how to report his significant 2003 earnings from Ultima Online and found that no one at the IRS was even thinking about virtual economies.¹¹⁸

While the IRS has come a long way since 2003, it has yet to issue Metaverse-specific tax rules. However, the IRS has issued guidance on related technologies such as cryptocurrencies, making it clear that virtual currencies exchangeable for real-world currencies are taxable, whereas “closed-loop” currencies are not.¹¹⁹ For example, the IRS has clarified that Fortnite’s V-Bucks and Roblox’s Robux are not to be taxed because they cannot be converted into dollars.¹²⁰

However, is this the correct approach if such activities still have economic value? By limiting taxation to exclude closed-loop currencies, the IRS potentially leaves millions of dollars of taxable income on the table and opens

¹¹³ I.R.C. § 61(a)(1), (2) (2018).

¹¹⁴ I.R.C. § 61(a)(3) (2018).

¹¹⁵ *Commissioner v. Glenshaw Glass Co.*, 348 U.S. 426 (1955).

¹¹⁶ See Allison Christians, *Sovereignty, Taxation and Social Contract*, 18 MINN. J. INT’L L. 99, 104–105, n.9 (2009).

¹¹⁷ JULIAN DIBBELL, *PLAY MONEY: OR, HOW I QUIT MY DAY JOB AND MADE MILLIONS TRADING VIRTUAL LOOT* (2007).

¹¹⁸ *Id.*

¹¹⁹ Miles Brooks, *Will I have to Pay Taxes in the Metaverse?*, COIN LEDGER, <https://coinledger.io/blog/metaverse-taxes> (last visited Feb. 8, 2023).

¹²⁰ *Id.*

the door for a potential tax haven. One source aptly describes this situation as “it will get to the point where the dollar value becomes so sizeable that the IRS would be almost negligent if it didn’t at least look into the potential of taxing these worlds.”¹²¹ A Bloomberg article also explains that

If a company decided to develop its own NFTs and sell those in a metaverse—such as a fashion company selling unique branded clothes which can be worn by an avatar—any gain realized on an increase of value of the relevant NFT may also be taxed along with the crypto currencies the company receives in return.¹²²

In short, economic activities and the resulting income in the Metaverse, even if it is closed-looped, should be taxed. Otherwise, we are creating a new tax haven.

2. Regulatory Reasons

Taxing the Metaverse can also play a significant regulatory role by enhancing information reporting and transparency in the financial market relating to the virtual economy. The need for such regulation, particularly in markets involving cryptocurrency, NFTs, and other blockchain innovations closely related to the Metaverse, has become increasingly apparent in recent years.¹²³ Consider the dramatic collapse of FTX, which some call the “Lehman Brothers of Crypto.”¹²⁴ In only a few short days, FTX went from being the fourth-largest Crypto Exchange in the world with a value of \$32 billion to filing for Chapter 11 bankruptcy, losing over \$1 billion of customer funds, and being investigated for potential criminal and security violations.¹²⁵

¹²¹ Clive Thompson, *The Virtual Taxman Cometh*, WIRED (Dec. 18, 2006, 2:00 AM), <https://www.wired.com/2006/12/the-virtual-taxman-cometh/>; see also Jamie S. Switzer & Ralph V. Switzer Jr., *Taxation of Virtual World Economies: An Empirical Review*, 12 PERFORMANCE AND PARTICIPATION 3 (2011).

¹²² Roger Van De Berg & Henrik Stipdonk, *Tax Problems Become More Complex When Entering the Metaverse*, BLOOMBERG TAX (Sept. 13, 2022, 2:45 AM), <https://news.bloombergtax.com/tax-insights-and-commentary/tax-problems-become-more-complex-when-entering-the-metaverse>.

¹²³ See Smith, *supra* note 109.

¹²⁴ Phil Rosen, *The Lehman Brothers of Crypto: Here's How the Fall of Sam Bankman-Fried's FTX Compares to the Collapse that Sparked the Great Financial Crisis*, INSIDER (Nov. 14, 2022, 4:05 AM), <https://www.businessinsider.com/lehman-brothers-crypto-sam-bankman-fried-ftx-2008-crisis-investing-2022-11>.

¹²⁵ Farran Powell, *FTX Declares Bankruptcy*, FORBES ADVISOR (Nov. 14, 2022, 11:09 AM), <https://www.forbes.com/advisor/investing/cryptocurrency/ftx-declares-bankruptcy/>; Angus Berwick, *Exclusive: At Least \$1 Billion of Client Funds Missing at Failed Crypto*

The rapid downfall of FTX resulted from a liquidity run on FTX's native coin, which was ultimately triggered by a single article raising concerns about the solvency of FTX.¹²⁶

In the aftermath of FTX, many call for more proactive regulation of these new and developing markets, including establishing clear reporting and transparency requirements.¹²⁷ Interestingly, tax policy is a particularly effective tool to accomplish such goals in financial markets.¹²⁸ In fact, using tax policy as a regulatory tool to improve reporting and transparency in financial markets relating to the virtual economy is already in progress. Perhaps the most notable example is the OECD's Crypto-Asset Reporting Framework ("CARF") which was developed to combat the unique risks that Crypto-Assets pose to global tax transparency.¹²⁹ Namely, Crypto-Assets are transferred and held without going through traditional financial intermediaries, making it difficult for tax administrations to verify whether taxes are appropriately reported and assessed.¹³⁰ CARF attempts to resolve this issue by ensuring a standardized and automatic exchange of tax information for Crypto-Asset transactions on an annual basis with taxpayers' resident jurisdiction.¹³¹ Under CARF, qualifying service providers are subject to various reporting rules and due diligence requirements because

Firm FTX, REUTERS (Nov. 13, 2022, 3:00 PM), <https://www.reuters.com/markets/currencies/exclusive-least-1-billion-client-funds-missing-failed-crypto-firm-ftx-sources-2022-11-12/#:~:text=The%20exchange's%20founder%20Sam%20Bankman,amount%20at%20about%20%241.7%20billion.>

¹²⁶ Powell, *supra* note 125; Rosen, *supra* note 124; *see also* Ian Allison, *Divisions in Sam Bankman-Fried's Crypto Empire Blur on His Trading Titan Alameda's Balance Sheet*, COINDESK (Nov. 2, 2022, 8:44 AM), <https://www.coindesk.com/business/2022/11/02/divisions-in-sam-bankman-frieds-crypto-empire-blur-on-his-trading-titan-alamedas-balance-sheet/>.

¹²⁷ *See* Smith, *supra* note 109.

¹²⁸ *See* Carlo Garbarino, *The Global Architecture of Financial Regulatory Taxes*, 36 MICH. J. INT'L L. 603, 612 (2015) ("financial regulatory taxes can constitute an efficient market-based solution insofar as they impose additional costs on certain financial actors' excessive risk-taking behavior equal to the negative externalities generated by such behavior"); Reuven S. Avi-Yonah, *Taxation as Regulation: Carbon Tax, Health Care Tax, Bank Tax and Other Regulatory Taxes*, 1 ACC. ECON. & L. 1, 9 (2011) ("[t]axation as regulation makes sense when (1) it is applied to small numbers of taxpayers, (2) the taxpayers are sophisticated and able to deal with complex tax incentives, (3) the regulatory goal is clear and related to the level of the tax. The bank tax, the carbon tax, and other forms of corporate taxation meet these criteria").

¹²⁹ CRYPTO-ASSET REPORTING FRAMEWORK AND AMENDMENTS TO THE COMMON REPORTING STANDARD, OECD 9–10 (2022), <https://www.oecd.org/tax/exchange-of-tax-information/crypto-asset-reporting-framework-and-amendments-to-the-common-reporting-standard.htm>.

¹³⁰ *Id.* at 9.

¹³¹ *Id.* at 6, 9.

they are in the best position to have all the necessary information.¹³²

The United States also uses tax policies to enforce reporting requirements and increase transparency in various crypto markets. The IRS issued ad hoc guidance on cryptocurrency reporting as early as 2014 when they published a notice clarifying that any gain or loss from the sale of Crypto must be reported with the basis equaling the FMV of the Crypto upon receipt.¹³³ It also clarified that the fair market value (upon receipt) of any cryptocurrency received as payment for goods or services must be reported as gross income, including mining efforts.¹³⁴ More recently, the IRS amended Form 1040 to ask whether, at any time during 2020, the taxpayer received, sold, sent, exchanged, or otherwise acquired any financial interest in any virtual currency.¹³⁵

Despite these efforts, studies showed that U.S. taxpayers were still not paying appropriate taxes on cryptocurrency transactions.¹³⁶ In response, the Infrastructure Investment and Jobs Act (IIJA) of 2021 introduced new reporting requirements related to Crypto assets to bring "transparency to the market while also giving taxpayers greater certainty as to their taxable gains and losses related to the transaction of digital assets."¹³⁷ Similar to the OECD proposal, the IIJA puts the responsibility on digital-asset brokers to collect customer information and report to the IRS all transactions involving digital assets in an annual tax report such as Form 1099-B or another form that the IRS designs.¹³⁸ It also requires digital asset brokers to furnish transfer statements whenever digital assets are transferred and put the responsibility on any trade or business that receives more than \$10,000 in cash in exchange for a digital asset to file a Form 8300 within fifteen days.¹³⁹

¹³² *Id.* at 11, 14–18.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Frequently Asked Questions on Virtual Currency Transactions*, IRS (Mar. 23, 2022), <https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions>.

¹³⁶ Adam Goldberg, William Sheridan & Yvonne Kunihira-Davidson, *What the US Infrastructure Bill Means for Cryptocurrency Brokers and Owners / Part II*, S&P GLOBAL (Dec. 20, 2021), <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/what-the-us-infrastructure-bill-means-for-cryptocurrency-brokers-and-owners.html>.

¹³⁷ *Id.*

¹³⁸ *Id.*; *2023 IRS Cryptocurrency Reporting Requirements*, STRAUSS TROY BLOG (Mar. 10, 2022), <https://www.strausstroy.com/articles/2023-irs-crypto-reporting/#:~:text=Specifically%2C%20cryptocurrency%20exchanges%20will%20have,for%20more%20than%20one%20year>).

¹³⁹ Kevin Ainsworth, David Askew & Peter Kwon, *Infrastructure Investment and Jobs*

CARF and IJIA have yet to be fully implemented; thus, their regulatory effectiveness in the crypto market is uncertain. Nevertheless, tax policy has proven to be an effective tool to increase transparency and enforce reporting requirements in the banking industry. Consider the Report of Foreign Bank and Financial Accounts (FBAR) and the Foreign Account Tax Compliance Act (FATCA) in conjunction with the Swiss Bank Program. FBAR and FATCA are federal laws that require United States persons, including individuals, companies, and trusts, to report their financial accounts held outside of the United States to the Treasury Department and the IRS.¹⁴⁰ To promote global compliance with FATCA, the United States signed an intergovernmental agreement with Switzerland whereby Swiss financial institutions must automatically report to the Swiss Federal Tax Administration (FTA) any accounts held by U.S. taxpayers.¹⁴¹ In return, the Swiss FTA will pass this information to the IRS.¹⁴² This agreement has had a significant impact on the Swiss banking industry. Swiss banks have been obliged to invest in the technology and resources needed to identify and report US-related accounts and adjust their compliance processes to ensure that accounts are correctly identified and reported.¹⁴³

In sum, the uncertain and virtual nature of the Metaverse does not remove

Act Contains New Cryptocurrency Reporting Requirements, BDO US (Jan. 5, 2022), <https://www.bdo.com/insights/tax/infrastructure-investment-and-jobs-act-contains-new-cryptocurrency-reporting-requirements>; Denise Hintzke, Peter Larsen, Rob Massey & John Wagner, *Tax Reporting in the Age of Cryptocurrency*, DELOITTE, <https://www2.deloitte.com/us/en/pages/tax/articles/cryptocurrency-tax-reporting.html>.

¹⁴⁰ *Summary of Key FATCA Provisions*, IRS (Nov. 9, 2022), [https://www.irs.gov/businesses/corporations/summary-of-key-fatca-provisions#:~:text=Reporting%20by%20U.S.%20Taxpayers%20Holding,the%20taxpayer's%20annual%20tax%20return;Report%20of%20Foreign%20Bank%20and%20Financial%20Accounts%20\(FBAR\),IRS%20\(July%2012,%202022\),](https://www.irs.gov/businesses/corporations/summary-of-key-fatca-provisions#:~:text=Reporting%20by%20U.S.%20Taxpayers%20Holding,the%20taxpayer's%20annual%20tax%20return;Report%20of%20Foreign%20Bank%20and%20Financial%20Accounts%20(FBAR),IRS%20(July%2012,%202022),) <https://www.irs.gov/businesses/small-businesses-self-employed/report-of-foreign-bank-and-financial-accounts-fbar>; Department of Justice, *Justice Department Reaches Final Resolutions Under Swiss Bank Program*, PRESS RELEASE 16-1535 (Dec. 29, 2016), <https://www.justice.gov/opa/pr/justice-department-reaches-final-resolutions-under-swiss-bank-program>; Marnin J. Michaels, et al., *The DOJ's Swiss Bank Program: Lessons Learned and the Road Ahead*, THOMSON REUTERS (Aug. 1, 2016), [https://content.next.westlaw.com/practical-law/document/I945436024eb211e698dc8b09b4f043e0/The-DOJ-s-Swiss-Bank-Program-Lessons-Learned-and-the-Road-Ahead?viewType=FullText&originationContext=document&transitionType=DocumentItem&ppcid=29a690aca35743d280ba606ce2e63694&contextData=\(sc.RelatedInfo\)](https://content.next.westlaw.com/practical-law/document/I945436024eb211e698dc8b09b4f043e0/The-DOJ-s-Swiss-Bank-Program-Lessons-Learned-and-the-Road-Ahead?viewType=FullText&originationContext=document&transitionType=DocumentItem&ppcid=29a690aca35743d280ba606ce2e63694&contextData=(sc.RelatedInfo)).

¹⁴¹ See *Switzerland: Guidance on Implementing FATCA Agreement with United States*, KPMG (Mar. 26, 2021), <https://kpmg.com/us/en/home/insights/2021/03/tnf-switzerland-guidance-on-implementing-fatca-agreement-with-united-states.html>; Michaels et al., *supra* note 140.

¹⁴² *Id.*

¹⁴³ Armando Mombelli, *Swiss Banks to Tell All Under FATCA*, SWI (Jun. 30, 2014), https://www.swissinfo.ch/eng/us-legislation_swiss-banks-to-tell-all-under-fatca/40473870.

the fact that it should be taxed. Since much of the economic activity within this space falls under the Haig-Simons definition of income, even resembling traditional sources of "real income," it is within the sovereign jurisdiction's right to impose such a tax. Allowing otherwise will only create stateless income and open up the Metaverse as a potential tax haven. Furthermore, taxation is perhaps the best tool to enforce information reporting and transparency, which will ultimately prevent tragedies such as the collapse of FTX. However, the conclusion that sovereigns ought to tax the Metaverse inevitably raises the more complicated questions of when and how to tax the Metaverse. Indeed, there are challenges in adapting the existing realization principle and identifying which jurisdiction has the right to tax economic activities within the Metaverse. The following Parts will introduce the various problems and provide possible solutions to encourage further conversation on this topic.

III. TAX BASE: WHAT TO TAX?

As illustrated in Part I.B., many activities in the Metaverse generate income. Users might earn prizes or rewards for winning various events, get a job earning compensation or salary, or operate a business earning business profits. Still, others might create, gather, loot, or purchase virtual items of value and sell them for gains derived from property dealings.

The first task for subjecting such income to taxation is determining the tax base. That is because the current system does not focus solely on gross receipts, instead looking to net income after deducting business expenses and capital expenditures.¹⁴⁴ Furthermore, current law exempts or defers taxation of certain income for various policy reasons.¹⁴⁵ This Part explores how to apply basic tax rules to income within the Metaverse.

A. *Earnings and Profits*

Let us begin with categories of Metaverse income that more easily apply to the general income taxation rules. These include compensation, business profits, interest, dividends, and other similar types whereby realization occurs upon receipt in the real world. This paper will refer to this group of income categories collectively as earnings and profits. The sections below will discuss other income categories that involve an interval between receipt and realization.

¹⁴⁴ GRAETZ & ALSTOTT, *supra* note 24, at 76–77.

¹⁴⁵ For example, current law does not tax imputed income and offers many exceptions to gifts and prizes. See *id.* at 113–133.

The general income tax rules apply to determine the tax base of earnings and profits within the Metaverse. Under these rules, the tax base is equal to the taxpayer's net income, which is gross income minus business expenses or costs.¹⁴⁶ Note also that personal expenses are not deductible,¹⁴⁷ whereas hobby expenses are deductible to the extent the hobby activity generates income.¹⁴⁸ When applying these rules to earnings and profits within the Metaverse, the form of payment does not affect the inclusion of such in gross income.¹⁴⁹ Hence, if a user receives virtual assets (e.g., game items) or cryptocurrency for compensation, the amount of income would be the fair market value of the transferred property.¹⁵⁰ Similarly, if a user receives the same virtual assets from operating a business in the Metaverse, the amount of income would be the net profits after deducting business expenses or costs.

Earnings and profits income within the Metaverse poses the least number of challenges. Nevertheless, the fact that such income is in the form of virtual assets or cryptocurrency raises two inevitable issues. The first is valuation. As discussed in Part II.A., any valuation of Metaverse income is shaky, given the volatility of digital assets. The second is liquidity. Taxpayers will inevitably face liquidity problems upon paying tax obligations if all their virtual income is in the form of assets, not cash. True, postponing the taxation of such income until the sale of these virtual assets for cash resolves both issues. Indeed, this type of cash-out event is already taxable under current law.¹⁵¹ However, this paper tackles the more difficult question of taxing such income while it is within the Metaverse.

In-kind taxation can be a solution to the valuation and liquidity problems.¹⁵² However, such difficulties are not unique to earnings and profits income. As discussed below, other categories of Metaverse income suffer from the same challenges in addition to problems stemming from the realization requirement. Thus, instead of recommending in-kind taxation for earnings and profits, this paper reserves Part IV.C. to propose an alternative, more comprehensive solution to the various difficulties.

¹⁴⁶ I.R.C. §§ 61, 162 (2018).

¹⁴⁷ I.R.C. § 262.

¹⁴⁸ I.R.C. § 183.

¹⁴⁹ Treas. Reg. § 1.61-2(a).

¹⁵⁰ See e.g., Treas. Reg. § 1.61-2(d).

¹⁵¹ *Digital Assets*, IRS, <https://www.irs.gov/businesses/small-businesses-self-employed/digital-assets#:~:text=For%20federal%20tax%20purposes%2C%20digital,to%20transactions%20using%20digital%20assets.>

¹⁵² See Jeremy Bearer Friend, *Tax Without Cash*, 106 MINN. L. REV. 953, 958 (2021).

B. Self-Created or Produced Assets

1. Imputed Income

Some Metaverses allow users to create and improve digital assets.¹⁵³ For example, some virtual worlds allow gamers to complete tasks to fashion a weapon.¹⁵⁴ Additionally, a person might be able to create and customize an NFT.¹⁵⁵ These activities are similar to producing goods or services for a trade or business (like baking cookies at a bakery) or generating imputed income (like baking cookies at home) in the real world.

In principle, self-created assets or merchandise for a trade or business are taxable. The timing of taxation for such assets are deferred until the assets are sold.¹⁵⁶ Such taxation would fall under the category of business profits discussed in Part III.A. On the other hand, if self-creation happens not for the business, the accession to wealth is excluded from tax base as imputed income.

Imputed income arises when people use their own property or own services to provide benefits to themselves.¹⁵⁷ Classic examples include painting a picture, cleaning your house, or harvesting apples from an apple tree in the backyard. Whenever a person performs services for one's own benefit or produces goods for one's own consumption, the person has an economic gain equal to the amount the person saves by not having to pay someone else to provide the services or goods. Those economic gains, or imputed income, are considered income under the Haig-Simons definition of income and *Glenshaw Glass*.¹⁵⁸

Nonetheless, current law does not tax imputed income due to practical and political difficulties, including valuation and recordkeeping problems.¹⁵⁹ Lawrence Zelenak and Martin McMahon Jr. explain that Congress has never considered it necessary to give explicit statutory authority to exclude imputed income.¹⁶⁰ Most governments and tax scholars have simply accepted that

¹⁵³ Louis Chan & Simeon Woo, *Exploring the Metaverse: Creating Digital Assets*, HKTDC RESEARCH (Nov. 9, 2022), <https://research.hktdc.com/en/article/MTIxMTQ4MzMyOA>.

¹⁵⁴ Ashim, *How to Get Sick, the New Melee Weapon, in COD Mobile*, SPORTSKEEDA (June 9, 2021), <https://www.sportskeeda.com/esports/how-get-sickle-new-melee-weapon-cod-mobile>.

¹⁵⁵ See Greenspan, *supra* note 82.

¹⁵⁶ See *e.g.*, Treas. Reg. §§ 1.61-3, -4.

¹⁵⁷ GRAETZ & ALSTOTT, *supra* note 24, at 113.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.* at 113-14.

¹⁶⁰ Lawrence A. Zelenak & Martin McMahon, Jr., *Taxing Baseballs and Other Found Property*, 84 TAX NOTES 1299, 1308 (1999).

imputed income should not be taxed.¹⁶¹ Indeed, such an exclusion makes intuitive sense since it is almost impossible to value imputed income. Additionally, imputed income leaves no cash trail for the government to follow. Hence, current law defers taxation until the benefits are later realized (e.g., selling the painting or harvested apples).¹⁶²

Unfortunately, the failure to tax imputed income creates inequality and inefficiencies.¹⁶³ For example, by not taxing imputed income, the tax system favors those taxpayers who decide to stay home to take care of their children over those who work and send their children to daycare. The result is inefficient because it influences people's decisions to work. It is also unfair because similarly situated taxpayers pay different taxes. The inequality exacerbates when the labor supply of secondary earners and single parents, who are more likely to be women, is more responsive to tax rates than that of primary earners.¹⁶⁴

Thus, the current policy of excluding imputed income may be revisited if there is a possibility to overturn the rationales. Indeed, the Metaverse turns these rationales on their heads. To be clear, this paper still sympathizes with the existing rationales of excluding imputed income as long as the imputed income involves benefits from self-services. However, self-created *property* in the Metaverse, such as NFT art, that could be excluded from tax base as imputed income should be included in the tax base. Furthermore, such virtual property should be taxed immediately because of the digital world's unique ability to monitor all activity.¹⁶⁵ While it would be impossible to administer and oversee the actions of every individual in the physical world, the virtual world allows gains from imputed income to be monitored and valued immediately.¹⁶⁶

That said, just because a system can do something does not mean it should. When taxing gains derived from property, even if it is self-created, current law requires realization. This paper's proposal to tax the self-created

¹⁶¹ GRAETZ & ALSTOTT, *supra* note 24, at 113–14.

¹⁶² *Id.*

¹⁶³ *Id.* at 113.

¹⁶⁴ *Id.* at 114.

¹⁶⁵ 3 *Benefits Technology Brings to Financial Reporting and Planning*, CPA PRAC. ADVISOR (July 2, 2019), <https://www.cpapracticeadvisor.com/2019/07/02/3-benefits-technology-brings-to-financial-reporting-planning/34165/> (discussing how automation and machine learning “can streamline tasks such as automated invoicing or allowing electronic payments”); Moiz Navsariwala, *What is Blockchain Technology, and How Does it Work?*, SERVER MANIA (Aug. 23, 2022), <https://blog.servermania.com/what-is-blockchain/#:~:text=Blockchain%20is%20a%20decentralized%2C%20permanent,among%20a%20network%20of%20businesses> (highlighting that blockchain technology is relevant in the digital world because it provided enhanced security, greater transparency, instant traceability, increased efficiency and speed, and automation capacity).

¹⁶⁶ Navsariwala, *supra* note 165.

property immediately would abandon the realization requirement. An in-depth debate on how to overcome the realization requirement in the Metaverse is discussed in Parts IV.B. and C below.

2. Clarifying the Creation in the Metaverse

Before wrapping up this Subsection, it is worthwhile to clarify what it means to create a digital asset. If a user can use a metaverse platform to create an entirely new or unique digital asset that previously did not exist, then that user created the digital asset. However, what if the user did not create something entirely new but instead made something already available to the user? That item may have been, in fact, ‘created’ by the programmers, contained in the code of a metaverse platform, and hidden from the users until certain events happen. For example, consider the game *World of Warcraft* (WoW). In WoW, a player can craft items using materials from their inventory.¹⁶⁷ Below is an image from WoW that shows a recipe for crafting ‘Grim-Veiled Spaulders.’

[Picture 1: A Recipe for Crafting an Item in the World of Warcraft]



This craft requires 45 ‘Shrouded Cloth,’ 10 ‘Orboreal Shards,’ and 15

¹⁶⁷ *Blacksmithing*, WOWPEDIA, <https://wowpedia.fandom.com/wiki/Blacksmithing>.

‘Enchanted Lightless Silk’ (the crafting materials). A player can craft a ‘Grim-Veiled Spaulders’ by consuming their crafting materials. If a player crafts a ‘Grim-Veiled Spaulders,’ did they create the ‘Grim-Veiled Spaulders’? If this action were examined by comparing it to the physical world, one might say the player created the ‘Grim-Veiled Spaulders’ using their crafting materials. The player used resources to create a new asset, which may be considered imputed income.

However, consider this from the perspective of the digital world consisting of ones and zeros. The player entered a command to the game, gave up one’s digital assets, and gained a new digital asset. That description applies to another type of action, an exchange. This situation is indistinguishable from a purchase or exchange. The above picture could have easily been a shop menu rather than a crafting menu. For example, the player would purchase a ‘Grim-Veiled Spaulders’ and pay for it using their crafting materials. A metaverse platform can easily relabel this activity as an exchange or creation at a moment’s notice. They can change the context and create animations to support either claim. Since a tax on the Metaverse should be consistent across platforms and not be easily manipulated by platforms, these two activities should be classified in a consistent non-manipulatable manner. Since the user is essentially exchanging resources and is not doing any significant actions besides confirming selections on a menu, this should be labeled as an exchange transaction which has its own tax treatment discussed in Part III.D. in this paper.

C. Rewards

Imagine a player in the Metaverse randomly receives a reward called a loot drop for killing an enemy.¹⁶⁸ At the same time, remember that killing enemies is one of the goals of the game since survival is key.¹⁶⁹ If we were to then tax the players for receiving loot drops such as shields or bat companions, we would, essentially, be taxing them for playing the game. Sure, loot drops can be randomized and are not guaranteed, but they are programmed to happen at a given probability.¹⁷⁰ Therefore, it can be argued

¹⁶⁸

Loot

Drop,

SLANG.NET, https://slang.net/meaning/loot_drop#:~:text=The%20items%20an%20enemy%20drops,to%20valuable%20in%20game%20items (last updated July 14, 2021).

¹⁶⁹ E.g., Andrew P. Heaton, *Minecraft Player Beats the Game Without Technically Killing Any Mobs*, GAME RANT (Apr. 30, 2022), <https://gamerant.com/minecraft-player-beats-game-no-killing/#:~:text=Generally%2C%20Minecraft%20is%20a%20peaceful,want%20to%20finish%20the%20game> (it is necessary “to kill certain creatures to progress” in Minecraft).

¹⁷⁰ Daniel Cook, *Loot Drop Best Practices*, GAME DEVELOPER (Dec. 15, 2014), <https://www.gamedeveloper.com/design/loot-drop-best-practices>.

quite persuasively that they are a primary reason for playing the game. Much like a lottery that a player plays to win money, a gamer may be playing the game specifically for the loot that he/she will later sell.

As long as virtual rewards have economic value, they are accessions to wealth under *Glenshaw Glass* and considered taxable income. Note that the player may be involved in hobby activities. While some players may mainly view a video game like Minecraft as a lucrative activity, others just play for the fun of it and collect loot for their own personal use in the game, or “not-for-profit” in tax terms. For such hobby activities, tax law limits the deductibility of expenses and losses but still imposes tax on income.¹⁷¹ For instance, scrapbooking is a hobby that can only be taxed once a person makes money or net profits from it.¹⁷² Keeping loot for oneself within the Minecraft world may not be any different. In short, receiving virtual rewards in the Metaverse is subject to taxation.

The next question is: how should the virtual rewards in the Metaverse be taxed? This depends on the characterization of the acquisition of the rewards. Loot drops in a game like Minecraft sound similar to prizes and rewards, in which case they are reportable gross income and immediately taxable under Section 74(a) of the Code. Another view is to treat them as treasure troves which are also immediately taxable under Treasury Regulation § 1.61-14.¹⁷³

On the other hand, some may argue that taxation of virtual rewards should be deferred until a disposition occurs at an auction house or through a merchant so that the ability for Minecraft players to play without worrying about tax consequences is preserved. And this tax deferral position seems fair, at least at first blush, because although the Metaverse may enable us to tax virtual rewards immediately,¹⁷⁴ it seems unfair to tax players for their hobbies before their hobbies become business ventures.

That said, virtual rewards are an accession to wealth under *Glenshaw Glass* and, thus, clearly income. Is there a way to defer taxation of such income to a later disposition? To answer this question, a potentially better analogy may be the record-breaking baseball that a fan randomly catches at a game.

The academic debate on how to tax the record-setting baseball catch demonstrates the agony of finding the proper tax rule for a specific scenario

¹⁷¹ I.R.C. § 183(a), (b); *Tips for Taxpayers Who Make Money from a Hobby*, IRS, <https://www.irs.gov/newsroom/tips-for-taxpayers-who-make-money-from-a-hobby> (last updated Jan. 31, 2023).

¹⁷² IRS, *supra* note 171.

¹⁷³ I.R.C. § 74; Treas. Reg. § 1.61-14.

¹⁷⁴ See *infra* Parts IV.B and C.

involving a treasure trove.¹⁷⁵ The IRS and some tax experts, including Andrew Appleby, argue that the Treasure Trove Regulation, which automatically requires including the found property in gross income, applies to record-setting baseballs that are not immediately disclaimed.¹⁷⁶ Darren Heil explain that very few people sitting on a valuable asset consider that valuable asset a pure hobby. It is not too farfetched to imagine that, in the backs of their minds, they know that they have an “ace” in their possession.¹⁷⁷ And if this is the case, it may not be fair that the government has to wait for the sale of that “ace” when it is perfectly capable of monitoring the gain and valuing its worth.¹⁷⁸

¹⁷⁵ The record-setting baseball has been much discussed by scholars and the IRS. See Joseph M. Dodge, *Accessions to Wealth, Realization of Gross Income, and Dominion and Control: Applying the “Claim of Right Doctrine” To Found Objects, Including Record-Setting Baseballs*, 4 FLA. TAX REV. 685 (2000). In the 1990s the IRS made clear that if an audience member catches a valuable baseball at a game but disclaims it immediately, the audience member will not be taxed. The IRS explained, however, that such an audience member is required to include the ball in one’s gross income under the Treasure Trove Regulation if the person decides to keep the ball. *Id.* at 724.

Shortly afterwards, Zelenak and McMahon challenged this approach. See Zelenak & McMahon, *supra* note 160. They thought that a record-setting baseball was best viewed as imputed income and, therefore, tax should be deferred until a disposition occurred. *Id.* Zelenak and McMahon focused on the cash base of our tax system, and concluded that deferred taxation for found property, other than cash, was not a threat to our system. *Id.*

Joseph M. Dodge disagreed with Zelenak’s and McMahon’s analysis. Dodge distinguished between taken property and record-setting baseballs, while Zelenak and McMahon did not. Dodge, *supra* note 175, at 694–96. For context, examples of taken property are fish found by fisherman and minerals mined by miners. Such found property only gets taxed once a disposition occurs. Zelenak and McMahon argued that the Treasure Trove Regulation did not distinguish between taken property that required effort and true windfalls like record setting baseballs, while Dodge argued that there was an inherent difference because of the lack of effort involved in catching the baseball. *Id.*

¹⁷⁶ See Andrew D. Appleby, *Ball Busters: How the IRS Should Tax Record-Setting Baseballs and Other Found Property Under the Treasure Trove Regulation*, 33 VT. L. REV. 43, 48–49 (2008); Dodge, *supra* note 175.

¹⁷⁷ Darren Heil speaks to a similar point when he makes the argument that the IRS’s decision to distinguish between the audience member who catches the record-setting baseball and keeps it and the audience member who immediately disclaims it is untenable. See Darren Heil, *Comment, The Tax Implications of Catching Mark McGwire’s 62nd Home Run Ball*, 52 TAX LAW., 871 (1999). Heil suggests that the audience member who disclaims the ball is acting rationally because he/she knows that his/her returning of the ball will cause him/her to receive benefits, some even monetary. Overall, Heil argues that the Service’s conclusion that the taxpayer does not realize income when returning the ball makes no sense because the taxpayer only ever returns the ball because the gain without it is greater than the gain with it. *Id.* at 878–79.

¹⁷⁸ This is the exact position that Kip Dellinger took to the record-setting baseball catch hypothetical. See Appleby, *supra* note 176, at 53 (asserting “that it would be ‘pure folly for the IRS to suggest that a fan catching the ball owes no tax immediately’”).

In contrast, Zelenak and McMahon Jr. compare baseballs to imputed income and conclude that tax on such baseballs should be deferred until the fans who catch them sell them. Furthermore, tax scholars like Leandra Lederman and Adam Chodorow support tax deferral for loot drops.¹⁷⁹ Although Lederman argues that loot drops are not like imputed income or record-setting baseballs, she argues that loot drops are like what she refers to as “taken property.”¹⁸⁰ She compares the loot to the fisherman’s fish or the miner’s minerals which are only taxed upon a disposition of the fish or minerals.¹⁸¹ Chodorow, on the other hand, argues for no taxation on virtual income until it is cashed out because virtual income does “not increase the ability to pay real-world taxes.”¹⁸²

Lederman’s and Chodorow’s push for tax deferral has benefits when we think about individuals who just want to play games for recreational purposes. That said, their rationales are mainly based on the difficulty of valuation and administration. The government cannot monitor when the fisherman or the miner acquire fish or minerals or how much these acquisitions are worth. Actual valuation of fish or minerals will happen at a later disposition, so it would make sense to wait until then. Likewise, loot drops or virtual rewards function the same way. Or do they? Virtual loot is called loot because it has inherent value. And unlike the baseball, fish, or minerals that we might struggle to value right away, the digitization of the Metaverse gives us the unique ability to monitor and value the loot. (More in-depth analysis of the valuation in the Metaverse will be discussed in Parts IV.B. and C). So why wait for a later disposition of cashing out to occur? The government should be able to take advantage of this valuation and tax the recipient of the virtual rewards immediately even if we deem the virtual rewards to be a true analogy to the record-setting baseball.

D. Gains Derived from the Virtual Assets

If a gamer sells one’s shield for game money or exchanges the shield for another player’s sword, does the gamer have income immediately included in the tax base? Clearly, if one of the items has a greater economic value than the other, one of the players will have income—that is “gains derived from

¹⁷⁹ See Lederman, *supra* note 30; Chodorow, *supra* note 30.

¹⁸⁰ Lederman, *supra* note 30, at 1644–48 (reasoning that loot cannot be imputed income because it involves a third-party game publisher, nor is it analogous to a record-setting baseball since it requires significant effort).

¹⁸¹ *Id.* at 1647–48.

¹⁸² Chodorow, *supra* note 30, at 741 (“In contrast, worlds that permit participants to cash out should be considered open, and income earned in such worlds increases a participant’s ability to pay real-world taxes and should be included in the tax base, again, unless some countervailing practical consideration exists.”).

dealings in property” under Section 61(a)(3) of the Code; and such gains are generally immediately taxable because the income from them is realized and recognized under Section 1001 of the Code.¹⁸³

Lederman agrees that such sale or exchanges are realization events under a virtual property paradigm; however, she cleverly avoids most of the realization problem by suggesting that we view game worlds through a license paradigm where we consider gamers’ rights to be mere licenses to use game items within a game world.¹⁸⁴ In essence, Lederman analogizes gaming metaverses to cruise ships where customers enjoy the facilities and amenities of their temporary environment.¹⁸⁵

While this analogy is a creative way to sidestep the realization issue, it is somewhat outdated and encroaches upon the income tax base. In 2007 when Lederman made this analogy, the Metaverse was not what it is today. Today we are beginning to imagine the possibility of the Metaverse existing as an independent world, not just as a mere supplement to the real world. Therefore, the license paradigm is no longer enough of a rationale for omitting taxation in gaming metaverses. While convenient, such logic may no longer make sense, and even Lederman recognized this when she argued that if a gamer has ownership rights of copies of in-game items, then trades involving such items are taxable under Section 1001 of the Code.¹⁸⁶

This paper suggests that the Metaverse is currently morphing into a place where individuals or their avatars view themselves as having ownership rights in a novel ecosystem. The virtual assets at issue are not only game items like shields but also NFTs and cryptocurrencies that current law recognizes as property.¹⁸⁷ This means that we are dealing with a novel economic environment where sale or exchanges in games can and should be viewed as realization events and thus, immediately taxable.

Lederman also tries to avoid the issues posed by such realization events by using a policy lens to argue that taxing loot drops and in-game sale or exchanges (or any other form of in-game income deemed to be taxable) should remain off the table because such a tax would violate the principle of vertical equity, as it would tax people who have more leisure time and do not have stable employment.¹⁸⁸

A response to this argument may be that serious gamers can now pursue

¹⁸³ I.R.C. §§ 61, 1001.

¹⁸⁴ Lederman, *supra* note 30, at 1653–55.

¹⁸⁵ *Id.* at 1654.

¹⁸⁶ *Id.* at 1656.

¹⁸⁷ I.R.S. Notice 2014–21, *supra* note 32.

¹⁸⁸ Lederman, *supra* note 30, at 1658–65.

careers as professional gamers.¹⁸⁹ Also, people are beginning to see the gaming world as more than a hobby when they choose to conduct their business ventures in the Metaverse.¹⁹⁰ Furthermore, even if those that game the most are unemployed and will be upset about such a tax, is such an outcome so problematic? Economists found that even as the economy is recovering from the downturn, an unusually large percentage of young people are choosing gaming over employment.¹⁹¹ From a policy perspective, it may actually be useful to tax those who are overly addicted to games so that society will have a built-in deterrent to discourage them from choosing gaming over employment.

The next, and potentially more complicated, question is whether unrealized appreciation in virtual assets in the Metaverse can also be included in the income tax base. When the value of an asset increases, current law taxes the accrued gains only when the asset is sold and the gains are realized.¹⁹² The realization requirement is one of the most fundamental elements of the income tax system.¹⁹³ However, the realization requirement offers taxpayers the ability to manipulate their taxable gains derived from dealings in properties and thus, results in many problems.¹⁹⁴ For example, taxpayers may choose to accelerate or defer gains or losses includable in gross income, which makes the realization requirement an inefficient tax policy. That the affluent are more likely to take advantage of the realization rules and the resulting tax deferral through tax planning proves that the rules are unfair. As a result, an alternative tax method, such as mark-to-market taxation, can be used to calculate the current or real value of a company or individual's assets. The main objective of the mark-to-market method is to provide a reliable and accurate picture of financial status and tax annual fluctuations in wealth.¹⁹⁵

Current law justifies the non-taxation of unrealized gains because it is difficult to value assets and pay tax prior to the receipt of cash.¹⁹⁶

¹⁸⁹ See *How to Become a Professional Gamer: Live Your Childhood Dream!*, UNIV. THE PEOPLE, <https://www.uopeople.edu/blog/how-to-become-a-professional-gamer/#:~:text=A%20professional%20gamer%20plays%20video,they%20earn%20money%20as%20well> (last visited Feb. 12, 2023).

¹⁹⁰ See *supra* Part I.B.

¹⁹¹ See e.g., Ana Swanson, *Study Finds Young Men are Playing Video Games Instead of Getting Jobs*, CHI. TRIB. (Sept. 23, 2016, 1:45 PM), <https://www.chicagotribune.com/business/ct-video-games-jobs-emploment-20160923-story.html>.

¹⁹² GRAETZ & ALSTOTT, *supra* note 24, at 144.

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ David A. Weisbach, *A Partial Mark-to-Market Tax System*, 53 TAX L. REV. 95 (1999)

¹⁹⁶ *Id.*

Interestingly, these two problems—valuation and liquidity—are also used to justify tax deferral for other categories of income in the Metaverse introduced in this Part. Any argument for deferring tax until the virtual assets are cashed out from the Metaverse would rely on the same rationales—that is, it is difficult to value the virtual assets and pay tax on them prior to the receipt of fiat cash.¹⁹⁷

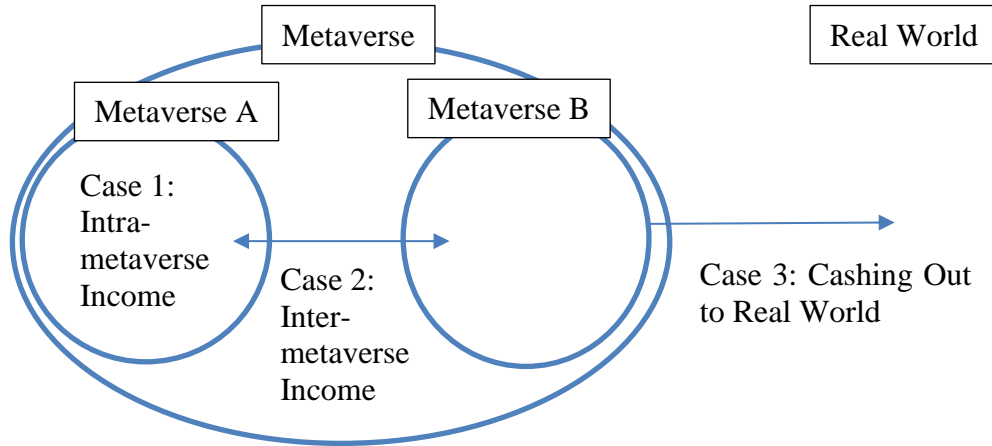
However, there may be a clear record and valuation of each of the virtual assets in the Metaverse. If so, any position for tax deferral for any Metaverse property is weakened, regardless of whether the income is received or realized. The position for tax deferral is further weakened if there is a way to address the liquidity issue, which will be discussed in Part IV.C. The unique nature of the Metaverse may allow tax administrations an opportunity to move away from the realization requirement. Therefore, this paper argues that assets or wealth in the Metaverse should be taxed immediately and not deferred until realization or further cashing out. The next Part of this paper, Part IV, focuses on this timing issue.

IV. TIMING OF TAXATION: WHEN IS IT TAXABLE?

Part III argued that the realization requirement could be lifted for transactions within a single metaverse, but some may also intuitively feel that the timing of taxation should depend on whether the receipt of income or the transaction in question occurred within the confines of one ecosystem or even one world. As we move from one ecosystem to another and as we jump from the real world to the Metaverse and back, we have to ask whether the speeding up of the taxation timeline always makes sense. For this purpose, this paper offers three paradigm cases (*see* Chart 1 below): first, income generated in a single metaverse; second, income generated from a cross-metaverse transaction; and third, income or wealth generated upon exit from the Metaverse and entry into the real world.

¹⁹⁷ See also Camp, *supra* note 30, 747–749 (endorsing tax deferral until cash-out for income from electronic gaming).

[Chart 1. Three Paradigm Cases]



It is likely that as the change of environment or setting becomes more distinct, the government will have a greater incentive to insist on immediate taxation. And the current law agrees with this last sentiment (or the third paradigm case), as it only taxes transactions that take a user/gamer from one world to another (meaning from the physical world to the virtual world and vice versa). That said, this Part concludes by suggesting that even when realization is not deemed to occur, the Metaverse remains the perfect laboratory for experimentation for mark-to-market taxation systems, such as the ULTRA system proposed by Brian Galle, David Gamage and Darien Shanske.¹⁹⁸

A. Three Paradigm Cases

1. Income Within a Single Ecosystem

The first paradigm case would encompass income generated within a single metaverse. Most categories of income explained in Part III fall under this category.

Consider the exchange of a sword for a shield in a metaverse. The law is uncomfortable with taxing gains from such an exchange because these weapons are usually considered worthless until they are exchanged for real-life items or fiat cash.¹⁹⁹ This is why the law prefers to wait until the virtual

¹⁹⁸ See Galle, Gamage & Shanske, *supra* note 28.

¹⁹⁹ See Sheldon E. Evans, *Pandora's Loot Box*, 90 GEO. WASH. L. REV. 376, 396 (2022)

assets are cash out of the game to tax the gain, allowing tax deferral.²⁰⁰ The novel question that this paper asks is why allow for tax deferral in the Metaverse.

Because so many players within the Metaverse are enjoying economic benefits by accumulating virtual wealth and exchanging virtual items, it is a waste to let a player enjoy this tax deferral benefit, especially when the player also knows that the person can cash out at any time. This is where the ULTRA system can potentially step in. ULTRA officially stands for Unliquidated Tax Reserve Account.²⁰¹ More practically, the basic idea behind the ULTRA system is for the government to take payments from the wealthy in the form of notional equity interests called ULTRAs.²⁰² This means that the government gets a percentage stake in the asset, so that when the asset goes up in value, the amount of tax goes up as well.²⁰³ By introducing the ULTRA system into the Metaverse, the government will finally have a way to test mark-to-market taxation in a way that is not threatening but still illustrative of the true, not just theoretical, economic benefits and pitfalls of such a system of taxation.²⁰⁴

Some may still defend tax deferral for the first paradigm case. First, the nonrecognition rules may arguably apply to sale or exchange transactions in a single Metaverse.²⁰⁵ The most similar real-world equivalent would be an exchange of personal property, which is a taxable recognition event.²⁰⁶ However, if real property held for use in a trade or business or for investment is exchanged for real property “of a like kind,” no gain or loss is recognized under Section 1031 of the Code.²⁰⁷ The reason Section 1031 was implemented was because like kind exchanges of real property are considered mere changes in form, not substance.²⁰⁸ Additionally, by deferring tax recognition until sale, Section 1031 ensures that taxpayers are not taxed until they receive the cash necessary to value the asset and pay the tax.²⁰⁹ However,

(“This has become an issue of such economic import that even the Internal Revenue Service (“IRS”) was forced to confront the issue, giving limited guidance on the taxation of virtual currencies, like Bitcoin, while declining to tax virtual currencies, like *Fortnite*'s popular V-Bucks, because they cannot be exchanged for real-world money.”).

²⁰⁰ *See id.*

²⁰¹ *See* Galle, Gamage & Shanske, *supra* note 28, at 2.

²⁰² *Id.* at 10.

²⁰³ *Id.* at 11.

²⁰⁴ *See* Part IV.C. for in-depth discussion on the ULTRA system in the Metaverse.

²⁰⁵ *See e.g.*, I.R.C. § 1031–1042.

²⁰⁶ GRAETZ & ALSTOTT, *supra* note 24, at 615–16.

²⁰⁷ *See* I.R.C. § 1031.

²⁰⁸ *Magneson v. Commissioner* 753 F.2d 1490, 1494–1495 (9th Cir. 1985) (“taxpayers exchanged property for like-kind property which they continued to hold for investment, albeit in different form of ownership”).

²⁰⁹ GRAETZ & ALSTOTT, *supra* note 24, at 621.

none of the justifications for Section 1031 apply to the taxation of the Metaverse because virtual assets are not real property under current law. Also, the difficulty in valuation and liquidity is less convincing in the Metaverse, as examined in Parts IV.B. and C.

Second, some may argue that shield for sword exchanges within one metaverse should qualify for a safe harbor exception of sorts because they are *de minimis*. This argument may hold some water for now because we still live in a world where the Metaverse is largely seen as a supplement to real life; however, this is subject to change. The IRS should publish guidance explaining that while it currently will not tax such transactions, it plans to do so once, for example, the number of American citizens generating a significant amount of income from the Metaverse hits a preselected threshold.

2. Exchanges Between Ecosystems

The second paradigm case would encompass exchanges between different metaverses. For example, a sword with one set of qualities from one metaverse for a sword with another set of qualities from another metaverse. Similarly, a sword for crypto also fits into this category. Although the first example may sound too complicated for current technology, it may not be so crazy to imagine a time in the future where users or gamers will be able to jump from a Microsoft-owned metaverse to a Meta-owned metaverse. As of January 2022, Microsoft purchased Activision and acknowledged that gaming “will play a key role in the development of metaverse platforms.”²¹⁰ Therefore, it is worth considering how cross-metaverse exchanges will work and whether they will trigger taxable events.

This paper argues that if it one day becomes possible for such exchanges to occur, these exchanges should be taxed immediately. In other words, complete tax deferral should not be an option because (1) taxation is administrable and (2) the individuals behind the exchanges have gains that they immediately enjoy precisely because they have exchanged their virtual property for *different* virtual property that leaves them in a different economic position.²¹¹ Even if one is not persuaded by the argument that same ecosystem exchanges, as in the Paradigm 1 Case, cause economic positions to shift, inter-metaverse exchanges in the Paradigm 2 Case obviously demonstrate that the items being traded do have economic value outside their

²¹⁰ Brian Quarmby, *Microsoft's Massive Metaverse Move: Buying Activision for \$69B*, COIN TELEGRAPH (Jan. 19, 2022), <https://cointelegraph.com/news/microsoft-s-massive-metaverse-move-buying-activision-for-69b> (“Microsoft is acquiring gaming giant Activision Blizzard for \$69 billion as part of a move to ramp up its gaming and metaverse plans.”).

²¹¹ See MILLER & MAINE, *supra* note 14, at 349.

original settings and are thus immediately taxable.

We might even view such exchanges as transactions where the users/gamers constructively exit the Metaverse in order to re-enter it. And if this is the case, we are, essentially, jumping from one metaverse to constructive cash and, only after that, onto another metaverse. The example of crypto for a sword may be persuasive here because crypto for a virtual sword is intuitively easier to understand as being analogous to cash for a virtual sword. That said, the distance between crypto for a virtual sword and a virtual sword from one metaverse in exchange for a virtual sword from another metaverse is equal. Both require one to go from one metaverse to another. Both start and end in the Metaverse. However, how one views the interim trip from one metaverse to another is up for debate. If the exit is seen as an absolute exit, albeit a constructive one, from the Metaverse, then it should be taxable as discussed in Subsection 3 below. And if the exit is not seen as an absolute exit from the Metaverse, then one must admit that the Metaverse has become so well developed that it functions independently of the physical world and does not need a reference point to function economically. This last argument also buys into the idea that the Metaverse is akin to the physical world where currency for items or general exchanges are taxable. Furthermore, once it becomes clear that society sees such great economic value in the Metaverse,²¹² the fact that the Metaverse has the ability to monitor all exchanges will be seen as a direct reason for insisting that we no longer completely ignore an individual's virtual gains until that individual exits the virtual world.

3. Cashing Out to Real World

The third paradigm case is a total exit from the Metaverse where one exchanges any virtual assets or wealth for fiat cash. Such an exchange is a taxable event under current law.²¹³ As recently as 2022, the IRS has declared

²¹² See e.g., *The Metaverse: Blurring the Lines Between Our Physical and Virtual Worlds*, RICHARD VAN HOOIJDONK (Nov. 30, 2021), <https://blog.richardvanhooijdonk.com/en/the-metaverse-blurring-the-lines-between-our-physical-and-virtual-worlds/> (Asserting that Fortnite is currently the best version of the Metaverse and highlighting its success as a worldwide sensation with more than 350 million registered players).

²¹³ The following chart makes the current law very clear:

| Examples of taxable crypto events | Examples of non-taxable crypto events |
|--|--|
| Selling cryptocurrency for fiat money (USD, EUR, JPY, etc.) | Buying cryptocurrency with fiat currency |
| Trading cryptocurrency for other cryptocurrency (e.g., trading Bitcoin for | Donating cryptocurrency to a tax-exempt organization |

that any taxpayer who has disposed of any “digital asset” through a sale, exchange, gift, or transfer will have to report and later pay tax on the action.²¹⁴ The term “digital asset” includes NFTs. Furthermore, anyone who receives “NFTs as compensation for services” or disposes “of any digital asset that they held for sale” will have to declare such receipts and dispositions as income.²¹⁵ This makes sense because the third paradigm case mirrors capital gains tax on assets like stocks, gold, and real estate.

Overall, we no longer live in a world where the IRS is oblivious to the potential gains that can come from virtual property.²¹⁶ Currently, “exchanges between relevant crypto assets and fiat currencies, along with exchanges between one or more type of crypto and transfers of crypto (including retail payment transactions), will need to be reported.”²¹⁷

B. Policy Debates on Realization

Currently, the law only imposes a tax on individuals when they cash out their virtual assets or wealth (i.e., paradigm case three).²¹⁸ Indeed, deferring the taxation of economic gains within the Metaverse until realization makes a certain amount of sense under the existing mechanics of the tax law, as taxing such items upon receipt raises valuation and liquidity issues. Nevertheless, this paper argues that assets or wealth in the Metaverse should

| | |
|---|---|
| Ethereum) | |
| Using cryptocurrency to buy a good or service | Gifting cryptocurrency to anyone (if the gift is no more than \$15,000) |
| Buying, selling, or trading an NFT | Transferring cryptocurrency from one wallet that you own to another wallet that you own |
| | Buying an NFT with fiat currency |

See Alex Gailey & Kendall Little, *Yes, Your Crypto is Taxable. Here’s How to Report Cryptocurrency to the IRS in 2022*, TIME (May 23, 2022), <https://time.com/nextadvisor/investing/cryptocurrency/cryptocurrency-tax-guide/>; I.R.S. Notice 2014–21, *supra* note 32.

²¹⁴ Will McCurdy, *IRS 2022 Tax Guidelines to Treat NFTs as Stablecoins, Cryptocurrencies*, DECRYPT (Oct. 19, 2022), <https://decrypt.co/112367/irs-2022-tax-guidelines-treat-nfts-stablecoins-cryptocurrencies>.

²¹⁵ *Id.*

²¹⁶ *IRS Reminds Taxpayers They Must Check a Box on Form 1040, 1040-SR or 1040-NR on Virtual Currency Transactions for 2021*, IRS, <https://www.irs.gov/newsroom/irs-reminds-taxpayers-they-must-check-a-box-on-form-1040-1040-sr-or-1040-nr-on-virtual-currency-transactions-for-2021> (last updated Jan. 31, 2023).

²¹⁷ Camomile Shumba, *OECD Releases New Global Tax Reporting Framework for Crypto Assets*, COIN DESK (Oct. 10, 2022, 12:25 PM), <https://www.coindesk.com/policy/2022/10/10/oecd-releases-new-global-tax-reporting-framework-for-crypto-assets/>.

²¹⁸ See Gailey & Little, *supra* note 207; I.R.S. Notice 2014–21, *supra* note 32.

be taxed immediately, thus capturing the situations described in paradigm cases one and two as well. More specifically, it argues that the unique nature of the Metaverse allows tax administrations an opportunity to move away from the realization requirement and its inefficiencies, inequalities, and administrative burdens.

There is a significant lack of scholarly literature debating the timing of Metaverse taxation. However, a similar conversation is going on in the cryptocurrency space involving block rewards. Block rewards are “rewards offered to validators of blockchain transactions in exchange for maintaining the public blockchain ledger.”²¹⁹ It is reasonably clear that block rewards are taxable upon receipt under the current law. The IRS issued a clear statement on mining rewards in 2014.²²⁰ Furthermore, many scholars confidently conclude that staking rewards satisfy the *Glenshaw Glass* income standard.²²¹ However, there is an ongoing dispute as to whether block rewards, which are the equivalent of crypto-to-crypto transactions, *should* be subject to taxation upon receipt or realization.

Proponents for deferring the taxation of block rewards until realization in the real-world economy often point to four justifications. First, the volatile nature of cryptocurrency makes it challenging to determine whether crypto-to-crypto transactions reflect an actual change in economic wealth (i.e., valuation).²²² Second, taxing crypto-to-crypto transactions upon receipt will result in an unduly administrative burden on taxpayers and the IRS, given their volatile nature and the relatively high frequency of such transactions.²²³ Third, taxpayers may not have the liquidity necessary to pay such taxes.²²⁴ Fourth, imposing taxation upon receipt might harm the innovation and development of the crypto industry.²²⁵

Nevertheless, such justifications have been critiqued persuasively. Advocates for taxing block rewards upon receipt point out that the law clearly requires taxpayers to include amounts received in income at fair market value *when received* and does not provide any exceptions for inflation or volatility.²²⁶ Moreover, the administrative difficulties that accompany volatile assets frequently traded are not more burdensome than similar taxable transactions, such as day-trading or algorithm-based trading, and

²¹⁹ Marian, *supra* note 30, at 1493.

²²⁰ I.R.S. Notice 2014-21, 2014-16 I.R.B. 938 (“When a taxpayer successfully ‘mines’ virtual currency, the fair market value of the virtual currency as of the date of receipt is includible in gross income.”).

²²¹ *E.g.*, Marian, *supra* note 30, at 1496–97; Avi-Yonah & Salaimi, *supra* note 30, at 28.

²²² *Id.* at 37–38.

²²³ *Id.* at 32–33, 37, 39.

²²⁴ *Id.* at 39.

²²⁵ *Id.* at 36.

²²⁶ Marian, *supra* note 30, at 1501, 1504.

should not be subject to any special treatment.²²⁷ Lastly, there is little evidence that the taxation of block rewards upon receipt “hampers innovative activity or even the mere adoption of cryptocurrency.”²²⁸

Many parallels can be drawn between the taxation of block rewards and the Metaverse. First, similar to block rewards, it seems clear that Metaverse income should be taxable under existing law. As discussed above, economic activity within the Metaverse falls under the Haig-Simons definition of income and is, therefore, within the sovereign right to tax. Additionally, the digital currency and property found within this paper's narrow definition of the Metaverse are likely to satisfy the definition of income under *Glenshaw Glass* or the Haig-Simons definition of income since they have economic value, are clearly realized, and are under the taxpayer's dominion. Second, it is fair to assume that the four justifications for waiting to tax block rewards until realization—namely, issues with valuation, liquidity, administrative difficulty, and hampering innovation—apply equally to the Metaverse, given its close relationship with cryptocurrency and other blockchain assets.

The above similarity between the taxation of block rewards and the Metaverse supports the argument for taxation upon receipt for Metaverse income. The next Subsection will address each of these in turn.

C. Mark-to-Market Taxation in the Metaverse

1. In Support of Mark-to-Market Taxation

Valuation poses the greatest obstacle to implementing a mark-to-market tax system, and one might base an argument for tax deferral until realization for economic activity within the Metaverse on the fact that the volatile nature of digital assets makes virtual world transactions hard to value. In that vein, it is undeniable that the waxing and waning of the Metaverse's popularity has done little to standardize prices.²²⁹ For example, limited competition in the Metaverse might force participants to buy digital assets at whatever price is set. Conversely, the price of a digital asset might suddenly drop if the relatively small pool of existing users finds a shiny new toy that has few interested buyers. Adding to the issue of volatility is the fact that cryptocurrency is often the conduit for economic activity within the Metaverse. One need only look at the cryptocurrency market's seventy percent devaluation (2 trillion-dollar loss) over the past year to see that digital

²²⁷ *Id.* at 1504–1505.

²²⁸ *Id.* at 1503.

²²⁹ See Musadiq Bidar & Dan Patterson, *Virtual Land Rush is Driving up the Cost of Space in the Metaverse*, CBS NEWS (May 6, 2022, 3:58 PM), <https://www.cbsnews.com/news/metaverse-real-estate-companies-land-rush/>.

assets are highly volatile.²³⁰ Moreover, much of the digital currency within the Metaverse has limited use since it is specific to a virtual world. This makes it hard for prices to be normalized.

Nevertheless, this argument inflates the connection between volatility and valuation, suggesting that if there is one, there must be the other. Such a belief is simply not true. Despite the volatility of virtual assets, it is entirely possible to ascertain their value at a specific moment in time, particularly within the Metaverse. As mentioned above, in the context of block rewards, the law clearly requires taxpayers to report the fair market value of assets *when received*, regardless of the asset's volatility.²³¹ Since many of these virtual worlds likely utilize blockchain technology or some other type of digital ledger, it is theoretically simple to collect the pertinent information.

In truth, the volatility argument is less about valuation and more about fairness. Proponents might say that since a digital item's value can increase or decrease dramatically from minute-to-minute, it would not be fair for taxpayers to report gains in the morning when they experience losses that night. Would it not be fairer to take the average value for the year/month/day? While this paper acknowledges such unfairness, it also takes the position that such a risk is a socially accepted part of dealing with volatile assets. A plethora of volatile assets lack any special treatment from the tax code, and there is no good policy reason to treat the Metaverse differently.

A stronger argument for why economic activities within the Metaverse are hard to value relates to the lack of virtual assets/cash exchange system or established secondary market. In such a situation, some may ask: how would one measure the gain resulting from a player exchanging a sword for a shield within the same virtual world? Although these items are likely assigned a value in the digital currency of that Metaverse, the lack of any cash/virtual assets exchange makes it difficult to convert any gain into taxable currency. And even if there is a secondary market for such items, the lack of participants might make it hard to ascertain the going market rate.

While such a position is more convincing than the volatility argument, it still falls short of justifying taxation upon realization. Recall that this paper narrows the definition of the Metaverse to include only virtual networks involving economic activity. Economic activity includes buying, selling, creating, or accumulating digital items with economic value. A digital item has economic value if it can be converted or at least valued in a taxable currency such as crypto or the U.S. dollar. Thus, many of the virtual worlds

²³⁰ Ari Levy & MacKenzie Sigalos, *Crypto Peaked a Year Ago — Investors have Lost More than \$2 Trillion Since*, CNBC (Nov. 11 2022, 7:00 AM EST), <https://www.cnbc.com/2022/11/11/crypto-peaked-in-nov-2021-investors-lost-more-than-2-trillion-since.html>.

²³¹ See Marian, *supra* note 30, at 1501, 1504.

wherein such issues might arise fall outside the relevant definition of the Metaverse. Additionally, the economic future of the Metaverse likely hinges on the ability to convert digital gains into cash or cryptocurrency. Therefore, it is probable that this specific issue will decrease over time as projects implement exchange systems to remain viable.

Nevertheless, this paper recognizes that there may still be situations where we might know something can be valued in a taxable currency, yet it is hard to identify that exact value. Such a problem is not unique to the Metaverse. Real-world examples include intellectual property rights or stakes in private businesses.²³² Furthermore, there might be an effective solution. As a preview, the ULTRA system that Section C.2 introduces provides the ultimate solution to any remaining valuation problems. The ULTRA system provides the government with a percentage stake in the taxed asset upon receipt rather than assigning a specific value. That interest tracks the taxpayer's internal rate of return such that if the asset increases in value, so does the amount paid in taxes when the asset is sold. Thus, there is no need to determine the value upon receipt under the ULTRA system.

Let us next address the liquidity issue. Indeed, one can imagine a host of scenarios where Metaverse participants might earn taxable income but lack the required liquidity to pay such taxes. As an illustration, recall the hypothetical where one player exchanges a sword for a shield within the same virtual world. Under the taxation upon receipt regime, the player would have to pay taxes on any economic gains from this trade. However, what would we expect him to pay with? Assuming this was his only source of income, the taxpayer would have to sell the shield for in-game currency and convert that into cash to pay the taxes. Again, the ULTRA system resolves this issue altogether. Although the government's notional interest in the asset ensures that the tax imposition does not stop, it still defers the actual tax payment until the asset is sold. Thus, taxpayers will have the cash to pay taxes.

Like the issues relating to valuation and liquidity, the administrative burden justification falls flat. Similar to block rewards, digital assets within the Metaverse are highly volatile. Additionally, transactions involving such assets frequently occur. Thus, one might argue that taxing virtual income upon receipt will make it difficult for taxpayers to calculate and track their income and for the IRS to audit them. However, such an assertion is not a certainty. Referring to the high-profile case of *Jarret v. United States* regarding the taxation of block rewards, Omri Marian points out that the taxpayers could calculate the exact amount of tax despite multiple transactions involving a volatile asset.²³³ Furthermore, given the digital nature of the Metaverse, any administrative burden is likely to be overstated.

²³² See Galle, Gamage & Shanske, *supra* note 28, at 7.

²³³ See Marian, *supra* note 30, at 1504.

These virtual worlds likely implement blockchain technology or other digital ledgers that keep records of transactions. As Marian said, “[t]axpayers do not sit in front of their computer with a pencil and notebook; the receipts are documented electronically. Market values are known.”²³⁴ Moreover, even assuming some administrative burden, it is not more burdensome than similar taxable transactions, such as day trading or algorithm-based trading.²³⁵ Why should the Metaverse be treated any differently? Lastly, a realization regime is never without administrative burdens.

The last piece worth considering on this topic is the innovation justification. Advocates might take the position that the realization requirement promotes innovation in the Metaverse, whereas taxation upon receipt will hinder development. This paper dismisses this concern for two reasons. First, like block rewards, there is little to no evidence supporting such a claim. Second, it is possible that a more stringent tax requirement will encourage innovation by stabilizing the market through greater transparency. Any regulatory policy must strike a balance to promote an environment where research and innovation can thrive.²³⁶ Overly prohibitive regulations or policies can inadvertently hinder innovation,²³⁷ while a laissez-faire approach opens the door to fraud and market instability.²³⁸ As highlighted by the dramatic collapse of FTX, the current state of digital markets suggests the need for more stringent rules.

2. ULTRAs: A Method for Mark-to-Market Taxation

Though this paper encourages immediate or mark-to-market taxation of Metaverse income as much as possible, it understands that the current law only taxes transactions where individuals jump between the physical and virtual world. It also acknowledges that the law changes and develops slowly. That said, the Metaverse is a perfect example of an environment where the rich can avoid paying taxes due to the valuation problem. Therefore, this paper would like to suggest that lawmakers consider introducing the novel method proposed by Brian Galle, David Gamage, and Darien Shanske in their article *Solving the Valuation Challenge: The ULTRA Method for Taxing Extreme Wealth* into the Metaverse.²³⁹ Because the Metaverse is in the early

²³⁴ *Id.* at 1504.

²³⁵ *See id.* at 1504–1505 (2022).

²³⁶ *See* Pui Ki, *How Regulatory Frameworks Drive Technological Innovations*, ENTREPRENEUR (Nov. 30, 2020), <https://www.entrepreneur.com/article/360111>.

²³⁷ Tim Day, *When It Comes to Tech, It's Regulation v. Innovation*, U.S. CHAMBER COM. (Aug. 18, 2017), <https://www.uschamber.com/technology/when-it-comes-tech-it-s-regulation-vs-innovation>.

²³⁸ *See* Ki, *supra* note 236.

²³⁹ Galle, Gamage & Shanske, *supra* note 28.

stages of designing its rules and regulations, the government, if it so chooses, can still implement a tax system that is closer to a mark-to-market tax system. In other words, the Metaverse, at least at this point in time, appears to be the perfect laboratory for experimentation. Thus, a willingness to try new systems of taxation in the Metaverse would allow policymakers to learn more about the true or untrue benefits of our realization-based tax system. In this way, policymakers would also be able to suggest potential modifications for making our real-world tax system more efficient.

It is no secret that our income tax system is based on a realization approach which avoids valuation problems but enables the rich to pay little in taxes. To solve the valuation problem, Galle, Gamage, and Shanske propose that governments take payments from the rich by receiving notional equity interests called ULTRAs.²⁴⁰ However, because the interest the government receives is "notional," the government has no governance rights or minority shareholder protections.²⁴¹ Most importantly though, the ULTRA system does not require valuation and does not incentivize taxpayers who see above market returns on investments to defer paying taxes.

Many scholars who are bothered by the unfairness of our tax system may remain uncertain about the possibility of taxing accumulated wealth because of the valuation problem. While modern technology can help us value many types of assets, especially publicly-traded securities, it is relatively useless when it comes to valuing complex private property which has never been sold before.²⁴² Property in the Metaverse usually falls into this last category. Therefore, applying the ULTRA system in the Metaverse is a good idea. The ULTRA method solves the valuation problem relatively elegantly, especially in an electronic system where, other than value, all data on an asset is easily recorded.

While the ULTRA method seems like a typical IOU at first glance, it actually works far better than standard deferred payment mechanisms because it does not incentivize tax deferral.²⁴³ Instead, it gives the government "a percentage stake in a taxed asset."²⁴⁴ Thus, if an asset goes up in value, the tax on that asset goes up by a proportional amount.²⁴⁵ In other words, the government can use the ULTRA method to essentially charge a taxpayer an interest rate equivalent to that taxpayer's internal rate of return on his/her asset.²⁴⁶ ULTRAs are also superior to in-kind payments because

²⁴⁰ *Id.* at 10.

²⁴¹ *See id.* at 2.

²⁴² *See id.* at 7–8.

²⁴³ *See id.* at 10–11.

²⁴⁴ *Id.* at 11.

²⁴⁵ *See id.* at 12.

²⁴⁶ *See id.*

they entirely avoid the potential for corruption which often springs from government ownership of private enterprise.²⁴⁷

Other solutions have previously been posed to the valuation problem. Galle, Gamage, and Shanske go through many of them and point out their flaws. For instance, governments can only tax assets that are easy to value. While this idea has many benefits and can be applied in the Metaverse, it still incentivizes taxpayers to only buy assets that are not valued easily and are, therefore, not taxable before realization.²⁴⁸

The Swiss Wealth Tax is another valuation tool that Galle, Gamage, and Shanske consider.²⁴⁹ They see the practical ability to carry out such a tax because it is based on easily attainable pieces of financial information: the book value of a firm's assets and its recent earnings.²⁵⁰ Galle, Gamage, and Shanske approve this method generally but see its weaknesses as well.²⁵¹ The main limitation of this formulaic valuation is that a company's book value can fall way below or above what that company is actually worth.²⁵²

Galle, Gamage, and Shanske also discuss the pros and cons of retrospective taxation and interest costs.²⁵³ The biggest con with such a system is that as the future tax grows, the taxpayer will search for ways to make sure that it never becomes due.²⁵⁴ This is called the "political optionality" problem.²⁵⁵ And while a yield-based retrospective tax may avoid this problem,²⁵⁶ it causes what its proponent, Stephen Land, calls the portfolio problem.²⁵⁷ In general, there is too much of an administrability issue with such a tax.

Additionally, Galle, Gamage, and Shanske explain that pure in-kind payments would be problematic economically and politically because

²⁴⁷ *See id.*

²⁴⁸ *See id.* at 9, 71.

²⁴⁹ *Id.* at 30–34.

²⁵⁰ *See id.* at 30.

²⁵¹ *Id.* at 32–34.

²⁵² *See id.*

²⁵³ *Id.* at 34 ("a retrospective tax is just the standard realization rule, but with an extra tax that amounts to an interest charge for the value of the deferred tax liability").

²⁵⁴ *Id.* at 35–36.

²⁵⁵ Galle, Gamage, and Shanske mention that Professor Ari Glogower has proposed a retrospective system where the interest charge is relatively low and close to the risk-free rate. *Id.* at 38. Galle, Gamage, and Shanske also write that while Professor Glogower's approach is the most "politically viable," it is economically defensible to introduce a rate that is higher than the risk-free one. *Id.* at 39.

²⁵⁶ Stephen Land's method assesses "how much an asset owner would save from tax deferral for any given asset, then upon sale charges the owner that exact savings amount." *Id.* at 40.

²⁵⁷ *Id.* at 41 ("implementing Land's proposal would require addressing a number of troublesome issues related to contributions, partial withdrawals, and deemed withdrawals").

governments as shareholders of private businesses becomes constitutionally sticky.²⁵⁸ Lastly, they discuss the separated accounts approach and its current problems.²⁵⁹ As it stands right now, the separated accounts approach incentivizes taxpayers to try to withdraw money without triggering tax via personal level borrowing.²⁶⁰ The ULTRA method can handle this problem by treating personal level borrowing by taxpayers maintaining ULTRAs as a form of deemed distribution from the ULTRA.²⁶¹

3. Applying the ULTRAs to the Metaverse

In brief, Galle, Gamage, and Shanske argue that the ULTRA system is superior to all of the previously suggested solutions because it is a tweaked hybridized version of many of them.²⁶² They provide various examples of how their ULTRA system could work and focus on how such a system would avoid the valuation problem, keep governments out of private businesses, and disincentivize tax deferral.²⁶³ This paper takes their reasoning one step further and applies it to assets and rewards in the Metaverse.

Galle, Gamage, and Shanske suggest that the ULTRA system need not become a universal valuation mechanism immediately or ever.²⁶⁴ It can mainly be used in cases where tax valuation is impossible.²⁶⁵ Again, a prime example of such a scenario is when we are dealing with assets and rewards in the Metaverse.

Galle, Gamage, and Shanske also suggest that ULTRAs can be made to be voluntary or mandatory.²⁶⁶ If voluntary, the ULTRA option would be offered alongside a take-it-or-leave-it alternative valuation regime.²⁶⁷ Such a gamble is not unheard of in the tax arena.²⁶⁸ It comes up with the Code Section 83(b) elections for payments of property, such as equity compensation subject to vesting, that have a “substantial risk of forfeiture.”²⁶⁹ Taxpayers can choose to wait to pay tax until their options vest, or they can pay when their options are granted based on their options’ current value.²⁷⁰

²⁵⁸ *Id.* at 44.

²⁵⁹ *Id.* at 45.

²⁶⁰ *See id.* at 49.

²⁶¹ *Id.* at 58.

²⁶² *Id.* at 50.

²⁶³ *Id.* at 52–64.

²⁶⁴ *Id.* at 53.

²⁶⁵ *See id.*

²⁶⁶ *Id.* at 59.

²⁶⁷ *Id.* at 60.

²⁶⁸ *See id.* at 61.

²⁶⁹ *See id.*

²⁷⁰ *See id.*

The same option can be offered to those who accrue wealth in the Metaverse. Such taxpayers can go along with the ULTRA method, or they can elect an alternative valuation regime which they promise not to challenge.

It is important to note that Galle, Gamage, and Shanske developed the ULTRA system while drafting a proposal for a comprehensive annual wealth tax reform for the state of California.²⁷¹ In California, the ULTRA solution will likely only be used to plug valuation holes for assets and circumstances where public trading valuations and formulaic valuations do not suffice.²⁷² However, Galle, Gamage, and Shanske see broader applications for ULTRA.²⁷³ They posit that the ULTRA system can solve the flaws with mark-to-market rules, replace the current gift-tax regime, aid with the administration of the property tax, reform the treatment of contributions and help in various other ways.²⁷⁴

While the author of this paper would like to see the ULTRA method implemented in real life, the main goal of this paper is to encourage the use of ULTRAs in the virtual economy. The implications of the ULTRA method for crypto and the Metaverse are significant. Current law taxes income from cryptocurrency or the Metaverse only when it is converted to cash. An important rationale for this traditional realization requirement in the virtual economy is that valuation is hard when gamers and other members of the virtual world do not cash out of the virtual economy. However, at the same time, it is an absolute waste to allow people to avoid taxation while they become rich through their holdings of cryptocurrency, assets, or rewards in the Metaverse. Therefore, this paper posits that the most effective way to tax economic activities that remain within the confines of the virtual economy, such as the Metaverse, is via ULTRAs.

All that said, if ULTRAs are rejected, the IRS should at least push for immediate taxation for the second paradigm case—exchanges that occur between metaverses (for example, crypto for a virtual good). While it may feel convenient for the IRS to wait for individuals to cash out of the Metaverse, at some point, the IRS may have to admit that the Metaverse is no longer a supplement to the real world, but an actual part of it. While society

²⁷¹ See *id.* at 70. While the ULTRA system is frequently explained as a mark-to-market income tax method, it is often discussed in the context of wealth tax reform. This relates to a discussion of whether mark-to-market income taxation is mathematically or economically equivalent to periodic wealth taxation, and therefore can be an alternative to wealth taxation to circumvent U.S. Constitutional challenges. Thomas Brennan, Protean Capital Income Taxes, Presentation at the 2023 Davis Polk & Wardwell Columbia Law School Tax and Public Policy Colloquium (March 28, 2023). However, this specific issue is irrelevant to this paper. This paper only uses the ULTRA proposal as a mark-to-market income tax method.

²⁷² See *id.* at 73.

²⁷³ *Id.* at 73–96.

²⁷⁴ *Id.*

may not be there yet, some commentators expect that the future is likely to include the Metaverse as a part of almost everybody's everyday lives.²⁷⁵ And while it may not take over everybody's lives, some people will definitely spend the majority of their time in the Metaverse.²⁷⁶

The question therefore is: to what extent will this takeover have to happen for the IRS to admit that the Metaverse is a world that has its own inherent value without regard to our physical world? And then the follow up question to this last question is: when will that be? There is no way to know whether the Metaverse will take over the majority of peoples' lives in ten, twenty, fifty or one-hundred years from now.²⁷⁷ One thing, however, is almost certain: the Metaverse is the wave of the future. There is a reason that Facebook has recently chosen to rebrand as Meta and Microsoft has acquired Activision.²⁷⁸ Old timers and individual lawmakers can try to fight it, but if society continues on the path it is currently on, the Metaverse may prevail. And when it does, this paper's arguments for implementing ULTRAs in the Metaverse will become even more relevant.

V. COMPLIANCE: HOW TO TAX?

When paying taxes on Metaverse income the taxpayers will first need to identify the right tax jurisdiction. This last statement seems simple, but it raises questions like: should the tax authority be based on the physical jurisdiction in which the taxpayer finds themselves in, or should it be based on the location of the server hosting the metaverse the taxpayers games in?

Even if the location of the server is considered a serious possibility of tax nexus, it should still be viewed as a mere proxy for the Metaverse which has no physical location. In some ways, the Metaverse seems to be everywhere and nowhere all at once. Moreover, if the location of the server is not considered a proper nexus for sourcing income, the locations of the Metaverse platform companies may be a good and practical option instead.²⁷⁹ Also, considering that these platforms create and run the new virtual world, their roles in tax compliance and administration may have to be strengthened.

²⁷⁵ Ghlionn & Hamilton, *supra* note 53 (quoting Mealie Subin, a director at The Future Today Institute in New York City saying “[b]y 2030, ‘a large proportion of people will be in the metaverse in some way.’”).

²⁷⁶ *See id.*

²⁷⁷ ANDERSON & RAINIE, *supra* note 6.

²⁷⁸ Wertenbroch, *supra* note 55 (“Mark Zuckerberg, founder of Facebook/Meta, has linked the new brand name to his strategic plan to create a metaverse — a virtual world in which consumers spend increasing parts of their lives, based on AI and virtual reality (VR) technology. This is an important new phase in the digital world.”).

²⁷⁹ *See* Bland, *supra* note 52.

Therefore, it is worth considering introducing a withholding tax system for Metaverse income.

Overall, it is safe to say that the Metaverse raises novel issues when it comes to applying the current rules of source and residence taxation. Hence, this Part briefly addresses those issues in the hope of inspiring further study on the tax compliance issues in the Metaverse.

A. Tax Jurisdictions

1. Source Taxation: Using the Server as a Proxy

As previously explained, the server may be a good proxy for the source of Metaverse income because the Metaverse, as experienced by its users, does not have actual coordinates on any map. But as human beings we have the need to live with tangibles. Therefore, if we are set on pinpointing a location for the Metaverse, one option is to look to the locations of servers that house the ones and zeros behind the Metaverse's operability. But this argument for source taxation still has its own flaws even if it does feel appropriate to the more technically minded individuals among us. This is because "servers aren't tied to certain data centers so the tax jurisdiction could move."²⁸⁰ That said, servers are not constantly moving. If anything, data centers are limited by the law of physics more than the average person would assume, and, therefore, their locations are generally planned out in advance and are not easily subject to change.²⁸¹

This means that if we were to accept the theory behind this form of source taxation, it would most likely be doable to use the server's location as an indicator for the relevant tax jurisdiction for any transaction within the Metaverse. Granted, the law would manipulate server locations because the Metaverse platforms would want to locate their servers in jurisdictions with the best tax rates.²⁸² Nevertheless, data takes time to travel, as current technology is limited by the speed of light. Also, because users of the Metaverse are tech-savvy and sensitive to slow page load times, the potential

²⁸⁰ Sal Visca, *The Metaverse: How to Tax Virtual Goods in the Real World*, TAX ADVISOR (Aug. 22, 2022), <https://www.taxadvisermagazine.com/article/metaverse-how-tax-virtual-goods-real-world>.

²⁸¹ See Darren Watkins, *How Important is Location When Choosing a Data Center?*, DATA CENTER KNOWLEDGE (June 20, 2019), <https://www.datacenterknowledge.com/industry-perspectives/how-important-location-when-choosing-data-center> (explaining that choosing the location of a data center is a pointed process that requires the consideration of multiple factors).

²⁸² See e.g., Wei Cui, *The Digital Services Tax: A Conceptual Defense*, 73 TAX L. REV. 69, 73, 86 (2019) (indicating that server location is highly mobile and can be placed in a low tax jurisdiction).

manipulation of servers' locations may not be as much of a concern as some might predict.²⁸³ At the end of the day, users of the Metaverse will most likely be willing to pay a little bit more in taxes if it means that the Metaverse will function gracefully and not constantly exhibit problems like slowness and outages. Furthermore, from the user's/gamer's perspective, the Metaverse has no physical location. And while this may not be true from a technical standpoint, it does reflect the user's/gamer's experience. Thus, taxpayers who are also gamers probably would not find it unfathomable or shocking if they were expected to pay taxes to a jurisdiction that they did not necessarily reside in.

However, if policymakers see the potential for servers to be moved as a true issue or if they feel that a server's location is just too arbitrary a way to designate jurisdiction, another option may be to assign the jurisdiction to the place where the Metaverse platforms' owner is based.²⁸⁴ The argument here is that the owner is the true power behind the server, and therefore the location of the platform owner is less random.²⁸⁵

On the other hand, if a platform's owner is located in a hub, as most big companies are, then tax jurisdictions for the Metaverse will be limited to cities. Alternatively, it could mean that big companies will suddenly be incentivized to leave big cities and, thereby, wreak havoc on the economies of those cities. Does it make sense to allow already popular jurisdictions to hold total power over the taxation of the Metaverse unless big companies move? This is an open-ended question that this paper does not have an answer to. More information is needed regarding the tax rates and policies of the jurisdictions that would be involved. However, it is interesting to consider how tax law can serve as the driving force behind a company's decision regarding where to locate its headquarters.

2. Residence Taxation

For residence taxation, the tax authority is likely to rely on the users'/gamers' IP addresses. While this will work for the majority of people, it is an imperfect system because it is infamously easy for individuals to disguise their IP addresses.²⁸⁶ This could pose a serious problem if certain

²⁸³ See Watkins, *supra* note 281 (“surveys consistently show that internet users are quick to drop sites with slow page load times - people want access to data instantaneously.”).

²⁸⁴ Roxanne Bland likes this option more than the server's location. See Bland, *supra* note 52 (“[s]hould the income be sourced to the jurisdiction where the platform's servers are located or where the platforms' owners are physically located? Again, the second option carries greater logic”).

²⁸⁵ *Id.*

²⁸⁶ See Ivan Belcic, *How Do I Hide My IP Address?* AVAST (Apr. 8, 2020),

jurisdictions had more favorable tax rates. In other words, it is not hard to imagine a world where users/gamers would manipulate their IP addresses using VPNs so that it would always seem as though they were located in jurisdictions that had the best tax rates. On a separate note, even if people are not consciously deceptive, the system will have to find a way to effectively track and then tax nomads and people with multiple residences. These are not insurmountable issues; however, they are worth recognizing from the outset. It must also be acknowledged that residence taxation has direct benefits too. It sets a bright line rule based on the locations of people's homes, and home is a place that, by definition, almost all people are intimately familiar with.

B. Enforcement Mechanism

After the proper method for determining the correct tax jurisdiction is selected, the next step to consider revolves around enforcement. Early discussion suggests that the payor of income arising from electronic gaming of \$600 or more per year should report those payment to the IRS using Form 1099, and the payees should complete the tax payment by filing their tax returns.²⁸⁷ Additionally, this reporting obligation is imposed only if the income is cashed out.²⁸⁸

However, this paper suggests a rule that departs from the realization or cash-out method. Rather, it recommends a broader tax base, including unrealized gains and income even if they are remained in the Metaverse. This paper also suggests implementing ULTRAs for mark-to-market taxation. Hence, assuming that this paper's proposal is accepted, this paper urges tax authorities to revisit the enforcement mechanism.

Regarding enforcement, two options are worth considering. The first and preferable option is to have the Metaverse's various platforms withhold the tax. Withholding by platforms means that the platform withholds income tax from the amount it sends its users/gamers and sends it directly to the IRS on behalf of its users/gamers. While taxpayers, employers and, in this case, Metaverse platforms might dislike shouldering the responsibility of withholding taxes because of the extra workload it shoves upon them,

<https://www.avast.com/c-hide-my-ip-address>; Paul Bischoff, *How to Hide Your IP Address (8 Ways, 6 are Free)*, COMPARITECH, <https://www.comparitech.com/blog/vpn-privacy/hide-ip-address-free/> (last updated Jan. 6, 2023).

²⁸⁷ Section 6041(a) of the Code requires all persons engaged in a trade or business making payment to another person of \$600 or more in any taxable year to report those payments to the IRS. I.R.C. § 6041. Treasury Regulation § 1.6041-1(a)(2) requires the reports be made on Form 1099. Camp, *supra* note 30, at 688.

²⁸⁸ See *supra* Part IV.A.3.

withholding taxes is preferable to the tax administration.²⁸⁹ This is because tax evasion and the margin for simple error is smaller when a withholding system is used.²⁹⁰ More importantly, the Metaverse's platforms are aware of the economic activities occurring within their metaverses and can generate taxable income values and the other information necessary for the ULTRA method to work. Therefore, it may be most effective for Metaverse platforms to initiate the tax compliance process through withholding.

And if the income is subject to source taxation, then all the withheld tax for all the players in the metaverse housed by the server or owned by the platform in question is simply paid directly to the source jurisdiction. In terms of compliance costs and administrative burdens, withholding matches well with source taxation. Residence taxation, on the other hand, is much more complicated to comply with. Residence taxation would require Metaverse platforms to send users/gamers tax information forms, tentatively titled the form W-4M,²⁹¹ so that the users/gamers could file their tax returns and request the refund of their withheld tax. In addition, residence taxation would require that the platforms pay the withheld taxes to multiple jurisdictions, resulting in significant compliance costs and administrative burdens. Still, residence-based taxation would work well in the sense that it would not add anything new to the regular process of filing tax returns, a process that most people are already familiar with. The users/gamers would just include the income listed on their 1099 forms and received from the virtual world in their 1040 forms.²⁹²

CONCLUSION

Overall, taxing the Metaverse is a conversation that is full of questions that tax policymakers have, for the most part, yet to answer. In the coming years tax authorities will have to decide which types of virtual income should be taxed. They will also have to figure out when and how to tax such income. This paper argues for speeding up the taxation timeline for most forms of income generated in the Metaverse. It embraces the innovative ULTRA

²⁸⁹ See e.g., Kathleen Delaney Thomas, *The Modern Case for Withholding*, 53 U.C. DAVIS L. REV. 81, 90, 94–97 (2019).

²⁹⁰ *Id.*

²⁹¹ For withholding taxation, existing tax forms include W-4P (Withholding Certificate for Periodic Pension or Annuity Payments) and W-4V (Voluntary Withholding Request). So, this paper suggests a new form titled W-4M (Withholding Certificate for the Metaverse Income) for the Metaverse income.

²⁹² On the other hand, source taxation may pose more compliance challenges than the residence taxation does. This is because most users/gamers do not file their tax returns with the server's jurisdiction.

method and suggests that ULTRAs be used to solve the valuation and liquidity problems inherent to virtual property. However, even if this is not possible, this paper encourages policymakers to at least make transactions between different metaverses immediately taxable, as it sees such transactions as exits from and reentries into the Metaverse.

Taxing the Metaverse income will ensure that the richest among us cannot hide their wealth within the invisible webs of the Metaverse. It will allow tax authorities to test the consequences of taxing income immediately that are now inevitably deferred due to administrative reasons. In other words, the Metaverse can be a laboratory for experimenting modern tax policies. If combined with the ULTRA system, the Metaverse's ability to track everything that occurs within its folds will mean that tax deferral will no longer be a necessary evil. And once tax deferral is no longer a given, many basic tax equity issues will potentially disappear. The Metaverse has the potential to simulate scenarios that are unlikely to ever occur in the physical world. This leaves the Metaverse in a unique position that will help inform politicians, economists, philosophers, judges and political scientists about human nature and the economics behind many aspects of human consumption.

That said, only time will tell how quickly society and the tax authorities will actually come to accept that the Metaverse is more than a supplement to human life and worthy of complex tax systems and laws. In the same vein, we will have to wait to see how the IRS chooses to manipulate the Metaverse's special ability to monitor virtual assets, income, and transactions. The potential for manipulation is great on both sides, and if our policymakers do not make sure to thoroughly educate themselves on the inner workings of the Metaverse, much tax avoidance and fraud may occur. Therefore, it is essential that policymakers become serious about following the constant developments within the Metaverse.