

Interplay Between the Metaverse and Islamic Finance: Mutual Impacts and Implications for Taxation

Metaverse ve İslami Finans Arasındaki Etkileşim: Karşılıklı Etkiler ve Vergilendirme Açısından Sonuçları

Abstract: The metaverse offers an evolutionary approach to taxation when viewed through Islamic financial principles, presenting three main scenarios for real-time, Sharia-compliant models. The first involves intra-metaverse transactions, where virtual assets are usually taxed only upon conversion to real-world assets. The proposed Islamic Non-Executed Tax Reserve Account (INETRA) system introduces mark-to-market taxation, levying taxes as assets appreciate. This challenges traditional tax deferral methods and suggests more immediate taxation. The second scenario covers cross-metaverse exchanges. When assets move between different virtual environments, the article argues taxation should occur instantly, similar to cryptocurrency exchanges. This is compared to a “constructive exit,” triggering taxable events akin to converting virtual currencies into Islamic-compliant assets. The third scenario examines conversions of virtual assets into fiat currency or real wealth. It critiques the focus on realized gains and recommends a framework that ensures value extraction from metaverse transactions. Special attention is given to metaverse sukuk (Sharia-compliant bonds) and other Islamic financial instruments, highlighting the importance of aligning them with Islamic tax compliance. The article emphasizes the role of financial statements and AAOIFI accounting standards in shaping tax calculations for Islamic banking, noting Saudi Arabia’s guidelines for sukuk management and VAT exemptions on certain transfers. Overall, the framework demonstrates how Islamic finance principles intersect with metaverse tax policy. Both domains share challenges in asset valuation and timing of taxable events, underscoring the need for internationally harmonized tax laws that balance ethical and economic considerations.

Keywords: Taxation, Metaverse, Islamic finance, Interdisciplinary

Jel Codes: G00, G18

Öz: Metaverse, İslam finansı ilkeleriyle birlikte ele alındığında, gerçek zamanlı ve Şeriata uygun vergilendirme modelleri için üç temel senaryo sunarak evrimsel bir yaklaşım ortaya koymaktadır. İlk senaryo, genellikle sanal varlıkların yalnızca gerçek dünyaya dönüştürüldüğünde vergilendirildiği metaverse içi işlemleri kapsamaktadır. Önerilen İslami Gerçekleşmiş Vergi Rezerv Hesabı (INETRA) sistemi, varlıkların değer kazandıkça vergilendirilmesini sağlayan piyasa-değerine göre vergilendirme yaklaşımını öne çıkarır. Bu, geleneksel vergi erteleme yöntemlerine meydan okumakta ve daha erken vergilendirmeyi gündeme getirmektedir. İkinci senaryo, metaverseler arası varlık transferlerini ele almaktadır. Makaleye göre, bu tür işlemler kripto para borsalarında olduğu gibi anında vergilendirilmelidir. Bu durum, “yapıcı çıkış” a benzetilerek, sanal paraların İslam’a uygun varlıklara dönüştürülmesiyle tetiklenen vergisel olaylara işaret etmektedir. Üçüncü senaryo, sanal varlıkların itibari para veya gerçek servete dönüştürülmesiyle ilgilidir. Mevcut uygulamalarda sadece gerçekleşmiş kazançların vergilendirilmesine yönelik eleştiriler getirilmekte ve metaverse işlemlerinden elde edilen gerçek değer güvence altına alınacağı bir sistem önerilmektedir. Bu bağlamda, metaverse sukukları (Şeriata uygun tahviller) ve diğer İslami finansal araçların vergilendirilmesi kritik görülmektedir. Makale ayrıca finansal tabloların ve AAOIFI muhasebe standartlarının, İslami bankacılık işlemlerindeki vergi hesaplamalarında oynadığı rolü vurgulamakta; Suudi Arabistan’ın sukuk yönetimine ilişkin yönergeleri ve bazı transferlerde sağlanan KDV muafiyetlerini örnek göstermektedir. Sonuçta, çerçeve İslam finansı ilkelerinin metaverse vergi politikalarıyla kesişimini ortaya koymaktadır. Her iki alan da varlık değerlemesi ve vergilendirmenin zamanlamasıyla ilgili benzer zorluklar taşımakta; bu da etik ve ekonomik unsurları gözetken uluslararası uyumun önemini göstermektedir.

Anahtar Kelimeler: Vergilendirme, Metaverse, İslami finans, Disiplinlerarası

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Introduction

Islamic finance, based on Sharia law, has gained global traction, but the U.S. lacks clear tax and regulatory guidance for Sharia-compliant transactions. In contrast, countries like the UK and Saudi Arabia have developed robust frameworks to support Islamic finance. The UK, for example, has an Islamic stock exchange, Sharia-compliant ETFs, and numerous banking products catering to Islamic finance principles. With over 20 banks offering these services, the UK has established a well-defined financial infrastructure that facilitates the growth and accessibility of Islamic financial transactions (Al Fathan & Arundina, 2019).

The challenges facing Islamic finance in the U.S. largely stem from the lack of IRS guidance, allowing taxpayers to interpret transactions in the most favorable way, creating regulatory uncertainty similar to issues seen in cryptocurrency and digital service taxation. This ambiguity may discourage businesses from pursuing Sharia-compliant financing, despite the potential benefits of clear regulations granting access to the vast global Islamic finance market (Allen & Prabowo, 2023:50). Rooted in the Quran and Sunna, Sharia law integrates legal and moral principles to uphold five core values: religion, life, family, money, and mind. Key prohibitions include *riba*, which forbids guaranteed returns on loans or investments, and *gharar*, which bans excessive uncertainty in contracts, ensuring fairness in wealth distribution. Institutions like Al-Rajhi Bank in Saudi Arabia and LARIBA in the U.S. exemplify adherence to these principles by avoiding interest and speculation while aligning risk management with Sharia guidelines (Ahmed, 2010).

Sharia is increasingly recognized as a legal system alongside civil and common law in both Muslim and non-Muslim countries, highlighting its growing influence in the global financial sector. The lack of regulatory clarity on Islamic finance in the U.S. stands in contrast to the progress seen in other nations, where clear standards facilitate business participation and ensure fair taxation. Sharia's ethical and legal framework prohibits exploitative financial practices, offering a global model for just transactions. Meanwhile, technological advancements, particularly in the metaverse, are reshaping global transactions (Sakinah, Kasri, & Nurkholis, 2022:49). The metaverse, broadly defined as a digital universe encompassing virtual reality, augmented reality, and other digital platforms, remains a concept with

multiple interpretations. Originally coined by Neil Stephenson in his 1992 novel *Snow Crash*, the term has since been debated in scholarly literature, with some arguing that a precise definition is unnecessary, while others describe it as a 3D-based virtual space where people interact and conduct business through avatars representing real individuals. As both Islamic finance and digital technology evolve, their intersection could shape future financial landscapes (Al-Jarhi, 2017:121).

The metaverse is far more than just an online playground or social network — it represents a digital space where unique economic activities take place, distinct from traditional online marketplaces like Craigslist or Facebook Marketplace. In the metaverse, users can engage in specialized virtual economies by creating digital goods and services, purchasing virtual real estate with digital currencies, and even establishing professional services such as accounting or legal firms in virtual offices. A more refined definition of the metaverse includes only those virtual environments that feature interactive economies beyond conventional video games. Examples of such spaces include *Second Life* and *Entropia Universe*, the latter of which operates on a "Real Cash Economy system" powered by Project Entropia Dollars (PEDs). With a fixed exchange rate of ten PEDs per U.S. dollar, users can acquire PEDs through various in-game activities, such as crafting, looting, or trading valuable items like clothing, real estate, and raw materials. Additionally, players can earn PEDs by offering services within the virtual world, such as piloting transport ships or running in-game businesses. This model demonstrates how the metaverse extends beyond entertainment, creating opportunities for digital entrepreneurship and economic participation in ways that resemble real-world economies (Fang, 2016; Kim, 2023; Ong, 2021).

The online battle game *Axie Infinity* further exemplifies the economic potential of the metaverse. Players create virtual creatures called Axies, which are NFTs that can be bought and sold in an NFT marketplace. However, the high upfront cost of acquiring an Axie (around \$600) often excludes lower-income individuals from participation. To address this, a scholarship system allows established players to lend Axies to newcomers in exchange for a share of their earnings. Like *Second Life* and *Entropia Universe*, *Axie Infinity* enables players to earn substantial income through virtual commerce. This raises an important question: should the metaverse

be taxed? While some argue against taxation due to the digital and evolving nature of the metaverse, the economic activities within it meet the Haig-Simons definition of income, which includes transactions, rewards, and imputed earnings. However, practical concerns such as the volatility of metaverse assets and the size of its tax base must be considered. This discussion aims to highlight key taxation issues in the metaverse and explore potential justifications for taxation, fostering further debate on this complex and evolving subject (Farooq, 2015; Jobst, 2007).

In theory, income generated in the metaverse should be taxed; otherwise, it becomes "stateless income," effectively turning the metaverse into another tax haven. Taxation could also enhance transparency and regulatory oversight, as seen in the wake of cryptocurrency market collapses closely linked to the metaverse. However, most metaverse participants are players of a few video games primarily targeted at young users, with only a small fraction engaging in taxable economic activities. This raises concerns about whether the costs of implementing a metaverse tax—such as developing tax authority infrastructure and modifying legal frameworks—would outweigh the potential revenue. Additionally, the metaverse may take years or even decades to evolve into a space with a substantial taxable user base. This discussion explores the taxation of the metaverse through a legal research approach, particularly within the framework of Islamic finance, to assess how Islamic principles could inform taxation policies and ensure that they align with Sharia-compliant financial practices.

1. Methodology

Legal research plays a crucial role in addressing legal challenges by regulating human behavior and meeting societal needs. It helps identify deficiencies and emerging issues within legal frameworks, ensuring they integrate various parameters, including social contexts, legal institutions, and societal responses. Legal research also uncovers new facts, verifies existing ones, and analyzes the causal relationships between human activities and laws to develop effective solutions to legal challenges. The objectives of legal research can be categorized into academic and practical goals. Academic goals focus on deepening the understanding of human society, legal principles, and how laws operate, particularly in relation to Islamic finance. Practical goals aim to combat social injustices and support the development of laws that effectively address societal issues. By

integrating these research approaches, legal studies can enhance the regulatory framework surrounding Islamic finance, ensuring compliance with both legal and ethical standards while addressing contemporary financial and taxation challenges (Ali, Mohamed Yusoff, & Ayub, 2017:493-495).

Legal research serves a variety of purposes, including uncovering both new and existing facts, developing theoretical frameworks and legal tools, and proposing reforms to outdated or ineffective laws. It plays a crucial role in exploring the relationships between different legal entities, such as the legislature and judiciary, while also interpreting statutes to improve the consistency of legal definitions. The research process within legal studies is multifaceted, incorporating diverse methodologies to address a wide range of issues. These include evaluative studies to identify social problems and explore law-based solutions, explicative analyses that clarify the nature and origins of laws, and identificatory research to identify groups affected by specific legal provisions. Additionally, projective assessments explore the potential societal acceptance of proposed policies, while collative comparisons examine the effectiveness of various laws. Impact analysis is used to suggest reforms, and interactive examinations explore the societal influences on legal frameworks. Interpretative efforts are crucial in clarifying ambiguous legal terminology. The scope of legal research is broad, impacting government policy-making, resolving business and taxation issues, supporting courts in reducing delays, and assisting legal professionals in case analysis. As law is seen as a behavioral science, it continually adapts to societal demands, making effective legal research essential for ensuring laws remain relevant, functional, and in alignment with social needs. Key research methodologies include doctrinal research, which analyzes and systematizes existing legal propositions and case law, and empirical research, which relies on observation and data collection to assess the real-world impact of laws. Furthermore, legal reasoning includes deductive and inductive approaches to derive conclusions based on specific principles or generalizations (Jobst, 2007).

The sampling method plays a crucial role in research by enabling the efficient and reliable generalization of findings to larger populations while conserving time and resources. In legal studies, doctrinal research is a systematic method of analyzing existing legal propositions, statutory

provisions, and case laws using logical reasoning. It focuses on developing legal principles and shaping laws based on authoritative sources such as judicial decisions and statutes. This methodological flexibility allows legal practitioners and judges to make informed decisions promptly while advancing legal scholarship. A key objective of doctrinal research is to bridge the gap between legal policy aspirations and their practical implementation. It is particularly beneficial in resolving complex legal issues, refining legal doctrines like the *ultra vires* principle, and providing extensive scholarly resources. However, it also has limitations, including its narrow focus on legal texts without fully accounting for social policies, difficulties in interpreting intricate legal language, and challenges in applying abstract findings in practical scenarios (Gordley, 1995; Vranken, 2011). Legal reasoning, a cornerstone of jurisprudence, incorporates both deductive and inductive methods, each contributing uniquely to legal analysis. Deductive reasoning progresses from general principles to specific conclusions, relying on syllogisms consisting of a major premise, a minor premise, and a conclusion. Despite its structured nature, this method has drawbacks—flawed premises can lead to incorrect conclusions, and reliance on verbal symbolism may hinder clarity. Conversely, inductive reasoning derives general principles from specific cases, prioritizing empirical observations and experience. However, it carries the risk of imperfect induction if not all relevant cases are adequately considered. Importantly, these two reasoning approaches complement each other; while inductive reasoning helps form broad legal theories, deductive reasoning is instrumental in validating and applying those theories within the legal system (Shen, 2018). Additionally, modern legal research increasingly integrates empirical methods to supplement doctrinal approaches, ensuring that legal interpretations remain aligned with evolving societal values and practical applications. This integration underscores the growing recognition of interdisciplinary insights in legal analysis, enriching the development of jurisprudence and policy frameworks (Shen, 2018).

2. Metaverse Taxation

As we transition across digital and physical ecosystems—whether moving between metaverses or from the metaverse to the real world—questions arise about the optimal timing for taxation. This section explores three "paradigm cases" that examine when taxation should be applied based on the nature of

income or transactions. The first case involves income generated entirely within a single metaverse, such as the exchange of a virtual sword for a shield in a game. Under most current legal frameworks, taxation is often deferred in such cases, as virtual items are not considered to have economic value until they are converted into real-world assets or cash. This tax deferral allows users to accumulate virtual wealth without immediate tax consequences, presenting challenges for tax authorities in regulating digital economies. The issue takes on additional complexity in the context of Islamic law, which imposes Shariah-based restrictions on intangibles. Under Shariah principles, transactions must align with religious guidelines, ensuring clear ownership transfer and compliance with prohibitions on certain activities. However, additional concerns arise, such as *gharar* (uncertainty or speculation), *maysir* (gambling or games of chance), and the concealment of knowledge. *Gharar* is particularly relevant when parties lack precise knowledge of an asset's value or its true nature—challenges that are evident in cases like the sale of confidential intellectual property, such as a secret recipe. If disclosing the asset diminishes its value, potential buyers may hesitate to engage in transactions, complicating the asset's valuation and sale. Additionally, Shariah prohibits wealth acquisition without effort, a principle closely tied to the concept of *maysir*, which bans gambling and interest-based earnings. This presents challenges in assessing intellectual property rights, where creators can earn royalties long after their initial effort. Traditional measures of labor and time investment may not accurately capture the true creative output, value, or utility of intellectual property in the digital and metaverse economies. The broader challenge lies in reconciling Shariah principles with modern economic realities, as digital assets and non-traditional forms of labor challenge conventional understandings of effort, risk, and compensation. Furthermore, as metaverse economies continue to grow, governments and regulatory bodies must balance tax enforcement with incentives for digital innovation, while also navigating ethical and religious considerations in diverse financial systems (Katterbauer K. , Syed, Genc, & Cleenewerck, 2023a).

The proposed Islamic Non-Executed Tax Reserve Account (INETRA) system presents an innovative approach to implementing mark-to-market taxation in the metaverse by granting the government a notional equity interest in a player's virtual assets. Under this system, taxes would be levied in real-time

as virtual assets appreciate, rather than being deferred until conversion into real-world currency. By testing the INETRA system in a virtual setting, tax authorities could assess the advantages and drawbacks of mark-to-market taxation in a controlled, low-risk environment. However, debates persist regarding whether intra-metaverse exchanges should qualify for tax deferral, similar to real-world like-kind exchanges under Section 1031 of the U.S. Tax Code. While some argue that virtual asset trades should enjoy similar nonrecognition treatment, others counter that digital assets lack the real property characteristics that justify Section 1031, such as liquidity constraints and valuation stability (Abu-Bakar, 2017). Additionally, while a safe-harbor exemption for minor transactions could provide temporary relief, this argument weakens as the metaverse solidifies its role as a significant economic environment. As virtual economies expand, tax authorities may preemptively signal that these transactions will eventually be subject to taxation. The second paradigm case explores cross-metaverse transactions, such as trading a sword from one metaverse for a sword with different attributes in another. While this scenario may seem futuristic, major technology firms like Microsoft have already recognized gaming's pivotal role in metaverse development, as seen in its acquisition of Activision. This article argues that cross-metaverse transactions should be taxed immediately, as exchanging virtual assets across ecosystems represents a clear economic shift. Unlike intra-metaverse exchanges, which may remain within closed digital economies, cross-metaverse trades create measurable value changes, making them taxable under existing principles of economic gain recognition. Furthermore, as interoperability between metaverse platforms increases, tax authorities will likely develop frameworks that address valuation, liquidity, and enforcement challenges associated with digital asset taxation (Pandey & Gilmour, 2024).

The economic value of traded virtual assets often extends beyond their original digital environments, reinforcing the argument for immediate taxation. This is comparable to exchanging cryptocurrency for a virtual sword, a transaction that intuitively feels taxable since cryptocurrency is widely regarded as real-world currency. Some argue that moving assets between metaverses is analogous to a "constructive exit," similar to cashing out digital wealth before re-entering another ecosystem. Under this perspective, cross-metaverse exchanges should trigger taxation, as they

mark a shift in economic position. Alternatively, if the metaverse is seen as an independent economic space rather than an extension of the physical world, then such exchanges might not be viewed as taxable exits. This perspective challenges conventional tax principles, suggesting that as the metaverse evolves, it may require distinct taxation rules that do not rely on real-world benchmarks (Yang, et al., 2022).

The third paradigm examines income and wealth realization when users exit the metaverse and enter the real world, typically through the conversion of virtual assets into fiat currency or tangible goods. Under existing tax laws, such conversions constitute taxable events. However, this article proposes that even in the absence of realization, the metaverse presents a compelling testing ground for mark-to-market systems like INETRA. Since metaverse transactions are inherently traceable and occur in real-time, they provide an opportunity to explore alternative tax models that capture wealth accumulation more accurately without waiting for liquidation. The emergence of the metaverse as a standalone economic environment calls for a reevaluation of traditional tax principles, particularly the concept of tax deferral. Historically, deferring taxation has been justified by valuation and liquidity concerns, but as digital economies grow and technology enables better asset tracking, these justifications become less persuasive. By implementing systems like INETRA, tax authorities could introduce real-time taxation models, reducing tax avoidance and improving fiscal efficiency. Ultimately, the metaverse challenges existing tax frameworks, requiring innovative solutions to ensure fairness and adaptability in the digital economy.

Many countries now mandate taxpayers to report and pay taxes on digital asset transactions—including NFTs—when they are sold, exchanged, gifted, or transferred. If someone receives an NFT as compensation for services or sells digital assets held for sale, these transactions must be reported as taxable income. This treatment mirrors the capital gains taxation applied to traditional assets like stocks, real estate, and gold, underscoring the growing recognition of virtual assets as a significant source of wealth. While current tax laws primarily focus on taxing realized gains when users exit the metaverse, the broader policy debate surrounding realization remains complex. Under conventional tax principles, wealth is only taxed upon "realization"—when digital assets are converted into real-world currency—

mainly to address valuation and liquidity challenges. However, this article advocates for immediate taxation of metaverse assets, even without realization, aligning more closely with Shariah principles, which emphasize transparency and fairness in economic transactions. The metaverse's distinct characteristics provide a unique testing ground to reconsider the realization requirement, as traditional deferral-based taxation models may become outdated in digital economies. Implementing mark-to-market taxation in virtual spaces could mitigate inefficiencies, reduce tax inequalities, and streamline administrative challenges. As metaverse economies continue to expand, policymakers may need to adapt tax frameworks to ensure fairness, efficiency, and compliance with evolving financial and ethical considerations (Kutty, 2020).

There is limited scholarly discourse specifically addressing the timing of metaverse taxation, but a parallel debate exists in the cryptocurrency space, particularly concerning the taxation of block rewards. Block rewards, which serve as incentives for validators of blockchain transactions, are taxable under current law upon receipt. Most scholars agree that these rewards meet the Glenshaw Glass income standard, which defines taxable income as undeniable accession to wealth. However, the debate persists over whether taxation should occur immediately upon receipt or be deferred until realization in the real-world economy.

Advocates for deferring taxation on both block rewards and metaverse income present several compelling arguments. One of the primary concerns is valuation—cryptocurrencies and virtual assets are highly volatile, making it difficult to establish their true economic worth at any given time. In addition, frequent taxation of crypto-to-crypto and virtual asset transactions could impose significant administrative burdens on both taxpayers and regulatory authorities, leading to compliance challenges. Liquidity is another major concern, as many users may lack real-world cash to cover tax liabilities on virtual earnings. Without accessible fiat currency, immediate taxation could create undue financial strain. Finally, critics argue that taxing digital assets at the point of receipt rather than realization could stifle innovation, discouraging participation in blockchain and metaverse economies by imposing excessive financial obligations on users and developers (Lee, 2022).

As digital economies expand, policymakers must carefully balance taxation frameworks to ensure compliance without hindering technological progress.

The metaverse, much like the cryptocurrency market, presents unique challenges that necessitate rethinking traditional tax principles. Moving forward, the debate will likely focus on whether emerging tax models—such as mark-to-market taxation—can address these concerns while maintaining fairness and efficiency in digital asset regulation (Vidal-Tomás, 2022).

Advocates for immediate taxation effectively challenge the arguments for tax deferral in the metaverse and cryptocurrency spaces. They emphasize that existing tax laws require taxpayers to report income at fair market value upon receipt, regardless of volatility, with no special exemptions for inflation or fluctuating asset values. They argue that tax systems are already equipped to handle frequent and complex transactions, such as those involving securities and commodities, meaning that metaverse transactions should not be treated differently. Additionally, they counter liquidity concerns by pointing out that similar challenges exist across various asset classes, including real estate and stock options, yet taxation is still enforced. Furthermore, they highlight the lack of empirical evidence suggesting that immediate taxation of block rewards has hindered innovation, adoption, or blockchain development (Katterbauer, Syed, Genc, & Cleenewerck, 2023b).

The debate surrounding block reward taxation closely parallels the taxation of income generated within the metaverse. Under current law, metaverse income meets the Haig-Simons definition of income—it represents an undeniable increase in economic value under the taxpayer's control. Therefore, the same challenges related to valuation, liquidity, administration, and innovation apply equally to block rewards and metaverse transactions. Despite these challenges, proponents of immediate taxation argue that if strong policy reasons justify taxing block rewards upon receipt, the same logic should apply to metaverse income. The metaverse's ability to track and monitor transactions in real-time strengthens the case for moving beyond the traditional realization requirement and adopting more immediate taxation models. However, valuation challenges remain a major obstacle to implementing mark-to-market taxation, and some argue that the inherent volatility of metaverse assets still justifies tax deferral until realization. As the metaverse continues to evolve into a more integrated and economically significant space, tax authorities will need to assess whether conventional tax principles remain effective or if new frameworks are required to ensure fairness and efficiency (Katterbauer K. , Syed, Genc, &

Cleenewerck, 2023a).

The volatility of digital assets in the metaverse is exacerbated by the fluctuating popularity of virtual worlds and the use of cryptocurrency as the primary medium of exchange. Digital assets, such as virtual items and NFTs, can experience significant fluctuations in value based on user demand, creating challenges for consistent pricing (Hassan, Khan, & Paltrinieri, 2021; Karasik, Wehrey, & Strom, 2006). The dramatic 70% devaluation of the cryptocurrency market between 2021 and 2022 highlights the unpredictability of digital assets, which complicates efforts to establish consistent valuations. However, the volatility argument conflates two distinct issues: volatility and valuation. While digital assets may fluctuate in value, their worth can still be assessed at any given time, especially within metaverse environments that rely on blockchain technology and digital ledgers. These technologies enable the recording of transactions and the determination of fair market value upon receipt, much like block rewards in cryptocurrency, which are taxed immediately despite their volatility.

The true concern raised by those advocating for tax deferral is not valuation, but fairness. They argue that taxing a digital item when its value could drop substantially shortly after the transaction feels unjust. For example, taxing a player on gains from a virtual sword in the morning might seem unfair if the sword's value decreases drastically by nightfall. One possible solution is to use an average value over a set period, such as a day, month, or year, to mitigate volatility. However, this article contends that the risk of fluctuating values is an inherent and socially accepted aspect of dealing with volatile assets. Just as stocks, commodities, and cryptocurrencies are taxed without special treatment despite their volatility, there is no compelling policy reason to treat the metaverse any differently (Monawer, et al., 2022; Narin, 2021). While digital asset volatility presents challenges for tax authorities, it also reflects the broader nature of speculative markets and the need for tax systems to adapt to the changing digital economy. A key argument for deferring taxation in the metaverse is the absence of a well-established virtual-asset-to-cash exchange system or secondary market. This raises the practical issue of how to measure taxable gains from a transaction, such as a player exchanging a sword for a shield, if there is no clear way to convert those virtual assets into fiat currency. While virtual items may hold value in a metaverse's native currency, the lack of a liquid cash exchange system

complicates the process of taxing such transactions in real-world terms. Even when secondary markets exist, limited participation may make it difficult to establish a reliable market rate for virtual items, further complicating valuation.

However, while this argument raises valid concerns, it still needs a robust justification for tax deferral. This article narrows the definition of the metaverse to include only virtual environments with significant economic activity, where digital items hold monetary value and can eventually be exchanged for taxable currencies like cryptocurrency or fiat money. The future of the metaverse hinges on its ability to enable the conversion of virtual gains into real-world currency, meaning that the absence of effective exchange systems is likely a temporary issue. As these exchange systems develop and grow, the challenges associated with valuing virtual assets will likely diminish. Ultimately, tax policies may need to adapt as metaverse economies mature and as exchange systems become more efficient, creating clearer pathways for the taxation of digital wealth.

Assigning a precise value to digital assets in the metaverse can be challenging, even if they can be valued in taxable currency. However, this difficulty is not unique to the metaverse, as similar valuation challenges arise with real-world assets like intellectual property or stakes in private businesses, where accurate pricing is often not straightforward. One potential solution to address these valuation issues is the INETRA system. Under this system, the government is given a notional equity interest in the asset, rather than requiring an immediate valuation. The government's stake would track the asset's internal rate of return, so as the asset appreciates, the eventual tax burden increases. This eliminates the need to assign a specific value upon receipt, allowing for more flexible and dynamic taxation that adapts as the asset grows in value (Čejková, 2023).

Liquidity is another significant challenge in the metaverse. While participants may earn taxable income from virtual transactions, they may lack the real-world currency to pay taxes. For instance, a player might be taxed on the economic gain from exchanging a sword for a shield in a virtual world. However, if the player doesn't have the liquidity to pay taxes on that gain in real-world currency, they may need to go through the laborious process of selling the shield for in-game currency and then converting that into cash. The INETRA system addresses this liquidity issue by allowing the

government to take a notional interest in the asset, deferring actual tax payment until the asset is sold for cash. This approach provides a solution to liquidity problems while still ensuring that taxes are paid on virtual transactions. In this way, the INETRA system helps to streamline the taxation of metaverse income, offering a practical framework for dealing with both valuation and liquidity concerns without hindering the immediate taxation of virtual assets (Kim, 2023).

Opponents of immediate taxation argue that the high volume of transactions and the volatility of digital assets in the metaverse would create an undue administrative burden for taxpayers. However, as Omri Marian notes, in the context of block rewards, taxpayers have successfully calculated their tax liabilities despite engaging in numerous transactions involving volatile assets. The digital nature of the metaverse actually reduces the administrative burden, as blockchain technology or other digital ledgers can automatically record transactions and track market values in real time. This technological infrastructure enables efficient tracking, much like day trading or algorithm-based trading, which are already managed without significant administrative difficulties. Therefore, there is no compelling reason to treat the metaverse differently from other taxable activities that involve frequent and volatile transactions.

Moreover, deferring taxes until realization does not eliminate administrative burdens; it merely shifts them to a later time. The paperwork and tracking involved in deferring taxes could be even more complex than implementing a system of immediate taxation. Some proponents of tax deferral argue that postponing taxation promotes innovation in the metaverse by allowing participants to reinvest their virtual gains without the burden of immediate taxation. However, there is little empirical evidence supporting this claim. In fact, more stringent tax requirements could enhance market stability by promoting transparency and accountability. The collapse of FTX in 2022, due to insufficient regulatory oversight, highlights the risks of lax regulation in digital markets. By imposing a more consistent and transparent tax regime, policymakers could foster a healthier and more sustainable environment for innovation in the metaverse, reducing market volatility and ensuring long-term growth (Park & Kim, 2022).

Financial statements, accounting records, and business documentation are essential for calculating taxes. The tax applicable to Islamic banking

transactions can be easily determined if the financial statements of Islamic institutions follow the AAOIFI (Accounting and Auditing Organization for Islamic Financial Institutions) standards, which are accepted by the relevant nation where those institutions operate. However, in countries like Saudi Arabia, which do not universally adopt the AAOIFI guidelines, alternative strategies must be devised for managing Islamic finance and its tax implications. While Saudi Arabia has not fully implemented the AAOIFI accounting standards nationwide, it made significant progress when, on October 22, 2017, the Central Bank of Saudi Arabia became an institutional member of AAOIFI. Subsequently, in June 2020, the Central Bank released its own set of Islamic finance rules, which outline how Islamic transactions, including taxation matters, should be handled.

One key element of Islamic finance is sukuk, which refers to Sharia-compliant bonds. Sukuk are essentially asset-backed bonds issued to investors, providing them with a certificate that represents ownership of one or more assets. These bonds are tradable on the market and generate returns for investors based on the underlying assets, aligning with the principles of Islamic finance by avoiding interest (riba). The Zakat, Tax, and Customs Authority (ZATCA) in Saudi Arabia has clarified the status of sukuk in its tax guidelines, explaining how these financial certificates should be treated from a tax perspective. According to ZATCA, sukuk represent ownership stakes in tangible assets, and the issuance of sukuk certificates raises capital for the underlying structures. The introduction of these regulations helps integrate Islamic financial principles with the taxation system, ensuring that transactions such as sukuk are compliant with both Shariah law and national tax laws.

In a typical Sukuk structure involving a foreign Special Purpose Vehicle (SPV), the SPV (also known as the "Issuer") issues certificates to raise funds. The money raised is then used by the SPV to purchase certain assets from the business that created the structure, referred to as the "Originator." The purchase price of these assets is used to fulfill the funding requirements of the Originator. Under the terms of the arrangement, the SPV must transfer full ownership of the underlying assets to the Originator at the beginning of the transaction. However, due to the structure of the agreement, the Originator will ultimately reclaim ownership of these assets, effectively ensuring that the Originator retains control.

To facilitate the process and allow the Originator to continue utilizing the assets in its business operations while making periodic payments to the investors, the SPV and the Originator typically enter into an Ijarah agreement (or similar lease-type agreement). In this agreement, the SPV acts as the Lessor, and the Originator becomes the Lessee. The Ijarah contract enables the Originator to maintain the use of the transferred assets while agreeing to make periodic lease payments to the SPV, which are then distributed to the investors. This structure allows the SPV to raise funds through the sale of certificates, while ensuring that the Originator retains control over the assets necessary for its business, and complies with the principles of Islamic finance by avoiding interest-based transactions.

In most Sukuk arrangements, the Special Purpose Vehicle (SPV) typically designates the Originator as the service agent responsible for managing various aspects of the assets, including handling proprietorship taxes, insurance, and significant maintenance or structural repairs. At the end of the Sukuk arrangement, the SPV sells the assets back to the Originator at a defined exercise price, and the investors receive their investment back from the SPV. According to the Zakat, Tax, and Customs Authority (ZATCA) standards, the entire Sukuk financing structure falls under the Sukuk tax treatment. ZATCA has clarified that all financing structures offered under the same terms must be taxed similarly, regardless of their name. By default, the Originator's supply of goods is taxable, with the exception of real estate transfers. The point of tax liability is typically tied to the date when the goods are delivered or when the consumer picks them up. However, there is an important exception for the brief transfer of ownership in cases of Islamic financial instruments that are specifically designed to raise money without involving interest payments to banks. For tax purposes, if the transfer of ownership is contractually demonstrated to involve assets that will be resold to the original owner in accordance with Islamic financial principles, it is not considered a supply of goods. This applies to the temporary transfer of assets from an Originator to a private entity as well. As a result, VAT does not apply to the sum paid for asset transfers or recurring lease payments in Sukuk arrangements. However, VAT is applicable to payments made for services such as upkeep or maintenance, with the service payments being subject to VAT at the applicable introductory rate, based on the location of the supply (Ahmed, 2010).

Riyadh Steel Enterprises has set up an SPV in a foreign country to raise 100 million SAR via Sukuk issuance. The SPV issues 10,000 certificates for 10,000 SAR each to international investors, with a ten-year maturity. The profits from these certificates allow the SPV to acquire assets worth 100 million SAR, previously owned by Riyadh Steel Enterprises. The company then leases these assets back from the SPV, making annual lease payments of 500,000 SAR. These lease payments are distributed periodically to investors. After ten years, the ownership of the assets is contractually returned to Riyadh Steel Enterprises. For tax purposes, the transfer of assets and periodic lease payments in this arrangement are exempt from VAT. This exemption applies because the assets are temporarily transferred from Riyadh Steel Enterprises to the SPV and will be returned to Riyadh Steel Enterprises at the end of the arrangement. The arrangement effectively mirrors a form of Islamic finance that avoids interest payments while maintaining a Sharia-compliant structure. Countries wishing to establish their own legal frameworks for Islamic financial operations, free from AAOIFI criteria, can refer to Saudi Arabia's guidelines. These regulations have clarified how Islamic banking transactions should be taxed, particularly in the context of international transactions. While the Islamic financial sector faces unique challenges compared to conventional banking, frameworks like the AAOIFI and the IICRA have helped address many of these hurdles. As countries like Saudi Arabia have demonstrated, developing domestic guidelines can assist in effectively managing Islamic finance operations and their tax implications (Sakinah, Kasri, & Nurkholis, 2022).

Conclusion

The article provides an insightful exploration of the evolving approach to taxation in the metaverse in alignment with Islamic principles, focusing on three key scenarios that highlight the potential for real-time Islamic compliant taxation models. It first addresses Intra-metaverse Transactions, where the value of virtual assets is traditionally deferred until they are converted into real-world assets. The proposed INETRA system aims to implement mark-to-market taxation, taxing virtual assets as they appreciate, which challenges the traditional rationale for tax deferral and proposes more immediate taxation solutions. Next, the article considers Cross-metaverse Exchanges, arguing that transactions involving assets transferred between different metaverses should be taxed immediately. It draws parallels with

cryptocurrency exchanges, positioning these cross-platform exchanges as a form of "constructive exit" from one virtual environment to another, triggering taxable events akin to the exchange of virtual currencies for real Islamic assets. The third scenario focuses on the taxation of virtual assets when they are converted to real-world wealth or fiat currency. While current tax laws generally focus on taxing realized gains, the advocacy is for a system that ensures that real value is realized from these metaverse transactions. As the metaverse grows into a more significant economic environment, traditional tax deferral principles should be reconsidered. The article argues that real-time systems like INETRA could offer more equitable and efficient taxation solutions in alignment with Islamic principles, addressing challenges such as valuation, liquidity, and the timing of realization in digital economies.

The taxation of metaverse sukuk (Sharia-compliant bonds) and related financial structures play an important role in the compliance with the Islamic principles in the metaverse. It emphasizes the importance of financial statements and accounting standards such as those established by the AAOIFI in calculating taxes on Islamic banking transactions. While Saudi Arabia has not fully adopted AAOIFI standards, it has created its own guidelines for managing sukuk and other Islamic financial instruments, including specific VAT exemptions for certain temporary asset transfers. This structure demonstrates the intersection of Islamic finance principles and tax policies, offering valuable insights into how tax frameworks could be developed globally, with Islamic financial principles potentially supporting this shift in the metaverse's taxation. Thus, both metaverse taxation and Islamic finance taxation face similar challenges related to the valuation and timing of taxable events, making it crucial to align tax laws internationally, while considering ethical and economic factors inherent in both systems.

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