

DEVisING AN INdONESIAN LEGAL ARCHITECTURE FOR METaverse BANKING: CHALLENGES AND OPPORTUNITIES

Kristianus Jimy Pratama

Center for Law, Technology, RegTech & LegalTech Studies,

Faculty of Law, Universitas Gadjah Mada, Indonesia

e-mail: kristianusjimy@mail.ugm.ac.id

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Abstract

The objective of this research is to correct misconceptions about the metaverse and metaverse banking, as well as to refute national legal perspectives on metaverse banking. It is designed to also shed some light on challenges and opportunities connected to the plan of legal architecture on metaverse banking along with its supervision and enforcement mechanisms. Metaverse banking consists of banking activities in the metaverse ecosystem. Due to the rapid development of metaverse banking on a global level and unresponsive national regulations to govern it, there is no adequate legal regulation for this activity in Indonesia. The research method is normative through literature study. This research findings illustrate persistent errors about the concept of metaverse banking including the national legal authority's perspective on the substance of regulation. The results also show that challenges and opportunities exist for devising a legal architecture on metaverse banking accompanied by a mechanism for supervision and dispute resolution. This research contributes to as well as serves as one of the references for study on metaverse banking in Indonesia.

Keywords: *Bank Indonesia, Financial Services Authority, Legal Architecture, Metaverse Banking*

I. INTRODUCTION

The expansion of the financial services industry has flourished along with the development of technology. One such has been the interconnection among financial service industry parties. Specifically, a prominent instance of this interconnectedness is the emerging relationship between banking industry entities and non-bank financial industry entities, commonly termed “IKNB,” such as financial technology known as fintech entities. In this instance, financial services industry actors can manifest this in two interconnection models which are one being direct interconnection and the other being indirect interconnection.¹ The direct interconnection model is mainly demonstrated

¹ The classification of the two interconnection models was based on the author's observation of the behavioural patterns that have been commonly adopted by the financial services industry stakeholders.

by the financial services industry stakeholders who collaborate with fintech stakeholders in one joint service such as the opening a Virtual Account (VA) which is facilitated by banking service industry stakeholders that are available on fintech managed services. Regarding the latter interconnection model, the banking service industry stakeholders have emphasised cooperation with fintech stakeholders through separate services that basically complement each other, including utilising the Indonesian Quick Response Standard (QRIS) to connect banking industry users in one integrated fintech services.²

These two models of interconnection have shown that customers of the banking services industry have been shifting to a more robust and streamlined financial model.³ The reason for this is that the banking sector is a sub-sector of the financial services industry that offers reasonable and sufficient prospects for the proliferation of deposits from users of the banking service industry. This was accompanied by the opening of opportunities for users to conduct lending, otherwise known as the intermediary function of banking. In undertaking this function, national banking industry that had previously prioritised conventional services also turned to digital services. Digital banking services that were considered optional, have subsequently transitioned to mandatory features, and continue as a bold new phase of digital banking.

This paradigm shift illustrates the impact of technology on the banking sector for national banking industry stakeholders in meeting the demands of its users who seek for efficient services.⁴ In this case, technology in the banking industry provides an answer to the recent growth in the digital ecosystem.⁵ In light of the vast growth of the digital ecosystem, the phase of transitioning conventional banking into digital banking is not on the end of the technology advancements in the banking industry, but rather the beginning on both a national and international scale.

These arguments are borne out by the invention and development of artificial intelligence (AI). The corollary is that using AI, banking industry stakeholders can personalise their services and simplify the existing banking landscape and work patterns.⁶ Observing this opens up a space for the transition

² Luigi Wewege, *et.al.* "Disruptions and Digital Banking Trends," *Journal of Applied Finance & Banking* 10, no.6 (2020): 19.

³ Cognizant, "The Work Ahead in Banking & Financial Services: The Digital Road to Financial Wellness," *Cognizant White Papers* (2021): 1-25.

⁴ Swiss Finance Council, "Getting Ready for the 20s: Technology and the Future of Global Banking," *Swiss Finance Council Discussion Paper* (2020): 9.

⁵ Estelle Xue Liu, "Stay Competitive in the Digital Age: The Future of Banks," *IMF Working Paper* (February 2021): 16.

⁶ Departemen Penelitian dan Pengembangan dan Pengaturan Perbankan Otoritas Jasa Keuangan, *Cetak Biru Transformasi Digital Perbankan* (Jakarta: Departemen Penelitian dan Pengembangan dan Pengaturan Perbankan Otoritas Jasa Keuangan, 2021), 29.

that the digital bank has been going through to a more intense usage of AI. This is underlined by the fact that advances in technology have entered the fifth generation (5G), which is characterised by the impetus for stakeholders to develop an ecosystem called the metaverse.

The metaverse is a concept depicting an immersive three-dimensional state or ecosystem.⁷ It in simple terms refers to how the real world is virtualised by the user who acts in it through the combined virtual reality (VR) and Augmented Reality (AR) equipment. The users in the metaverse ecosystem could also be leading their second life rather than. The reason for this is that users have been able to do virtual transactions like the way they would have otherwise been executed in the real world. The metaverse ecosystem will therefore progressively contribute towards the metaverse economy, which is integral to the entire global economy.⁸ The metaverse economy is not without issues. Largely, the issues revolve around the reliance on virtual currencies as payment instruments in the metaverse ecosystem, which are mostly unregulated.⁹ The use of virtual money or cryptocurrencies by the metaverse ecosystem is a clear acknowledgement of the importance and applicability of cryptocurrencies. The definition and scope of cryptocurrencies do not align with those of currencies acknowledged by regulators around the world.¹⁰ There is no denying that cryptocurrency in current circulation defies the most used definition of fiat currency.¹¹ Considering the above, utilising cryptocurrencies in the metaverse poses challenges for a national banking industry entering metaverse ecosystem because regulators have not recognized the validity of cryptocurrencies.¹²

⁷ Jee Young Lee, "A Study on Metaverse Hype for Sustainable Growth," *International Journal of Advanced Smart Convergence* 10, no. 3 (2021): 72, <https://doi.org/10.7236/IJASC.2021.10.3.72>.

⁸ Michael J. Bushnell, "Global Capital Markets and Cryptocurrency: Exploring the International Political Economy of Blockchain Ecosystem and Metaverse Development," *Thesis*, The University of Chicago (2022): 54, <https://doi.org/10.31124/advance.19742272.v1>.

⁹ Kee-Young Kang and Seungduck Lee, "Money, Cryptocurrency, and Monetary Policy," *SSRN*, 2019, 1, <https://doi.org/3303595> in Safari Kasiyanto and Mustafa R. Kilinc, "The Legal Conundrums of The Metaverse," *Journal of Central Banking Law and Institutions* 1, no.2 (2022): 313, <https://doi.org/10.21098/jcli.v1i2.25>.

¹⁰ Citi Global Perspectives & Solutions, "Metaverse and Money: Decrypting the Future," *Citi GPS Report* (March 2022): 3.

¹¹ Sam Gilbert, "Crypto, Web3, and the Metaverse," *Bennet Institute for Public Policy University of Cambridge Policy Brief* (March 2022):1; Hiromi Yamaoka, "Digital Currencies and the Future of Money," in Markus Heckel and Franz Waldenberger (ed), "The Future of Financial Systems in the Digital Age: Perspectives from Europe and Japan (Singapore: Springer Nature Singapore Pte Ltd., 2022), 54.

¹² Provisions of Article 34(a) of Bank Indonesia Regulation Number 18/40/PBI/2016 on the Implementation of Payment Transaction Processing confirms that the utilisation of virtual currencies is prohibited from being used as legal tender.

This emphasises that the banking industry is grounded in fiat money or commodities that can be exchanged for a fiat money, crippling the use of cryptocurrencies as payment instrument in the metaverse. In terms of dispositive concepts, metaverse users are now relatively unaffiliated with “coins” that are transmitted through blockchains, and thus they will not resemble typical deposits. Regarding lending, possible collateral for metaverse users is their digital property. Essentially, while the metaverse banking industry is a breakthrough, it should be perceived as disruption at the same time.

These present both economic and legal concerns with respect to a future legal architecture as well as law enforcement’s ability to watch transactions encompassing the metaverse banking industry. There are two legal issues that this research addresses. While the first legal issue concerns the future design of the legal architecture for the Indonesian banking industry as it moves towards the metaverse era, the second legal issue is the extent to which the supervision and enforcement of the law in the metaverse banking industry can address all parties’ interests. According to these two legal issues, there are two questions presented in this research: (1) how are the legal argumentations on these conceptual misrepresentations as well as claims of national legal authorities about metaverse and metaverse banking² and (2) how would the legal architecture of the metaverse banking industry be well designed to include mechanism of supervision and enforcement?

This research will also delve deeper into previous research encapsulated in, “The Legal Conundrums of the Metaverse” conducted by Safari Kasiyanto and Mustafa R. Kilinc which concluded that the legal instruments of the metaverse are an enigma.¹³ This earlier research questioned the intrusiveness of metaverse interference on the legal authorities’ assertions about the jurisdiction over its instruments in the metaverse ecosystem. This study attempts to explore these questions further. This present research was further instigated to discuss metaverse banking specifically, while the previous research was mainly discussed about the legal conundrums presented by the metaverse ecosystem.

The research is prefaced by the following conceptual alignment of metaverse and metaverse banking concepts in relation towards recent practice. The present paper also challenges the prevailing perspective of national legal authorities on the relationship of banking law and technology law, which is restricted to existing digital banking. The objectives of this study are consequently to rectify misunderstandings about the concepts of metaverse and metaverse banking, to respond the common perspectives on national legal authority on metaverse and metaverse banking, and to explain challenges and opportunities in the metaverse and metaverse banking through a proposal for

¹³ Kasiyanto and Kilinc, “The Legal Conundrums”, *ibid.*

banking law architecture in the metaverse ecosystem along with its oversight and enforcement.

This study is normative legal research based on secondary data through literature study. It applies a statutory and conceptual research approach. The findings of this research are broken down into five sections. The first chapter describes the chances of connecting the banking industry with the metaverse ecosystem accompanied by its potential problems. The second chapter provides an overview of the misconceptions surrounding the metaverse and metaverse banking. The third chapter refutes the prevailing perspective of national legal authorities on metaverse banking. The fourth chapter discusses the ideas of a banking industry legal architecture in the metaverse ecosystem. The fifth chapter presents an overview, based on the findings of the research, of the proposed supervision and enforcement mechanism of banking laws across virtual jurisdictions in metaverse ecosystem.

II. RECTIFYING MISCONCEPTIONS ABOUT THE METAVERSE AND METAVERSE BANKING

Previous research conducted by Safari Kasiyanto and Mustafa R. Kilinc concluded that no deal or consensus has been reached on the metaverse concept.¹⁴ It needs to be pointed out that this is a false understanding. The metaverse is an ecosystem architecture combining both a data management system and the Web3 framework. It is grounded in blockchains and accessible with artificial intelligence. Thus, it is not accurate to say that no consensus has been reached about the metaverse concept.¹⁵ The proper statement would be that disagreement persists not about the concept of the metaverse, but rather its extent. In this regard, I argue the scope of metaverse banking reaches all banking intermediation functions in the metaverse. First, it reaches savings activities either in fiat currencies, cryptocurrencies, or other digital assets. The second is lending activities, including the use of digital assets as collateral. The third is complementary services to support the first two, include account access or transfers.

The metaverse can be looked at from multiple angles depending on its intended use. Regarding the metaverse ecosystem model, this article argues that at least two models presently exist. The first is an integrated metaverse ecosystem model which allows various activities to occur in the same ecosystem, and the second is a single metaverse ecosystem designated for one specific activity.

¹⁴ Kasiyanto and Kilinc, "The Legal Conundrums", 304.

¹⁵ Accenture, "Technology Vision 2022, Meet Me in the Metaverse: The Continuum of Technology and Experience, Reshaping Business," *Accenture Full Report* (2022): 39.

It is important to note that the metaverse was not developed as a replacement for real-life, but as a complement to it. This is reflected in the use of avatars for the metaverse ecosystem users who are unable to utilise their original identity. These avatars can only be used in one metaverse ecosystem or a specific integrated metaverse ecosystem. The avatar in principle is meant to enhance the non-physical experience of the users inside the metaverse ecosystem.¹⁶ This enables users to engage not just with the machine assistants, but with other avatar owners who are ostensibly real people.¹⁷

The other fallacy is that people in the metaverse ecosystem are prone to violence in a non-physical way as in the real-world which makes the ecosystem not secure.¹⁸ This argument is incomplete because within metaverse ecosystem operations, there are safeguards between providers and their users. The actions of a user can be monitored frequently by the metaverse ecosystem provider. If there are any indications of unlawful activity, users and providers can respond immediately.¹⁹ The pervasive characteristic of the metaverse is the responsibility of the protected interconnection of metaverse ecosystem providers with their users.

It was also mentioned by Kasiyanto and Kilinc that cryptocurrency, Non-Fungible Tokens (NFTs), or tokens are used for settlements in a metaverse ecosystems and form a bridge for economic activities between the metaverse and real life.²⁰ It is important to note that all three purported stores of value are non-fiat money based, rendering them unable to provide any economic bridge from the metaverse to reality. This is aligned with the report from the Oliver Wyman Forum in 2022 which stated that digital assets such as NFTs as a payment for transactions will only be localised and usable in certain ecosystems.²¹ Brown, Shin, and Kim pointed out that every metaverse ecosystem provider's authentication and documentation efforts are not equal

¹⁶ Savvas Papagiannidis and Michael Bourlakis Brunel, "Staging the New Retail Drama: At a Metaverse Near You!" *Journal of Virtual Worlds Research* 2, no. 5 (2010): 7, <https://doi.org/10.4101/jvwr.v2i5.808>.

¹⁷ Lau Christensen and Alex Robinson, "The Potential Global Economic Impact of the Metaverse," *Analysis Group White Paper* (2022): 7.

¹⁸ Ben Chestor Cheong, "Avatars in the Metaverse: Potential Legal Issues and Remedies," *International Cybersecurity Law Review* (2022): 4, <https://doi.org/10.1365/s43439-022-00056-9>.

¹⁹ Nishith Desai Associates, "Metaverse: A New Universe, Legal, Regulatory and Tax Issues," *Nishith Desai Associates Research* (July 2022): 27; Ronald E. Leenes, "Privacy Regulation in the Metaverse," in Brian Whitworth and Aldo de Moor (ed.), *Handbook of Research on Socio-Technical Design and Social Networking Systems* (Pennsylvania: Information Science Reference, 2009), 128.

²⁰ Kasiyanto and Kilinc, "The Legal Conundrums", 308.

²¹ Oliver Wyman Forum, "Reckoning with the Metaverse: A Primer on the Metaverse and NFTs," *Oliver Wyman Forum Report* (2022): 3.

in assessing a value of digital assets or other documents.²² An economic bridge from the metaverse to real life with the present concept is therefore mistaken.

The metaverse concept encourages trust in digital activities in metaverse ecosystems.²³ In regard to trust in digital and in the context of a banking transformation, I argue that the idea of banking in the metaverse ecosystem as inevitable. This banking industry is not only restricted to a simulation game or visits to the digital or a conventional bank that is transmitted in a metaverse ecosystem, but also banking behaviours that occur solely within the metaverse. The metaverse banking is a demonstration of the real-world banking behaviour in a metaverse ecosystem.

Regarding metaverse banking, banking industry stakeholders have to look at customer preferences for more efficient future banking products.²⁴ A metaverse banking concept enables people to access their transactions and information if something is suspicious with their accounts.²⁵ The focus of metaverse banking is to streamline existing banking services. The efficiency objective of AI technology enables users to concentrate on their transactions, rather than being restricted to complementary services.²⁶

Metaverse banking will allow users to see each device code of each transaction as the new financial standard of the virtual community.²⁷ A key point to note is the possible instability of metaverse banking in the absence of a firm basis for each digital asset used. This is reversible if digital asset storage is performed through a regulated entity or at least based on fiat money. Importantly, AI-enabled metaverse banking embraces smart omnichannel experiences and quick cycles of innovation, rather than simply service digitisation.²⁸ I consider the premise that metaverse banking is entirely the same banking service as conventional or digital banking services to be incorrect.

²² Rodney Brown Sr., Soo Il Shin, and Joo Baek Kim, "Will NFTs be the Best Digital Asset for the Metaverse?" *Southern Association for Information Systems (SAIS) 2022 Proceedings* (2022): 2, <https://aisel.aisnet.org/sais2022/16>.

²³ World Economic Forum, "The Global Risks Report 2022 17th Edition," *World Economic Forum Insight Report* (2022): 52.

²⁴ Samson Yusuf Dauda and Jongsu Lee, "Technology Adoption: A Conjoint Analysis of Consumer's Preference on Future Online Banking Services," *Information Systems* 53 (2015): 2, <https://doi.org/10.1016/j.is.2015.04.006>.

²⁵ Deloitte, "The Future of Banking is Here," *Deloitte Article Publication* (May 2017): 11; Daniel Broby, "Financial Technology and The Future of Banking," *Financial Innovation* 7, no. 47 (2021): 6, <https://doi.org/10.1186/s40854-021-00264-y>.

²⁶ PwC and Workday, "Banking's Digital Future: Accelerating Transformation, A Joint Point of View with PwC and Workday," *PwC and Workday Report* (2021): 2.

²⁷ D. Linda Garcia and Garrison LeMasters, "Synthetic Excellence: Standards, Play, and Unintended Outcomes," *Journal of Virtual Worlds Research* 2, no. 3 (2009): 5.

²⁸ Brant Carson, Abhishek Chakravarty, Kristy Koh, and Renny Thomas, "Platform Operating Model for the AI Bank of the Future," in McKinsey & Company, "Global Banking Practice: Building the AI Bank of the Future," *McKinsey Article Publication* (2021): 52.

III. REFUTING THE PREVAILING PERSPECTIVE OF NATIONAL LEGAL AUTHORITIES ON METAVERSE BANKING

The term “national legal authorities” refers to the bodies with authority to enact laws within certain jurisdictions, including the legislative and executive branches of government.²⁹ The formulated law is known using the Latin term “*ius constitutum*.”³⁰ Use of *ius constitutum* in this study refers to the Indonesian law as explained in this chapter. In deciphering the *ius constitutum* to consider metaverse banking industry and its various possible forms, two outlines of the *ius constitutum* need to be examined. The first outline is the *ius constitutum* which regulates the role and authority of Bank Indonesia as the central bank, whereas the second outline is in relation to the *ius constitutum* governing the role and authority of the Financial Services Authority that is authorised by legislation to oversee banks. The two outlines of the *ius constitutum* provide insight into how the existing regulatory legal instruments have responded at present to metaverse banking below.

III.A. REGULATORY RESPONSE OF BANK INDONESIA TO METAVERSE BANKING

The first outline is to describe *ius constitutum* which regulates the role and authority of Bank Indonesia in response to the potential banking industry in the metaverse. Globally, a central bank has historically been the key institution of the sovereign nation, focussed on both monetary and fiscal policy under both normal and exceptional circumstances.³¹ The central bank is not simply about economics, but is an unified state institution and in most democratic systems, an independent operational institution.³² For Indonesia, the functions and authorities of Bank Indonesia are regulated under the provisions in Law No. 23 of 1999 on Bank Indonesia as most recently amended by Law No. 2 of 2020 on the Stipulation of Government Regulation in Lieu of Law No 1 of 2020 on State Financial Policy and Financial System Stability in the Context of Handling the 2019 Coronavirus Disease Pandemic and/or Facing Threats that Endanger Economic Stability and/or the National Financial System into Law (hereinafter referred to as the Law concerning Bank Indonesia). Considering that the global regulation of central banks has changed infrequently, the Law

²⁹ Wim Voermans, “Speeding Up the Legislative Process: To What End and at What Cost?” in *Time, Law, and Change*, by Sofia Ranchordas and Yanif Roznai (Oxford: Hart Publishing, 2020), 255.

³⁰ Sandy Lammale, “Multilevel Translation Analysis of a Key Legal Concept: Persona Juris and Legal Pluralism” in *The Ashgate Handbook of Legal Translation*, by Le Cheng and King Kui Sin (London: Routledge, 2014), 305.

³¹ Ivo Maes, “Central Banking Through the Centuries,” *National Bank of Belgium Working Paper Research*, no. 345 (2018): 2.

³² Anand Chandavarkar, *Central Banking in Developing Countries* (New York: St. Martin’s Press, 1996), 240.

concerning Bank Indonesia in Indonesia also rarely happens during normal conditions.³³ The provision of Article 4 paragraph (2) of the Law concerning Bank Indonesia states that Bank Indonesia is a state independent institution in conducting duties and authorities and independent from any government and/or other party interference. This is only accepted in regards with matters which are explicitly regulated under the law. The independence of a central bank in implementing monetary policy is not subject to interference by third parties to ensure achievement of the economic objectives in accordance with law.³⁴

Independence is considered one of the crucial aspects in the definition of Bank Indonesia, aside from its authority vis-a-vis other state institutions. Bank Indonesia as a central bank must maintain a high level of trustworthiness to ensure the system is built maintains integrity, avoiding systemic risks.³⁵ This relates to the independent character of Bank Indonesia as an institution to set monetary policy autonomously and independently.³⁶ I argue that political involvement in the appointment of people to positions in Bank Indonesia is not meant to signify that every decision made by Bank Indonesia contains political tendencies, but an institutional policy in the public interest.

The provisions of Article 7 paragraph (1) of the Law concerning Bank Indonesia further sets forth that the objective of Bank Indonesia is to attain and preserve the stability of Indonesia's national currency, the Rupiah. In furtherance of these objectives, Article 7 paragraph (2) of the Law concerning Bank Indonesia states that Bank Indonesia is required to execute a sustainable, consistent, transparent monetary policy, with due consideration to government's general policy on the economy. It is provided in Article 8 of the Law concerning Bank Indonesia that the tasks of Bank Indonesia encompass determining and executing policies, as well as regulating and maintaining the payment system. It is important to underscore that Article 8 of the Law concerning Bank Indonesia regulates that bank regulation continues to remain under the purview of Bank Indonesia and banking oversight has been transferred from Bank Indonesia to the Financial Services Authority which was established in accordance with Law Number 21 Year 2011 concerning the

³³ Alex Cukierman, "The Economics of Central Banking," in *Contemporary Economic Issues*, by H.C. Wolf (London: Palgrave Macmillan, 1998), 37.

³⁴ Alberto Alesina, "Macroeconomics and Politics," in *NBER Macroeconomic Annual*, by Stanley Fischer (Cambridge: MIT Press, 1988), 17.

³⁵ Ross Cranston, *et.al.*, *Principles of Banking Law: Third Edition* (Oxford: Oxford University Press, 2017), 335.

³⁶ Camila Villard Duran, "The Framework for the Social Accountability of Central Banks: The Growing Relevance of the Soft Law in Central Banking," *European Journal of Legal Studies* 8, no. 2 (2015): 97. See: Natasha Hamilton-Hart, *Asian States, Asian Bankers: Central Banking in Southeast Asia* (Ithaca and London: Cornell University Press, 2002), 2.

Financial Services Authority (hereinafter referred to as the Law concerning the Financial Services Authority) as mandated by Article 34 paragraph (1) of Law concerning the Bank Indonesia. The shifting of bank oversight duties from Bank Indonesia as the central bank has made Bank Indonesia as the central bank focused on monetary functions and has abdicated complete oversight.³⁷ It can be argued that the issues handled by Bank Indonesia are focused on everything connected the economics of banks supervision.³⁸

Removing central banks' oversight of banking institutions will erode the functions of the central bank.³⁹ This also indicates a deregulation of the roles and duties of Bank Indonesia as the central bank of Indonesia. Deregulation has meant that the banking laws to enforce integration have not been internalised within one institution. It also makes the central bank unable to preserve its independence over the financial services sector.⁴⁰

In this regard, there are two authorities of Bank Indonesia that have retained beyond the control function which has been transferred to the Financial Services Authority. Based on these two authorities and in relation to metaverse banking, authority to govern and to maintain the payment system fluidity is most relevant. In relation to this authority, Bank Indonesia has authority to govern, ensure payment system fluidity, and control the metaverse banking industry stakeholders' compliance with the prevailing payment system rules in Indonesia.

Article 34 (a) of Bank Indonesia Regulation No. 18/40/PBI/2016 concerning the Implementation of Payment Transaction Processing explicitly states the prohibition of operating a payment system using virtual currency, including for banking industry stakeholders. If the regulation is not repealed or revised, the existing regulation could have two consequences. The first consequence is that the metaverse banking industry will not accommodate virtual currency as a payment instrument. The second is that every banking industry stakeholder in the metaverse should pay attention to transparency and should comply with Bank Indonesia's rules. Otherwise, the anonymity of users' personal data or the mismatch of users' personal data with other users' personal data is not possible. The presence of blockchain transmission

³⁷ Alan S. Blinder, *Central Banking in Theory and Practice* (Cambridge: MIT Press, 1998), 2.

³⁸ Eric Tymoigne, *Central Banking, Asset Prices and Financial Fragility* (London: Routledge, 2008), 1. See: Peter Conti-Brown, "The Central Banking Century: An Introduction to Institutional Central Banking," in *Research Handbook on Central Banking*, by Peter Conti-Brown and Rosa Maria Lastra (Cheltenham: Edward Elgar Publishing Limited, 2018), 4 and Alberto Alesina and Lawrence H. Summers, "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence," *Journal of Money, Credit and Banking* 25, no. 2 (1993): 151, <https://doi.org/10.2307/2077833>.

³⁹ Louis-Philippe Rochon and Sergio Rossi (ed.), *The Encyclopedia of Central Banking* (Cheltenham: Edward Elgar Publishing, 2015), 29.

⁴⁰ Daniyar Nurbayev, "The Rule of Law, Central Bank Independence and Price Stability," *Journal of Institutional Economics* 14, no. 4 (2018): 660, <https://doi.org/10.1017/S1744137417000261>.

of information is not applicable to banking industry stakeholders, as Article 15 paragraph (1b) of Law concerning Bank Indonesia regulates that Bank Indonesia obligates payment system service providers, including banking industry stakeholders to report their activities. The *ius constitutum* above does not permit users and their accompanying transactions without clarity and must impose a disclosure obligation on both customers and non-customers if they truly intend to deal with the banking industry stakeholders in metaverse.

In relation to the authority of Bank Indonesia to conduct monetary policy, Bank Indonesia determines minimum reserve capital provision obligations of commercial banks as set forth in Bank Indonesia Regulation Number 15/12/PBI/2013 concerning Minimum Capital Provision Obligations of Commercial Banks, although it is also regulated in Financial Services Authority Regulation Number 11/POJK.03/2016 concerning Minimum Capital Provision Obligations of Commercial Banks as amended by Financial Services Authority Regulation Number 34/POJK.03/2016 concerning Amendments to Financial Services Authority Regulation Number 11/POJK.03/2016 concerning Minimum Capital Provision Obligations of Commercial Banks. In this regard, it can be concluded that as far as the provisions are related to the impact on the activities and monetary duties of Bank Indonesia, Bank Indonesia has the authority to issue such provisions. It is important to underline that there is no specific regulation on Bank Indonesia's authority to regulate metaverse banking. In this regard, the existing regulations concerning the role and authority of Bank Indonesia in response to metaverse banking is severely limited as it does not prescribe on how transactions in metaverse banking can be performed in a safe manner and protect its users.

III.B. REGULATORY RESPONSE OF FINANCIAL SERVICES AUTHORITY TO METAVERSE BANKING

In the second outline, it is important to expound the *ius constitutum* that governs the roles and authorities of the Financial Services Authority in responding to metaverse banking. Article 5 of the Law concerning the Financial Services Authority explains that the role of the Financial Services Authority is to conduct an integrated system of regulation and oversight of all activities in the financial services sector. The Article 6 of the Law concerning the Financial Services Authority explained that the Financial Services Authority is charged with arranging and supervising the financial services activities in the banking sector, the capital market sector, and financial services in the field of insurance, retirement funds, multi-finance institutions, and others financial services institutions.

It is argued that the transition under the provisions of the Law concerning Bank Indonesia on the delegation of the duties of Bank Indonesia as the

central bank to regulate and supervise banks to the Financial Services Authority. This article argues that it is a form of deregulation of the Law concerning Bank Indonesia. Deregulation in the banking section occurs as a form of rapid response to emerging issues in banking practices which require audit and supervision institutions outside the central bank.⁴¹ According to the Article 7 of the Law concerning the Financial Services Authority, the Financial Services Authority has authority to: regulate and supervise banking institutions; regulate and supervise the soundness of banks; regulate and supervise the prudential aspects of banks; and conduct examinations of banks. It is evident from the provisions described previously that the Financial Services Authority has broad authority over the Bank Indonesia to regulate and supervise banks. If all these things are connected to the metaverse, it can be explained as follows.

There is no regulation from the Financial Services Authority on metaverse banking as to whether there are any scope limitations or technical matters related to metaverse banking. I argue that the *ius constitutum* above simply addresses the regulatory and oversight of conventional and digital banks which could also be applicable to metaverse banking. In relation to prudential aspects of banks and the bank examination, both aspects have an important role to be applied in metaverse banking. This is premised at least in two legal arguments. The first is simply because metaverse banking requires more layers of assessment about the possibilities of non-customers or users to carry out transactions with anonymity, while the second is a more efficient examination of banks as the metaverse was built on an augmented virtual blockchain network.

According to the discussion above, it can be concluded that the *ius constitutum* above explained how the complex roles and authority of Bank Indonesia and the Financial Services Authority still fails to address metaverse banking regulation. This is aligned with one weakness of financial services regulation, which is the absence of regulation for emerging issues from new technology such as metaverse banking.⁴² It is important to recognise that regulation should streamline the use of technology and its oversight in the financial services sector.⁴³ If metaverse banking already had existed before regulations were established, it would inevitably raise genuine legal challenges in the field, whether for banking industry stakeholders, regulators, or customers themselves.

⁴¹ George Walker, "Financial Technology Law – A New Beginning and a New Future," *The International Lawyer* 50m no. 1 (2017): 137, <https://www.jstor.org/stable/26415633>.

⁴² Jon Truby, *et.al.*, "Banking on AI: Mandating a Proactive Approach to AI Regulation in the Financial Sector," *Law and Financial Markets Review* 14, no. 2 (2020): 112, <https://doi.org/10.1080/17521440.2020.1760454>

⁴³ Alistair Milne, "Competition Policy and the Financial Technology Revolution in Banking," *Communications & Strategies; Montpellier* 103 (2016): 159.

IV. THE DESIGN OF A LEGAL ARCHITECTURE FOR METAVERSE BANKING FROM THE PERSPECTIVE OF CHALLENGES AND OPPORTUNITIES

The current *ius constitutum* used in Indonesia is not sufficient to encompass superficial issues from the initial layer of metaverse banking, which relates to the scope of spatial boundaries. It is noted that there is a perceived authority conflict between Bank Indonesia and the Financial Services Authority to regulate the banking system in Indonesia. From the previous discussion, it can be concluded that the *ius constitutum* of Bank Indonesia was considered very feeble in addressing metaverse banking. It can further be said that legal products that improve the substance of the *ius constitutum*, or “*ius constituendum*” are a necessity. It is because the *ius constitutum* clearly has failed to address metaverse banking.

In this regard, three basic challenges should be addressed in the *ius constituendum* to enhance the roles and authorities of Bank Indonesia and the Financial Services Authority efficiently. The first is the current *ius constitutum* governing separation of banking regulatory functions under the Financial Services Authority, while monetary and other matters that can have a systemic impact on the nation’s economy under the authority of Bank Indonesia. Revocation of the Bank Indonesia’s authority to exercise both regulatory and supervisory functions following enactment of the Law concerning the Financial Services Authority has also resulted in an inefficient oversight model. The transfer of authority from Bank Indonesia to the Financial Services Authority is counterproductive to the oversight objectives which require promptness and precision in issuing recommendations and taking actions from state institutions on banking matters.

The division of the regulatory and supervisory authority over banks from Bank Indonesia in metaverse banking would have a similar impact to the present situation. The current situation would essentially be repeated in metaverse banking. The intended situation is regulation and supervision are carried out by the Financial Services Authority tends to not be fully integrated with functions carried out by Bank Indonesia in relation to systemic impact of the bank on the nation’s economy. This means that the Financial Services Authority should submit all findings to Bank Indonesia, and it would be efficient to do this on one side, which is through Bank Indonesia and carried out by the internal parties of Bank Indonesia. In the event this is to be retained, then the challenge is how the *ius constituendum* would ensure that the Financial Services Authority function to govern metaverse banking is efficiently executed.

The second challenge is the unavailability of regulation to guide a regulatory framework for metaverse banking in Indonesia. The absence of baseline

regulations to guide Bank Indonesia and the Financial Services Authority would make it difficult for both regulators to establish well-aligned and harmonised regulations. This challenge also emerges because the regulations enacted by Bank Indonesia and the Financial Services Authority could be inconsistent or overlapping including the minimum capital regulation since the establishment of commercial banks either by the Bank Indonesia or the Financial Services Authority.

This regulation has the same legal framework as the Law concerning Bank Indonesia. This means it can be realised as a redundant rule or an inefficient rule to promulgate. It is also unavoidable that regulation dissonance is possible under such circumstances although there is already guidance. If there is no guidance, then it is undeniable that will differ from each other or at the very least be disharmonious. The government would have to establish a regulation governing metaverse banking to face this challenge.

It is important to emphasise that the regulation can be executed by the government with consideration of at least three key points. The first is the government should examine the economic aspects of metaverse banking. This is essential for determining the extent to which metaverse banking influences the economy in Indonesia. This aspect needs to be studied to understand the effect on the economic activity, as well as the extent of the systemic level and the way to resolve the issue from the economic perspective. The second aspect is the technological aspect, whereby the government can conduct an in-depth study of the technology to be used in metaverse banking and determine the ability of conventional or at least commercial banks to adopt the technology. The government should assess the extent of security, traceability of the technology systems, and their suitability for use.

The third aspect is the legal aspect, whereby the government should consider the *ius constitutum* on regulation and supervision functions in the Financial Services Authority toward conventional and digital banks that can be adopted for metaverse banking. This is very important in shaping the regulation to encourage legal synchronization and harmonisation. The government could also undertake an in-depth examination about the legal certainty of metaverse banking implementation in Indonesia to ensure that it could be implemented in an efficient and fair manner by the banking industry stakeholders as well as prospective customers and non-customers.

The third challenge is determining which institution has authority to regulate or to resolve conflicts that occurs in metaverse banking. The primary consideration is to determine which institution has the authority to regulate, whether its Bank Indonesia or the Financial Services Authority, and the scope of such regulation. If a legal dispute arises, the appropriate sanctions can

be imposed. This is significant as there are layered sanctions within the legal statutory framework, which include criminal sanctions and administrative sanctions. If criminal sanctions are to be imposed, to what extent can such sanctions be applied and to whom can these sanctions be applied. The use of evidence would tend to emphasise indirect evidence or digital evidence, such as transaction receipts in the metaverse. The reason for this is that even using a blockchain network and an end-to-end user model, I argue that it is possible for hacking if banking industry stakeholders fail to protect their security systems in the same way as in the real world.

These three challenges indicate that despite the regulatory impetus and the institutional authority to regulate it, metaverse banking has the potential to provide a promising future for the Indonesian economy and law. There are three opportunities at least which can be explained as follows. The first is the presence of metaverse banking could be an entry point to strengthen the role and authority of Bank Indonesia in the systemic aspects of metaverse banking. One example is related to the minimum reserve capital requirements of banks in the metaverse.

The minimum capital reserve regulation of metaverse banking can be performed more properly by Bank Indonesia. There is no repetition with the regulation issued by the Financial Services Authority. The regulation of minimum capital of metaverse banks would also indicate that the role of Bank Indonesia in enacting regulations related to its monetary functions and matters relating to systemic impact on Indonesian economy can be emphasised. It is important to consider this second challenge as well to form a law that emphasises the roles and authorities of Bank Indonesia and the Financial Services Authority in metaverse bank regulation and supervision.

Regarding the the authority over the minimum capital requirement of metaverse banks, which should be apportioned to Bank Indonesia, I believe that the minimum reserve capital requirements of metaverse banks should be higher than that of the conventional or digital banks. This is in view of the enormous potential for banks in the metaverse to rapidly liquidate. This opinion also considers the extent of the metaverse being used by people with considerable skills in technology as opposed to digital banks whereby the concepts and practices are easier to understand through mobile devices by the general population. The potential for the metaverse ecosystem will also be very enormous, as users will also abandon and revert to conventional banks or digital banks. It is expected that banking industry stakeholders in the metaverse should prepare sufficient financial measures to anticipate user or market movements for financial products in the metaverse.

The second opportunity is the formation of *ius constituendum* to clarify the roles and authority of the Financial Services Authority in supervising banking

industry stakeholders in the metaverse. It is intended to clarify the extent to which the Financial Services Authority's supervision can be conducted, while still providing opportunities for Bank Indonesia to take part in supervising indirectly through assessment of Financial Services Authority's report on systemic impacts on metaverse banking industry stakeholders. In this regard, the Financial Services Authority can also supervise using regulatory technology or supervisory technology whose systems are already owned under the auspices of the Financial Services Authority in order to supervise the banking industry stakeholders in a metaverse manner. The Financial Services Authority should also regulate the extent to which it can provide administrative sanctions and at which point it should report to Bank Indonesia and refer a crime to prosecutors. This is necessary to ensure legal clarity and justice for parties with adverse interests caused by violations of such interests by others.

The third opportunity is when the Financial Services Authority can enhance its role in assessing negative creditworthiness ratings "blacklists" for banking industry stakeholders and suspending parties to banking transactions in the metaverse who have committed criminal offences or at least may prejudice the interests of other parties. It is important to empower the Financial Services Authority to avoid similar incidents happening again in future or to prevent losses that may be incurred by either party. This measure enables the Financial Services Authority to inventory of these two matters.

The first is the list of banking industry stakeholders and metaverse users who are delinquent borrowers or non-customers, and the second is related to subsequent problems which can be inventoried to find solutions to these problems. When the dispute or offence model is similar, the Financial Services Authority could impose the same administrative sanction. The problem occurs when the Financial Services Authority finds in the inventory that the matter has occurred several times despite the sanction already imposed on the violation, then it should be understood as an inventory of problems from the *ius constituendum*. The metaverse banking opportunity could be an entry point to reinforce and enhance the roles and authorities of Bank Indonesia and the Financial Services Authority in metaverse banking, which is currently lacking in a comprehensive manner both in the context of conventional banks and digital banks.

V. OVERVIEW OF THE SUPERVISION AND BANKING LAWS ENFORCEMENT MECHANISM IN A CROSS-JURISDICTIONAL METAVERSE ECOSYSTEM

Financial crimes such as money laundering or even banking crimes are threats to virtual cross-jurisdictional banking law enforcements.⁴⁴ The criminal law regulation concerning the legal aspects in the field of banking has met the point of emergence. Regulators should be responsive to these needs.⁴⁵ It could be argued that existing regulation requires reform to address the lagging of the current technology phase as explained in previous chapter.⁴⁶ In regard to the legal supervision mechanism of virtual cross-jurisdictional banking or metaverse banking, Bank Indonesia should conduct the payment system model. The Financial Services Authority can also supervise on technical regulations. The supervision is not only carried out by Bank Indonesia and the Financial Services Authority, but also the Personal Data Protection Authority as governed by the provisions of Article 58 paragraph (2) and Article 59 of Law No. 27 of 2022 on Personal Data Protection. It is explained in the regulation that Personal Data Protection Authority have the authority to monitor personal data administration. This emphasises that the validity check of banking user data in the metaverse becomes the supervisory scope of the Personal Data Protection Authority.

The control over user validity can also be maintained through the deployment of Know Your Customer (KYC) in electronic device principle, which means the metaverse banking stakeholders have a clear understanding of the authentic identity of their users.⁴⁷ In virtual cross-jurisdictional supervision and as far as users from Indonesia or economic activities with Indonesian elements involved, oversight from all three institutions is possible. It is important to protect all parties and to reach out beyond the previously unreachable.

⁴⁴ Daniela Rosette, "The Application of Real-World Rule to Banks in Online Games and Virtual Worlds," *University of Miami Business Law Review* 16, no. 2 (2008): 290.

⁴⁵ Nicholas Suzor, "The Role of The Rule of Law in Virtual Communities," *Berkeley Technology Law Journal* 25, no. 4 (2010): 1820, <https://www.jstor.org/stable/24118612>; KPMG Advisory Services Limited, "Meet EVA: Your Enlightened Virtual Assistant and the Future Face of the Invisible Bank," *KPMG Advisory Services Limited Report* (2016): 8.

⁴⁶ HSBC Group, "Banking of the Future: Finance in the Digital Age," *HSBC Group Report* (2019): 16; Siddharth Peter de Souza and Maximilian Spohr, "Introduction Making Access to Justice Count: Debating the Future of Law," in Siddharth Peter de Souza and Maximilian Spohr, *Technology, Innovation and Access to Justice Dialogues on the Future of Law* (Edinburgh: Edinburgh University Press, 2021), 3.

⁴⁷ Benedictus Renny See, Ahmadi Miru, Muhadar, and Hasbir Paserangi, "Know Your Customer (KYC) Principles Relates to Bank Confidentiality as an Effort to Prevent Money Laundering Crimes," *Journal of Law, Policy, and Globalization* 81, (2019): 103, <https://doi.org/10.7176/JLPG/81-12>.

The previous section noted that laws are limited in application to a particular jurisdiction, as well as their enforcement based on the territorial principle. These principles can be excluded by the state, if there are moral reasons like philosophical and sociological reasons.⁴⁸ The philosophical reason is that law enforcement should be able to refer to three values, which are the value of certainty, the value of justice, and the value of legal expediency. This means that just as with surveillance, law enforcement is enforceable under Indonesian law even if there is a loss sustained by an Indonesian user despite different virtual jurisdictions such as mediation in court.

In relation to this, current dispute resolution forums outside the court will refer to the provisions of Law No. 30 of 1999 on Arbitration and Alternative Dispute Resolution. One of these is through mediation. It is important to renew technical rules on the stages of mediation, both direct and digital. The general rule at present is to restore the mediation of the parties' agreement. The government as regulator should be able to shape the banking and dispute resolution legal architecture into the metaverse.

VI. CONCLUDING REMARKS

This research has arrived at two conclusions after having conducted in-depth research as explained in the discussion section. The first conclusion is there are still misconceptions about the metaverse and the banking metaverse. The misunderstanding of the metaverse is expressed in the notion that metaverse does not have an agreed definition whereby the scope of the metaverse, is not the definition. It was also pointed out that the metaverse ecosystem is not intended to directly replace the real life but complement it. Metaverse ecosystem also has sufficient security system to prevent non-physical violence between users if the metaverse ecosystem provider has a firm commitment. Regarding misconceptions about metaverse banking, it is designed to augment the omnichannel experience with artificial intelligence innovations to its users and not restricted to conventional banking digitisation or digital banking. This situation further supports the unfortunate fact that regulations established by national law authorities which include Bank Indonesia and the Financial Services Authority have not been as responsive to metaverse banking.

The second conclusion is that there are challenges and opportunities in establishing a legal architecture for metaverse banking. The challenges involve the inefficiency of the regulation on the authority of Bank Indonesia and Financial Services Authority to regulate banks, the absence of specific regulation on

⁴⁸ Kenneth S. Gallant, *International Criminal Jurisdiction: Whose Law Must We Obey?* (Oxford: Oxford University Press, 2022), 181.

metaverse banking, and there is no authorised institution on metaverse banking. In response to these challenges, the *ius constituendum* on metaverse banking is necessary to be realised by firstly assessing the economic, technological, and legal aspects of metaverse banking. The intended opportunities are that metaverse banking can be an entry point to strengthening the role of Bank Indonesia and the Financial Services Authority, as concrete steps to explain the classification of authority to regulate and supervise metaverse banking between Bank Indonesia and the Financial Services Authority and streamlining the creditworthiness verification function in the financial services sector. The challenges and opportunities could encourage change to the *ius constitutum* on metaverse banking supervisory mechanism, and cross-jurisdictional banking dispute resolution in the metaverse ecosystem which currently is limited to courts, arbitration, and alternative dispute resolution forum.

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