



Potential Outcomes of Blockchain Technology Application for Transparency of Ultimate Beneficial Owner Registration Issue

AFFILIATION:

^{1,2,3,4} Department of Fiscal Administration, Faculty of Administrative Sciences, Universitas Indonesia, Indonesia

***CORRESPONDENCE:**

arfah.habib11@ui.ac.id

THIS ARTICLE IS AVAILABLE IN:

<https://ojs.unud.ac.id/index.php/jiab>

DOI:

10.24843/JIAB.2022.v17.i01.p07

CITATION:

Setyowati M. S., Adnyani I. A.R. Saragih A. H., Hendarawan A. (2022) Potential Outcomes of Blockchain Technology Application for Transparency of Ultimate Beneficial Owner Registration Issue. *Jurnal Ilmiah Akuntansi dan Bisnis*, 17(1), 102-116.

ARTICLE HISTORY**Received:**

8 March 2021

Revised:

6 August 2021

Accepted:

22 November 2021

Milla Sepliana Setyowati¹, Ida Ayu Rasthiti Adnyani², Arfah Habib Saragih^{3*}, Adang Hendrawan⁴

Abstract

The number of High Net-Worth Individuals (HNWI) in Indonesia is increasing. However, this increase was not followed by an increase in state revenues originating from the types of income taxes related to HNWI. This issue can be overcome by applying blockchain technology. This study aims to investigate the potential outcomes of blockchain technology in the issue of Ultimate Beneficial Owner (UBO) registration. Blockchain as a technology can support tax modernization, but it has not been extensively studied. This study used a qualitative method, by using a post-positivist approach, by conducting a literature study and in-depth interviews with nine informants. The results of the study state that the potential outcomes for UBO registration consist of value delivery and risk mitigation. Value delivery is easier to realize than risk management. Both are still being discussed further to find solutions to maximize the potential outcomes.

Keywords: blockchain, UBO, value delivery, risk management, tax modernization

Introduction

The purpose of this study is to analyze the potential outcomes of implementing blockchain technology on the issue of Ultimate Beneficial Owner (UBO) registration transparency in Indonesia. Disclosure of the Panama Papers in 2016 causes tax avoidance cases have been increased. One of them is run by High Net-Worth Individuals (HNWI), individuals with high assets with a minimum amount of US \$1 million or the equivalent of IDR13,2 billion (Kristiaji in Siregar, 2016). Indonesia is one of the countries in Asia Pacific that has an increasing number of HNWI since 2014. In 2014, from 47,000 population, the total wealth can be reached of US\$157 billion or equivalent to IDR2,086 trillion. The population of HNWI has increasingly grown, 48,000 population in 2015, 66,000 population in 2016, and reach 124,000 in 2017. From the perspective of tax regulator, this phenomenon actually could be a great contribution to state revenue from taxation. The ideal condition is that the increasing population of HNWI leads to an increase in the state revenue from

taxation. However, the reality shows another condition, The increase in the population of HNWI is not followed by an increase in income tax revenues from HNWI.

These days, Multinational Corporations (MNCs) are growing rapidly and it is also known that they will seek to reduce the tax burden to the government as predicted and explained by agency theory. This also can be applied to the individual level on the issue of transparency about who is the real owner of an asset. [Agung, 2020](#) states that the higher a person's income and education level, the lower the tax compliance. Resources, skills, and high political connections are three things mentioned to strengthen the arguments regarding tax compliance by HNWI.

[Agung, 2020](#) states that HNWI is often indicated to be able to carry out aggressive tax planning and even tax evasion. [Gunadi, 2018](#) defines tax avoidance as the act of taking legally available tax planning opportunities to minimize the tax burden. Tax avoidance is a way of legal tax planning to reduce the tax burden to maintain the taxpayers' wealth. HNWIs often use complex and even unclear structures to cover their actual asset ownership ([Majdanska & Migai, 2018](#)).

This is important to resolve because this issue is one of the loopholes in Base Erosion Profit Shifting (BEPS). For this reason, there is a need for transparency of the Ultimate Beneficial Owner (UBO). Internationally, in the BEPS Action Plan 5, harmful tax practices are the basis for transparency in minimizing BEPS. To support its implementation, tax regulations in Indonesia are registered in Law number 36 of 2008 article 18, apart from that Indonesia has enacted Presidential Regulation number 13 of 2018 as proof of the Indonesian government which requires every corporation to submit reports about the ultimate owner of assets to the Directorate of General Legal Administration (DGLA) as a form of collaboration with the Directorate General of Taxes (DGT) in strengthening the database in tracking the UBO which is dominated by the HNWI category ([Husein, 2020](#)).

To realize transparency of UBO registration, in the era of the industrial revolution, technological assistance that is identical to tax modernization is needed which aims to establish taxpayer compliance. The modernization of Indonesia's tax administration in the future is planned through blockchain technology ([Saragih, 2019](#); [Setyowati et al., 2020](#)). The emergence of blockchain is a response to the need for efficiency, transparency, timely logging, security, and immutable data against hacking. Data confidentiality is guaranteed because no party has control of certain information ([Utama, 2018](#)). This advantage makes blockchain known as a decentralized distributed ledger or a distributed ledger that does not need a third party as an intermediary. In this case, the existence of blockchain technology seems to be considered because it has enormous potential in the world of taxation ([Majdanska & Migai, 2018](#)). Deloitte (2017) explains, "Blockchain has the power to disrupt and strongly recognize the accounting and the way tax payments processed". Blockchain has the potential to be used as a technology for recording UBO registrations but has not been widely investigated.

A blockchain is a form of Information Technology Governance (ITG). [Weill & Ross \(2004\)](#) define ITG as the determination of decision rights and accountability to encourage desired behaviour in the use of Information Technology (IT). This means that ITG presents as a process in determining choices and accountability in encouraging the desired behavior in the use of information technology. In addition, ITG can also be interpreted as a process to ensure that in the future the use of information technology

will provide benefits as planned by the organizations. In sum, effective governance is crucial for facilitating and conveying business value (Ali et al., 2021).

There are several similar research about blockchain technology. First research entitled How Blockchain Can Affect Financial Services - Overview, Challenges, and Recommendations from Expert Sources by Chang et al., 2020. The study aims to provide an analysis related to blockchain and its developments in finance. Also, their study investigates the challenges of industrial development 4.0. This study uses a post-positivist approach with the Theory of Planned Behavior (TPB) with qualitative data techniques. The results of their study state that there are challenges in using blockchains such as scarcity, security, and energy consumption. In addition, there are ethical issues related to privacy, regulation and law, and cybercrime. In terms of the use of blockchain for financial purposes, which aims to use it also for corruption and money laundering. Blockchain can identify the transaction being sought and can be seen based on the record time. This study focuses more on the application of blockchain technology in the financial sector, especially on banks.

The second previous research related blockchain, entitled Introduction and Application in Financial Accounting by Yu et al. (2018). This study uses a qualitative approach as well as techniques with data. The existence of problems in obtaining data based on accurate and accurate regulatory difficulties causes accounting to try to apply blockchain technology. The study discusses how this technology can partially reduce information asymmetry between an organization and users of information. Their study discusses the potential and impact that may occur from the application of blockchain technology, especially in the accounting field.

The third research, entitled Can Blockchain and Linked Data Advance Taxation by Hoffman (2018). The study argues that a blockchain system is a solution for global tax authorities of its complexity and transparency. This research focuses more on the discussion of the tax loopholes as a result of tax avoidance and the issue of fraud from Value Added Tax (VAT) refunds. Their research method is qualitative. The results of the research show that the blockchain used for tax authorities is not intended for repeated recording but to create trust between parties who have access to participate in the blockchain platform. Hyperledger Sawtooth is a solution that can overcome the tax loopholes. This distributed ledger is not necessarily applicable to all types of taxes. On the other hand, in the field of taxation, it will able to reduce administrative burdens that enabling the collection of taxes at a lower cost. The next recommendation is VAT Invoice 2.0 which must be standardized first before being implemented. Hoffman's research is focused on VAT rather than UBO which is identical to the discussion of income tax. Besides, this research does not aim to provide a solution related to the use of blockchain in minimizing tax avoidance, but rather focuses on analyzing the potential outcomes of blockchain in dealing with the issue.

Based on the three previous research, the registration of UBO with blockchain has begun to be announced based on the disclosure method which has minimum potential to capture UBO. The goal is to ensure that blockchain can deliver value delivery compared to other technologies. Furthermore, to be able to provide risk management from the unfolding of UBO, such as the occurrence of business failure, corruption, money laundering, and tax avoidance with a complex scheme of ownership of an asset. Solving the problem by implementing the blockchain is not impossible. Blockchain also

has risks as a technology. For this reason, it becomes important to analyze how the expected value can be realized and to find solutions to overcome obstacles that may occur.

Information Technology Governance Institute (ITGI) provides standards for IT governance that help ensure effective strategic business/IT alignment, resource management, risk management, performance management, and value delivery (Wilkin & Chenhall, 2010). This framework emphasizes the importance of proactive design and execution of IT governance processes. ITGI (2003) states that value delivery and risk management are potential outcomes when blockchain implementation can run on the issue of transparency of Ultimate Beneficial Owner (UBO) registration. Value delivery focuses that the application of Information Technology (IT) can provide added value by the objectives before the implementation of IT. In this case, the value delivery mentioned refers to two things ITGI (2001), namely on-time value delivery and benefits/advantages promised.

According to Karimi et al. (2000), the punctuality of the delivery of values is influenced by several things as indicators including the impact of IT steering commitment on the management of IT functions. Doughty (2001) states that the role of the leader can increase the delivery of values to be achieved through the application of technology. When there is the participation of leaders or senior managers, a technology-based project will be successful and be able to increase the delivery of the desired values (Young & Jordan, 2003). The benefits were promised measured by three things as concluded by Yafi (2020), that the features of blockchain consist of security, transparency, and real-time recording.

Risk management focuses on efforts to minimize the risks that may occur with the application of technology, in this case, blockchain. Chang et al. (2020) state that in implementing blockchain, there are also several challenges that the risks should be able to mitigate, such as scarcity, insecurity, and energy consumption. Scarcity refers to the tendency for a transaction recorded in blocks to increase even continuously which is not followed by a certain amount of block capacity which can cause scarcity. The impact is, it

Table 1. Code of Informants

Group	Code	Informants
Government	I1	Director of Directorate of Information Communication Technology, DGT
	I2	Support System Development Section I of Directorate of Information Communication Technology, DGT
Academics	I3	Lecturer of the Faculty of Administrative Science, Universitas Indonesia
	I4a	Lecturer a of the Faculty of Computer Science, Universitas Indonesia
	I4b	Lecturer b of the Faculty of Computer Science, Universitas Indonesia
Practitioners & Association	I5	DDTC Tax Consulting
	I6	Blocktogo Indonesia
	I7	Association of Blockchain Indonesia (ABI)
	I8	Indonesia Blockchain Network (IBN)

Source : Prossced Data, 2021

Table 2. Arguments from the Informants of Dimension of Value Delivery

Informants	Arguments for Indicator Delivery on Time
I1	Influenced by the role of the leader (work the top culture).
I3	Will be hampered if there are political obstacles.
I4b	Depend on user experience.
I9	Society does not need to know all the processes of blockchain systems.

Source : Proseeded Data, 2021

can delay small transactions and emphasize transactions with relatively higher fees (Biais et al., 2019). Thus, the indicator is ensuring that the blocks in the blockchain network are sufficient (adequate blocks for the records).

The existence of a smart contract feature on the blockchain that is automatically compiled based on a difficult mathematical system and formula should not allow the blockchain to be hacked. However, the potential for insecurity remains the focus of studies by several parties. The reason is, blockchain cannot prevent information leakage, especially for the type of public blockchain (privacy leakage). Blockchain runs on the internet which requires electricity. Apart from the internet, blockchain also requires at least a computing device. Price (2018) states that running a blockchain requires a lot of

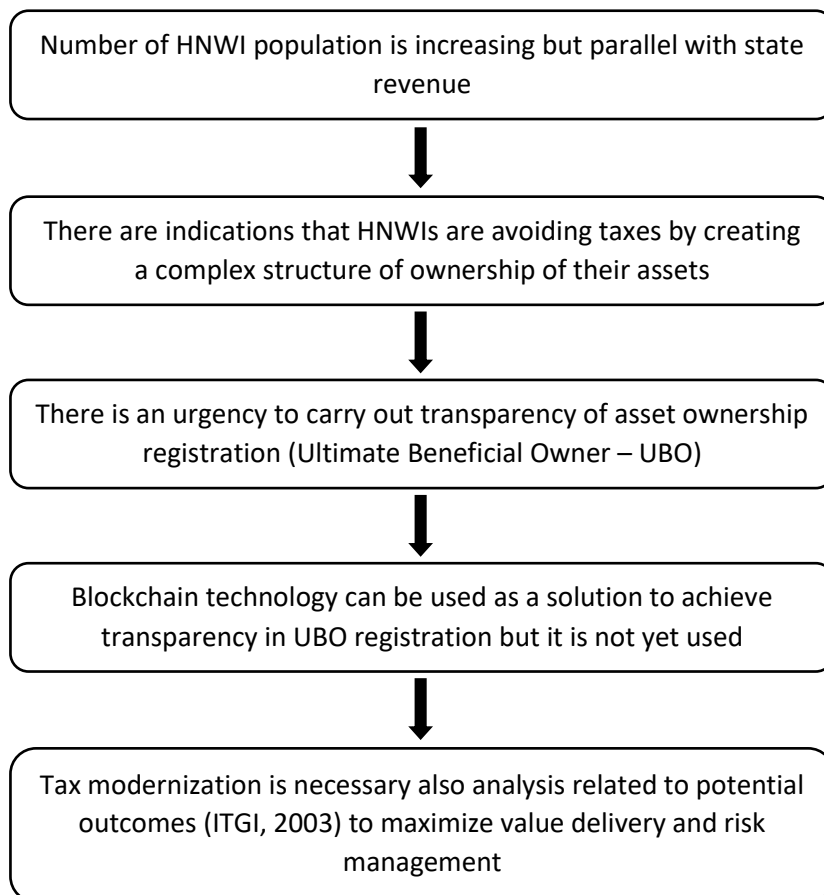


Figure 1. Work Flow of the Research

Source : Processed Data, 2021

power and will continue to grow bigger. On that basis, the indicator refers to energy consumption, namely the use of electricity as a means of support (suitability electricity usage) including other energy used to support blockchain implementation.

Research Method

To achieve the research objective, we used a qualitative method. This study conducted by using a post-positivist approach, which will not only support the theory but also considering the discovery of data [Creswell \(2014\)](#). Following [Anesa et al. \(2019\)](#), the paradigm used in this study was interpretive. In addition, because the number of informants tends to be small, we did not use specific tools to process information from in-depth interviews. The analysis was done manually. [Figure 1.](#) shows the workflow of this research.

Result and Discussion

The delivery of value relates to how blockchain technology creates added value or optimal results by utilizing features that are the speciality of blockchain compared to other technologies. The first indicator in the delivery of values as stated by [ITGI \(2001\)](#) is on-time delivery. The role of technology is inseparable from the role of resource management which has a major influence on how technology can successfully deliver the value it wants to realize promptly. This timely terminology is relative and can take some time. Several things that affect the length of time the value conveyed can be seen in [Table 2.](#)

Based on [Table 2.](#), it is known that to be able to ensure that the value that is the advantage of blockchain technology can be delivered promptly, I4b, in December 2020 in detail stated that:

"In my opinion, researchers like me are trying to figure out how this technology can be down to earth. Like an e-wallet whose technology can go as high as a star. It's just from the point of view of the application, it's easy just a click. So, how to use blockchain technology which should also be like an e-wallet".

From the in-depth interview excerpt above, it is known that society does not need to know the basic concept of blockchain which is difficult to understand. I4b said again that it takes the role of a researcher or an industry that oversees him make this technology easy to use when it reaches the user. Ensuring that users experience the ease and usefulness of technology is important. Following the explanation by [Bal \(2019\)](#), the public should not need to be involved in the transaction process that runs on the blockchain. Easy-to-operate usage allows users to receive various promised benefits. Not only user experience can be an indicator to realize the delivery of blockchain values on time, the role and collaboration between Academics, Businesses, and Government (ABG) is also an indicator.

The big influence of resources, more specifically as mentioned by [Karimi et al. \(2000\)](#), includes the leaders or senior managers who play a role. Informants with code number I1 said that the Directorate of Information, Communication and Technology (ICT) at DGT is constantly developing and making innovations. With work the top culture, I1 ensures that in addition to the leader who is in charge of providing a vision and mission that prioritizes innovation, those who support him must be able to translate

the vision and mission into an application. Accordingly, leaders should understand and participate actively in the process.

In terms of applying blockchain technology to UBO registration in Indonesia, it takes a long time to be implemented massively, but when it happens, the value to be conveyed can be felt more quickly. This is consistent with [Young & Jordan \(2003\)](#) that state that when there are participations from leaders or senior managers, a technology-based project will be successful and be able to increase the delivery of the desired values. As [Mansury \(2002\)](#) states that one of the definitions of tax administration refers to human resources. Specifically, it refers to officials and employees who work for institutions or agencies in the taxation sector. By becoming one of the elements of tax administration, the role of human resources owned by the Directorate of ICT, DGT can support the tax administration system in the all-digital era. The role of a good leader in the Directorate of ICT, DGT will assist in the realization of technology as a tool to facilitate tax administration in Indonesia which is growing in a better direction. Compliance culture in the IT sector has a significant effect on the level of ITG ([Ali et al., 2009](#)). Thus, tax modernization will accelerate rapidly.

In ensuring that the delivery of value with the blockchain can be realized on time, it is not only in terms of taxation. This was confirmed by I3 in an in-depth interview "The obstacle is political. Are the people getting ready or not? They are usually comfortable with their current condition. So there must be political compulsion too. Continue technologically. Is it ready or not?".

About this statement, political issues often hinder its timely delivery. From this quote, it is emphasized that apart from the technological infrastructure, the human resources that play a role, as well as the political situation in a country, data management needs to be ensured that it does not need to be processed repeatedly because the data received is still in raw condition. This will also increase efficiency so that the delivery of value can be felt more quickly.

The second indicator of the dimension of value delivery is the delivery of value, which is the speciality of blockchain which consists of security, transparency, and real-time recording ([Yafi, 2020](#)). The three advantages regarding blockchain are not impossible to materialize but will be realized even though they have issues or limitations in one way or another. What will be realized from the implementation of blockchain for UBO registration in Indonesia is the value of transparency between nodes that agree to international coverage. Harmonization is needed from the Organization for Economic Co-operation and Development (OECD) and The Group of Twenty (G20) regarding the definition of UBO, UBO ownership threshold, and several other things including supporting document templates for UBO registration needs between agreed countries. The statement was stated by I5, in December 2020.

Blockchain exists to offer the value of transparency in the midst of issues and the growing need for trust globally. Tax issues are emphasized in the second pillar of the BEPS 5 Action Plan. By having a common ground to create information transparency, one of which is related to UBO which has a large potential for state revenue, the decision to implement blockchain technology is influenced by the benefits it has.

As it is known that the use of blockchain cannot be used comprehensively for all types of taxes. Referring to [Fettke & Risse \(2018\)](#), it is said that the blockchain concept is intensively addressed and discussed in tax law. In particular, in the case of indirect taxes

Table 3. Arguments from the Informants of Dimension of Value Delivery

Informants	Arguments for Indicator The Benefits were Promised
I2	Conflict of interest needs to be resolved first.
I5	Consensus & harmonization needs to be realized first.
I6	Benefits such as transparency, security, and real-time recording.
I8	Benefits will be realized especially because it is very safe.

Source : Prossced Data, 2021

such as Value Added Tax (VAT), customs and excise, and transfer pricing. Even though the issue of UBO is included in the realm of income tax, blockchain has the potential to be applied to private blockchain based on recording activities not tax payment transactions. Furthermore, UBO also concerns the scope of international tax where transfer pricing is one of the components in international tax.

The second feature refers to security by using a private blockchain and a variety of hyper-fabric blockchain networks in which a smart contract is loaded, ensuring the security of database storage related to UBO is guaranteed. Smart contracts are contractual agreements that maintain security on the blockchain. Blockchains have a high system security. This can be seen from the use of mathematical encryption as a complex tool and consists of multiple independent servers (Viryasitavat & Hoonsopon, 2019). Wang et al. (2018) in this case, emphasizing that once it can be recorded in a block, it is impossible to make changes or deletions. The existence of a hash is a sign of the validity of the data which is recorded continuously in each block.

More specifically, I8, in August 2020, said that users felt this security with cryptographic knowledge to secure their accounts. It contains of 14 phrases with unique code and a low percentage to recover. If the user has forgotten the password, the account cannot be recovered. Education about the importance of saving passwords is also an important focus. Thus, when the blockchain is deemed unable to deliver the value as promised in the initial, it is not only the blockchain that is hacked, but there are errors that come from human resources.

Lastly, regarding timely recording. Cohen et al. (2017) state that blockchain has the privilege of being able to prevent parties who have access from logging errors. Besides, this technology can also prevent data changes from occurring after the recording has occurred. However, this benefit has a definition that needs to be emphasized that every record that is entered on the blockchain, the data should has been tested for validity first. When the data is valid, it will be recorded immediately. If it is not valid, then the data cannot be recorded and even exchanged on the private blockchain. Based on changes or indications of hacking data that have been recorded in the new blockchain will be recorded in real-time (Laurence, 2017).

Based on the explanations, the benefits promised by blockchain are not based solely on technology. The benefits can be realized if other supporting aspects are also adequate and support the implementation of blockchain. In the issue of UBO registration, this benefit can be realized as referring to the features of blockchain-related to transparency, security, and timely recording. Based on this analysis, Table 3. contains a summary of the tables of relevant informant's arguments to answer this indicator.

Table 4. Arguments from the Informants of Dimension of Risk Management

Informants	Arguments for Indicator Scarcity
I1	From technology, scarcity refers to the storage that has to be large.
I4a	Scarcity occurs because data validation process slowly as there many transactions in a day.
I4b	There should be no issue for the number of blocks but registration must be predicted

Source : Prossced Data, 2021

Continuing with the second dimension of potential outcomes, risk management. Blockchain also has risks as a technology. The following is an analysis of the dimensions of risk management related to blockchain implementation on the issue of transparency of UBO registration. The first indicator is scarcity. Scarcity is defined as the tendency for recording transactions in blocks to increase continuously which is not followed by a certain number of blocks so that it can cause scarcity. To ensure there is no scarcity, it is necessary to ensure that there are enough blocks in the network available. In [Table 4](#), we can see the summary of informant’s arguments.

Firstly, it must be determined whether the blockchain used includes whether it is a public or private blockchain. In the case of UBO registration in Indonesia using the private blockchain type, the issue of scarcity of unavailability of blocks due to the large number of transactions carried out in a day is irrelevant. This is motivated because the private blockchain in the transaction records is limited to nodes, not the public in general. In general, the quantity will not be as much as the record that can occur on the public blockchain.

Based on the interview above, it can be seen that the private blockchain for recording UBO is still in normal storage data storage. In a day, blockchain can record a trillion transactions. If we use the assumption that in a day it occurs for ten thousand records from parties who declare themselves as UBO in all countries agree, then this proves that there is no scarcity of blocks to record on the blockchain.

The solution is to apply the use of hierarchical type blockchain or blockchain with a data validation process that has been tested regularly to the main chain to avoid errors or reduced performance on the blockchain. The issue of scarcity is not a risk because technical considerations are feasible. Even though the facts in the field used are a non-hierarchical or flat type blockchain that has to execute each process directly with the number of transactions reaching hundreds of millions of data per day. After finding a way to mitigate risks related to scarcity which could have implications for the slow recording process of UBO registration, it will not make small transactions and prioritize transactions with relatively higher costs in terms of costs as [Biais et al. \(2019\)](#).

The second indicator is insecurity. There is a risk of insecurity possible with blockchain technology even though the blockchain has a high security decentralized book feature. Several informants have given their arguments about this indicator. [Table 5](#) shows the arguments clearly before the analysis.

Insecurity can occur with hacking when a node has 50 per cent control over the network in a private blockchain. Regarding insecurity, the use of private blockchains is safer than public blockchain. The reason for insecurity in the public blockchain occurs

Table 5. Arguments from the Informants of Dimension of Risk Management

Informants	Arguments for Indicator Insecurity
I1	Impossible to be hacked with multiple nodes.
I4a	The use of private blockchain is safe, but it requires commitment in recording from related parties.
I4b	Insecurity will be resolved with the use of hierarchical or blockchain type blockchain (hyper-fabric blockchain network).
I5	Data protection still an issue for those who have access or intermediaries
I6	The issue of insecurity returns to the commitment of each party.
I7	Data privacy still need to be concerned.
I8	High security, not easily hacked/recovered if forget the password.

Source : Prossced Data, 2021

because it requires significant computing from the mining process so it is more vulnerable to insecurity.

The existence of a smart contract feature on the blockchain that is arranged automatically based on a mathematical system and formula, should not allow the blockchain to be hacked. Providing blockchain should also reduce the risk and indication of fraud by providing access to monetary policy and taxation. This will provide full access to the inspection process for every digital transaction made by individuals and companies. Thus, the problem of insecurity can be well mitigated considering the type of private blockchain used must be more secure than the public blockchain in terms of data leakage. Informant I1 expressed his opinion on this matter that:

“Blockchain can not be hacked. If you want to be hacked, you have to confirm with the other nodes first. If hacked, 1000 nodes will have to be hacked. Which is less likely. That is the speciality of the blockchain. It is duplicated on various nodes”.

Based on the statement, it can be believed that the level of insecurity of the private blockchain is smaller when compared to the public blockchain. As a third party, the blockchain can also provide document details such as up-to-date notes to trips that involve changes or deletions from time to time. Interestingly, the blockchain can show if something is missing from a document. With a feature that has the term proving the negative, blockchain can not only report what is in a document, including what is missing. This was stated by informant I1, as quoted below:

“... From one side is the security safer. But in terms of acceptability and change management, many do not immediately believe it”.

I1 considers this insecurity issue will not occur. I1 also states that there is nothing dangerous about the transparency of UBO data. Recalling the role of smart contracts, not everything will be transparent. Likewise, the database is also stored at each node before the necessary data exchange occurs. Even so, the potential for hacking will remain forever. Thus, there is a need for mitigation efforts for insecurity issues as stated by I4a:

“..Back to how committed the company is to maintaining data confidentiality”.

In this case, data leakage related to UBO is not impossible, so a commitment is needed to be able to maintain the confidentiality of data that has been registered in the blockchain. This is also supported by statement I5 that accessibility is crucial before the commitment of each party involved is realized. For that, the government must have a control target as a concentration of information.

When the security of the use of blockchain on the issue of UBO can be realized, it can simultaneously realize one of the goals of modernizing tax administration, namely achieving a level of trust or trust in tax administration. If this can be realized, the level of productivity of the tax authority and taxpayer compliance can increase. Thus, the process of modernizing taxation as a form of tax reform will be realized. This is following the explanations expressed by [Pandiangan \(2008\)](#).

The last indicator is energy consumption, as we know that, to be able to operate, the blockchain technology that runs on the internet, electricity is needed. Apart from the internet, blockchain also requires at least a computing device. [Price \(2018\)](#) states that running a blockchain requires a lot of power and will continue to grow bigger. On that basis, this indicator refers to the use of electricity as a means of support (suitability electricity usage) including other energy used to support blockchain implementation. [Table 6](#). shows arguments from several informants.

This indicator aims to ensure that the application of blockchain to UBO registration in Indonesia should not consume excessive energy. The goal is that the efficiency side with blockchain adoption can still be realized. Furthermore, I4b explains that even blockchain will provide many times the efficiency compared to creating servers or e-mail with comparable energy consumption. But because this is not visible (intangible), the use of technology, including blockchain, is often doubtful to be applied. The private blockchain used in UBO registration does not require a mining process, so excess energy consumption is eliminated. Here are some reasons that support that private blockchain on UBO registration in Indonesia will use less energy.

First, to be able to create a private blockchain server for UBO in Indonesia, it is enough by using a computer device with normal capacity. Of course, it is supported by a stable intranet or internet network. Furthermore, regarding other energy used to support the application of blockchain, it concerns how to ensure that energy is expended for its users. In this case, it refers to nodes that are incorporated in the UBO

Table 6. Arguments from the Informants of Dimension of Risk Management

Informants	Arguments for Indicator Energy Consumption
I1	The more nodes, the more stable they need electricity and the internet.
I2	The private blockchain type will not exploit as much energy as the public blockchain. If later this technology does not have users, then this is an issue.
I4a	Private blockchain will not consume a lot of energy because it only uses voting media, not mining.
I4b	There will be no excess energy consumption because the result is efficiency. It is necessary to ensure that technology is easy to use.

Source : Prossed Data, 2021

private blockchain in Indonesia. I2 states that one of the possible risks of blockchain for UBO listing is neither party uses nor refuses to use it. As a result, from the blockchain infrastructure provider, namely the ICT Directorate, DGT can suffer losses. The following is an excerpt from an in-depth interview that describes ways to mitigate these losses:

"There must be mitigation, how to use it. Then education, based on the benefits, governance, so that it can be mitigated. Then, related because it is transparent means resistance to taxpayer data. So it's more about how we give understanding and transparency to taxpayers, what will the data be used for. If necessary, hold a disclaimer to the user on the blockchain to mitigate leakage or protect data as well".

I4b agrees that:

"The theory, in the beginning, must be certain, how to prove that fraud will not occur, transparency is guaranteed, how about the initial contracts of all kinds. Everything happens in the blockchain network. But when it comes to the user's hand, it should be displayed by simply pressing yes and no".

Referring to the two quotations above, it can be concluded that it is not solely the use of electricity and the internet in the application of blockchain which can consume excess energy and cause waste. In ensuring that blockchain can be useful and produce efficiency, especially transparency over UBO and even international coverage, it can be started with a strategy on how to socialize so that this technology can be accepted and used.

Conclusion

This study aims to determine the potential outcomes of blockchain technology in the issue of Ultimate Beneficial Owner (UBO) registration. The results show that the potential outcomes consist of two dimensions, namely value delivery and risk management. Delivery of value in the application of blockchain technology at UBO registration in Indonesia can be realized if the delivery can be done on time supported by the role of leaders and nodes who feel the benefits described, especially transparency. If UBO is not revealed, it can increase the risk of tax avoidance. This can be mitigated by the use of blockchain. However, blockchain has several risks as a technology, namely the scarcity of blocks that can be mitigated by the use of a private blockchain and the implementation of blockchain that has a hierarchy. Furthermore, the use of smart contracts that provide limited access to a party can mitigate the incidence of insecurity. Finally, the use of blockchain in UBO registration problems in Indonesia does not consume excess energy, providing efficiency even though it is intangible.

To support the potential of blockchain in UBO registration, solutions and ideal steps have been obtained to realize value delivery and risk management. Although many aspects should be addressed apart from preparing the blockchain. To achieve this, it will take a long time if there is no commitment from the stakeholders to make it happen.

In terms of the implication, for academic purposes, this research is expected to become research that can contribute to the development of tax administration, especially in implementing blockchain technology to create transparency in UBO registration in Indonesia. Studies related to blockchain technology, especially regarding the issue of transparency in UBO registration, tend to be limited and understudied. For

this reason, the results of this study can also be used as a reference for subsequent studies or the wider community that need additional information.

From a practical point of view, this research is expected to become a proposal and solution in the form of information or consideration for stakeholders, especially the government, namely the Directorate General of Taxes (DGT) and the Fiscal Policy Agency (FPA) in terms of policymaking and application of blockchain technology in taxation field. For academics and practitioners, this study can be used as research material and future reference. For taxpayers themselves, it can be useful in ensuring that they are compliant taxpayers. This can prevent the occurrence of audits or allegations of tax avoidance on the transparency of UBO registration. Finally, it is hoped that this research can become a reference in making policies that are not only limited to taxation interests as expected by the Financial Action Task Force (FATF) that UBO registration also aims to prevent illegal money flows such as corruption and money laundering.

This study has two limitations thus opens up some avenues for future research. First, This study only discusses the application of blockchain technology in the issue of registration of actual ownership of an asset or Ultimate Beneficial Owner (UBO) as per Presidential Decree No. 13 of 2018. In this case, this case is included in the type of Income Tax (PPH) and international tax. Future studies may investigate the potential of blockchains for other areas of taxation. Second, this study does not involve informants from taxpayers who may have used blockchain technology in other areas. Future studies may consider the diversity of informants for better triangulation.

References

- Agung, K. (2020). *Memajaki Orang Kaya, Solusi Krisis*. DDTC Indonesia.
https://www.youtube.com/watch?v=Z_XkuFftJfA
- Ali, S., Green, P., & Parent, M. (2009). The role of a culture of compliance in Information Technology governance. *CEUR Workshop Proceedings*, 459.
- Ali, S., Green, P., Robb, A., & Masli, A. (2021). Governing information technology (IT) investment: A contingency perspective on organization's IT investment goals. *Australian Journal of Management*. <https://doi.org/10.1177/03128962211009578>
- Anesa, M., Gillespie, N., Spee, A. P., & Sadiq, K. (2019). The legitimization of corporate tax minimization. *Accounting, Organizations and Society*, 75, 17–39.
<https://doi.org/10.1016/j.AOS.2018.10.004>
- Bal, A. (2019). *Taxation, Virtual Currency and Blockchain*. Kluwer Law International B. V.
- Biais, B., Bisière, C., Bouvard, M., & Casamatta, C. (2019). The Blockchain Folk Theorem. *The Review of Financial Studies*, 32(5), 1662–1715.
<https://doi.org/10.1093/RFS/HHY095>
- Chang, V., Baudier, P., Zhang, H., Xu, Q., Zhang, J., & Arami, M. (2020). How Blockchain can impact financial services – The overview, challenges and recommendations from expert interviewees. *Technological Forecasting and Social Change*, 158.
<https://doi.org/10.1016/j.techfore.2020.120166>
- Cohen, L. R., Samuelson, L., & Katz, H. (2017). How securitization can benefit from blockchain technology. *Journal of Structured Finance*, 23(2), 51–54.
<https://doi.org/10.3905/jsf.2017.23.2.051>
- Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches. In *Research Design Qualitative, Quantitative, and Mixed Methods*

- Approaches* (4th Edition). Sage Publications.
- Doughty, K. (2001). The myths and realities of information technology steering committees. In *New Directions in Project Management*.
<https://doi.org/10.1201/9781420000160>
- Fettke, P., & Risse, R. (2018). Blockchain: Wird eine sog. Real Time Tax Compliance. *Der Betrieb*, 1748–1755.
- Gunadi. (2018). *Panduan Komprehensif Ketentuan Umum Perpajakan (KUP)*. Bee Media Indonesia.
- Hoffman, M. R. (2018). Can Blockchains and Linked Data Advance Taxation. *The Web Conference 2018 - Companion of the World Wide Web Conference, WWW 2018*, 1179–1182. <https://doi.org/10.1145/3184558.3191555>
- Husein, Y. (2020). *Transparansi Beneficial Owner jadi Pintu Masuk Kepatuhan Pajak*. DDTC Indonesia. <https://www.youtube.com/watch?v=nvUHjeTxjB8>
- ITGI. (2001). *Broad Briefing on IT Governance*. www.itgi.org
- ITGI. (2003). *Board Briefing on IT Governance* (2nd Editio). IT Governance Institute.
- Karimi, J., Bhattacharjee, A., Gupta, Y. P., & Somers, T. M. (2000). The effects of MIS steering committees on information technology management sophistication. *Journal of Management Information Systems*, 17(2), 207–230.
<https://doi.org/10.1080/07421222.2000.11045641>
- Laurence, T. (2017). *Blockchain for Dummies* (2nd Editio). John Wiley & Sons, Inc.
- Majdanska, A., & Migai, C. (2018). *High-Net-Worth Individuals : The Challenge for Tax Administrations , Financial Intelligence Units and Law Enforcement Agencies*. October, 595–606.
- Mansury, R. (2002). *Pajak Penghasilan Lanjutan Pasca Reformasi 2000*. Yayasan Pengembangan dan penyebaran Pengetahuan Perpajakan.
- Pandiangan, L. (2008). *Modernisasi & Reformasi Pelayanan Perpajakan*. Elex Media Komputindo.
- Price, D. (2018). *5 Big Blockchain Issues: Security, Privacy, Legal, Regulatory, and Ethical*. <https://blocksdecoded.com/Blockchain-issues-securityprivacy-legal-regulatory-ethical>
- Saragih, S. (2019). E-Readiness of Blockchain Technology in Modernization of Tax Administration in Indonesia. *Proceedings of the 1st International Symposium on Indonesian Politics, SIP 2019*. <https://doi.org/10.4108/EAI.25-6-2019.2288017>
- Setyowati, M. S., Utami, N. D., Saragih, A. H., & Hendrawan, A. (2020). Blockchain technology application for value-added tax systems. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 1–27.
<https://doi.org/10.3390/joitmc6040156>
- Siregar, B. (2016, August 30). *Indonesia Punya 47.000 Miliarder, Tapi Rendah Bayar Pajak*. <https://www.gatra.com/detail/news/213963-indonesia-punya-47-000-miliarder-tapi-rendah-bayar-pajak>. Diakses pada Oktober 2020
- Utama, M. P. (2018). *Teknologi Blockchain dalam Transfer Pricing*.
<https://news.ddtc.co.id/teknologi-blockchain-dalam-transfer-pricing-11998>
- Viriyasitavat, W., & Hoonsopon, D. (2019). Blockchain characteristics and consensus in modern business processes. *Journal of Industrial Information Integration*, 13, 32–39. <https://doi.org/10.1016/j.jii.2018.07.004>
- Wang, Y., Han, J. H., & Beynon-Davies, P. (2018). Understanding blockchain technology

Setyowati, Adnyani, Saragih, & Hendrawan

Potential Outcomes of Blockchain Technology Application for Transparency of Ultimate Beneficial Owner Registration Issue

- for future supply chains: a systematic literature review and research agenda. *Supply Chain Management: An International Journal*, 24(1), 62–84.
<https://doi.org/10.1108/SCM-03-2018-0148>
- Weill, P., & Ross, J. W. (2004). IT Governance on One Page. *Center of Information System Research*.
- Wilkin, C. L., & Chenhall, R. H. (2010). A Review of IT Governance: A Taxonomy to Inform Accounting Information Systems. *Journal of Information Systems*, 24(2), 107–146.
<https://doi.org/10.2308/JIS.2010.24.2.107>
- Yafi, M. (2020). *Wawancara Mendalam*.
- Young, R., & Jordan, E. (2003). Passion & IT Governance. *7th Pacific Asia Conference on Information System*.
https://www.researchgate.net/publication/228687479_Passion_IT_Governance
- Yu, T., Lin, S., & Tang, Q. (2018). Blockchain: Introduction and Application in Financial Accounting. *Journal of Corporate Accounting & Finance*.
<https://doi.org/https://dx.doi.org/10.2139/ssrn.3258504>