Blockchain Application on Property Law: a Mean to Meet Legal Certainty for Creditors in a Bankruptcy Case

by Gunardi Lie, Lewiandy

Submission date: 02-Mar-2023 09:47AM (UTC+0700)
Submission ID: 2026664500
File name: to_Meet_Legal_Certainty_for_Creditors_in_a_Bankruptcy_Case.docx (366.92K)
Word count: 5063
Character count: 26495

Blockchain Application on Property Law: a Mean to Meet Legal Certainty for Creditors in a Bankruptcy Case

INTRODUCTION

Over the course of more than 60 years after its independence, Indonesia has promoted its future development to be a legal state. This ideal idea of state development is written in the Indonesian national constitution. As a legal state, one primary characteristic possessed by the state is a clear legal ground for every right and obligation of its governing bodies and population. Prior to its Independence, Indonesia was under the Netherlands' colonization. This explains the strong influence of the Netherlands on the Indonesian law regime. For example, the Indonesian civil law regime still relies on Burgerlijk Wetboek, a codification of private law norms that remains our core civil code. One of the most important fields of laws in the private law regime is property law. Indonesian property law is mostly regulated in the second book of *Burgerlijk Wetboek*. The second book of the civil code covers the ownership, possession, transfer, and loss of property rights. The history of BW itself is relatively long, starting from its enactment in 1847. Some academicians argue that we have been enacting an ancient legal framework since our independence without significant changes. Despite the long debate, however, till date, the code still remains as our source of property law, with some changes through the enactment of other laws. For example, land ownership in Indonesia has not recognized BW as law, but instead, we refer to Law no. 5/1960 on Basic Agrarian Principles. We also do not recognize the collateral mechanism of law stipulated in the BW, as the collateral-related regulation has been replaced with Law no 4/1996.

Nevertheless, as academicians, it is somehow interesting to explore whether the hypothesis that BW has been outdated is verifiable. This is one part of the question we try to address in our paper, and we would like to focus our research on property law. This has turned out to be more interesting when new technology, the blockchain technology, comes into play. In Indonesia, at least, blockchain technology is developing in a rather slow manner. Our present regulators realize that blockchain technology requires some time before a more complex regulation can be enacted, so our regulation is more of a recognition instrument for the assets produced through the technology. The technology, however, offers unlimited collaboration possibilities that might even unlock the full potential of our property law regime. The blockchain technology works as a machine of trust, where one can ensure a secure transaction without the fear of fraud or forgery. It allows no hold-up game between parties and leaves no room for ‘fake ownership’ to take part in any transaction within the ecosystem. In the context of property law, we argue that

the development of property law will greatly reduce the transaction cost of transferring assets, preventing 'double-spending' problems in the real world due to overlapping proofs of ownership and identifying fake certificates to be transacted under the ecosystem.

We also would like to explore that the upgrade of property law regime through blockchain technology will be specifically beneficial in the bankruptcy law developments. As an example, there are numerous cases where the decision of the commercial court is straightforward in deciding one to be bankrupt and, consequently, all of his property would be legally confiscated. However, in practice, the execution does not work smoothly as the bankrupt party has previously transferred his property beforehand or without the authority of the creditors. In such a case, creditors that have been involved in an agreement with good faith will suffer significant loss.

This paper aims to analyze the possibilities of the blockchain technology in upgrading our property law and its future utility in property-related transactions, especially with regard to the bankruptcy law regime. We will be seeing this topic in the law and economics perspective with normative approach methodology. To explore the topics throughout, we organize our paper in the following order: first, we will be discussing the present positive law of property law in Indonesia and some problems that surround its practical application, including the bankruptcy cases where the execution fails to meet the court request due to property law problems. Second, we will explore blockchain technology, along with its benefits and risks in upgrading our property law using the technology. Third, we will highlight the property regulatory challenge existing in case we do initiate the upgrade on our property law. Fourth, we will revisit some possible utilization of the upgraded property law in the bankruptcy cases. Lastly, we will conclude this paper with the steps we need to take if we agree that such upgrades are necessary in society.

The Indonesian Regime of Property Law: The Netherlands' Inheritance and Gradual Improvement to date

Prior to its independence in 1945, Indonesia's history has not been easy for the state. The Netherlands colonized Indonesia for more than 350 years and continued with Japanese colonization for a short period of 3 years. The influence of the Netherlands' legal system is definitely significant. It explains the continental law adoption since its independence and, to date, Indonesian law schools still include a lot of Dutch terms in their teaching. In the property law regime, the second book of BW has stipulated a clear status over one's ownership over properties. However, a significant change of property recognition started to change in 1960. The enactment of Law no. 5/1960 on the Agrarian Basic Principles marked the reformation of Indonesian Property Law. In general, the enactment partly was

the execution of the initial plan after independence, removing colonization traces that are seen to be unfit with the society norms. Post its enactment, Law no.5/1960 governs all land-related regulation and dismisses all land-related provisions in BW. One significant difference that Law no.5/1960 offers is the recognition of property rights over land. However, we will not discuss further in-depth with the difference or by comparison since the aim of this section is to merely highlight the history of property law in Indonesia.

Moveable - Immovable Property Classification under Indonesian Law

While the civil law doctrines in general classified properties differently, the most prominent classification for this research is the division based on the property's movability. The code divides property into movable and immovable property. The terms attached are self-explanatory, where movability means that the property can be moved from one place to another, while immovable property means that the property cannot be moved. Under the law, this kind of classification is recognized as natural classification. There are some conditions that the law considers some property to not be recognized in line with its nature of classification. For example, a ship would be recognized as a movable property under natural classification, however, in any case where a ship is larger than 2000m3 in volume, the law will consider it as an immovable property.

Such classification and legal recognition is important to make a clear framework for property ownership. Under Indonesian law, most movable objects are considered to have their ownership status "built-in" with the property. In other words, the ownership of one's property is proven by the mere possession of the property. Say for example we own a book. Our proof of ownership is the fact that we have the book in my possession. One cannot claim that the book in my possession is their property, unless he or she has a legal basis to do so. For instance, he could show an agreement that has been signed by both him and us saying that the book is his and we borrow the book for a certain period of time. The possession that I have over the book is called '*bezit*' and as long as I can prove the *bezit* then I am one to claim the ownership over the property. The system may cause confusion and sound a little bit unfair, but taking into account the technicalities problem, we are convinced that this is the most efficient way to prove ownership as it will maintain legal certainty.

The economic justification for this is that the cost to prove one's ownership if we opt to take another option in determining the ownership is that the transaction cost in proving one's ownership might be too high and even be more expensive than the property itself. Seeing it in the perspective, the question arises is what if some properties are

economically valuable and naturally movable. Applying the 'bezit' mechanism of proving ownership might invite another economic problem, which is the risk of losing it would drag the value of the property to zero for the original owner. For example, say that A owns some amount of paper money and puts it in his pocket. He, then, accidentally dropped it while he was walking. A moment after, B sees the money on the street and takes it in his pocket. In this scenario, it was clear that A is actually the original owner of the money, but since the ownership right follows the property, B is now the owner of the money. The writers argue that the proof of ownership is a fortification of certainty, but does not serve a proper economic purpose. In that example, A, as the original owner now does enjoy any value of the money despite his original ownership, while B enjoys the ownership right even though he simply claims ownership based on the 'finders keepers' principle.

In a case where the property is less valuable, the framework is highly efficient. However, if the value of the property is more valuable, then a problem might arise. People will invest too much on not losing the property or, even worse, would be more likely to do illegal occupation to own a property. The regulators in the past realized this problem and came up with a solution: certificate of ownership. Some property rights require more than just a display of possession to proof. More valuable properties (i.e. vehicles and gold) require a display of ownership certificates to prove one to be the owners. In the theoretical context, the ownership right still is attached to the property, but the existence of a certificate would be a stronger proof to it. This concept, however, does not apply to immovable property. Under Indonesian law, land ownership is specifically regulated under Law no. 5/1960. The law requires all land to be certificated and all transfer of ownership must be recorded by the mechanism provided by the government. This is why land ownership transfer must be done in front of a 'special professional' required by the law, a Land Deed Official ("LDO"). Another illustration that might explain this is when a transaction involves a ship. Under Government Regulation no. 51/2022, all transactions that involve a transfer of ship ownership require the presence of a notary.

Indonesian Securities Law

Under finance theory, leverage is a tool to amplify return. Businesses with leverage could earn more profit with lower equity. The leverage, which is the loan that financial institutions offer, however, comes as a double-edged sword. In order to get leverage, one should risk his asset through the securities mechanism. In giving a loan, a financial institution does not share the risk with the business, unlike the concept of investment. Therefore, the financial institution would request an asset to be the collateral of the loan, in case the debtor fails to pay his debt.

BW recognizes two types of guarantee: general guarantee and property guarantee. Under the first, the debtor guarantees to pay the loan by staking all his property ownership throughout. This means that failing to pay the agreed loan would result in the existence of the creditor's right to request the debtor to liquidate all his property to pay the loan. In practice, however, the process is not that simple, since the request should be submitted before the court. The second type of guarantee, the property guarantee, relieves the procedural problem encountered in the first type of guarantee. The property guarantee means that the debtor stakes his specific properties as the collateral of the loan. In general, the collateral would be more valuable than the value of the loan so that the creditor would be assured of the loan payment and the properties encumbered would be put under *parate executie* under the agreement. *Parate executie* gives the creditor a right to liquidate the collateral in case of non-payment without requiring the case to be taken before the court. This simplifies the procedure, saving more on the transaction and procedural costs.

There are four types of securities recognized under Indonesian law: lien, fiduciary, mortgage right, and hypotheek. Each of these is used in different types of properties. Movable objects would be put under either lien or fiduciary while immovable objects would be put under either mortgage right of hypothec. The Lien mechanism requires one's property to be under the possession of the creditor. This way, the creditor is ensured from the hold-up behavior of the debtor by not paying the debt. In the case where the debtor fails to pay the debt, then the creditor, assuming there is a right of execution provision in the agreement, could execute the property by auctioning it and gets his payment as agreed. In practice, liening allows the creditor to have the access to this resolution easier as the possession of the encumbered property is in the possession of the resolution. However, this form of securities invites another efficiency problem. The shift of possession to the creditor causes the property to be "unusable" by the creditor and in the end, it will leave the property to produce anything during the period. Imagine that you are encumbering your machinery and the machinery is your tools for reaping profit. If the machinery is under the possession of the creditor, then the machinery would not make any profit. In light of this, the solution proposed was to let the possession of the property remains with the debtor but the creditor is assured that in case of payment failure, the property is executable. This mechanism is what fiduciaries essentially offer. The creditor will provide loans with only the proof of ownership possessed by the creditor, while the property itself can be possessed by the debtor. This way, the debtors could still reap values out of the securities, which is essential for the loan payment, and the creditors would be assured of future payment, while also allow execution in case of payment failure. Mortgage right is specifically applied for lands, where the lands under mortgage right would be registered to the National Land Agency. For large vehicles like cruise and

airplane, the available securities mechanism is hypoteek. Hypoteek used to also applicable for land until the enactment of Law no.5/1960. This section, however, would not probe deeper into the mechanism but is aimed to cover the available securities under Indonesian Law.

Bankruptcy Cases and Problems Surrounding

When one fails to fulfill its payment obligations under a loan agreement, the consequence would not only result in breach of contract but also bankruptcy, in case where the elements are fulfilled. Under Indonesian law, bankruptcy is well-defined under Law no. 37/2004 concerning Bankruptcy and Postponement of Debt Settlement Obligation. One is considered insolvent when two elements are fulfilled. First, is that the presence of two or more creditors and second, one of the debt is already payable. The fulfillment of these elements would allow the rightful parties to request the court to declare the party to be insolvent or bankrupt. Bankruptcy under the law would dismantle one's right to be one with a capacity. Therefore, to do any legal action, including entering an agreement, the insolvent individual would require the permission of his curator.

In theory, the case of insolvency would be a protection mechanism for the creditors to receive their payment without taking risks along with the borrower. Insolvency results in the general confiscation of the insolvent's property. Once declared bankrupt, a curator would be appointed to settle the unfulfilled legal obligation. The property would later be assessed to settle all the obligations. However, the case in practice is not this simple. The insolvent might have known that he will be declared bankrupt by the court and he, therefore, will face general confiscation. General confiscation is limited to one's property, and in case of a corporation, it should not involve the shareholders' property. To evade this consequence, some cases evidence that the insolvent, with prior knowledge of the possible future, transferred the right of all assets to a third party, leaving him having no asset under his ownership. Even if later the court does declare him to be bankrupt, there would be virtually nothing to be confiscated.

The problems above raise a serious threat against the certainty of the creditors. Even if the law might virtually protect the creditors' right, the protection is often found as 'on paper' protection in which, the decision has been passed in favor of the creditors, yet execution is impossible. The regulation has overseen this possibility upholding *actio paulina* principle, but it is only applicable for the transfer in the past one year. Therefore, despite the clear ruling, the creditors are always under risk of not getting paid. Under the economics theory, risk will be translated into cost and this risk results in a higher cost to

do funding, which would eventually result in slower economic growth from the macroeconomics point of view.

While on the surface the problems seem to be fraud-related, we argue that the essential problem lies in the unclear property ownership and registration mechanism. Clear registration and proper asset data management would easily solve the problem. A clear set of data gathered by the government and an auto-verification mechanism would help to ease the problem, preventing unclear ownership status. However, the technology has been the utmost obstacle until the invention of blockchain technology.

Blockchain Technology and Its Implications

Say that you want to transfer money to another individual, what is your fastest option? Taking the present practice of technology, when we would like to send money to other individuals, we take our mobile to use the mobile-banking service from the bank. On the back end, what is happening is simply that we give information to the bank that we are sending 100$ from our account to another person's account. Then the bank deducts 100$ from our bank account and adds 100$ to the target account. This is perhaps the most efficient way to transfer value to date. However, there is a problem we are actually facing. The intermediary role taken by the banks does not come with no cost. In addition, The centralized nature of the server will raise the risk of a single point of failure. For example say a bank is hacked and the hacker can now control all transactions run under the bank server. It might sound exaggerated but it sure is a reasonable risk that we might want to consider. The second problem of centralized servers is the problem of trusts. Microeconomics theory does not buy the statement that an individual is benevolent. One acts based on incentive, and therefore, the microeconomic theorist would not rely on integrity in designing a business model. Assume that we trust an intermediary to hold our data, we are actually entrusting our data to them, hoping none of the staff of that intermediary act based on integrity. There is also another problem of verification time and extra cost when it comes to inter-bank transactions.

Blockchain comes as an alternative to transactions by cutting off intermediaries. Blockchain technology might not be that recent in development, yet its real-world application remains limited to date, apart from the adoption of cryptocurrency. Blockchain was first introduced by Satoshi Nakamoto in the form of a cryptocurrency product, the Bitcoin. For the first time, the internet allows not only the exchange of information but also value. We have previously identified that the bank works as an intermediary. Blockchain technology allows to bypass intermediaries through consensus mechanisms. Instead of handing the ledger to the intermediary, each of the participants

in an ecosystem now owns the same transaction ledger. This means that one cannot arbitrarily create a transaction without the approval of other holders. Each of these ledger holders, called nodes, would verify each transaction. We do not mean to get too technical, but for the sake of this writing, we will cover a little technicalities of blockchain technology.

How Blockchain will Fortify Property Law

Some argue that blockchain is revolutionary due to its decentralized nature. We agree with that statement as the digital world are now reshaped with the existence of this technology. The blockchain technology allows the value transfer, a great addition to our present broad internet development. An image of an official certificate, for example, cannot be used as a proof. This is because the image can be copied indefinitely and raise the question of authenticity. The authenticity problem is why immovable properties transaction require a testament from notary to ensure authenticity. In a smaller scale, an ownership over image of specific certificate is not sufficient due to its duplicative nature, raising trust issues. Blockchain technology solves this so-called double-spending problems in action.

The built-in consensus in the blockchain technology is a way out from the problem. Since now consensus is required for any transaction, we can therefore expect a proper transaction of a real digital certificate that represent the ownership of a property. Say that in a real world we are transferring a property with a certificate to other. The transferring process is done when the property is handed over to the buyer and the name in the certificate is changed into buyer. In the present digital world, it is a little bit hard to apply, unless all the data regarding the ownership is stored in one centralzied data. However, to writers understanding now, even with centralized data, multiple certificate still occur, and the centralization result to a less transparent regulation in the property law, causing uncertainty and to the bankruptcy case, unexecutable properties require a lot of effort to verify. In the decentralized system, the certificate can be converted into non-fungible token, making it essentially a transferable goods, without requiring all data to be stored in a centralized server. This way, certificate issued can easily verified and there is no way one can duplicate or issue a forged certificate. The mechanism is simple yet the impact is rather huge as it scales throughout a country’s jurisdiction, enhancing legal certainty

with a definitely lower cost. With these features, we are now one step closer to reach a more perfect market with lower cost of verification, virtually zero risk of fraud and tampering, and lower risk of dispute as the ledgering mechanism of property transfer is clearer.

The Bankruptcy Case and Property Law Application

In a case of bankruptcy, all of the default party's property is put as security to ensure that creditors would be paid accordingly. On paper, the normative result would be quite certain as the debtors should be unable to transfer his right over the secured property. However, the practical administration often differs. In numerous cases, such as …, the creditors are normatively protected, but the administration problems are hindering them from the protection. On the surface, the problem seems to be the mechanism, but we argue that proper administrative management would solve the problem. The data verification process takes time and even with the huge amount of time, administration errors occur and the transfer of rights over secured property still proceeds.

Taking blockchain technology into account, the tamper-proof and verifiability it offers would be a huge cost-saver with the more accurate and less risky application. Digitizing an asset certificate with a clear linkage to the property is essential. We agree with Coase's theorem that one of the most essential elements of an efficient market is the clear regime of property ownership. Therefore, even before the application of blockchain may work, digitalization is required. All certificates over assets should be in digital form. Once everything is turned into digital form, blockchain technology will jump into the game to deal with the trust problem.

In centralized digital data storage, we rely fully on the benevolence of the asset administrator. Even in an assumption that the institution is benevolent, we are unable to ensure that all the individual officers are so. Therefore, a single trivia error or unaligned incentives would result in a risk of uncertain asset ownership, not to mention the downside of external source of problems, including a single point of failure and hacking. To deal with this, monopoly power over consensus and validation shall not be centralized and instead, be decentralized. The decentralization is embodied in the consensus mechanism that is adopted by blockchain technology. The hashing and merkle tree mechanism allows a decentralized consensus to be reached with almost no way to hack the data. Consensus and Merkle tree mechanism allows trust to be capitalized, where

one can safely assume that the data is fully his own, others cannot save it against his will and more importantly, allows transparency between all parties.

To illustrate the use of technology, say that one person is under bankruptcy, which result in total encumberment of all his property. Once declared bankrupt, the government, under the command of the judicial body, will disallow all kind of transaction of asset of the bankrupt individual. Using blockchain technology, all of assets under his name would be marked as not-tradable on a permissioned ledger in a blockchain ecosystem, disallowing it to be changed in any way, unless through a legal mechanism enacted by the government.

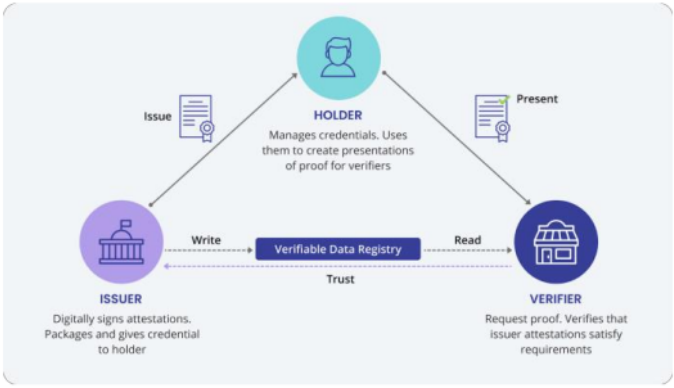
Problems and Regulatory Approach to Revolutionize Property Law

Despite the wonder offered by the possibilities of blockchain technology application in the property law regime, there are a lot of obstacles to deal with. First, a large-scale digitization is required in order to allow this kind of seamless technology experience to take over the piles of administrative paper with high risk of human error. Second, interoperability between ledger is required. One of the largest problems we are facing is that, despite the huge amount of data we have given, each of it are closed to each other. Say for example, you cannot use your Starbucks loyalty card to get discount at Dunkin Donut's. Same goes for the data, we might have inputted personal information in one ministry, yet those data are not well-recorded on the other, leaving a lot of gap for mistakes between governmental bodies. Third, new innovation always come with one thing, uncertainty. While to date blockchain technology poses no serious threat, the technology is still in its infancy. This is to say that there is more that we do not know about it than what we know. Committing too much and relying solely on such an infant technology might not be best, at least until we could discover all factors for a proper cost and benefit analysis.

Faced with all the problems, the judicial question raised on the law and economics perspective is whether to regulate or not regulate. We have to understand that the application of blockchain technology in the property registration process might be a huge leap in reducing transaction costs and certainty. The regulatory framework that we need would require a regulation that stimulate the technology application, yet wary enough not to react when possible risk raises from the technology emergence. Perhaps, *sandbox regulatory* system adopted in the P2P lending business might be a good start to stimulate the technology emergence in a smaller ecosystem.

A Trust Model Proposal

The core problems between the issuing and verification process is the trust and coordination problems between the parties. In a world where the verification process is zero cost as the Coasean economic model suggests. However, in the real world, the verification cost is high as the trust between parties is not established. As an illustration, say that the land registration agency issued a certificate stating that A is an owner of a piece of land. On the surface level, assuming that all certificates are tamper-proof, the ability to present the certificate would factor out the possibility of unauthorized certificate. However, the real world practice would be not as seamless. First, double certificate on a single asset often happens in practice. Second, the possibilities of fake certificates would invite verification cost to be applied. The verification cost rises due to the trust problems between parties. Since the nature of blockchain ecosystem is to factor out the trust problem, we propose that the triangle of trust concepts offered by the blockchain ecosystem would be the antidote for the specific problem.



Source: academy.affindi.com

The trust triangle happens between issuers, verifiers and the holders of the certificates. The verifier has no other mean to verify the legitimacy of the certificate unless there is a confirmation from the issuer. However, through the decentralized mechanism offered by blockchain technology, we can reduce the verification cost as the certificate produced in the blockchain registry is featured with built-in verification mechanism, disallowing any form of forgery attempt and multiple certificates as the data is more organized. Through the blockchain ecosystem, the data can be instantly verified, significantly reduce

verification cost, without the need of confirming the authenticity to the issuer. This is the new model of new trust triangle in the blockchain to revolutionize the property law regime.

In a practical manner, in case of bankruptcy, the integrity of a certificate is unquestionable and thee is no more verification cost that requires special auditor for bankruptcy case. This is achieved by combining the trust triangle establishment between issuers, verifiers and holders.

Limitation and Recommendation

This research focuses on the possibilities of combining blockchain technology with the present regulatory system in the property law regime. There are a lot of advantages offered by applying the technology and allows a more transparency and certainty for creditors in the context of bankruptcy. However, we do not probe deeper on the cost benefit analysis for the usage of the blockchain technology in the property law context. We pave the way for future researchers to probe this matters deeper. Some future research that might invite economists would be the cost efficiency offered from the adoption of blockchain technology in the property law context, while information technologist might be cliqued to develop an app that allows blockchain ecosystem to be adopted in a large scale.

Blockchain Application on Property Law: a Mean to Meet Legal Certainty for Creditors in a Bankruptcy Case

ORIGINALITY REPORT

1%	0%	1%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Xin Zhang. "Chapter 3 Borrowing Foreign Debts: Guarantee and Security Interests", Springer Science and Business Media LLC, 2022 Publication	1%
2	"Amended proposal for a Council Regulation (EEC) on the Statute for a European association. Amended proposal for a Council Directive supplementing the Statute for a European association with regard to the involvement of employees. Amended proposal for a Council Regulation (EEC) on the Statute for a European cooperative society. Amended proposal for a Council Directive supplementing the Statute for a European cooperative society with regard to the involvement of employees. Amended proposal for a Council Regulation (EEC) on the Statute for a European mutual society. Amended proposal for a Council Directive supplementing the Statute for a European	<1%

mutual society with regard to the involvement of employees. COM (93) 252 final, 6 July 1993", , 2012.
Publication

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		