

CRYPTOCURRENCY TREND IN INDONESIA: A REGULATORY APPROACH TO SOLVE NUMEROUS ECONOMIC PROBLEMS

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ABSTRAK

Cryptocurrency merupakan sebuah teknologi baru dan merupakan sebuah tantangan baru bagi para regulator dalam membuat aturan terkait perkembangan cryptocurrency. Dalam tulisan ini kami menganalisis potensi permasalahan ekonomi yang muncul dengan meningkatnya tren cryptocurrency dan menganalisis aplikasi regulasi yang tepat untuk menyelesaikan permasalahan tersebut. Permasalahan yang kami identifikasi antara lain masalah biaya transaksi dengan adanya 'biaya ganda', kebangkitan ekonomi ilegal, permasalahan eksternalitas terkait polusi lingkungan dan masalah perilaku kawanan. Pendekatan yang kami lakukan dalam melihat permasalahan multidimensi ini adalah dengan pendekatan "n permasalahan membutuhkan n solusi" dari De Geest, di mana setiap masalah memerlukan solusi yang berbeda. Argumentasi yang dibangun untuk solusi tiap permasalahan di atas bervariasi. Permasalahan biaya transaksi akan diselesaikan dengan kompetisi dan tidak memerlukan regulasi. Permasalahan ekonomi ilegal dapat diatasi dengan regulasi administratif. Permasalahan eksternalitas terkait lingkungan hidup dapat diatasi dengan hukum lingkungan positif saat ini atau perluasannya, jika diperlukan. Terakhir, permasalahan perilaku kawanan para investor dapat diatasi dengan regulasi keterbukaan informasi.

Kata Kunci: Blockchain; Mata Uang Kripto; Regulasi; Pasar Bebas; Intervensi.

ABSTRACT

Cryptocurrency is a new technology and poses a new challenge to the regulators in making regulatory framework of the digital currency. In this paper, we analyze the potential economics problems that might persist with the increase trend of cryptocurrency and we, then, later analyze the suitable regulation to deal with the problems. The problems identified in this paper are the transaction cost problem of 'double spending'. The rise of shadow economy, externality problem related to the environmental pollution and the herding behavior of the investors. We use De Geest's 'N Problems Requires N Solutions' approach to provide the regulatory prescription, where each economic problem needs different solution. The arguments established to deal with each problem varies depending on the problem. The transaction cost problem of 'double-spending' will be self-regulatory through competition, therefore requires no regulatory approach. The problem of shadow economy will require administrative regulation. The present positive environmental law in Indonesia, or its extension of scope, would suffice to deal with the externality problem of environmental pollution. Lastly, the problem of herding behaviour of the investors would require information disclosure regulation.

Keywords: Blockchain; Cryptocurrency; Regulation; Free market; Intervention.

1. INTRODUCTION

Background

The exponential development of information technology has always come as two sides of a coin. On the one hand, technology is created for the sake of humanity in general, enabling things previously impossible or making possible things much easier. On the other hand, there is no free lunch for the positive impact of the technology development. Much of the technology disruption comes with not only the benefit it offers, but also its potential risk (Beckstead, Bostrom, Cotton- Barratt, Ord, & MacAskill, 2014). This double-edge nature of technology raises the question of regulation from the authority, whether a limiting regulation on the technology development is required or not.

Blockchain technology has been developing rapidly in the recent years and its advancement has impacted the way data works to date. It enables people to make a perfect record of any

transaction, providing an infrastructure that is virtually impossible to hack (Yatsenko & Mihal., 2021), and, due to its decentralized nature, allows much faster and more secure system for overall business processes. Some experts agree that the characteristics possessed by blockchain will elevate the present business and ultimately become the future system for many sectors (Koolwal, Mohbey, & Kumar, 2020). To present, one of the most prominent products of blockchain is cryptocurrency. In a simplified fashion, cryptocurrency is a digital asset invented to compete with traditional currency, or in other words, they are created to deal with the traditional efficiency of money. Many of cryptocurrency inventors argue that the traditional currency, *inter alia* the USD, JPY, GDP, IDR, and others, are too prone to manipulation, due to its centralized nature, and inflation.

While the end of this debate is far from ending, regulators all around the world, including in Indonesia, need to make a clear decision to whether accelerate or halt the cryptocurrency development in the jurisdiction of Indonesia. Passing a too intervening regulation would result in a halted development of cryptocurrency, which means there will be a lot of deadweight-loss in the form of uncapitalized value in the society. However, a too loose regulatory framework might lead us into unknown catastrophic results, as what presented before in the realized financial risk in 2008 and the China's P2P market collapse.

Problems Presented

Reflecting on the existing phenomenon, this paper aims to analyze both the potential benefit and risk in the development of cryptocurrency. After the analysis, we will identify the possible economic problems arising from the development of cryptocurrency and eventually we will conclude the paper with the theoretical regulatory approach should be taken to reach the desired efficiency. Therefore, the problems presented for this paper are what economic problems will arise with the development of cryptocurrency in Indonesia and how the Indonesian Government should rule cryptocurrency within its jurisdiction.

This paper aims to help the government in determining what economic problems would persist in the development of cryptocurrency trend and what regulation should be imposed to minimize the unwanted welfare destructive result while allowing the society to reap the benefit offered by the cryptocurrency development.

2. RESEARCH METHOD

The research method applied in writing this paper is juridical normative method. A normative research method is conducted by researching on secondary gathered from the library research. The ultimate aim of a normative research, according to Peter Mahmud Marzuki, is to find out a rule of law, legal doctrines, or any related legal principle to deal with the presented legal problem (Marzuki, 2016). At the end of the research, the outcome would be a legal opinion on the specific question, based on the collected data and analysis. To collect the data for this research, the writers apply library research method. The method is applied to gather primary legal resources and secondary data related to this research. Primary legal sources are legally binding regulations, and are positively passed law under the jurisdiction of Indonesia. Secondary

data is other legal sources that would explain the primary sources but does not directly have legal binding power, for example books and scholarly writings.

3. RESULT AND DISCUSSION

The Technology Behind Cryptocurrency: Blockchain

The cryptocurrency is the result of blockchain technology. Blockchain is essentially a distributed database of records or public ledger of all transactions or digital events that have

been executed and shared among participating parties (Crosby, Nachiappan, Verma, & Kalyanaraman, 2015). Just like other function of database, blockchain's main utilization is to store data. However, unlike other forms of database, the breakthrough feature offered by the blockchain technology is its innovative way storing information where once data is stored in the database, it is irreversible (Deloitte, n.d.). This irreversible nature allows digital transaction to be more viable as it makes duplicative transaction impossible. Another important feature offered by the technology is the decentralized system of storing (Koolwal, Mohbey, & Kumar, 2020). Unlike other data that majorly centralized in one entity, blockchain technology allows all network participants to check on the data and verify the transaction. Therefore, the trust issues between participants are irrelevant and the existence of blockchain ultimately shave the cost of trust, elevating collaboration further (Müller, Ostern, & Michael, 2020).

Nature of Cryptocurrency

The two main features offered by the blockchain technology allows the fast development of digital asset. First, the society now has unlocked a measure to store their digital asset safely and second, the transaction can be conducted safely and in a more secured manner, as the blockchain technology is virtually impossible to hack due to its decentralized nature (Yatsenko & Mihal., 2021). This pushes the development of digital money. In its core purpose of invention, cryptocurrency is created to replace the use of fiat money. The cryptocurrency supporters are unhappy with the flaw of the current monetary system and argue that cryptocurrency will eventually take over and replace the money in the future.

However, even though cryptocurrency is meant to be a medium of exchange, apparently the society is yet to accept it as a replacement of money. Indonesia, through the Law No. 7/2011 does not in anyway permit any transaction using any cryptocurrency in the jurisdiction of Indonesia. Many countries are also practicing the same policy of banning it as a medium of exchange, with one extreme exception is El Salvador (Tidy, 2021), where Bitcoin is declared as a legal tender. The reasons why it is widely not accepted is its unknown disruptive future effect of the digital currency, including how it would affect financial stability and the high volatility of cryptocurrency.

High volatility is not desired as a currency as it results in menu costs, a form of cost born by firms for changing their products' tags, which is very inefficient in the economics theory. However, high volatility is something desirable for investors with high-risk appetite or traders that makes money from the price volatility. That being said, many consider cryptocurrency to be an investment instrument. As an illustration, the price of Bitcoin, which is considered to be one of the strongest fundamental cryptocurrencies, has soared over 30.000% since 2015, making it one of the highest performance instruments. The Indonesian Regulators through law of Bappeti No. 5/2019 concerning Technical Enforcement of Cryptocurrency Exchange in The Future Market has recognized cryptocurrency as a digital asset and therefore allows them to be owned as investment instruments.

Problems of Cryptocurrency

While cryptocurrency offers huge advantage in the economic perspective, its advantage comes with some drawback for us to analyze. Despite its very young age and thin references, there are some problems persist with the development of cryptocurrency we identify in this paper. The first major economic problem arises is the transaction cost arises from dealing with 'double-spending' issues (Karame & Capkun, 2012). This problem sounds paradoxical as one of the features offered is a strong anti-hacking mechanism of cryptocurrency, however, in order to do that a high cost is required per transaction. This cost is reflected in the mining cost

where people are collecting bitcoin fees in return for their service in verifying transactions to prevent the double spending problem. This problem, however would be avoided when the pool of transaction is large enough. The second prominent problem is the nature of decentralized system of cryptocurrency makes it extremely difficult for officials to trace transaction. This feature is a serious problem for states as centralized government as it will promote the existence of shadow economics practice, including money laundering and tax avoidance (OECD, 2017). The third problem is the environmental externality caused by the practice of cryptocurrency mining. Some experts argue that the practice of mining require a lot of energy (Badea & Mungpiu-Pupăzan, 2021). To illustrate, there are more than 3 million mining activities around the globe operating. These machines are running to capitalize the reward of verification process of blockchain transaction. The incentive problems of excessive usage of energy will persist in a large scale as each individual miners disregard the external cost of environmental destruction. While not all cryptocurrencies are mined through this high energy consumption mechanism, Bitcoin and Dogecoin, which are the among the largest cryptocurrencies, are mined that way.

The fourth problem that will be discussed is the asymmetric information problem of the buyers of cryptocurrency. With the fast development of information technology, information is literally everywhere and just one click away. While it is agreeable that individual holds partial responsibility on filtering the available information, it might be desirable for the government to step in with some regulatory that allows buyers to have better piece of information as the asset is yet to be mature. The economics theories argue that people will make a rational decision. However, as the researchers of behavioral finance would disagree, the reality speaks otherwise as people tend to have bias in every aspect of decision due to the imperfect information or failure to process the incoming data. The failure of reaching perfect information will result in the herding behaviour in community, which is now influencing many on their decision to invest in cryptocurrency.

Regulatory Approach to The Problems

From the problems identified above, it comes to the question of law whether or not regulation should be passed. To answer this question, we must first address the aim of the regulation before we even start with what regulation should be passed. In this analysis, we are approaching the problem from economic view and the decision of whether to regulate or not is putting efficiency as our main priority. The application of regulatory framework should consider not only the theoretical outcome, but also the cost of regulation. Regulation is essentially not free and not to mention the adverse effect of regulation that would be the unexpected outcome. Therefore, regulation should not be seen as the solution for any economic problems.

Economists in general distinguish two types of regulations: economic and social regulations. The economic regulation comprises of set of regulations that limit the numbers of actors on the field, for example through licensing requirement for some professionals, or limit price by applying price ceiling or bottom. Economic regulation is commonly used to deal with competition

problem in a monopolistic market, for example. Social regulation, on the other hand, is a set of regulation that change the behaviours of entities in conducting their business. A classic example of social regulation application is to deal with pollution externality problem. In a regulation-free situation, company will produce its product until the point where it maximizes its profit. However, the result of that decision is that the value of the welfare in the society through that much production would be lowered as the result of the pollution would negate some of the result. This is a problem of externality, where company does not pay for its cost,

but the other actor, the society in general, would need to pay for it. Therefore, an internalization mechanism is needed and this is where the regulation step in. The choice of public regulation in this case might be applying standard of emission to reduce pollution, or taxation method for every exceeding pollution generated by the company. Social regulation is also effective to deal with asymmetric information problem. An example of this application is the ingredient facts that must be displayed on food packaging. The regulation obliges all food producers to display them in order to provide sufficient information to the consumers, promoting a microeconomics decision of the actors. The issue to be addressed here is whether regulation be able to deal with the transaction cost from double spending, rise of shadow economy, environmental externalities and asymmetric information.

We would like to view the problems with De Geest's approach of "N Problem Requires N Solutions" (De Geest, 2012). Since there are multiple problems, we then would require multiple solutions as one solution would fail to address all. The first problem is identified as a transaction cost problem that persists when the transaction is still below the threshold of the minimum economies of scale to overcome the cost. We argue that the *Laissez-faire* approach will solve this problem itself. If the transaction cost of avoiding double spending is too high for a transaction, then a lower value transaction will not take place using cryptocurrency. Even if this is not a perfect condition, cryptocurrency is still very young in its development and the competition among the digital currencies will automatically reach us to the efficiency with lower transaction in the future.

The second problem, however, requires a different approach in order for us to solve. This is because the decentralized system of cryptocurrency is a double-edged sword for the government. These undetected economic activities are known as shadow economy, which might or might not be illegal activities. A clear example of the shadow economy relevant to the development of cryptocurrency is the practice of money laundering and tax avoidance. While the technicality and method of practicing them will not be covered in paper, these practices are easier in the cryptocurrency existence as intermediary. The decentralized system of cryptocurrency indeed makes it harder for the government to trace transactions, however, the nature of problem is the registration and administration mechanism. The money laundering is harder to repress, so an *ex-ante* approach of the regulation would be desirable as it is easier to prevent the crime to happen. This approach is to limit the number of actors, ensuring its administration transparency and this measure can be taken through licensing mechanism for any business that involve cryptocurrency to be transparent in their transaction. A failure to comply may impact their operational business license. The repressive regulation either criminal or private should comply with the positive law within the jurisdiction of Indonesia. An international policy to cooperate with other countries is also desirable as cryptocurrency can be sent digitally despite jurisdiction. Tax avoidance practice could also be reduced with the *ex-ante* registration practice, but would be desirable to also combine it with the easier tax-registration regulation as it would greatly reduce the hassle-cost of tax that would ultimately result in a lower shadow economy development.

The third problem in hand is the environmental impact of the cryptocurrency activity. Taking after the classic example, the similarity between the example and the cryptocurrency threat to the environment. Both are externality problems, but before we jump into the conclusion that the same regulation would resolve the problem, we must first realize the novelty of cryptocurrency in the society. A clear assessment of profit of cryptocurrency mining and the environmental cost must first be conducted. The result would be the reference of the environmental taxation or compliance regulation to incentivize miners efficiently. A special note to this regulation is that Indonesia currently has environmental law in effect and, should this regulation pass the assessment process, the extension of this law to the mining practice

would suffice.

The fourth problem to be discussed in this section is the asymmetric information of investors that result in the herding behavior. The herding behavior results from confusion of individuals due to inability to process certain information. This information failure incentivizes individuals to take the easiest decision, which is following the crowd. The rise of influencers and tons of unverified information on the internet has led many people to make a decision to invest in cryptocurrency. The regulatory approach to deal with information asymmetries is compulsory information disclosure. Borrowing the mechanism of stock market exchange, the obligation for coin fundamentals should be disclosed to all investors. While white papers are available, however the verification is not from the government and most are not available in Indonesian. Therefore, the form of regulation applied should be obliging the coin issuers or crypto exchange companies to reveal the information of the cryptocurrencies.

4. CONCLUSION AND SUGGESTION

The blockchain technology has enabled the creation of digital asset, and one of the most prominent digital assets to date is cryptocurrency. Cryptocurrency is invented with the purpose as the future medium of exchange. Presently, Indonesia recognizes cryptocurrency as an investment instrument but ban its use as a medium of exchange. While cryptocurrency undeniably offers benefits fiat money unable to provide, its impact of vast adoption alert regulators all around the world. Faced with unknown result, regulators need to make their stance. However, we argue that regulation itself is not free of cost and therefore its probably not wise for regulation to step in under all circumstances. This paper aims to analyze some problems posed by the existence of cryptocurrency and eventually come up with regulatory framework for each problem.

The problems highlighted in this paper are the high transaction cost due to ‘double-spending’ prevention mechanism, shadow economy growth, environmental impact and asymmetric information. We argue that we cannot apply one framework of regulation to deal with all the problems and we suggest a different framework for each problem. The high transaction cost is essentially a self-regulating problem and will eventually fade out as the competition among cryptocurrencies in the free-market will eliminate both inefficient cryptocurrencies and inefficient transaction. The shadow economy problem requires a more administrative regulation approach as we need transparency from the actors that involve cryptocurrency in their business model to prevent money laundering practice and a simpler tax compliance registration to reduce hassle cost. The environmental problem could be addressed with our present environmental law. However, a general environmental impact assessment should be done to measure the impact of cryptocurrency mining. The result of this assessment should be then used as consideration on whether or not a new law to deal with the environmental issues from cryptocurrency mining needs to be passed or not. The last problem discussed in this paper is the herding behavior of investors that resulted from the asymmetric information. An information disclosure regulation reflected on stock market exchange that displays the fundamentals of the cryptocurrency would be desirable to provide as close to the perfect information.

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