ISSN: 2547-9725
Akademik İzdüşüm Dergisi
Journal of Academic Projection
2022; 7 (2); 117-130

Araştırma Makalesi / Research Article

A Review on Ripple, a Financial Intermediary Coin*

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Abstract

Given that Ripple is currently one of the most well-known and widely-used cryptocurrencies, second only to Bitcoin, it is thought to be advantageous to study its brief history. The Ripple system enables reduced transaction costs for cross-border payment transactions, new banking services and products for users, and new liquidity corridors for liquidity providers. Ripple is a real-time reconciliation system, a platform for foreign exchange, and a decentralized remittance network. It allows for big, consistent payments. Additionally, Ripple acts as a technology foundation that enables existing payment networks to communicate with one another and accept international real-time payments. Understanding laws in relation to Ripple and cryptocurrencies is crucial because of the relevance of Ripple.

Keywords: Ripple, Coin, Regulation

Finansal Aracılık Koini Olan Ripple Üzerine Bir Değerlendirme

Öz

Bitcoin'den sonra en çok bilinen ve en çok kullanılan kripto para birimlerinden biri olması nedeniyle Ripple'ın kısa tarihçesini incelemenin bu noktada faydalı olacağı düşünülmektedir. Ripple sistemi ile işlem tarafları sınır ötesi ödeme işlemlerinde düşük maliyetler ödeyebilir, bankalar müşterilerine yeni ürün ve hizmetler sunabilir ve likidite sağlayıcıları yeni likidite koridorlarına ulaşabilir. Ripple, gerçek zamanlı olarak büyük tutarlı ödemelerin yapıldığı bir mutabakat sistemi, bir döviz platformu ve merkezi olmayan bir havale ağıdır. Ripple aynı zamanda mevcut ödeme ağlarının uluslararası gerçek zamanlı ödeme yetenekleriyle birbirleriyle iletişim kurmasını sağlayan teknolojik bir altyapı olarak da hizmet vermektedir. Ripple bir öneme sahip olduğundan, Ripple ve kripto para ile ilgili düzenlemeleri anlamak da önemlidir.

Anahtar Kelimeler: Ripple, Koin, Mevzuat

* Bu makalede bilimsel araştırma ve yayın etiği ilkelerine uyulmuştur. / In this article, the principles of scientific research and publication ethics were followed.

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This study is inspired from Master Thesis of Sevinj Ahmadova, thesis name: BLOCKCHAIN TECHNOLOGY AND CRYPTOCURRENCIES, Corvinus University of Budapest

Başvuru tarihi/ Received: 23.08.2022 - Kabul tarihi/Accepted: 12.09.2022

INTRODUCTION

It is considered to be beneficial at this point of studying the short history of Ripple because it is one of the most known and most used cryptocurrencies and after Bitcoin. Also, it has been differentiating from Bitcoin infrastructure.

Ripplepay, the father of the Ripple protocol, was developed by Ryan Fugger in 2004. Fugger's aim was to establish a decentralized, secure and online money system in Vancouver and allow people to create their own currencies. The project initially aimed to find common acquaintances among the people who knew each other and to make payments by offsetting mutual debts (Michelfeit, 2011). Other programmers, who inspired by this idea, have developed a digital monetary system in May 2011, in which transactions are confirmed by the actual voting process between users, not by mining activities as in the Bitcoin system.

Programmers established OpenCoin company in September 2012. OpenCoin developed the Ripple Transaction Protocol (RTXP). According to this protocol it is possible to realize direct and instant money transfers between two parties. With this protocol, it is aimed to eliminate long transaction times and high transaction costs in traditional banking system. USD, Euro, Renminbi, Yen, Rupee, Gold and Airline Miles can be exchanged in Ripple system. To ensure security, OpenCoin has programmed the Ripple to work with a common ledger managed by independent verification servers. Everyone, including the banks, can have verifiable servers. OpenCoin also created its own currency with the name of Ripple Virtual Currency (XRP). With XRP, financial institutions are able to transfer money with small costs and processing times (Ripple, 2012).

LITERATURE

Within the scope of the study, the daily closing prices of Bitcoin, IOTA and Ripple cryptocurrencies were tested with the generalized exus Sup ADF GSADF unit root test in order to determine the speculative bubbles and the formation periods of the bubbles. As a result of the study, bubble formation was detected in the prices of all three cryptocurrencies, especially in the last quarter of 2017. When the periods in which bubble formation was detected were evaluated historically, it was concluded that news manipulations had an effect (Şahin, 2020).

The purpose of this article is to reveal the relationships between Bitcoin Cash, Ethereum, Litecoin and Ripple, which are decentralized currencies, also called cryptocurrencies. The period studied in the study is between 03.08.2017 and 17.03.2020. In the study, the Augmented Dickey-Fuller (ADF) test was applied as a unit root test, and the levels at which the series were stationary were determined and the causality relationship between them was tested with the Granger causality test. The direction and magnitude of the relationships between the series were tried to be determined by vector autoregressive (VAR) modeling technique. In addition, impulse-response analyzes and variance decomposition analyzes were performed and it was revealed how many percent of the change in the standard deviation of the series was explained by other variables on a period basis(Donmez ao., 2021).

Especially in the last few years, the crypto money market, which has become increasingly popular in the world and includes crypto money, has been the focus of both international and national literature. Cryptocurrencies offer the opportunity to make international payments instantly, confidentially and easily in their own currencies. The aim of this research is to determine whether there is a short and long-term relationship between Bitcoin, Ethereum and Ripple, which are crypto currencies. It has been tried to determine whether cryptocurrencies affect each other in themselves. The closing prices of Bitcoin, Ethereum and Ripple cryptocurrencies between 01.01.2018 and 31.12.2018 were used in the research. While Bitcoin was determined as the

dependent variable, Ethereum and Ripple were determined as the independent variables. The time series was created by considering the data in the selected time period on a daily basis. First, unit root test was applied to the data of the three selected cryptocurrencies. The series became stationary at first-order differences. Then, the lag length of the model was found to be eight and the Johansen Cointegration test was performed. With the vector error correction model, the relationship between cryptocurrencies was examined in detail, and as a result, a short-term relationship was determined between Bitcoin, Ethereum and Ripple cryptocurrencies(Konuşkan ao., 2019).

In their study, authors aimed to make GARCH modelling to 7 most important cryptocurrencies in order to find their volatility risks from an investor perspective. Data used here has been driven from the historical exchange rates of each cryptocurrency using BNC2database from Quandl. Authors made 12 different GARCH-type log returns. Authors analysed Bitcoin, Ripple, Litecoin, Monero, Dash, Dogecoin and Maidsafecoin. Authors firstly, have chosen correct model for the analysis. Then they checked the efficiency by comparing the best fitting model and bootstrapping. After successful selection, authors controlled the models by Kolmogorov-Smirnov test. In the end, authors conducted risk exceedances test to implement unconditional and conditional coverage value. The results of the study are implemented to tested cryptocurrencies and are indicated with high volatility. Those cryptocurrencies can be good opportunity to high risk-high return seeking investors, but overall high volatility should be considered by financial intermediaries carefully (Chu ao., 2017).

DESIGN

Ripple is a reconciliation system in which large consistent payments are made in real time, a foreign exchange platform and a decentralized remittance network. Ripple also serves as a technological infrastructure that enables existing payment networks to contact each other with international real-time payment capabilities. For this reason, Ripple is one of the cryptocurrency examples that is important for international remittance markets. Among the transferred currencies, there are nominal currencies as well as cryptocurrencies such as Bitcoin and Ripple. Ripple protocol is accepted by some financial institutions and many small banks that have to deal with large banks to provide international remittance services can use cryptocurrencies to facilitate this service.

As an alternative to systems that require synchronization, such as Bitcoin, the Ripple Protocol Voting Algorithm created Unique Node List (UNL). Every node which is in the Ripple system has this UNL that it queries during the voting process. Contrary to the approval of each participant in the Bitcoin system, in the voting process, each participant considers only the other members in their UNL. Therefore, the UNL of any participant is composed of processors that the participant is assured not to collectively defraud the system (Ripple, 2012). There is no need for each processor in this list to be reliable. Instead, it is envisaged that these processors will not send incorrect information to the network in a coordinated form.

Ripple protocol;

- give the participant the authority to determine his / her UNL,

- accept the fact that the miners are not based on evidence of business or proof of ownership,

- accept any virtual or nominal currency, debt or certificate,

- making Ripple attractive to financial intermediaries with features like as the value being not tied to a volatile asset.

SYSTEM PARTICIPANTS

With Ripple system, transaction parties can pay low costs in cross-border payment transactions, banks can offer new products and services to their customers, and liquidity providers can reach new liquidity corridors. Apart from these participants, the technological partners that enable banks' existing technological infrastructures to integrate with the Ripple system are also part of the Ripple system.

-Transaction Parties: The transaction parties initiate payment and cross currency transfer transactions using the Ripple system. Parties that find the methods of making cross-border money transfers slow, costly and uncertain in the current situation are obliged to fund their accounts in foreign banks on a continuous basis for related transactions. In addition, the transaction parties usually have to accept the exchange rate offered by one liquidity provider. Since there is more than one liquidity provider in the Ripple system, the exchange rate is determined competitively and results in favour of the transaction parties. In addition, transaction reconciliation takes place in the middle of the year, and transaction costs are very low due to direct reconciliation.

-Financial Institutions: Financial institutions, which are part of the Ripple system, make real-time reconciliation of transactions. Since there is no need for a central counterpart in the Ripple system to perform the transaction and reconciliation of the transactions, the banks can directly deal with each other. Under the name of Ripple Global Payments Steering Group (GPSG), Ripple build the world's first blockchain network of banks; rules and management framework. Financial institutions that use the Ripple system have the lowest risk of reconciliation thanks to the ability to track transactions and wasting little time on them.

Scheme 1: Ripple Partners (stormgain.com)

-Liquidity Providers: As it is apparent, cross-border payments liquidity. In the Ripple system, liquidity providers found a solution to this by contributing to different currencies and holding them as capital. The involvement of liquidity providers in the network allows transaction parties to make transactions between currencies in real time with financial institutions. Thanks to the liquidity providers, banks do not need correspondent bank accounts and counterparty risks are reduced. With the global foreign exchange market, liquidity providers reach new corridors, thus diversifying and managing exchange rate risks better.

The lifecycle of each process in the Ripple system is as follows:

1. The transaction is created and signed by an account holder.

2. The process is transmitted to the network. Erroneous transactions can be denied instantly. Fault-free operations can be temporarily successful and fail afterwards, or they can fail temporarily and succeed later.

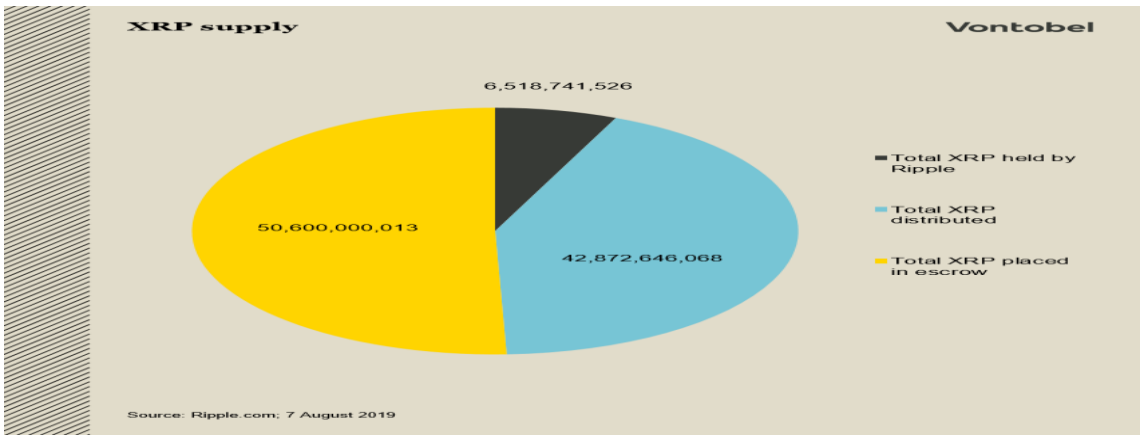
3. During the voting process, the transaction involves the bookkeepers. At the end of a successful vote-union process, the ledger is verified. In the event of a failure of one ballot, the ballot process continues until the process is successful.

4. The verified ledger contains the change that you made on the ledger, the operation, and the ledger itself.

SUPPLY

Bitcoin and alternative cryptocurrencies are mined to create currencies and verify operations. As it is mentioned earlier, mining leads to high energy consumption. The voting system used in the Ripple system does not include the mining process, so the required computer power is running at very low levels, the verification time of the transactions is adjusted to the delays in the network and the irrevocable feature is obtained when the operations are approved. Unlike the bitcoin system, all currencies are pre-created by the system's developers in Ripple (Ripple, 2017).

Because of the reasons mentioned above, the creators of the Ripple system have chosen to distribute directly to the system rather than to produce XRP by mining process. XRP deals with business development agreements, initiatives given to liquidity providers, and XRP sales to institutional buyers who are considering investing in XRP. Currently, there are about 100 billion XRPs in the market, of which about 62% are owned by Ripple and the remaining 38% are held by users on the market.



Scheme 2: Ripple Distribution Figures (ripple.com)

THE ADVANTAGES AND RISKS OF CRYPTOCURRENCIES

Cryptocurrencies have some benefits and risks at the same time. Below major advantages and risks will be discussed. It is apparent that as cryptocurrencies are not mature yet, they have defined risks that is removed by the traditional financial system. Those are the main reasons for the uncertainty from people's side. However, those risks can be reduced via advancement which will take some time.

Benefits of Cryptocurrencies

The benefits provided by cryptocurrencies can be examined in three main categories: high transaction speed, transaction security and low cost.

Cryptocurrencies are fast based on their processing time and availability of transfers. Processing time may vary between centralized and decentralized cryptocurrencies. While for centralized currencies it is rapid as one second, for decentralized ones it may take up to 1 hour. But their availability of making transactions is a great advantage as immediate transactions can be made even in non-office hours and receiver party can receive it.

Also cryptocurrencies do not have one location. They are worldwide which means that location does not affect transaction fees or the processing time. In this terms, differences in the time also does not matter as cryptocurrencies are verified automatically and office working hours are not a matter of question (Messika, 2018).

One of the advantages of the cryptocurrencies is that they do not require to enter personal data information in order to proceed. They are anonymous. However, their anonymity has been in used for taking illegal activities and that makes thoughts to be sceptical about them to be the future. This feature is actually an advantage if cryptocurrency developers and governments will take actions against illegal money transactions through cryptocurrencies. This feature is cryptocurrency similarity to cash, as cash is also anonymous (Messika, 2018).

Cryptocurrencies are cheap because of the various factors. Firstly, there is no fee for creating a wallet for them and store. Secondly, there are very low transaction fees. Thirdly, there are no exchange rates and commission fees. Finally, there are no fees for cross-border transactions.

The price of cryptocurrencies is volatile. If the users do not have cryptocurrency in their hands today, it can be more expensive for them to get this cryptocurrency tomorrow as they can appreciate over their national currency.

The reason why cryptocurrencies are cheaper is that they are not regulated by the government or authorities. If cryptocurrencies are regulated as a financial service by law, similar costs may apply to cryptocurrency systems. These compliance costs will affect negatively the cost advantage already borne by cryptocurrencies (EBA, 2014).

Risks of Cryptocurrencies

In above section, the benefits of the cryptocurrencies were discussed. As it was mentioned previously, cryptocurrencies have some core problems that make people think sceptically regarding their benefits. Below benefits will be discussed.

In order to analyse payment system risks, two major sector should be analysed: Centralized and decentralized payment systems.

Centralized payment systems have those disadvantages (BOE, 2018):

- When the borrowers cannot pay back the borrowed money to lenders, it leads to credit risk.
- When borrower does not have enough assets like cash to pay the debt back to the lender, it causes liquidity risk.
- When there is technical issue like internet error or system error, the transactions are not succeeding. This type of risk is operational risk.

Those are the payment risks. During making transactions, intermediaries are taking into consideration those risks and try to avoid them by decent methods. As there are no intermediaries, cryptocurrencies have those risks in which it is unavoidable. If those risks are not prevented and cryptocurrencies are main payment methods, then crisis is inevitable.

There are no intermediaries in decentralized systems, because they are not gathered in one centre and no intermediaries exist. As there is no intermediary, there is no central authority who is interested in avoiding risks. In cryptocurrency cases, the main argument is that they are kept in distributed ledgers, so everyone has the same "notebook" with same records. However, it is undeniable that those systems can also collapse by hacks or fraud, or some operational risks may happen due to the connection.

People who don't believe in cryptocurrency are mainly arguing that cryptocurrencies are not regulated by government and there is no control of money supply and demand. Fiat currencies are issued by central banks and banks can easily manipulate supply and demand of them in order to "play" with inflation and interest rates. Because of the fact that cryptocurrencies have no centre and no "issuer" and they are public, they cannot be manipulated.

For decentralized cryptocurrencies, it is not even clear who will provide information to the user. Some cryptocurrencies carry features that are not specified by the user and impose inconvenience to the user. Especially when users decide to invest in these cryptocurrencies or if they try to make profits by mining activities. The profit is misleading because of the profit ratios promised by investors or issuers. In some cases, after investors have obtained a certain amount of cryptocurrency as the end of mining activities, these units are introduced to the market, and after they are sold, the scheme is usually left to itself. Users in the blockchain cannot be followed by their real names and only with cryptocurrency addresses. Although this situation poses a positive role for cryptocurrencies in favour of users in terms of securing information, the risk of forgery created is the other side of medallion (Harwick, 2016). For instance, because of the fact that cryptocurrency transactions are anonymous, fraud can happen if some fraudulent people make fake transactions and they are recorded. If those transactions are not reversed, it will decrease public trust to the cryptocurrencies. This will become even more common in the process as the use of cryptocurrencies increase.

Cryptocurrencies are not real currencies and as far as they are not accepted as fiat currency, they will not be judged legally. It makes sense when for example, people get their salary from companies. No company will be ready to pay in cryptocurrencies as there is first challenge of choosing one special cryptocurrency that perfectly fits their need from a million of cryptocurrencies, and second challenge of the fluctuation of the exchange rates of the cryptocurrencies. Also, there is liquidity risk that if people who receive their payments in cryptocurrencies can spend them.

Since the legal framework for cryptocurrency transactions is not yet clear, users may face unexpected legal requirements and their actions may be considered illegal or unfeasible. In many

countries, the tax rules in this area are not yet clear and may change unexpectedly, resulting in additional costs for the users.

Cryptocurrency' continuity is not guaranteed by anybody. Sellers can stop accepting one or more cryptocurrencies without any reasons. In this case buyers will have illiquid assets in their hands.

The main factor why still cryptocurrencies are regarded as investment rather than payment method is their very high volatility. Due to this fact, it cannot be guaranteed that with the same amount of dollars spend for cryptocurrencies, users can exchange them for goods with the same amount of dollar value. That is why most speculators are using cryptocurrencies in order to gain high income from their volatility.

Scheme 3: Ripple Volatility (messari.io)

Policies and safety actions taken by countries again cryptocurrencies constitute an important dimension of the cryptocurrency debate. The focus of the discussion is on cryptocurrency anonymity and illegal use. Creating and developing a cryptocurrency requires far less effort and infrastructure than developing a fiat currency behind a state. Therefore, the spread of a cryptocurrency to a certain geographical area is much simpler in terms of labour power, capital and infrastructure compared to the currency of the world. In countries where the legal and financial infrastructure is inadequate, producing cryptocurrencies can be considered as a strategy that non-state actors apply to establish sovereignty and to establish their own political power afterwards.

Global cooperation is needed to ensure that cryptocurrencies are online by nature and their use is not limited to a certain country, so that a legal regulation is fully effective. But the necessity of an international business union does not preclude some regulation at national level. The attitude that countries will adopt against cryptocurrencies can be classified under four headings:

-Warnings: Authorities may choose to alert users and investors about the risks of cryptocurrencies and to warn them to influence the market, while directly intervening in the development of cryptocurrencies.

-Special arrangements of institutions: Through an institutional approach, authorities can make arrangements for cryptocurrencies and private institutions that will provide transitions between traditional payment instruments and / or the real economy. Mediators that provide services for cryptocurrencies, such as digital wallet applications that allow for storage and transfer of cryptocurrency-based clearing platforms and users, may be subject to these specific arrangements.

-Interpretation of existing regulations: Some countries may consider the implementation of existing legal arrangements with cryptocurrencies and intermediaries. Countries may go to wider legal arrangements and decide with a functional approach that the legal obligations to which traditional payment service providers are subject are also applicable to cryptocurrency schemes and intermediaries. In some countries, for example, authorities have taken decisions to apply tax regulations to cryptocurrency transactions. Apart from this, countries can also implement counter terrorism financing and anti-money laundering (CFT/AML) applications to cryptocurrency transactions and parties, or to apply consumer protection practices to cryptocurrency transactions. These applications are basically the identification of risks, the development of policy and domestic coordination; determining of terrorism financing and money laundering; finding solutions for financial sphere other relevant spheres; identification of strengths and liabilities for relevant authorities, and international co-operation (FATF, 2018).

-Prohibition: Authorities may also proceed to prohibit the use of cryptocurrencies in their own countries. In practice, this means that the prohibition of cryptocurrency-based financial activities also means that the sale of cryptocurrency exchange or cryptocurrencies by retailers is also prohibited.

REACTIONS OF GOVERNMENTS

Since their inception, cryptocurrencies have railed against regulation and interference from the government. Ripple, though, wants the government to step in.

According to Ryan Zagone, head of regulatory relations at Ripple Labs, the UK government has been pushed to establish laws that find a balance between "capturing risk and promoting innovation." In an interview with The Telegraph, Zagone compared the state of the cryptocurrency markets now to the early days of the internet. "We've come to the point where we need more security, guidelines, and clarity. He suggested that now is a good moment to start examining the regulators' "wait and see" approach. He asserted that legislation would create "guardrails" to entice new participants, such as institutional investors.

Without a doubt, Ripple has always abided by the laws and regulations. Over the years, the San Francisco-based company has pressed US and UK government representatives about the benefits of regulating cryptocurrency-related new technology. Zagone stated that the United States needed a "workable regulatory framework (for financial infrastructure) to retain its competitiveness" in a letter to the House Energy and Commerce Committee in 2016.

The audience for Zagone's statements was the task group that the UK government established earlier this year to track "risks surrounding crypto-assets." These remarks about regulation are the first of their kind from a well-known cryptocurrency. The objectives of crypto enthusiasts have been at odds with efforts by governments throughout the world to exert legal control over the transfer and routine transactions of currencies. As a result, institutional investors are no longer buying cryptocurrencies, which has resulted in thinly traded markets that rise or crash at the slightest hint of bad news. For instance, the price of bitcoin dropped for almost two years as a result of the Chinese government's efforts to control the cryptocurrency markets in 2014. Ripple's XRP itself fell by 6% when Zagone's comments were made public.

Since regulation would draw more investors and bring order, it is believed that it will strengthen the entire cryptocurrency markets. Ripple stands to benefit greatly from additional regulation. Customers can adapt current regulatory goals with the aid of its products. For instance, xCurrent, the company's tool for facilitating communication between banks, meets with current regulatory requirements. "Based on individual domestic rules, Ripple assists each bank to discover and help with satisfying all regulatory obligations," the product brochure states (Sharma, 2022).

A number of central banks are planning to license and monitor services for cryptocurrency. Companies / virtual environments that allow the cryptocurrency exchange in Sweden have to register as a financial authority since 2012 because cryptocurrency is used as a payment instrument (the Swedish National Bank, 2013). In Germany, the use of BaFin Bitcoin, the sale or mining does not require an authorization on its own, but it may be necessary to license it if the cryptocurrency market is established (Kelso, 2018). In view of the complexity of the legal situation, BaFin recommends that the activities of potential service providers be subject to legal action as soon as possible. In Denmark, licensing of cryptocurrency service providers is not compulsory (Bitcoin, 2017). The New York State Department of Financial Services, in July 2014, published an arrangement to be implemented in cryptocurrency operations in 2015 in which, the clearing platform iTBit was the first to receive a license called BitLicense (Brennan, 2018). In Japan, the law governing cryptocurrency as of April 1, 2017 entered into force (Coleman, 2017). Under the proposed law, cryptocurrency has begun to be accepted as an official payment method in Japan, and it is clearly emphasized that it is not a currency. In addition, the licensing of virtual platforms that provide cryptocurrency exchange services is governed.

In some countries, further activities are prohibited. The Chinese Central Bank warned financial institutions not to shop with cryptocurrency in December 2013. A cryptocurrency exchange platform in Thailand has applied for permission to operate but has received a response from the central bank that cryptocurrency is not allowed to trade, buy, sell and use (The Guardian, 2013). Indonesia's Central Bank explained that the use of cryptocurrency is against some law. However, still the policy requirements in order to avoid the exchange or usage of cryptocurrency has not been implemented.

CONCLUSION

Studying Ripple's brief history is seen to be useful at this time because it is one of the most well-known and widely utilized cryptocurrencies, second only to Bitcoin, in terms of usage. It has also been distinguishing itself from the infrastructure of Bitcoin.

Ripple is a decentralized remittance network, a foreign exchange platform, and a reconciliation system that allows for large, regular payments to be made in real time. Ripple also acts as the technical foundation that enables current payment networks to communicate with one another and conduct global real-time payments. Ripple is a crucial example of a cryptocurrency for global remittance markets because of this. There are nominal currencies and cryptocurrencies like Bitcoin and Ripple among the transferred currencies. Some financial institutions use the Ripple protocol, and many small banks that engage with big banks to offer international remittance services can employ cryptocurrencies to make this service possible.

Cryptocurrencies come with some advantages and some risks. Major benefits and hazards are addressed below. It is clear that because cryptocurrencies are still in their infancy, they carry specific dangers that the established financial system does not. These are the primary causes of

peoples' uncertainty. But those hazards can be minimized through development, which will take some time.

Any government reaction to cryptocurrencies shouldn't downplay their risks or rely on cumbersome regulatory procedures that will stifle technological innovation. The most important aspects of cryptocurrencies, such as consumer protection, information security, and transaction legitimacy, should come first. Since there is less danger associated with cryptocurrencies in terms of monetary policy and financial stability, they can be put off until later. Cryptocurrencies combine the various characteristics of digital payment systems, commodities, and currencies, and they are a topic of debate among several national authorities. Cryptocurrencies can increase potential hazards, cause regulatory issues, and function in a virtual environment with a framework that works across borders. Cryptocurrencies can enhance potential dangers and result in regulatory arbitrage. They function in a virtual environment and have a structure that works across borders. For the use of these assets in cross-border transactions, effective policy coordination at the national and international levels is crucial.

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EXTENDED SUMMARY

The brief history of Ripple is thought to be useful at this time because it is one of the most well-known and widely utilized cryptocurrencies, second only to Bitcoin. It has also been distinguishing itself from the infrastructure of Bitcoin.

In 2004, Ryan Fugger created Ripplepay, the precursor to the Ripple protocol. In Vancouver, Fugger wanted to construct a decentralized, safe, online payment system that would let users issue their own money. The initial goal of the project was to connect those who knew one another and make payments by offsetting debts that they shared (Michelfeit, 2011). In May 2011, other programmers were intrigued by this concept and created a digital currency system in which votes cast by users, as opposed to mining operations as in the Bitcoin system, confirm transactions.

OpenCoin was founded by programmers in September 2012. The Ripple Transaction Protocol is a creation of OpenCoin (RTXP). This protocol allows for the realization of direct and immediate money transfers between two parties. This protocol aims to do away with the traditional banking system's lengthy transaction times and high transaction charges. In the Ripple system, you can swap US dollars, euros, renminbi, yen, rupees, gold, and airline miles. OpenCoin has designed the Ripple to operate with a common ledger controlled by separate verification servers in order to maintain security. Everyone can have verifiable servers, even banks. Additionally, OpenCoin developed its own money under the name of Ripple Virtual Currency (XRP). Financial institutions can send money with XRP at low prices and with quick processing times.

Cryptocurrencies come with both advantages and disadvantages. Major benefits and hazards are addressed below. Evidently, as cryptocurrencies are still in their infancy, they still carry some risks that the established financial system does not. These are the main causes of people's uncertainty. However, those risks can be minimized by progress, which will take time.

Based on their processing times and transfer capabilities, cryptocurrencies are quick. Between centralized and decentralized cryptocurrencies, processing times may differ. While it only takes a second for centralized currencies to transfer funds, decentralized ones can take up to an hour. However, the ability to do immediate business even outside of regular business hours and have the recipient party receive it is a huge advantage.

Also, there is no single destination for cryptocurrencies. Since they are available everywhere, neither the transaction fees nor the processing time are impacted by geographic location. In this sense, time disparities are also irrelevant because cryptocurrencies are automatically confirmed, therefore office hours are also unaffected.

One benefit of cryptocurrencies is that no personal information needs to be entered in order to proceed. They remain unknown. Their anonymity has, however, been abused for nefarious purposes, which raises doubts about their viability in the long run. If bitcoin creators and governments take action to stop unlawful money transfers using cryptocurrencies, this feature could really be advantageous. This characteristic of cryptocurrencies is their resemblance to cash, as both are anonymous.

A number of reasons contribute to the low cost of cryptocurrencies. First of all, there is no charge to create a wallet for them to put their money. Second, transaction costs are incredibly low. Thirdly, there are no commission charges or exchange rates. Last but not least, there are no costs for international transactions.

Cryptocurrency prices are erratic. If people do not currently have any cryptocurrency, purchasing it tomorrow may cost them more money since it may appreciate against their local currency.

Cryptocurrencies are less expensive since they are not governed by any authorities like the government. Similar expenses might be associated with bitcoin systems if cryptocurrencies are legally recognized as financial services. The cost advantage that cryptocurrencies presently enjoy will be significantly impacted by these regulatory expenditures.

Decentralized systems do not require middlemen because they are not assembled in a single location. There is no central authority interested in preventing hazards since there is no intermediary. The primary defense used in bitcoin disputes is that because distributed ledgers are used to store them, everyone has access to the same "notebook" of data. It is also undeniable that these systems are susceptible to fraud or hacking, or that there may be operational concerns as a result of the connection.

People who reject cryptocurrencies generally claim that there is no government regulation of them and that the supply and demand of money is uncontrolled. Since fiat currencies are produced by central banks, it is simple for banks to "play" with inflation and interest rates by adjusting supply and demand. Cryptocurrencies cannot be controlled since they have no central authority, a "issuer," and they are openly traded.

Even the identity of the person who will tell the user in the case of decentralized cryptocurrencies is unclear. Some cryptocurrencies have features that the user cannot control and that cause them inconvenience. Particularly when individuals opt to invest in these cryptocurrencies or when they attempt to profit from mining activities. Because of the profit ratios that investors or issuers have promised, the profit is deceptive. In certain instances, these units are brought to the market once investors have a particular quantity of cryptocurrency as the result of their mining operations, and once they have been sold, the scheme is typically left to run on its

own. Users on the blockchain can only be tracked by their cryptocurrency addresses and not by their real names. The risk of forgery created is the downside of medallions, even though this condition presents a favorable function for cryptocurrencies in favor of users in terms of securing information. Because bitcoin transactions are anonymous, fraud may occur, for example, if some dishonest individuals conduct fictitious transactions and they are observed. The public's confidence in cryptocurrency will decline if those transactions are not reversed. As the use of cryptocurrencies rises, this will thereafter become even more typical.

Any political reaction to cryptocurrencies shouldn't downplay their risks or entail cumbersome procedures that will stop the technology from developing in a new way. The most important aspects of cryptocurrencies, such as consumer protection, data privacy, and transaction legality, should come first. Since there is less danger with cryptocurrency in terms of monetary policy and financial stability, it is possible to move on to the next phase. Cryptocurrencies combine the many elements of virtual goods, money, and payment systems, and they are the focus of multiple national regulatory bodies. Cryptocurrencies can increase potential hazards and enable regulatory arbitrage since they function in a virtual environment, have a structure that works across borders, and operate in a decentralized fashion. To employ these assets in cross-border transactions, there must be effective national and international policy cooperation.