# E-Money And Its Potential To Change The Role Of Cash In The Payment System: Opportunities And Challenges

Sofiyanti Karimah[1], Nur Alisah [2]
[1,2] UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia
sofiyanti.karimah@mhs.uingusdur.ac.id[1], alisahnur527@gmail.com[2]

Email corespondent: sofiyanti.karimah@mhs.uingusdur.ac.id

***ABSTRAK***: *Tujuan penelitian ini adalah untuk mengetahui bagaimana peluang dan tantangan uang elektronik terhadap potensinya dalam mengubah peran uang tunai dalam sistem pembayaran. Penelitian ini merupakan penelitian kualitatif deskriptif dengan pengumpulan data yang diperoleh melalui sumber sekunder dari telaah terhadap buku, jurnal, artikel ilmiah, dan dokumen lainnya yang diperkuat dengan beberapa pendapat dari beberapa hasil penelitian terdahulu oleh para peneliti atau literatur review. Temuan studi ini menunjukkan bahwa penggunaan uang elektronik memiliki peluang yang positif sebagai alat pembayaran dalam transaksi. Penggunaan e-money dapat memberikan peluang pada pertumbuhan UMKM yang akan berdampak pada pertumbuhan ekonomi nasional, serta memberi dampak positif kepada lembaga penerbit dan pemerintahan dengan berbagai kebijakannya. Disamping itu juga terdapat berbagai tantangan yang dihadapi dalam penggunaan e-money sebagai alat pembayaran. Tidak semua pelaku usaha dapat mendukung dan menerima transaksi pembayaran melalui e-money dikarenakan konsep bisnis yang harus fleksibel dalam menanggapi aktivitas pemeliharaan dan perawatan. Selain itu masih kurangnya literasi terhadap sistem pembayaran menggunakan uang elektronik sehingga kurang mendukung dalam semua fase sistem.*

***Kata kunci***: *Uang elektronik, uang tunai, sistem pembayaran.*

***ABSTRACT***: *The purpose of this study is to determine how the opportunities and challenges of e-money and its potential in changing the role of cash in the payment system. This research is a descriptive qualitative research. data collection is obtained from secondary sources. Secondary sources are obtained from a review of books, journals, scientific articles, and other documents reinforced by several opinions from several researchers' previous research results or literature reviews. The findings of this study indicate that e-money users have a positive opportunity as a means of payment. The use of e-money can provide opportunities for the growth of MSMEs which have an impact on national economic growth, as well as having a positive impact on issuing institutions and the government with its various policies. Besides, there are various challenges in using e-money as a means of payment. Not all businesses can support and accept payment transactions through e-money due to business concepts that must be unique and flexible in responding to maintenance and maintenance activities, as well as challenges from the community itself that the payment system using electronic money is still somewhat primitive and does not support all phases of the system.*

***Keywords***: *Electronic money, cash, payment systems.*

## 1. INTRODUCTION

Money plays an important role in everyday life. It is impossible to separate the use of money as a payment method from the economy. transactions in every country. In this digital era, technology has changed the way people interact with the world, one of which is in terms of finance. Contributing significantly to the economy, the financial industry is always evolving to meet the demands of the general public. It is important to recognize the importance of money in the economy.

As a widely accepted medium of exchange, money plays a role in facilitating trade and trade products and services. Money continues to be one of the key means of payment that applies in society. Money is used as a legal instrument of payment in making buying and selling transactions to facilitate economic activities. By using money as a means of payment in transactions, a country's economy will run well so as to achieve the goals of the state (Ulfi, 2020).

Referring to history, humans use a barter system to fulfill their daily needs. The system was later replaced by the money system as a medium of exchange. Kertal money is printed in accordance with operational standards and special features so that it is not easily counterfeited. Ink for printing and security features of money are also adjusted, so the process of printing money is very expensive. This is one of the reasons for the shift from paper money to electronic money, where money no longer has to be physical but can also be in the form of electronic digits (Puspitasari, 2021).

The driving factor for the emergence of e-money is Bank Indonesia Regulation No. 11/12/PBI/2009, which is one of the initiatives that support Bank Indonesia's goal to reduce the amount of cash in Singapore society. Electronic money is defined as digital money whose value is recorded in certain electronic media. The value of money stored electronically on a server or chip media that can be transmitted for the purpose of funds transfer or payment operations is known as electronic money, according to Bank Indonesia Regulation (PBI) No. 16/8/PBI/2014 (Rohmah, 2018).

The concept of electronic money emerged from advances in information technology and the need to improve the effectiveness of the financial system. Practicality has become very important in this contemporary age. Many technologies are now available for use in meeting financial needs; the development of e-money is one example. The purpose of developing a payment system is to facilitate transactions for consumers. The replacement of cashless payment methods is not only convenient, efficient, and effective, but also aims to reduce the number of crimes that occur due to the large number of people carrying cash. The government and central bank have been pushing for the creation of electronic payment systems in an effort to expand financial inclusion and reduce dependence on cash (Febriaty, 2019).

With technological advancements, the function of money in the payment system has also changed, leading to important shifts in payment patterns and methods used in economic transactions. History shows how payment instruments have evolved over time, starting with traditional coins and banknotes. Payment instruments have evolved to today's electronic payment instruments, which are simply data that can be stored in a container. The function of cash as a form of payment can be replaced by more reasonable, effective and cost-effective non-cash options thanks to technological advancements in payment systems. This technical drive and innovation created e-payments, such as credit cards, debit cards and electronic money (Juhro, 2021).

The world of electronic payments has been significantly impacted by digital currencies due to ongoing technological improvements. The term "payment system" refers to the legal framework, organization, and procedures that facilitate the transfer of money to meet financial obligations resulting from economic activities (Law No. 23 Year 1999, as revised by Law No. 3 Year 2004) (Rohmah, 2018).

Given that Indonesia has a small open economy, the demand for money in society will decrease as electronic money becomes more widely available. In theory, money market interest rates will fall as a result of this decrease in demand for money. This makes borrowing costs more competitive, so consumption and investment levels will increase, with an increase in the country's real production as a result. Therefore, the use of electronic money will lead to economic expansion. One of the macroeconomic metrics that can be used to determine the level of social welfare in a country is economic growth (Sitompul, 2022).

Through the payment system regulation law set by Bank Indonesia, there are four principles, including security, equal access, efficiency, and consumer protection. With this, consumers will get a guarantee of security and convenience in making digital payment systems (Anjani, 2023).

Bank Indonesia, as the monetary authority, have the power to oversee and maintain a smooth payment system. Because the cash payment system has various risks and is less efficient in its use, such as the risk of criminal crimes of robbery, theft, and so on. Cash payment systems also require high cash handling costs. So that the existence of technology allows the non-cash payment system to run better (Febriaty, 2019).

A country's financial and banking system consists of the payment system. The financial and banking system will thrive if the payment system is successful, but the unreliability or failure of the system will negatively affect the stability of the economy as a whole. Because of these issues, the payment system must be regulated and supervised by an organization. The central bank usually does this, acting as the regulator, supervisor, and organizer of the payment system.

## 2. METHOD

### 2.1 *Research Methodology*

A descriptive-qualitative method was used in this study. Research using this method is referred to as qualitative research to understand and explore the meaning stored by individuals or a group of individuals originating from social or humanitarian problems. According to (Sugiyono, 2019) descriptive research methods are methods for comparing one or more variables so that researchers can find out the value without making comparisons.

### 2.2 *Data Collection Methods*

Procedures are a means to collect data used by researchers to acquire the information needed in the preparation of research results. In this research, secondary data is used, which is obtained from books, articles, and previous research journals that are still related to the issues raised.

### 2.3 *Data Analysis Technique*

According to (Sugiyono, 2019) Qualitative data analysis is an analysis technique that is carried out interactively and continuously so that the data is obtained completely until the data is saturated. As for the activities in this interactive data analysis, they are divided into three, including:

1. Reducing Data
   Reducing data is summarizing by selecting important parts that are in the data source.
2. Data Presentation
   In qualitative research methods using data presentation in various forms, including descriptions, charts, or tables in relation to a category or the like. As for this research, the data presentation system is to use paragraph descriptions.
3. Draw Conclusions
   Conclusions are findings in the form of data that is still dim and becomes clear after research. In the conclusion of this research, it is taken by taking a sentence from a thought idea that is found.

## 3. RESULT AND DISCUSSION

**3.1 Money Concept**

Money plays an important role in everyday life. In every country, the process of economic transactions cannot be separated from the use of money as a medium of exchange. It can even be said that money serves as the main economic indicator for a country. This is because money plays an important role in all aspects of economic activity, including production, distribution, and consumption.

According to conventional economics, money is a widely accepted tool of trade in the exchange of commodities and services. In modern economics, money is described as something that can be used to pay debt repayments, purchase products and services, and other valuable property. It is also something that is widely accepted as a form of payment. Overall, money is an item that is widely used by society to determine its value, transact, and build wealth (Gunawan et al., 2019).

Barter, which requires two parties who have the same desire to exchange goods and struggle to determine value, is more complicated, inefficient, and inappropriate for the modern economic system. Instead, money facilitates various transactions. Ultimately, the division of labor and trade will be driven by the efficiency achieved from the use of money, thereby increasing prosperity and productivity.

For almost all economic activities, it serves as an important means of exchange and payment. Therefore, money is essential in everyday life, especially when it comes to purchasing goods, services and other necessities. Society must fulfill the following conditions before it can accept goods as money: the value does not fluctuate over time, it is simple to use, safe storage without loss of value, durable, limited supply, and the objects have the same quality (Nursari, 2019).

In an economic perspective, money is a supply of assets that are used as a medium for transactions. Money is everything that is obtained and generally available as a means of purchasing goods and services and determinants of valuable wealth. To be accepted or trusted by the public as a medium of payment, money must have the following functions:

1. Unit of Account. Money that can give the price of a commodity based on units of measure.
2. Storage of Value. Is the ability of money to store the results of transactions or gifts that increase purchasing power so that all transactions do not need to be spent right now.
3. Transaction Tools. As a means of transaction or medium of exchange that can be accepted or get a guarantee of trust.
4. Payment standard in the future. Money has a function as a means of payment in the future; for example, debts and credits are determined at a certain tempo (Candra, 2024).

There are two important theories related to the demand for money. These theories can be divided into the classical theory and the keynesian theory.

1. Classical Money Demand Theory
   According to classical economics, money is simply a medium of exchange. Because the amount of money needed is proportional to the amount of services or income. If the income level rises, then the demand for money also rises, and vice versa. The amount of money owned by a country is not only its nominal value but also its purchasing power, namely its nominal value relative to the price level. The function of money only as a medium of exchange makes money neutral, in the sense that money only affects the price level. The opinion is expressed in the classic quantity of money equation by Irving Fisher (Candra, 2024) .
2. Keynes' Money Demand Theory
   Keynes, in his theory of the demand for money, distinguished between transaction and speculation motives (Tentiyo, 2022).

a. Transaction Motive Money Demand
   Keynes stated that income determines how much money is needed for transactions. The need for money for transactions increases with the level of income. Individuals with higher incomes usually make more transactions than those with lower incomes. Larger transactions are usually made by residents of large cities compared to residents of small towns.
b. Speculation Motive Money Demand
   Keynes argued that interest rates encourage the desire for money for speculative purposes. People's desire for money for speculative purposes decreases when interest rates rise. First, an increase in interest rates indicates that it becomes more expensive to hold money, thereby reducing people's demand for money and vice versa. Secondly, Keynes postulated that people's assumptions about future interest rates are based on their past experiences, especially with recently changed interest rates.

**3.2 E-Money**

The definition of electronic money is based on the definition published in October 1961 by the Bank for International Settlement (BIS). The definition of electronic money in this paper is "stored-value or prepaid products in which a record of the funds or value available to a consumer is stored on an electronic device in the consumer's possession." E-money can grow well along with the increasing economy (Sitompul, 2022).

Electronic money was first issued by Bank Indonesia in April 2007. In the year and a half since its first issuance, the number of electronic money has reached 430,000. Today, e-money is not only printed on cards or other media; it is also printed on other media which, during the transaction, is connected to the issuer's server. In order to be accepted at various retailers, almost all electronic money issued today is multi-purpose, rather than single-purpose. According to Situngkir (2018), there is a tendency for the use of electronic money in Indonesia to increase both in terms of transaction volume and the amount of electronic money in circulation. By definition, electronic money is a payment instrument that meets the requirements listed in Bank Indonesia regulation No. 11/12/PBI/2009:

1. Based on the amount of money that the holder has previously placed with the issuer;
2. Electronically stored values are stored on servers or chips, for example.;
3. used as a payment method to retailers who have no control over the issuance of electronic money; and
4. The value of e-money deposited by the holder and managed by the issuer is not considered a deposit under banking rules (Situngkir, 2018).

Electronic money is an innovative form of payment instrument that has evolved into a more practical form. Electronic money has been widely recognized and developed in Indonesia. The characteristics of electronic money are different when compared to other previously circulated payment methods, including debit and credit cards, although the purpose of these instruments is still the same as that of credit and debit cards: to as a means of payment (Anjani, 2023).

Electronic money comes in two types in Indonesia: server- or app-based electronic money, and chip- or card-based electronic money. Known as e-wallets, e-money is usually used with a smartphone. The number of people using and transacting with electronic money is currently on the rise. The growing area of digital transactions has led to an increase in the use of electronic money. In addition, the increase in online purchases and sales is another factor contributing to the growth in the use of electronic money (Annurria, 2023)

Digital currencies can be classified into two categories according to their validity period:

1. Rechargeable e-money can be topped up; that is, if the value has been exhausted or the validity period has expired, the e-money can be used once again to top up.
2. Second, disposable electronic money is electronic money that cannot be recharged, i.e. after the value of electronic money runs out or the validity period expires, the electronic money cannot be used for further purchases (Anjani, 2023)

Features of Electronic Money Seeing that electronic money has a function as a payment instrument in society, electronic money has the following features.

1. Complete payment transactions easily and quickly without having to carry change.
2. Not concerned with changes to items due to minor adjustments.
3. Very useful for standard low-value but frequent transactions such as parking and tolls. Fast food, etc.

Electronic money can be used for different types of transactions. First, electronic money can be issued and recharged, allowing the issuer to put funds into the medium in advance and allowing the holder to recharge if the value of the electronic money runs out. Second, to make payments using electronic money, the holder must follow certain procedures to exchange the value of the money for products or services. Third, through terminals provided by the issuer, holders can send electronic money value to other holders through transfers within the electronic money facility. Fourth, cash withdrawal gives the holder the flexibility to withdraw money at any time according to the amount of electronic money stated on the electronic money media. Fifth, the return of (Najwa, 2023).

### 3.3 Development of payment systems

A payment system is a collection of agreements, contracts, operational tools and technological systems used to send, validate and receive payment instructions and to fulfill payment obligations through the transfer of "value" between individuals, banks and other institutions within and between countries (Subari, 2017).

In reality, both cash and non-monetary money are used to settle payment transactions. A country's financial system would not be complete without its payment system. While the possibility of a payment system failure will adversely affect the overall stability of the economy, a successful payment system will promote the growth of the banking and financial sector (Nursari, 2019).

Advances in technology and changes in people's lifestyles have a significant impact on the development of electronic payment systems or better known as non-cash. The creation of non-cash payment instruments is currently happening very quickly, along with advances in payment system technology which have recently had a significant impact on payment system stakeholders.

Customers and suppliers of cashless payment systems are always looking for more secure and efficient cashless payment alternatives, partly due to continued technological advancements. In addition, as people's lives become more efficient, the need for fast transportation and communication systems is increasing to reduce barriers related to time and distance (Rohmah, 2018).

Society is becoming more receptive to non-cash transactions, as seen by the increasing use of electronic money. A society that uses less cash, or a society that has fewer cash transactions overall, may result from an increase in non-monetary transactions. Less cash society is beneficial to improve a fast, safe, and efficient payment system, as well as to accelerate the turnover of economic activity and financial system stability. In addition, the development of non-cash transactions will also reduce the printing of banknotes, which will have an impact on saving Bank Indonesia's operational costs.

Non-cash payments are payments made using card-based checks or bilyet giro that can replace cash. With the introduction of paper-based payment instruments, the cashless payment system began to take shape. The growth of paper-based payment instruments continued to slow down as more banks promoted the use of electronic systems and card-based payment instruments (Nursari, 2019).

E-payment is a payment system that uses technology to make transactions faster, more precise and accurate, which in turn will increase banking productivity. This payment system has also developed into an electronic payment system, where this electronic payment system utilizes technology in transactions. Non-cash payments have developed and are increasingly popular in society. This fact shows us that non-cash payment services Final settlement systems, clearing houses, and banking activities are available and can be conducted in Indonesia by banks and non-bank organizations (Nursari, 2019).

The use of electronic money as a new and useful means of payment is expected to facilitate the payment of economic activities quickly, easily, and in bulk, so as to help smooth transactions. Simply put, an electronic money transaction begins when the holder gives cash to the issuer and the issuer gives electronic money to the holder in the amount of the cash that the holder deposited with the issuer. If the holder receives electronic money, they can use it to make payments directly to the merchant; however, the value of their electronic money will drop if they complete the transaction. Furthermore, the retailer can convert the value of the holder's e-money into

### 3.4 E-Money Opportunities & Challenges

The increased use of cashless payments is a source of fee-based revenue for banks and other organizations that issue cashless payment instruments as users of cashless payments have to pay administrative fees. In addition, fees collected for certain types of transactions, including bill payments or transfers, may contribute to fee-based income. These limitations are eliminated by the availability of cashless payment methods such as cards, which can encourage higher levels of consumption (Nursari, 2019).
By using e-money, a user can obtain various advantages, including the following.

1. As a means of payment in the micro segment.
   Electronic money that is cashless allows people to make transactions without having to carry (physical) cash, either in payment transactions or as change. With electronic money, creative economic actors in the micro segment no longer need to prepare cash to be used as change when making transactions with buyers. Electronic money is considered as an answer to the need for such payment instruments, with the hope of being able to make the payment process quickly at a relatively low cost.
2. Effective and efficient
   Electronic money is considered more effective and efficient in its use. With its cashless form, electronic money allows users to make transactions anywhere and anytime, even across countries. Using electronic money allows economic actors to conduct their transactions digitally. So that transactions made between sellers and buyers can be carried out without having to leave the house and payments can be made without having to go to the nearest ATM.
3. Provides a high level of accuracy
   Electronic money has the same advantages as digital bank operations, all payment transactions made using electronic money are carried out in real time and papper less so that the accuracy of financial data calculations when carrying out transactions using electronic money is also higher. Economic actors can find

out the updated balance in their bank account or electronic wallet a fraction of a second after payment is made by the buyer. This makes electronic money a solution in minimizing errors in carrying out the payment process during transactions.

4. Ease of financial control
   Electronic money makes it easier for users to control their finances. For economic actors who have a minimal background in good financial management knowledge, they can take advantage of the various services and facilities provided in the e-wallet application where server-based electronic money is stored. So that they can directly monitor the digital transactions they carry out daily. That way creative economic actors can control the entry and exit of money.
5. Security in transactions
   When business owners use e-money, it can provide security for all their transactions. They don't have to worry about dealing with counterfeit money, and once the transaction is complete, the money from the payment will go directly into the business owner's account (Annurria, 2023).

In addition, e-money has the ability to spur the expansion of small and medium enterprises (MSMEs), which at a macro level will affect a country's GDP growth and overall economic growth. As distance and time seem limitless when using the internet system, cashless transactions can lead to the creation of new jobs. For companies, the benefits can include faster access to capital and reduced processing costs. Lastly, the government will also benefit as this policy can lead to higher tax collection rates, better financial inclusion and economic development. With the ease of transactions, the use of cashless transactions should ideally provide efficiency and flexibility in managing needs (Ulfi, 2020).

Besides E-Money offers convenience and speed in making transactions. However, to achieve this, E-Money must sacrifice another aspect, namely security. There is no authorization procedure at all during the payment process to increase the security risk borne by the cardholder. The E-Money card can still be used by someone else if the user misplaces it or if there are other circumstances that cause the ownership of the card to transfer from us to someone else. Therefore, the person who misplaced the card cannot take additional legal action. In addition, it has been stated in the E-Money card agreement between the bank and the user that the risk of losing the card is the user's risk (Rohmah, 2018).

In addition, behind the various conveniences offered by non-cash payments of this type of e-money, Due to the need for a standardized business model and the additional costs associated with maintenance and security measures for cashless transactions, not all merchants are able to handle and accept payment transactions via electronic money, besides that because people still view payment instruments using e-money as quite complicated and do not reach all levels of the system, and sometimes experience several disruptions so that they cannot be used (Ulfi, 2020).

## 4. CONCLUSION

In everyday life, money plays a major role. In every country, the process of conducting business involves money as a medium of exchange. Innovative payment methods such as electronic money have evolved into more useful methods. People are becoming more receptive to cashless transactions, as evidenced by the growth in the use of electronic money. This increase can accelerate the turnover of economic activity and financial system stability, and lead to a less cash society - a society that reduces cash transactions and switches to a fast, secure and effective payment system.

In addition, there are many options for using electronic money as a payment method. The increased acceptance of cashless payments provides banks and other issuing organizations with a fee-based revenue stream. E-money has the ability to boost the macro growth of MSMEs, which is anticipated to impact a country's GDP growth and overall economic growth. As this policy can improve financial inclusion, economic development, and tax collection rates, the government will also benefit.

Apart from that, E-Money makes transactions quick and easy. That being said, E-Money has to forgo the security features that are the user's duty in order to accomplish that. Due to standardized business models, additional maintenance and security costs, and problems from the community, which still sees e-money payment instruments as complicated and not reaching all system levels, not all merchants are able to support and accept e-money payments.

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