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Analysis of the Impact of APMK & UE as a Non-Cash Payment Instrument on Indonesia's Economic Growth

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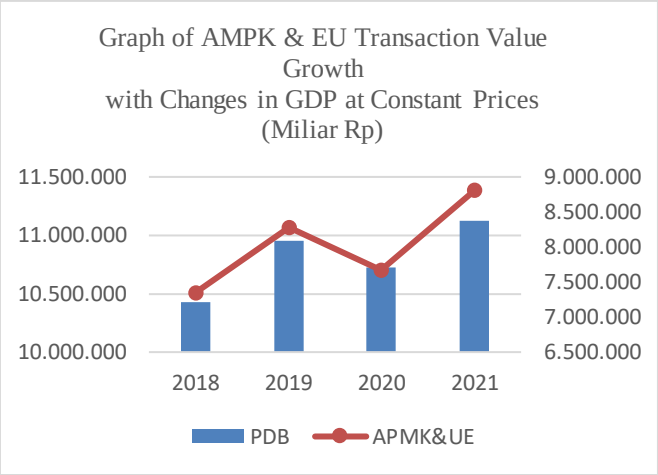
Abstract. Rapid technological developments encourage payment systems to be more effective and efficient for the community. At this time the payment system has developed into a non-cash basis. The non-cash Payment System consists of Card-Based Payment Instruments, namely ATM/Debit Cards and Credit Cards, as well as Electronic Money (E-money). The purpose of this research is to find out whether the non-cash payment system affects economic growth in Indonesia. This research uses quantitative methods and secondary data obtained from Bank Indonesia and the Central Statistics Agency (BPS) for the 2009-2021 period. The analytical method used is multiple linear regression analysis using SPSS version 27. The results show that simultaneously transaction values for Debit Cards, Credit Cards and Electronic Money affect economic growth in Indonesia. Meanwhile, partially, the transaction value of Debit Cards and Credit Cards has a significant influence on economic growth. However, the value of Electronic Money transactions does not affect economic growth.
Keywords: Non-cash Payment System, Debit/ATM Card, Credit Card, Electronic money, economic growth.

I. Introduction

The era of rapid development of the times, encouraging science, especially technology, to become more advanced and sophisticated from time to time. Technological developments that move forward can affect every activity of society, one of which is the change and evolution of the payment system. Before the payment system experienced progress as it is now, people in ancient times used a barter system or by exchanging goods, then shifted with the use of commodity money, then to primitive money. Cashless based payments are popular in today's society. Almost all economic activities began to use non-cash payments. Indonesia has only launched a movement to use a cashless payment system, Specifically, through the GNNT (National Non-Cash Movement) initiative, which Bank Indonesia started. According to (Lintangsari et al., 2018) with the speed, convenience, efficiency, and effectiveness offered, the use of digital technology provides motivation for payment systems and follows the development and utilizes digital technology. So that the cashless payment system provides convenience, and helps to make the payment process faster and more practical. It also provides cost savings, efficiency, and ease of transaction. Before the existence of non-cash payment systems, everything was based on cash payments, which was considered to still have an impact on ease of transactions, because it was not practical, and took a lot of time. That way cashless payments are the right innovation to help people make transactions easier. Especially during the Covid-19 pandemic, people are worried about making payments with physical contact, because it can be considered capable of transmitting the virus. In addition, the digital era (industrial revolution 4.0) has brought the dynamics of community transactions from offline to online (Widiyanti, 2020). Based on data from Bank Indonesia (BI), in 2012 the volume of shopping transactions using electronic money (e-money) only reached 100.63 million transactions with a total value of around Rp 1.98 trillion. When the Covid-19 pandemic occurred, namely in 2020, the value of shopping transactions using electronic money continued to grow to 41.16%, compared to the previous year, then in 2021 the volume of transactions using electronic money reached 5.45 billion transactions with a total value of IDR 305 trillion (databoks.katadata.co.id). This shows that non-cash transactions, especially electronic money during the pandemic, are increasingly in demand The community because it provides more convenience and security in transactions. The presence of cash-based payment system innovation is not only driven by technological advances and innovations in the banking sector. But it is also driven by the community's need for easy, fast, and efficient payment instruments for transactions in daily activities. The use of cash-based transactions has an influence on economic growth. Because non-cash transactions are more efficient and provide convenience in transactions and stimulate consumption activities. Non-cash payment systems are divided into several payment instruments, Card-Based Payment Instruments, such as Debit Cards, Credit Cards, and Electronic Money, are referred to as APMK. The economic system places a high value on consumption.



Source: Bank Indonesia dan BPS. 2022.

Based on data obtained on the chart, it shows that the growth of transaction value with non-cash payment instruments (APMK &EU) experienced a significant increase in 2019 and 2021. This is supported by external factors, one of which is the increasing level of public consumption from year to year, then driven by the integration of electronic money in the expanding digital ecosystem.

According to (Muhammad, 2021), Numerous economic activities can be stimulated by increasing non-cash compensation. Actors in the economy will be urged to conduct business, because non-cash payments can save in terms of energy costs, as well as time. So that it will contribute to increasing economic activity and of course also to economic growth (GDP). In addition, the factor of ease and efficiency in transactions with non-cash payments can affect the increase in consumption power in the community. Economic growth has several influencing factors, including natural resources, human resources, capital resources, science, and technology, as well as payment systems (Mahendra, 2019). With the existence of an increasingly advanced and sophisticated payment system like today, especially innovation in cash-based payment systems, public transactions will be more optimally moved. As a result of the payment system's significant impact on economic growth.

II. Literature Review

Economic growth

Economic growth is the expansion of economic activities that raise the amount of products and services produced in society. Through economic growth, a nation can increase its income from one era to the next. (Sukirno, 2019). Economic growth is a macroeconomic indicator that can show the level of people's welfare. For developing countries, including Indonesia, economic growth is one of the main concerns. This can be obtained through increasing aggregate output (goods and services) or Gross Domestic Product (GDP) every year (Mahendra, 2019).

Growth Neo-classical economic theory is a theory of the development of the classical growth theory which was previously introduced by Adam Smith. Neo classical theory was developed in the 1950's. The most popular figures in this theory are by Robert Solow and Joseph A Schumpeter. Robert Solow (1970) contends that a succession of actions that come from four primary factors people, capital accumulation, contemporary technology, and results—are what constitute economic progress. (Utomo, 2020). According to (Sukirno, 2019) Solow also argued that the most important factors that create economic growth are not an increase in capital and an increase in labor.

Payment System

In order to fulfill a financial obligation resulting from economic activity, a payment system is made up of a set of regulations, institutions, and methods. The concept of "money" as a medium of exchange or intermediary in commodities, services, and financial transactions was born at the same time as the payment system. The payment system, in theory, comprises three processing phases: authorisation, clearing, and final settlement (settlement) (Bank Indonesia, 2022). And according to (Humphrey, 2001) the payment system is a mechanism that indicates the flow of a number of values from the seller to the buyer in a transaction.

Non-Cash Payment System

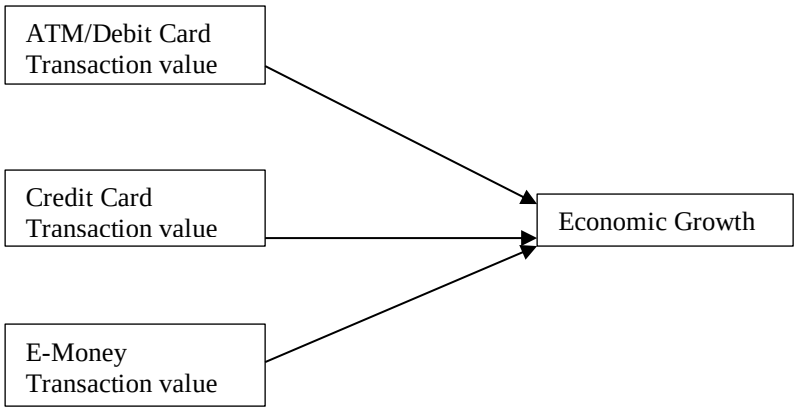
In order to fulfill a financial obligation resulting from economic activity, a payment system is made up of a set of regulations, institutions, and methods. Cash and non-cash based payment instruments are used in the payment system.

1. The cash payment system is a system whose payment instruments use physical money (currency and coins) as a transaction process for goods and services (Muhammad, 2021).
2. The non-payment system, which makes use of card and digital payments, is a payment system that doesn't use actual money. According to (Puspita, 2019) claims that digital payments, also referred to as electronic money, come in two main forms: computer networks and digital systems. Non-cash payment methods include electronic money and APMKs (card payment instruments), such as ATM/Debit and credit cards.

Gross Domestic Product (GDP)

Economic growth is a state in which the growth of GDP reflects the rise in output per person and raises people's living standards, which are measured in percentage terms annually (Indayani & Hartono, 2020) An essential gauge of a nation's economic development is its gross domestic product. gross domestic product can indicate an economic activity that can generate increased public income and produce goods and services for the production factors owned by the community (Sholihah, 2022). An essential measure of a country's economic health during a given time period is its gross domestic product. According to (Badan Pusat Statistik, n.d.) Indonesia's gross domestic product is divided into two, namely based on constant prices and current prices

Hypothesis



H1 : ATM/Debit Card Transaction value has a positive effect on economic growth

H2 : Credit Card Transaction value has a positive effect on economic growth

H3 : E-Money Transaction value has a positive effect on economic growth

III. Research Method

This study used quantitative methods with secondary data and time series data types during the period 2009-2021 (13 years). By collecting data using data sources sourced from Bank Indonesia and the Central Statistics Agency (BPS). The analysis used in this study is a multiple linear regression analysis model using SPSS 27 software. A regression model called multiple linear regression includes multiple independent variables. To ascertain the direction and degree of influence the independent variable has on the dependent variable, multiple regression analysis is used. (Ghozali, 2018). Multiple linear regression testing techniques consist of classical assumption tests, namely autocorrelation tests, multicollinearity tests, and heterokedasticity tests, determination coefficient tests (R2), then hypothesis testing consisting of F tests and t tests.

According to (Ghozali, 2018) the multiple linear regression equation can be expressed in the form of a formula as follows: PDB = α + β1NTKD + β2NTKK + β3NTUE + e. The variables in this study are:

1. Economic Growth (Y)

Economic growth as measured by Gross Domestic Product (GDP) is the dependent variable in this

study, indicated by Y. The value of the goods and services generated in a nation over a particular year employing both domestic and foreign labor is known as the gross domestic product (GDP). It can be based on current pricing and fixed (constant) prices and is typically regarded in accordance with market prices. (Sukirno, 2019).

2. ATM/Debit transaction value (X_1)

   ATM/Debit Card is a payment instrument including APMK (Card-Based Payment Instrument). ATM/Debit cards are used to make payments for obligations derived from economic activities, such as transactions for shopping.

3. Credit Card transaction value (X_2)

   Credit card is a means of payment that includes APMK (Card-Based Payment Instrument). Credit cards can be used to make transactions by buying goods but paying can be gradually.

4. Electronic money transaction value (X_3)

   E-money or also called electronic money is a kind of payment where the value of the money is kept on its own media in the form of computer programs.

IV. Results and Discussion

Results

	Unstandardized Coefficients		t Statistic	Sig (t-statistic)	Collinearity Statistics		F Statistic	Sig (F-statistic)	R Square	Durbin Watson	Spearman's rho
Variabel	B	Std.Error			Tolerance	VIF					
Constanta	8.855	.694	12.757	<.001			605.617	<.001[b]	.995	2.067	
KD	.792	.045	17.480	<.001	.135	7.418					.887
KK	-.178	.074	-2.420	.039	.167	5.992					.762
UE	.004	.012	.372	.718	.548	1.824					.929

Sources: secondary data, processed

From the estimation results above, it can be written agreement as follows: PE = 8,855 + 0,792 NTKD – 0,178 NTKK + 0,004 NTUE + e. Debit card variables are known to have a positive impact on economic growth, followed by credit card variables that have a negative impact. By looking at the statistical t value, it is known that electronic money variables have no impact on economic growth. According to the F test, the independent variables of debit cards, credit cards, and electronic money have a significant impact on the independent variable of concurrent or joint economic growth, as indicated by the values of F count = 605.617 F table 3.86 and sig. of 0.000. Furthermore, the Durbin Watson value shows a value of 2.067 where the value gives the conclusion that this regression equation is free from autocorrelation symptoms. The VIF value of each variable shows a value below 10 or (<10), therefore this regression model is also declared free from symptoms of multicollinearity, and the results of the Spearman rank test show that all variables have a significant value of > 10, so it is concluded that the model is free from symptoms of heterokedasticity. Additionally, this regression model's r squared value is 0.995, or 99.5%, meaning that the independent variable in this study has a 99.5% chance of affecting the dependent variable, with the remaining 0.5% being explained by factors unrelated to this research.

Discussion

The Effect of Debit Card Transaction Value on Economic Growth

The value of debit card transactions has a favorable impact on economic growth, according to the findings of the t test. According to one perspective, the amount of debit card transactions has a favorable impact on economic expansion. If the value of debit card transactions increases, economic growth also shows an increase. This demonstrates that with the development of non-cash-based payment instruments, debit cards can offer convenience for the general public in transacting, and individuals will be more motivated to transact along with the reduction of transaction barriers in terms of cost, energy, and time (Muhammad 2021). The results of this study are in line with the results of research by (Firda, 2019) according to researchers the effect of convenience provided by debit cards can encourage people to transact, and this will affect economic growth. However, it is different from research conducted by (Febriaty, 2019), that debit cards have a significant negative influence, because researchers assume that debit cards do not really encourage public consumption to increase more than before.

The Effect of Credit Card Transaction Value on Economic Growth

The t test's findings indicate that credit card factors significantly have a negative impact on economic growth. It claims that every increase in the nominal credit card transaction will slow the rate of economic

expansion. This condition is where when there are many bad loans or called NPL (Non Performing Loan), that is, many people experience default. An increase in NPLs can cause economic growth to slow down. As during the Covid-19 pandemic in 2020, many people experienced bad loans due to their inability to pay obligations and credit interest because during the pandemic people's income was reduced due to social restrictions and lockdowns. This is in line with research conducted by (Sastriani, 2020) researchers say that the use of credit cards as a means of debt, many of which cause bad loans which results in a decrease in economic growth. However, it is inversely proportional to research conducted by (Marginingsih & Sari, 2019) which states that credit card transactions have a positive influence on economic growth. Because researchers think that the use of cards as a means of transaction, especially credit cards, can increase the efficiency of the national financial system so that it can affect public consumption.

The Effect of Electronic Money Transaction Value on Economic Growth

The variable electronic money is known not to significantly affect economic growth based on the t test's findings. This is because in fact the use of electronic money must be accompanied by an adequate understanding of technology, but at this time there are still many, especially among the lower community who do not understand the importance of non-cash use, especially electronic money for daily transaction activities, due to the lack of their technological understanding ability. In addition, there are still many people who tend to prefer using cash rather than electronic money, because it is considered more practical to use in daily transactions. This means that using electronic money has not aided Indonesia's economic progress. This is because in fact the use of electronic money must be accompanied by an adequate understanding of technology, but at this time there are still many, especially among the lower community who do not understand the importance of non-cash use, especially electronic money for daily transaction activities, due to the lack of their technological understanding ability. In addition, there are still many people who tend to prefer using cash rather than electronic money, because it is considered more practical to use in daily transactions. So according to this, the use of electronic money has not contributed to economic growth in Indonesia. This is in line with research conducted by (Ismanda, 2019) researchers say that the number of electronic money uses is still quite small compared to debit and credit card users, and only a few people have used electronic money for daily transactions. However, it is different from research conducted by (Sitompul, 2022) which states that the influence of electronic money transactions has a significant positive influence on economic growth. Because increasingly rapid technological advances can encourage people to be able to transact using electronic money, because with the increasingly advanced technology, it can provide convenience in transactions

V. Conclusion

Based on the findings of the research, specifically the Analysis of the Effect of Non-Cash Payment Systems on Indonesia's Economic Growth, it can be said that the following: Economic growth is aided by the value of debit card transactions, which are based on the development of noncash payment methods, namely debit cards can provide convenience for the public in transacting, and the public will be more encouraged to transact and with the convenience offered by debit cards to transact, it will affect public consumption which will increase, thus also having an impact on economic growth. The increasing value of credit card transactions will decrease the economic growth rate, because of this condition when there are many bad loans or called NPL (Non-Performing Loan), where many people experience default. An increase in NPLs can cause economic growth to slow down. Like during the Covid-19 pandemic. The transaction value of electronic money does not contribute to increasing economic growth. Because in reality the use of electronic money must be accompanied by an adequate understanding of technology, but at this time there are still many, especially among the lower community who do not understand the importance of non-cash use, especially electronic money for daily transaction activities, due to the lack of their technological understanding ability.

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