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The Effect Of Cashless Transactions On The Velocity Of Money In Indonesia

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Abstract

Technological developments in the financial sector have encouraged a shift in transactions from cash to cashless. The increasingly massive digitization of the payment system is expected to affect the velocity of money in the economy, which is reflected in the velocity of money. This study aims to analyze the effect of cashless transactions on the velocity of money in Indonesia. Using secondary data from Bank Indonesia and the Central Bureau of Statistics, this study applies quantitative methods to measure the relationship between the volume of cashless transactions and the velocity of money. The results show that an increase in cashless transactions has a positive correlation with the velocity of money, indicating that the digitization of the payment system can accelerate the velocity of money in the economy. The findings provide implications for monetary policy and payment system regulation in supporting economic efficiency in the digital era.

Keywords: cashless transactions, velocity of money, digitization of payments, monetary policy.

INTRODUCTION

Economic growth is important in the progress of a country. This is because the economic sector cannot be separated from its important role in regulating finance. Bank Indonesia as the central bank maintains its function by maintaining financial system stability. By maintaining the stability of the financial system, the country will remain firmly standing from various economic disturbances that can perform the function of

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intermediation, make a payment, and overcome the spread of risk properly Therefore, the regulation of money is very important for the sustainability of the country.

Money plays an important role in the economy, especially as a medium of exchange and store of value. Along with the times, the payment system has undergone a transformation from the use of cash to a non-cash or cashless system, triggered by advances in financial technology (fintech), changes in public consumption patterns, and government policies. Bank Indonesia, as the payment system authority, launched the National Non-Cash Movement (GNNT) in 2014 to encourage more efficient, secure, and affordable non-cash transactions for the community.

The convenience offered by non-cash transactions has increased their use, especially in the form of ATM/Debit cards, credit cards, and electronic money (e-money). Based on Bank Indonesia data (2020), digital banking transactions grew by 13.48%, while the value of electronic money transactions increased by 43.45%. This growth indicates a significant shift in people's payment patterns, from cash-based to digital-based.

The increased use of non-cash payment systems has the potential to affect the velocity of money in the economy. Velocity of money reflects how quickly money changes hands in economic activity and can be used to measure the efficiency of the payment system in supporting economic growth. With faster and more efficient digital transactions, economic

theory suggests that the velocity of money may increase. However, there is also the possibility that the digitization of transactions actually reduces the velocity of money due to increased savings or changes in consumption patterns. Therefore, further research is needed on the relationship between cashless transactions and velocity of money in Indonesia.

Based on this background, this study aims to analyze the effect of non-cash transactions on the velocity of money flows in Indonesia. This study will use data related to the value of non-cash transactions, including ATM/Debit cards, credit cards, and electronic money, to understand how the development of digital payment systems affects the financial system and the economy as a whole.

METHODS

It is a type of research that is systematic and structured, with clear stages to explain certain phenomena. This research focuses on the interpretation of numerical or statistical data to understand the relationship between variables. In this study, time series data is used with a period of 2009 to 2023 in annual form for GDP data, Total velocity of money,

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ATM/debit cards, credit cards, and *E-money.* the data in this study uses secondary data taken from government publications and reports, namely Bank Indonesia and the Central Statistics Agency (BPS). This variable is expressed in nominal form. In this quantitative research, multiple linear regression is used as a data analysis method to test the hypothesis and see the effect of each variable, namely ATM/Debit cards and credit cards and *E-money*, on the velocity of money turnover. The analytical tool used was *IBM Statistical Product and Service Solution (SPSS) Stats 25 for Windows software*

Multiple linear regression analysis used in this study aims to see the effect of the transaction value of ATM/debit cards, credit cards, and *E-money* as independent variables on the dependent variable, namely the velocity of money turnover. This analysis uses three independent variables (X1, X2, and X3) with the dependent variable (Y). the equation model is generally stated in the following equation (Ghozali, 2014) :

The use of the equation function from the function above, namely the effect between the value of ATM/debit card transactions (X1), the value of credit card transactions (X2), and the value of *E-money* transactions (X3) on the velocity of money turnover (Y) has the following equation;

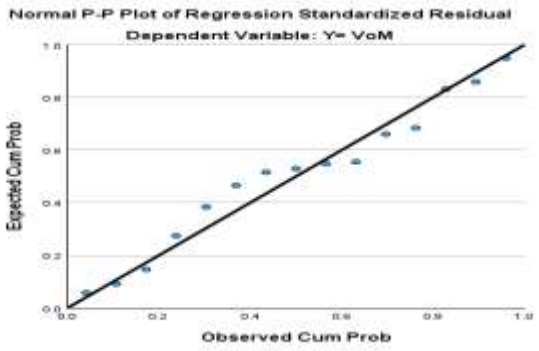
V =β0+$\beta 1 Debit$+$\beta 2 Kredit$+$\beta 3 Emoney$+μ

The description of the above equation is:

V = Velocity of Money Turnover
Debit = ATM/Debit Card
Kredit = Credit Card
Emoney = E-money
e = Confounding variable

RESULTS AND DISCUSSION

Normality Test



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In the picture above, it is explained that the result of the normality test is the distribution of data on the diagonal line or close to the diagonal line, which can be concluded that the data is normally distributed.

Multicollinearity Test

Table 1 Multicollinearity Test

	Collinearity Statistics	
(Constanta)	*Tolerance*	VIF
Kartu Debit	0.245	4.080
Kartu Kredit	0.260	3.852
E-money	0.507	1.972

The results of the multicollinearity test above are the ATM / Debit Card variable (X1) has a tolerance of 0.431> 0.1 with a VIF of 2.322 < 10. Then the Credit Card Variable (X2) has a tolerance of 0.437> 0.1 and a VIF of 2.291 < 10. And the E-money Variable (X3) has a tolerance value of 0.480> 10 and VIF of 2.085 < 10. So it can be concluded that the three independent variables used do not occur multicollinearity.

Heteroscedasticity Test

Table 2. Heteroscedasticity Test

			Unstandarlized residual
Spearman's rho	Kartu Debit	Sig. (2-tailed)	0.723
	Kartu Kredit	Sig. (2-tailed)	0.860
	Emoney	Sig. (2-tailed)	0.676

The results of the heteroscedasticity test above are the Sig (2-tailed) value of the ATM / Debit Card variable (X1) of 0.723> 0.05, the Credit Card Variable (X3) of 0.860> 0.05, and the E-money Variable (X3) of 0.676> 0.05. So it can be concluded that the regression model does not occur heteroscedasticity.

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Autocorrelation Test

Durbin-Watson
1,557

The results of the Autocorrelation test above the value of the Durbin Watson test is 1.557 which means that DW is between -2 and +2, so it can be concluded that there is no autocorrelation in the regression model.

Hypothesis Test
Coefficient Of Determination (R^2)

Model	R	R square
	0,966	0,933

The results of the coefficient of determination test above show that the R^2 value is 0.933, which means that the variables ATM/Debit Card, Credit Card, and E-money influence the velocity of money by 93.3%, while the remaining 6.7% is influenced by other variables.

F Statistical Test

Model	*Sum of Square*	Df	*Mean square*	F	Sig
Regression	24.432	3	8.144	50.995	< 0.001
Residual	1.757	11	260		
Total	26.189	14			

Based on the results of the f test above, it is known that the result of f count 50.995 which is where f count 50.995> f table 3.857 with a significant value of 0.001 <0.05, it can be concluded that all independent variables simultaneously affect the dependent variable.

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T Statistical Test

Model	T	Sig.
(Constant)	20.691	< 0.001
KartuDebit	-6.123	< 0.001
KartuKredit	4.890	< 0.001
Emoney	-6.130	< 0.001

Based on the t test results in the table above, the following results are obtained:

1. Based on the results of the t test on the Debit Card variable, the t value is obtained -6.123, which is -6.123> t table 2.201 and a significant value of 0.001 <0.05. then H0 is rejected and H1 is accepted, which can be concluded that the ATM / debit card variable has a significant negative effect on the velocity of money. .
2. Based on the results of the t test on the Credit Card variable, the t value is 4.890 which is 4.890> t table 2.201 and a significant value of 0.001 <0.05. then H0 is rejected and H1 is accepted, which can be concluded that the Credit Card variable has a significant positive effect on the velocity of money.
3. Based on the results of the t test on the E-money variable, the t value is obtained -6.130 which is -6.130> t table 2.201 and a significant value of 0.001 <0.05. then H0 is rejected and H1 is accepted, which can be concluded that the Credit Card variable has a significant effect on the velocity of money

DISCUSSION

The Effect of ATM/Debit Card Transaction Value on the Velocity of Money

Based on the results of the t test, it is known that the value of ATM / Debit card transactions has a significant negative effect on the Velocity of Money Turnover. The results of the t test show that t count< t (table) is -6.123 < 2.201 with a significant value of 0.001 < 0.05. The value of ATM / Debit card transactions has increased, it will affect the velocity of money turnover. This is also in line with Irving Fisher's theory which according to Irving Fisher's theory, if people use ATM / Debit Cards for transactions when shopping, the use of cash will decrease. As a result, the amount of money needed to make transactions based on nominal income will decrease (M decreases relative to P x Y), so the speed velocity of money ((P x Y)/M) will increase.

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The Effect of Credit Card Transaction Value on Accelerating Money Flow

Based on the results of the t test, it is known that the value of credit card transactions has a significant positive effect on the velocity of money turnover. The results show that t count> t (table) is 4.890> 2.201, with a significant value of 0.001 <0.05. If the value of credit card transactions increases, the velocity of money will also increase. This can be seen from Bank Indonesia, the division of credit card value is divided into two, namely the value of shopping transactions and the value of cash transactions. BI data shows that in the 2009-2023 period, the largest transaction value is the value of shopping transactions, while the smallest is the value of cash transactions. It can be concluded that people use credit cards for shopping so that the use of money is reduced when making purchases (M decreases against P x Y) and velocity will increase.

The Effect of E-Money Transaction Value on Accelerating Money Turnover

Based on the results of the t test, it is known that the E-money variable does not have a significant negative effect on the velocity of money turnover. The results of the study show that the tcount > ttable is -6.130> 2.201 with a significant value of 0.001 <0.05. This result states that if there is an increase in the value of E-money transactions, it will not affect the velocity of money turnover. The use of E-Money in Indonesia is experiencing a positive trend, but it does not rule out the possibility that there are still many people who have not utilized this Electronic Money-based non-cash payment tool, and the use of electronic money is also still on a small transaction scale (Anggraini & Agustin, 2022). In the digital era, E-money-based payment methods are a new payment option that is efficient and flexible and without direct contact. In addition, payments using E-money are relatively inexpensive as they require minimal equipment and setup. In 2022, Indonesia is also expanding its network of e-money usage overseas. In 2022, the use of E-money will increase because the use of e-money is increasingly widespread in the international arena.

CONCLUSION

Based on the results of the research analysis, it can be concluded that cashless transactions, which consist of ATM/Debit cards, credit cards, and E-money, simultaneously have an influence on the velocity of money velocity in Indonesia in the period 2009-2023. However, each payment instrument has a different influence on the velocity of money.

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The F-test results show that together, the three independent variables affect the velocity of money. While the t-test shows that ATM/Debit cards and E-money have a significant negative effect on the velocity of money, while credit cards have a significant positive effect.

Effect of ATM/Debit Card Transaction Value on Velocity of Money The t-test results show that ATM/Debit card transactions negatively affect the velocity of money. This is due to the dominance of cash transactions conducted through ATMs, where people withdraw more money in physical form rather than using it for direct shopping. As a result, the amount of cash in circulation increases (M increases), but is not accompanied by a significant increase in GDP (P × Y), so the velocity of money decreases.

Effect of Credit Card Transaction Value on the Velocity of Money Unlike ATM/Debit cards, credit card transactions have a positive influence on the velocity of money. The t-test results show that the higher the value of credit card transactions, the faster the velocity of money. This is because the majority of credit card transactions are used for shopping, not cash withdrawals, so money circulates faster in the economic system. Thus, the amount of money used for transactions is more efficient than the cash-based payment system.

Effect of E-Money Transaction Value on the Velocity of Money Turnover Transactions using E-money show a negative influence on the velocity of money. Although the value of E-money transactions has increased, many users often top-up their balance rather than spend it directly, and some even withdraw the balance back into cash. In addition, the use of E-money in Indonesia is still limited to small transactions, so it has not been able to significantly increase the velocity of money. However, the trend of E-money usage continues to increase, especially with the expansion of digital payment systems to the international level.

Overall, payment system digitization does have an effect on money flows in Indonesia, but the effect varies depending on the type of payment instrument used. The results of this study provide insights for regulators and financial industry players in designing policies that can encourage more effective use of non-cash transactions to improve the efficiency of the national financial system.

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