Jurma : Jurnal Program Mahasiswa Kreatif
Universitas Ibn Khaldun Bogor, Indonesia
Vol. 6, No. 2, Desember 2022, pp. 289~266
ISSN: 2615-8019, DOI: 10.32832/pkm
http://pkm.uika-bogor.ac.id/index.php/pkm-p

The Effect of Cashless Payment and the Amount of the Money Circulation on the Inflation Rate in Indonesia for the Period of 2018-2021

Dwi Yanti Sahriana [1], Muhammad Yafiz [2], Khairina Tambunan [3]
Universitas Islam Negeri Sumatera Utara

Article Info

Article history:

Received September 2, 2022
Revised October 4, 2022
Accepted November 11, 2022

Keywords:

Cashless Payment
Money Supply
Inflation

ABSTRACT

This study aims to determine the effect of cashless payments and the money supply on the inflation rate in Indonesia in the period 2018-2021. The independent variables used are cashless payment and the money supply. While the dependent variable used in this study is the inflation rate. The research data used is secondary data, namely the number of cashless payment transactions and the inflation rate whose data source comes from the official website of Bank Indonesia (BI) and the money supply whose data source comes from the official website of the Central Statistics Agency (BPS). This research data consists of 48 data in which the data used is monthly data. The research method used in this research is quantitative with a descriptive approach. The analytical technique used in this research is multiple linear regression analysis using SPSS Version 22.00 analysis tool. The results obtained in this study are simultaneously independent variables in the form of cashless payments and the money supply has an effect on the dependent variable, namely the inflation rate in Indonesia in the period 2018-2021. While partially, the independent variable in the form of cashless payments affects the inflation rate in Indonesia in the period 2018-2021 and the independent variable in the form of the money supply also affects the inflation rate in Indonesia in the period 2018-2021.

Corresponding Author:

Dwi Yanti Sahriana
Universitas Islam Negeri Sumatera Utara
Email: dwiyanti700@gmail.com

INTRODUCTION

In modern economics, inflation is a scourge because inflation is one of the main threats that can continue to damage or possibly destroy economic growth if it cannot be controlled properly. Inflation is a general trend of increasing price levels in an economy that occurs continuously (Priyono, 2016).

A high price increase will be a burden for many parties. The purchasing power of a currency will decrease and decrease in value with the presence of inflation. An unstable inflation rate can also have a negative impact that is not conducive to the economy of a country as a whole. Because of the negative impact caused by inflation, every country will always try to control the inflation rate at a stable level (Suseno, 2009).

Since March 2020, the COVID-19 pandemic that has hit Indonesia has had a wide impact on the economy. BPS (Central Statistics Agency) stated that economic growth in Indonesia since the 2nd quarter of 2020 has decreased for a full year. The inflation rate during the pandemic was also relatively stable and low, even though at the beginning of the pandemic consumers had expectations that high inflation would occur.

During a pandemic, economic problems that occur due to restrictions on community mobility are carried out to reduce disease transmission. These restrictions result in low community productivity which causes workers' income to decline and restrictions on community mobility are suspected to be the cause of the low inflation rate (Yana Hendriyana, 2021).

To maintain economic stability, the government can carry out various policies. The policies are fiscal policy and monetary policy, the objectives of which are to achieve an inflation rate and maintain price level stability. According to Bank Indonesia, controlling inflation can be done by optimizing the rapid developments in the era of finance and the digital economy (Judy Watulingas, et al, 2016).

The presence of the digital economy is marked by the increasingly widespread development of trade or business transactions that use digital media as a tool for economic activity, communication, and collaboration between companies or individuals (Dewi Sartika Nasution, 2019). In the financial and banking sector, a financial innovation emerged in the payment system. The development of technology has made a change in the need in society for a means of payment that can meet the speed, accuracy, and security of every transaction.

Payment instruments continue to develop and undergo several changes in form, starting from the metal form, and conventional paper money, until now payment instruments have evolved in the form of data that can be placed in a container or also called electronic payment. Technological advances in this payment system can shift the role of cash as a means of payment.

Bank Indonesia explained that the cash payment instrument was in the form of the Rupiah, which is the currency prevailing in Indonesia. Meanwhile, non-cash payment instruments (cashless payments) can be in the form of checks, debit notes, bilyet giro, and credit notes, as well as non-script instruments, such as ATM cards, debit cards, credit cards and e-money which is most familiar to the public. in transactions (Pitriani Ritonga, 2018).

The widespread use of cashless payments can reduce the use of money issued directly by Bank Indonesia as the Central Bank and will affect the implementation of Bank Indonesia in controlling monetary policy. The monetary authority estimates that the use of cashless payments will slow down the money supply. That is, if more and more uses of non-cash payments are made, the amount of money in circulation will decrease (Meilinda Nur Rasyida, et al, 2019).

The amount of money in circulation in general is the total amount of money in the hands of the public (M. Natsir, 2009). An excessive increase in the amount of money in circulation can increase prices beyond the expected level so that in the long term it can disrupt economic growth in a country and vice versa. If economic weakness persists, the overall prosperity of the people in the country will decline. This is the background of the Central Bank to make efforts to control the amount of money circulating in its economy (Perry Wajiryo, et al, 2003).

In the economy of a country, there is a direct relationship between the money supply and changes in the price level. For example, if the money supply in a country increases, the price level will also increase, which causes the value of money to decrease. The theory of money demand or better known as the quantity theory of money put forward by Irving Fisher explains that there is a direct relationship between the growth in the money supply and the general increase in prices (inflation) (M. Natsir, 2012).

Table 1. Data on the Number of E-Money Transactions, Amount of Money Supply, and Inflation Rate 2018-2021

Tahun	*Cashless Payment*	Amount of Money Supply (M2)	Inflation Rate
2018	47.198.616,11	66.220.039,60	3,19%
2019	145.165.468,60	70.826.470,00	3,02%
2020	204.909.170,00	78.244.592,70	2,03%
2021	305.435.828,53	86.113.541,38	1.56%
2021	305.435.828,53	86.113.541,38	1.56%

RESEARCH METHODS

Research Approach

This research belongs to the type of quantitative research with a descriptive approach. Quantitative research is one type of research whose specifications are planned, systematic, and structured from the beginning to the making of the research design (Sandu Siyoto, 2015). Then the descriptive research method is a research method carried out by someone to describe the nature of something that was taking place at the time the research was conducted and to examine the exact causes of a certain symptom or condition (Ma'ruf Abdullah, 2015).

ISSN: 2615-8019

Data Types and Sources

In this study, researchers used secondary data types. Secondary data is data collected and obtained by researchers from various existing sources (researchers as secondhand). Secondary data can be obtained from various sources that are already available and can be in the form of notes, evidence, magazines, books, official websites, journals, articles that have been arranged in archives, historical reports, etc. In this study, researchers used data taken from the official website of Bank Indonesia (BI), namely www.bi.go.id, and the official website of the Central Statistics Agency (BPS), namely www.bps.go.id.

Population and Sample

In this study, the sample selection method used is non-probability sampling with a saturated sampling technique, namely a sampling technique that does not provide the same opportunity/opportunity for each member or element of the population to be selected as a sample (Hardani, et al., 2020). The population and sample used in this study are the overall time series data from the amount of money in circulation, cashless payment (e-money) instruments, and inflation in 2018-2021 with a total sample of 48 samples.

Data analysis method

The data analysis method used is multiple linear regression, which is an equation model that explains the relationship of one dependent or independent variable (Y) with two or more independent or dependent variables (X_1, X_2,..., X_n) which is the purpose of the linear regression test. This multiplex is to predict the value of the independent variable (Y) if the values of the dependent variable (X_1, X_2,..., X_n) are known and also to know how the direction of the relationship between the independent variable and the dependent variables is. The multiple linear regression equation can mathematically be expressed by the following equation:

$$\mathbf{Y = a + } \boldsymbol{B_1X_1 + B_2X_2 + e}$$

Y : Inflation
a : Constant
B_1 and B_2 : Regression coefficient to be estimated
X_1 : Cashless payment
X_2 : The money supply
e : Error term

RESULTS AND DISCUSSION

The data analysis model uses multiple linear regression models which are processed through the SPSS version 22.00 program with the final results obtained from the study as follows:

Table 2. Descriptive Statistics Table

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Cashless Payment	48	3352893.65	2213515953.00	480054549.4415	782428829.71151
Amount of Money Supply	48	5351650.33	7868233.46	6280763.3833	680339.37645
Inflation	48	1.32	3.49	2.4348	.77014

Based on the results of data from SPSS regarding the Effect of Cashless Payment and the Money Supply on the Inflation Rate, the cashless payment variable (X1) has an average value (mean) of 480054549.4415, a maximum value of 2213515953.00, and a minimum value of 3352893.65. Meanwhile, the money supply variable has an average value (mean) of 6280763.3833, a maximum value of 7868233.46, and a minimum value of 5351650.33. And the inflation rate variable has an average value (mean) of 2.4348, a maximum value of 3.49, and a minimum value of 1.32 with a total sample of 48 samples.

Normality test

Table 3. Normality Test Table

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		48
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.41230115
Most Extreme Differences	Absolute	.050
	Positive	.050
	Negative	-.048
Test Statistic		.050
Asymp. Sig. (2-tailed)		.200[c,d]

In the One-Sample Kolmogorov-Smirnov Test table, it can be seen that the Asymp value. Sig is 0.200 which is 0.200 > 0.05. So it can be concluded that the research data used in this study were normally distributed.

Autocorrelation Test

Table 4. Autocorrelation Test Table

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. error in the Estimate	Durbin-Watson
1	.845[a]	.713	.701	.42136	.448

In the autocorrelation test table above, it can be seen that the Durbin-Watson value is 0.448, it can be concluded that the number 0.448 lies between -2 and +2, which means that in this study there was neither a positive autocorrelation nor a negative autocorrelation.

Multicollinearity Test

Table 5. Multicollinearity Test Table

Coefficients[a]

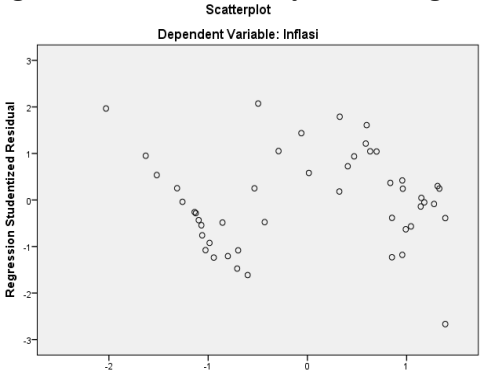
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.057	.582		13.834	.000		
	Cashless Payment	-1.778E-10	.000	-.181	-2.183	.034	.930	1.075
	Amount of Money Supply	-8.815E-7	.000	-.779	-9.411	.000	.930	1.075

In the multicollinearity test table above, it can be seen that the two dependent variables have a VIF value < 10 and a Tolerance value > 0.10, it can be concluded that the two dependent variables, namely cashless payments and the money supply do not occur multicollinearity.

ISSN: 2615-8019

Uji Heterokedastisitas

Figure 1. Heteroscedasticity Test Histogram



In the histogram image above, it can be seen that there are points that spread randomly and are not in the same place. So it can be concluded that there is no heteroscedasticity.

Partial Test (T-Test)

Table 6. Partial Test Table (T-Test)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.057	.582		13.834	.000		
	Cashless Payment	-1.778E-10	.000	-.181	-2.183	.034	.930	1.075
	Amount of Money Supply	-8.815E-7	.000	-.779	-9.411	.000	.930	1.075

In the partial test table above, it can be concluded that in the cashless payment variable, the calculated T value is -2.183. While the value of T table is 1.677. So it can be obtained that T count < T table or -2.183 < 1.677 and the significance value < significance level or 0.034 < 0.05. Therefore, it can be concluded that the cashless payment variable can significantly affect the inflation rate with the conclusion that H0 is rejected and Ha is accepted. While on the variable of the money supply, the calculated T value is -9.411. While the value of T table is 1.677. So it can be obtained that T count < T table value or -9.411 < 1.677 and significance value < significance level value or 0.000 < 0.05. Therefore, it can be concluded that the money supply variable can significantly affect the inflation rate with the conclusion that H0 is rejected and Ha is accepted.

Simultaneous Test (F Test)

Table 7. Simultaneous Test Table (F Test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.887	2	9.943	56.004	.000[b]
	Residual	7.990	45	.178		
	Total	27.876	47			

It can be seen in the table above, the calculated F value is 56.004 with a significance value of 0.000. The value of F table is 3.204. So that it can be concluded that F count > F table or 56,004 > 3,204 and also significance value < significance level or 0.000 < 0.05, it can be concluded that together the independent variables, namely cashless payment and the money supply have a significant effect on the dependent variable. namely the inflation rate with the conclusion H_0 is rejected and Ha is accepted.

Coefficient of Determination (R-Square)

Table 8. Coefficient of Determination Table

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.845[a]	.713	.701	.42136	.448

It can be seen in the coefficient of determination table above, the R2 value is 0.713, which shows that all independent variables, namely cashless payments and the money supply can simultaneously explain the dependent variable of 71.3%. The other 28.7% can be explained by other variables that are not found in this research model.

CONCLUSION

Based on the results of research that has been carried out, it produced a research result the form of based on the results of data processing in the Partial Test (T-test) on the cashless payment variable resulting in the conclusion that H0 is rejected and Ha is accepted because the result of significance is smaller when compared to the significant value of 0.034 < 0, 05. This means that the cashless payment instrument can significantly affect the inflation rate in Indonesia in 2018-2021. And based on the partial test (T-test) on the money supply variable, it can be concluded that H0 is rejected and Ha is accepted because the results of the significance are smaller than the significance value of 0.000 <0.05. This states that the money supply variable can significantly affect the inflation rate in Indonesia in 2018-2021. Meanwhile, the results of the data processing in the Simultaneous Test (F test) resulted in a research result in the form of simultaneously H0 being rejected and Ha is accepted because the results of the significance were greater than the significance value, namely 0.000 < 0.05. This means that together the independent variables, namely cashless payments and the money supply have a significant effect on the dependent variable, namely the inflation rate in Indonesia in the period 2018-2021.

REFERENCES

[1]. Abdullah, Ma'ruf. 2015. Metodologi Penelitian Kuantitatif. Yogyakarta : Aswaja Pressido
[2]. Hardani, et.al. 2020. Metode Penelitian Kuantitatif dan Kualitatif. Yogyakarta : CV. Pustaka Ilmu group
[3]. Hendriana, Yana. 2021. Inflasi dan Mobilitas Masyarakat di Masa Pandemi Covid-19. Jurnal Akuntansi & Ekonomika. 11(2)
[4]. Nasution, Dewi Sartika. 2019. Ekonomi Digital. Mataram : Fakultas Ekonomi dan Bisnis Islam UIN Mataram
[5]. Natsir, M.. 2009. Ekonomi Moneter. Malang : Tunggal Mandiri
[6]. _____. 2012. Ekonomi Moneter. Semarang : Polines Semarang
[7]. Priyono dan Teddy Chandra. 2016. Esensi Ekonomi Makro. Sidoarjo : Zifatama Publisher
[8]. Rasyida, Meilinda Nur, dan Yuliana, Indah. 2019. Pengaruh Transaksi Non Tunai Terhadap Jumlah Uang Beredar di Indonesia Tahun 2015-2018 dengan Inflasi Sebagai Variabel Moderasi. Ekspansi : Jurnal Ekonomi, Keuangan, Perbankan, dan Akuntansi. 11(2)
[9]. Ritonga, Pitriani. 2018. Pengaruh Pembyaran Non Tunai Terhadap Pertumbuhan Ekonomi di Indonesia. Medan : Universitas Sumatera Utara
[10]. Siyoto, Sandu, dan Sodik, M. Ali. 2015. Dasar Metodologi Penelitian. Yogyakarta : Literasi Media Publishing
[11]. Suseno, dan Aisyah, Siti 2009. Inflasi. Jakarta : Seri Kebanksentralan No.22
[12]. Wajiryo, Perry, dan Solikin. 2003. Kebijakan Moneter di Indonesia. Jakarta : Bank Indonesia Seri Kebanksentralan No.6
[13]. Watulingas, Judy, et. al. 2016. Pengaruh Aspek Moneter dan Fiskal Terhadap Inflasi di Indonesia Periode Tahun 2000-2014. Jurnal Berkala Ilmiah Efisiensi. 6 (1)