THE INFLUENCE OF ELECTRONIC PAYMENT SYSTEM ON ECONOMIC GROWTH AND INFLATION AS A MODERATION VARIABLE IN INDONESIA 2019-2023

Ery Rahmawati[1]
Universitas Nasional, Jakarta Selatan, Indonesia
erahmawati21@gmail.com

Hasanudin[2]
Universitas Nasional, Jakarta Selatan, Indonesia
hasanudinsadikin910@gmail.com

Abstract

The purpose of this study was to analyze and obtain empirical evidence of the effect of the Electronic Payment System on Economic Growth and Inflation as a Moderating Variable in Indonesia in 2019-2023. The research was conducted in 34 provinces using a purposive sampling method in selecting samples for the 2019-2023 period. The data analysis method used is the panel data regression method using Moderate Regression Analysis (MRA) on Stata 17.0 application software. The results of this study state that the volume of electronic money has a significant positive direct effect on economic growth in provinces in Indonesia for the period 2019-2023. The volume of debit cards has a significant positive direct effect on economic growth in provinces in Indonesia for the period 2019-2023. The variable volume of credit cards has a significant positive direct effect on economic growth in provinces in Indonesia for the period 2019-2023. The inflation variable has a positive and insignificant effect in moderating the volume of electronic money on economic growth in provinces in Indonesia for the period 2019-2023. The inflation variable has a significant negative effect in moderating the volume of debit cards on economic growth in provinces in Indonesia for the period 2019-2023. The inflation variable has a positive and insignificant effect in moderating the volume of credit cards on economic growth in provinces in Indonesia for the period 2019-2023.

Keywords: Electronic Payment Systems, Inflation, Economy Growth, Electronic Money, Debit Card, Credit Card

INTRODUCTION

Economic growth has always been a main topic in the field of economics. Economic growth is a long-term problem that becomes a benchmark for measuring economic progress in a region or a country. Every country tries to advance its economy with various factors that influence economic growth. Previously, the Indonesian economy contracted and weakened due to the Covid-19 pandemic throughout 2020-2021. The welfare of society will ultimately depend on the level and rate of economic growth. Economic growth will increase the amount of social product, which will lead to an increase in the welfare of the population. The economy will be able to meet existing needs better. Economic growth is the reason why a country's economy is healthy, and economic growth is a condition for the progress and prosperity of a nation (Hasanudin, 2022).

The importance of economic growth must also be taken into account. The rate of significant economic growth varies depending on the size of the country in real terms. Currently, the main task of our country in the modernization and diversification of the economy is to apply new techniques and technologies to production, introduce new methods and forms of organization and management of production (Masfiatun et al., 2023). The economic development of a country can be measured through economic growth, which indicates an increase in the production of goods and services in an economic area over a certain period of time. This output is measured in the form of added value created by economic sectors in the region, which in total is known as Gross Domestic Product (GDP).

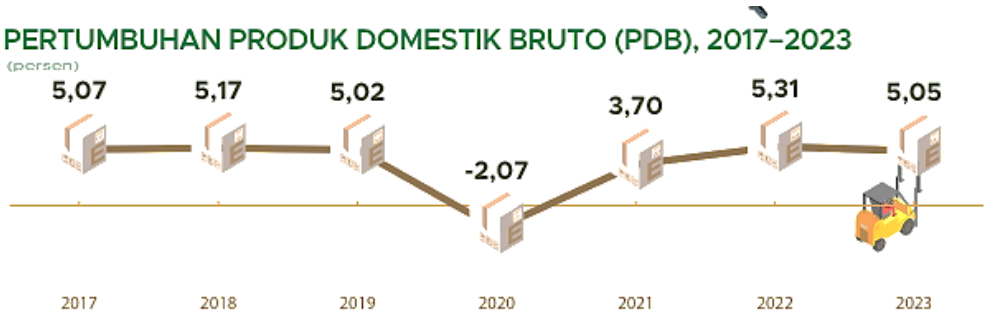

Figure 1
GDP Growth Rate 2017-2023
Source: Bps.go.id

Indonesia has set an economic growth target of 5.3% for 2023, but it has only achieved 5.05%. This growth is slightly lower than the growth in 2022 which reached 5.31%.

Indonesia faces several global economic challenges, such as potential economic weakness, increasing geopolitical tensions, inflation risks and climate change. These factors can influence national economic growth. Insufficient economic growth can affect macroeconomic stability. This instability can put pressure on the exchange rate, inflation and interest rates, which in turn affects the economy as a whole (Badan Pusat Statistik, 2023).

If economic growth does not reach the target, this can affect various aspects of people's lives and economic stability in general. Therefore, it is important for the government and stakeholders to immediately identify and overcome the factors that cause it and take strategic steps to encourage higher and sustainable economic growth.

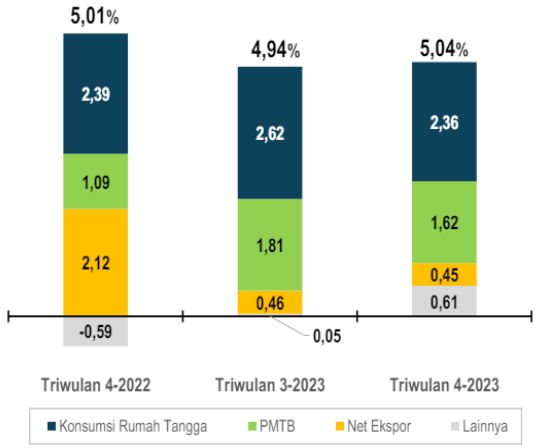

Figure 2
Sources of Indonesia's Economic Growth Quarter 4-2023
Source: Bps.go.id

One of the factors of Indonesia's economic growth is consumption. Indonesia's economic growth reached 5.04 percent (year-on-year) in the fourth quarter of 2023, slightly exceeding the government's estimate of 5 percent. Increased household consumption and investment are the main drivers of growth. Household consumption, the largest component of Indonesia's gross domestic product (GDP), will grow by 4.82 percent in 2023. The increase in the minimum wage and government social assistance are the main factors behind the increase in household consumption. In the midst of global economic challenges and high inflation, the increase in household consumption shows that the purchasing power of Indonesian people is still maintained. Economic growth is an increase in national income in a certain period, for example in the last year, economic growth shows an increase in

production capacity and services over a certain period of time. Economic growth is one of the most important indicators in analyzing economic development that occurs in a country (Rapanna & Sukarno, 2017).

Like several other countries, both industrial and non-industrial, one of the main macroeconomic policies in Indonesia is to encourage economic growth and keep inflation at a low level. Monetary authorities seek to achieve the government's overall inflation objectives through effective monetary management, which includes setting medium-term targets and operational targets that are in line with assumed targets for GDP growth, inflation rate, and balance of payments. However, high inflation is known to have many detrimental impacts: inflation imposes welfare costs on society; hinders efficient resource allocation by obscuring the signaling role of relative price changes; inhibits savings and investment by creating uncertainty about future prices, and more importantly, reduces long-term economic growth so that inflation becomes a public concern as the main goal of monetary policy, (Bawa et al., 2012).

Fluctuating macroeconomic conditions in a country have a significant impact. One of them is the possibility of inflation, which causes a decrease in purchasing power. In a global economy, currency values are never stable. On the other hand, prices of goods and services tend to rise. This reduces the purchasing power of money, which causes inflation. When inflation rises, the economy suffers (Nurwulandari, 2020). The economic influence of globalization has been followed by economic liberalization, where investors can invest in global markets. Simultaneous fluctuations in the Rupiah exchange rate, interest rates, inflation, and currency exchange rates have had a significant impact on business entities in Indonesia during the economic crisis (Setyawati & Suroso, 2022). Inflation is an economic event that occurs frequently, even if we don't want it to. Inflation occurs when the general price level rises and this price increase can have a negative impact on productive activities because when production costs rise, investment activities shift to activities that do not increase national output, productive investment decreases and economic activity falls (Mahendra, 2019)

Inflation occurs when there is an increase in the prices of goods and services. This price increase is considered inflation if it occurs continuously and is above a specified

benchmark. For example, an increase in the money supply can lead to higher prices over time (Anochiwa LI & Maduka, 2015). Inflation which over time is directed towards deflation. Deflation is characterized by a general and sustained rate of decline in prices. If inflation continues until GDP continues to increase, then the economy will not actually grow. Therefore, inflation must be increased in GDP to get real GDP (Rill) (Hasanudin, 2021).

The welfare changes produced by digital products are conceptually relevant to understanding consumer inflation as measured by the household consumption deflator. However, to understand the many changes in this regard, additional versions are needed and some important objectives require a conservative approach to treating subjective increases in satisfaction as there are new strategies that may have many approaches to economic change through digitalization (Reinsdorf & Schreyer, 2019). Digitalization of the national economy plays an important role in integrating the economies of developed countries. In the new economy, digital networks and communications infrastructure provide a global platform that makes it possible to develop corporate and organizational development strategies. In addition, it enables collaboration, economic communication, and information exchange as well as efficiency(Jurayevich & Bulturbayevich, 2020).

Especially during the COVID-19 pandemic, more and more people are turning to their gadgets and computers as survival tools to replace face-to-face activities. These changes in society have an impact on economic development by accelerating its digital transformation. Every country is looking for ways to create gradual and sustainable growth. The growth of gross domestic product (GDP) per capita is very dependent on the country's technological progress. More innovative and high-tech countries often manage to be more competitive and have better economic performance.

One of Indonesia's successes in realizing the potential for digital economic growth is digital payments. With digital transformation, old habits die. The global economy has adapted and digitalized. The digital economy offers flexibility for business transactions that no longer have to be done in person (Aprilia et al., 2021). The digital economy is a growing phenomenon that is important for predicting economic growth. An important factor that drives economic growth is the development of technological innovation. With the advent of

technology, affordability has increased, allowing the economy to grow rapidly. With the digital economy, changes in payment systems are also increasing (Masfiatun et al., 2023).

Along with increasingly rapid technological developments, payment systems are also experiencing major changes. One of these systems is a payment system using electronic cards or what is often called an electronic payment system. The development of this payment system is driven by the increasing number of volume transactions carried out by the public, increasing risks, complexity of transactions and developments in the technology itself. The cash payment system evolved from basic currency to demand currency, while the non-cash payment system evolved from written payment instruments (cheques, bank transfers, direct debits, etc.) to electronic payment instruments (electronic cards and Electronic Money). Technological advances in payment systems are replacing cash (cards) as the most efficient and cost-effective means of non-cash payment. This is where banks compete to innovate electronic payment systems, including debit cards/ATMs, credit cards, smart cards, electronic money, and others (Mahendra, 2019).

Electronic Money is a non-cash payment instrument issued based on the nominal value of money deposited in advance with the issuer's Electronic Money. The value of money contained in Electronic Money is stored electronically in a medium such as a server or chip, so it is not linked to customer savings deposits. With the development of Electronic Money, as has been explained, Bank Indonesia aims to create a cashless society where people switch to making transactions with Electronic Money (Gunarto et al., 2017).

Since its introduction in 2007, electronic money transactions have continued to increase and are used by the public. The use of electronic money transactions shows that society can accept the existence of electronic money and its use as a new transaction instrument in society. The ease of using e-money in transactions is one of the causes of the increase in the percentage of electronic money transactions. In addition, the use of electronic money for micro and retail payments is faster and more efficient compared to cash payments (Gusriyanti & Marna, 2022).

The era of digital payments began with the issuance of payment cards, for example, credit cards and debit cards which can be used as a means of non-cash payment transactions. More familiar payment cards to replace cash payments began in the 1980s. Credit and debit

cards are the most practical transaction payment media, especially for people who travel abroad. People like the ease with which transactions are made, which encourages banks to offer various special benefits and discounts for their users (Lathief & Nasution, 2020).

The non-cash payment system makes economic transactions easier, including financial transactions. Smooth financial transactions supported by a non-cash system encourage faster money circulation, thereby encouraging economic growth. An increase in nominal value and volume of non-cash payments are an indicator of Indonesia's economic development. An increase in non-cash payments results in reduced transaction costs, so the circulation of money becomes faster and has an impact on increasing output and economic growth (Pertiwi & Marna, 2023)

Credit cards, ATM/debit cards, and electronic money are the most commonly used non-cash payment tools. A debit card is an electronic payment instrument in the form of a card issued by a bank to finance customer consumer spending. Debit cards can be used by customers by first topping up their credit balance and then making payments at the ATM of the bank that issued the card (Achir & Kusumaningrum, 2021). Apart from debit cards, electronic payments can also be made with credit cards. A credit card is a card issued as a means of payment. This card can be used to pay for goods and services that the owner wants to pay for at a later date (Koparal & Çalik, 2015).

The function of this payment instrument is the same as cash, and although the source of money for the three payment instruments is different, the purpose of their use is the same: making purchases, sending money, paying various bills, and other purposes. This non-cash payment tool makes it very easy for people to carry out transactions, so the circulation of money becomes very fast (Marginingsih, 2021).

REVIEW OF LITERATURE

Economic Growth Theory

Classical Economic Growth Theory

This theory was developed by Adam Smith, David Ricardo, Malthus, and John Stuart Mill. According to this theory, economic growth is influenced by four factors, namely the population, the amount of capital goods, land and natural resources, and the technology used.

This theory focuses on the impact of population growth on economic growth. This theory assumes that land natural resources and technology do not change. The relationship between per capita income and population is called optimal population theory. According to this theory, population growth initially causes an increase in per capita income. However, if the population continues to grow, the law of diminishing returns (the law of diminishing returns) will affect the production function, i.e. marginal output will decrease, leading to a situation where per capita income is equal to marginal output (Syahputra, 2017).

Neo-Classical Economic Growth Theory

According to neoclassical growth theory, it is not societal demand that determines growth rates. On the contrary, according to this theory, economic growth depends on a reasonable increase in the factors of production and the rate of technological progress. This view is based on the assumptions that have become the basis for classical analysis, namely that the economy will remain at full employment and that the capacity of capital goods will be used in full from time to time. Therefore, according to neoclassical theory, the rate of economic growth depends on the growth of factors of production and the level of technological progress (Sukirno, 2006). The Solow-Swan model emphasizes the role of capital accumulation, labor, and technological progress in economic growth. They argue that in the long run, economic growth can only be achieved through technological progress (Solow, 1956).

Harrod-Domar Growth Theory

The Harrod-Domar growth theory is a direct development of John Maynard Keynes' macro growth theory. According to Harrod-Domar, every economy basically has to reserve or save a portion of national income to add or replace capital goods. To stimulate the process of economic growth, new investments are needed, which are net additions to the capital stock (Syahputra, 2017).

Schrumpeter's Growth Theory

Schumpeter's theory emphasizes the important role of entrepreneurs in economic growth. In this theory, it is explained that entrepreneurs are a group that continuously carries out updates or innovations in economic activities. These innovations include: introducing new goods, increasing the efficiency of goods production, expanding the goods market to

new markets, developing new sources of raw materials, and organizational changes to increase the efficiency of business activities.

In proposing his growth theory, Schumpeter began his analysis by assuming that the economy was not in a state of growth. However, this situation did not last long. When this situation occurred, a group of entrepreneurs realized the possibility of profitable innovation (Nurlina & Chaira, 2017).

Sollow-Swan Growth Theory

According to the Sollow-Swan theory, economic growth depends on the availability of factors of production (population, labor, and capital accumulation) and the level of technological progress. (Solow, 1956). found from his research that technological development plays a very dominant role in economic growth. Sollow's research results show that more than half (1.5%) of the United States' economic growth, which reached 2.75% per year between 1909 and 1949, was caused by technological developments, while the rest was caused by increased use of production factors (Nurlina & Chaira, 2017).

Economic Growth

According to (Solow, 1956) economic growth is an increase in a country's economic capacity to produce goods and services over time. This is measured by the increase in real Gross Domestic Product (GDP) per capita. According to (Lincolin, 1999),economic growth is defined as the growth of gross domestic product (GDP)/gross national product (GNP), regardless of whether the growth is higher or lower than the population growth rate, or whether there is a change in the economic structure or not.

Another definition of economic growth is an increase in national income over a certain period of time, for example over the past year, economic growth is an increase in production capacity and services over a certain period. In general, economic growth is defined as an increase in the economy's capacity to produce goods and services. Economic growth is one of the most important indicators in analyzing a country's economic development (Rapanna & Sukarno, 2017:7). So economic growth refers to increasing the long-term ability of a country to provide economic goods to its population. This capacity increase is the result of technological, institutional, and ideological developments or adaptation to the demands of existing conditions.

Economic Growth Indicators

The indicator used to calculate the level of economic growth is the growth rate of national income data, such as gross domestic product (GDP) or gross national product (GNP). In practice, GDP data is more often used than GNP data, because the scope of GDP calculations is limited to the country (nation) concerned so that the effectiveness of economic policies taken by the government to encourage national economic activities can be assessed (Sukirno, 2014)

The conventional measure of economic growth is usually the calculation of the percentage increase in Gross Domestic Product (GDP). GDP measures the total economic expenditure on various newly produced goods and services during a period or year, as well as the total income from the production of these goods and services, or more precisely, GDP is the market value of all goods and services produced in a country during a certain period. Growth is usually calculated in real terms to eliminate inflation in prices and services produced so that real GDP reflects changes in production (Nurlina & Chaira, 2017).

Payment system

Payment system according to (Listfield & Montes, 1994) a system that defines procedures, rules, standards, and instruments used to exchange financial value between two parties carrying out obligations. Although the goal is simple, payment systems evolved over the years.

A payment system is a system consisting of arrangements, contracts/agreements, operational structures, and technical mechanisms used to send, validate, and receive payment orders, and to fulfill payment obligations through the exchange of value between individuals, banks, and other institutions, both nationally and internationally. between countries (Sri & Ascarya, 2003).

According to (Cirasino & Garcia, 2009) a payment system is an infrastructure (consisting of institutions, instruments, rules, procedures, standards, and technical means) created to enable the transfer of monetary value between parties who fulfill mutual obligations. Its technical efficiency determines the efficiency of the use of transaction money in the economy and the risks associated with its use.

The role of money as a means of payment continues to grow, especially in the form of checks or demand deposits, which allow payments by transferring money from account balances between financial institutions, especially banks. Checks or demand deposits can be considered the first non-cash means of payment. Along with technological developments, various electronic payment systems or non-cash payment tools have emerged in various forms, including telephone banking, mobile banking, ATM/debit cards, credit cards, smart cards, and so on. Until now, all electronic payment tools are still connected directly to the accounts of bank customers who use them (Mahendra, 2019).

RESEARCH METHOD

Research Framework

The method used in this research is quantitative research. Quantitative research focuses on objective phenomena and is investigated quantitatively. Maximizing objectivity in quantitative research design is achieved through the use of numbers, statistical processing, structure, and controlled experiments. Research methods from non-experimental quantitative research include descriptive, survey, ex post facto, comparative, and correlative methods. This method was chosen to describe systematic, actual, and accurate comparisons regarding the influence volume of Electronic Money, volume of Debit Card, and volume of Credit Cards on economic growth (GDP) through inflation as a variable moderate in Indonesia in 2019-2023. Where the volume of Electronic Money, volume of Debit Card, and volume of Credit Card is variable free (X), economic growth (GDP) is variable bound (Y), and inflation is variable moderation (Z). This research examines the influence electronic payment system on economic growth in Indonesia for the 2019-2023 period.

The research framework can be depicted in Figure 3 below:

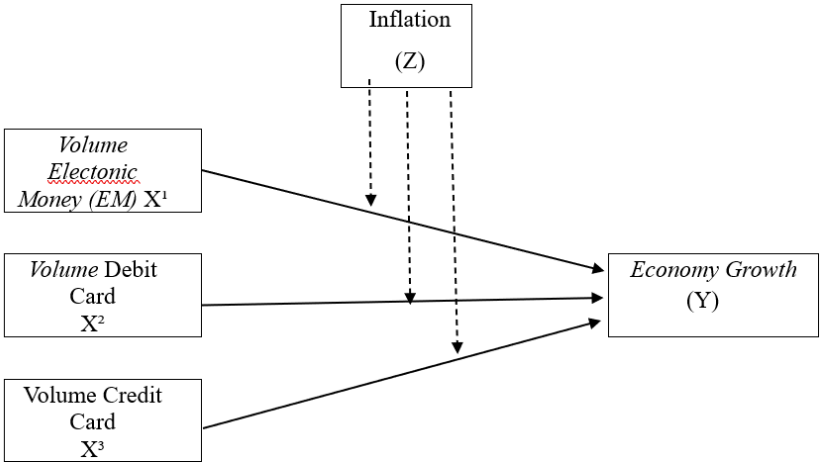

Figure 3
Research Framework

Population and Sample

Population is a generalized area consisting of objects or subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn. The population in this study is data collected based on data on the value of electronic money transactions, debit cards, credit cards, Economy Growth (GDP) based on constant prices for the 2010 series, and inflation data in Indonesia from 2019-2023 consisting of 34 provinces in Indonesia. The sample is part of the number and characteristics of the population (Sugiyono, 2017). The method used in sampling this research is purposive sampling namely the technique of determining samples with certain considerations or criteria. (Sugiyono, 2017) explains that sampling is done purposive is the selection of samples based on certain criteria or considerations.

The criteria that can be used as samples in research are:

1. Provinces in Indonesia and present all data consistently in annual economic reports for the 2019-2023 period.
2. Provinces that have usage reports electronic payment system of BPS website.
3. Provinces that have a complete inflation report from 2019-2023 on the BPS website

Table 1
Purposive Sampling

No.	Criteria	Number of Provinces
1	Provinces in Indonesia and present all data consistently in annual economic reports for the 2019-2023 period	34 Provinces
2	Provinces that do not have usage reports or electronic payment system	1 Province
3	Provinces that do not have complete inflation reports	3 Provinces
	Total Research Sample	30 Provinces

Data Analysis Method

The analysis technique used in this research is multiple linear regression analysis. This technique is used to determine the extent of the relationship between each independent variable (independent), mediating variables (moderation), and the dependent variable (dependent). The data analysis method in this research uses panel data and regression analysis methods Moderation Regression Analysis (MRA) using the STATA 17.0 program for Windows and processed to obtain descriptive information, knowing the strength and significance of a relationship between variables independent and dependent, as well as testing the sign, magnitude, and significance of the relationship between variables.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Descriptive analysis is used to analyze the collected data as it is, without drawing general conclusions. By using descriptive statistics to analyze interval, minimum, maximum, sum, average, and standard deviation values, as follows:

Table 2
Descriptive Analysis Results

Variable	Obs	Mean	Std. Dev	Min	Max
HE COMES	150	38.8886	181.0425	0.08	1138.29
VDC	150	234.8399	438.6554	6.921846	2670.704
VCC	150	10.80625	33.76915	0.042212	230.1069
INF	150	2.9742	1.727017	0.14	7.43
PDB	150	3.2556	4.303038	0.25	17.55

Source: Stata 17 output results (2024).

Table 2 shows that variable economy growth (GDP) has a minimum value of 0.25 owned by Gorontalo province and a maximum value of 17.55 owned by DKI Jakarta province with an average value of 3.2556 and a standard deviation of 4.303038. This means that during 2019 – 2023, economic growth (GDP) in Indonesia studied has an average value of 3.2556. Variable volume electronic money has a minimum value of 0.08 owned by the province of West Sulawesi and a maximum value of 1138.29 owned by the province of DKI Jakarta with an average value of 38.8886 and a standard deviation of 181.0425. This means that during 2019 – 2023, the volume of electronic money in Indonesia studied had an average value of 38.8886.

Variable volume debit card has a minimum value of 6.921846 owned by the province of Gorontalo and a maximum value of 2670.704 owned by the province of DKI Jakarta with an average value of 234.8399 and a standard deviation of 438.6554. This means that during 2019 – 2023, volume debit cards in Indonesia studied had an average value of 234.8399. Variable volume credit card has a minimum value of 0.042212 owned by the province of West Sulawesi and a maximum value of 2670.704 owned by the province of DKI Jakarta with an average value of 10.80625 and a standard deviation of 33.76915. This means that during 2019 – 2023, the volume of credit cards in Indonesia studied had an average value of 10.80625. The inflation variable has a minimum value of 0.14 for the province of Central Sulawesi and a maximum value of 7.43 for the province of West Sumatra with an average value of 2.9876 and a standard deviation of 1.721502. This means that during 2019 – 2023, the volume of credit cards in Indonesia studied had an average value of 2.9876.

Regression Model Selection Results

Before testing regression methods for panel data, we must test which method is most appropriate among them common effect model (CEM), fixed effect model (FEM), and random effect model (REM) using the Chow test, Hausman test, and Lagrange multiplier (LM) test.

Test Chow

The following are the test results of chow in this research:

Table 3
Chow Test Results

Effect Test	Prob
F (29, 116)	488.92
Prob > F	0.0000

Source: Stata 17 output results (2024).

Based on the test results Chow in Table 3 the probability value of F is 0.0023, where this value is ≤ 0.05 which means H0 is rejected. Therefore, the method chosen is FEM.

Hausman test

The following are the test results of chow in this research:

Table 4
Hausman Test Results

Effect Test	Prob
chi2 (3)	26.05
Prob > F	0.0000

Source: Stata 17 output results (2024).

Based on the test results Hausman in Table 4 the probability value of F is 0.0000, where the value is ≤ 0.05 which means H0 is rejected. Therefore, the method chosen is FEM. Because after testing the model with tests Hausman, model fixed-effects show better performance, then there is no need to carry out further testing, so it can be concluded that the best regression model for panel data used in this analysis is the fixed-effects.

Classical Assumption Test

The data quality test used in this research is the classic assumption test. The classic assumption tests used in panel data regression are the heteroscedasticity test and the multicollinearity test (Basuki & Prawoto, 2016).

Hypothesis Test

Panel Data Regression Analysis

Below are the results of data estimation using robust standard error.

Table 5
Fixed Effect Model

Variable	Coeff.	Z	P>[Z]
VEM	0.0051407	2.31	0.021
VDC	0.0027477	5.04	0.000

VCC	0.0319809	2.72	0.007
INF	0.0222701	1.40	0.162
VEMINF	0.0005384	1.13	0.258
VDCINF	-0.0002474	-2.42	0.015
VCCINF	0.0000841	0.02	0.980
_cons	2,510,628	6.72	0.000

Source: Stata 17 output results (2024).

Based on Table 4.5, it can be seen that the equation for panel data regression in this study is as follows:

GDP = a + ß1VEM + ß2VDC + ß3VCC+ ß4INF + ß5VEMINF + ß6VDCINF + ß7VCCINF + ße

GDP = a + 0.0051407 VEM + 0.0027477 VDC + 0.0319809 VCC+ 0.0222701 INF + 0.0005384 VEMINF - 0.0002474 VDCINF + 0.0000841 VCCINF + ße

Coefficient of Determination

The coefficient of determination test (R^2) is used to determine the extent to which the independent variables interpret and influence the independent variables.

Table 6
1of Determination Coefficient

R-Square	
Whitin	**0.0800**
Between	**0.8035**
Overall	**0.7968**

Source: Stata 17 output results (2024).

The results in Table 6 are regression using the Fixed Effect Model with Robust Standard Error, with a coefficient of determination (R^2) of 0.7968. This shows that statistically 79.68% of the GDP variable is influenced by the independent variables in the study, namely the volume of electronic money, the volume of debit cards, and the volume of credit cards.

T-Test (Partial) and Moderate Regression Analysis (MRA)

The results of the t-test and moderation test for interaction are shown in the table below:

Table 7
t-Statistic Test and Regression Test with Moderation Variables

Variable	Coeff.	Std. Err	Z	P>[Z]
VEM	0.0051407	0.0022273	2.31	0.021
VDC	0.0027477	0.0005456	5.04	0.000
VCC	0.0319809	0.0117758	2.72	0.007
INF	0.0222701	0.0159258	1.40	0.162
VEMINF	0.0005384	0.0004762	1.13	0.258
VDCINF	-0.0002474	0.000102	-2.42	0.015
VCCINF	0.0000841	0.0034095	0.02	0.980
_cons	2,510,628	0.3736258	6.72	0.000

Source: Stata 17 output results (2024).

1) VEM is an electronic money volume variable with a coefficient value of 0.0051407 with a probability of 0.021 significant at an α value of 0.05 or 5%. So, it can be concluded that the volume of electronic money has a significant positive effect on GDP in every province in Indonesia.
2) VDC is a debit card volume variable that has a coefficient value of 0.0027477 with a probability of 0.000 with a significance level of α of 0.05 or 5%. So, it can be concluded that the debit card volume cards have a significant positive effect on GDP in every province in Indonesia.
3) VCC is a credit card volume variable that has a coefficient value of 0.0319809 with a probability of 0.007 with a significance level of α of 0.05 or 5%. So, it can be concluded that credit card volume has a significant positive effect on GDP in every province in Indonesia.
4) VEMINF is an interaction between inflation and electronic money volume that has a probability value of 0.258 which is greater than 0.05 and a coefficient value of 0.0005384, meaning that it positively does not significantly moderate the volume of electronic money against GDP. This positive coefficient value indicates that inflation slightly strengthens the relationship between the use of electronic money volume and GDP. However, its influence is very small because the coefficient value is close to zero.
5) VDCINF is an interaction between inflation and debit card volume that has a probability value of 0.015 which is greater than 0.05, meaning it has a significant effect on GDP and

a coefficient value of -0.0002474 which indicates a negative direction, meaning that inflation has a significant effect in weakening the relationship between debit card volume usage and economic growth, although its effect is small. When inflation increases, the impact of debit card usage on economic growth weakens.

6) VCCINF is an interaction between inflation and credit card volume which has a probability value of 0.980 which is smaller than 0.05, meaning it is not significant for GDP, and a coefficient value of 0.0000841 which shows a positive direction, meaning it positively does not significantly moderate credit card volume. to GDP. A positive value indicates that inflation slightly strengthens the relationship between credit card usage and GDP, but its effect is very small because the coefficient value is close to zero and is not statistically significant.

CONCLUSION

This research tests the effect volume of electronic money, the volume of debit cards, dan the volume of credit cards on economic growth (GDP) and inflation as moderating variables. This research method uses moderated regression analysis (MRA) using the STATA 17.0 application software to determine the influence or impact of the independent variables on the dependent variable. This research uses 30 provincial samples obtained through the method of purposive sampling for all provinces in Indonesia during the 2019-2023 observation period, with the criteria that the province has reports of transaction volume values and inflation values contained in the reports of Bank Indonesia and the Central Statistics Agency for 5 years during the research period.

The test results and discussion in the previous chapter resulted in the following conclusions:

1. The volume of electronic money has a significant positive direct influence on economic growth in provinces in Indonesia for the period 2019 – 2023. With wider access and ease of transactions, consumption and investment can increase, which ultimately drives economic growth.
2. Debit card volume has a significant positive direct influence on economic growth in provinces in Indonesia for the period 2019 – 2023. Debit cards provide direct access to

funds in savings or checking accounts, allowing consumers to make purchases and transactions more easily, which can increase consumption and economic activity.

3. Variable volume credit card has a significant positive direct influence on economic growth in provinces in Indonesia for the period 2019 – 2023. Credit cards provide fast access to credit, allowing consumers to make purchases even when they do not have sufficient cash.
4. Variable inflation could not moderate the volume of electronic money to economic growth in provinces in Indonesia for the period 2019 – 2023. Positive inflation is not strong enough to influence how the use of electronic money contributes to economic growth. This may indicate that the mechanisms linking electronic money to economic growth are independent of inflation or that the effects of inflation on consumption and investment are relatively small in this context.
5. Variable inflation was able to moderate the volume of debit cards to economic growth in provinces in Indonesia for the period 2019 – 2023. High or low inflation can affect the effectiveness of debit card use in driving economic growth. For example, high inflation may reduce consumers' purchasing power and affect how debit cards are used, while low inflation may increase purchasing power and increase the positive impact of debit cards.
6. Variable inflation could not moderate the volume of credit cards to economic growth in provinces in Indonesia for the period 2019 – 2023. The influence of credit card use on economic growth is not significantly affected by inflation fluctuations. This suggests that credit cards remain effective in supporting economic growth regardless of changes in inflation rates.

REFERENCES

Achir, A. Y., & Kusumaningrum, T. M. (2021). 8503-21689-1-Pb. *Jurnal Manajemen*, *13*(3), 544–568.

Anochiwa Li, & Maduka. (2015). Inflation And Economic Growth In Nigeria: Empirical Evidence? In *Journal Of Economics And Sustainable Development Www.Iiste.Org Issn* (Vol. 6, Issue 20). Online. Www.Iiste.Org

Aprilia, N. D., Waluyo, S. D., & Saragih, H. J. (2021). *Perkembangan Ekonomi Digital Indonesia The Development Of Indonesia's Digital Economy*.

Badan Pusat Statistik. (2023). *Produk Domestik Bruto Indonesia Triwulanan 2019-2023*.

Bawa, S., Abdullahi, & Ismaila S. (2012). Threshold Effect Of Inflation On Economic Growth In Nigeria. In *Cbn Journal Of Applied Statistics* (Vol. 3, Issue 1).

Cirasino, M., & Garcia, J. A. (2009). Measuring Payment System Development. *Access Finance The World Bank Group*, *27*. Www.Worldbank.Org/Paymentsystems

Gunarto, M., Rasjid, A., & Putra, R. N. (2017). Pengaruh Integrated Marketing Communication Terhadap Kepuasan Nasabah Yang Dimediasi Oleh Citra Bank Sumsel. *Forum Manajemen Indonesia (Fmi 9)*.

Gusriyanti, A., & Marna, J. E. (2022). Pengaruh Permintaan Uang Kartal Dan Transaksi Uang Elektronik Terhadap Inflasi Di Indonesia Tahun 2011-2020 Dengan Perputaran Uang Sebagai Variabel Moderasi. *Junal Salingka Nagari*, *1*(2), 167–178. Https://Jsn.Ppj.Unp.Ac.Id/Index.Php/Jsn/Index

Hasanudin, H. (2021). The Effect Of Inflation, Exchange, Sbi Interest Rate And Dow Jones Index On Jci On Idx 2013 – 2018. *Budapest International Research And Critics Institute (Birci-Journal): Humanities And Social Sciences*, *4*(2), 2063–2072. Https://Doi.Org/10.33258/Birci.V4i2.1896

Hasanudin, H. (2022). Infokum Is Licensed Under A Creative Commons Attribution-Non Commercial 4.0 International License (Cc By-Nc 4.0) The Influence Of Inflation And Exchange Rates On Indonesia's Economic Growth. *Jurnal Infokum*, *10*(5). Http://Infor.Seaninstitute.Org/Index.Php/Infokum/Index

Jurayevich, M. B., & Bulturbayevich, M. B. (2020). The Impact Of The Digital Economy On Economic Growth. In *International Journal Of Business* (Vol. 01, Issue 01). Https://Www.Gov.Uk/Government/Uploads/System/Uploads/Attachment_Dat

Koparal, C., & Çalik, N. (2015). Hedonic Consumption Characteristics Related To Products And Services Where Fashion Involvement Plays An Important Role, A Field Study From Eskisehir, Turkey. *International Journal Of Social Sciences*, *Iv*(1), 14–39. Https://Doi.Org/10.20472/Ss2015.4.1.002

Lathief, M., & Nasution, I. (2020). Digital Payment: Probability In Millenial (Case Study Of Uinsu Febi Students). In *Jhss (Journal Of Humanities And Social Studies)* (Vol. 04). Https://Journal.Unpak.Ac.Id/Index.Php/Jhss

Lincolin, A. (1999). *Ekonomo Pembangunan* (4th Ed.). STIE YKPN.

Listfield, R., & Montes, F. (1994). Modernizing Payment Systems In Emerging Economies. In *Bei Golembe, Economist Fsd*.

Mahendra, O. C. (2019). *Pengaruh Sistem Pembayaran Non Tunai Dan Inflasi Terhadap Pertumbuhan Ekonomi Indonesia* [Skripsi Sarjana (Dipublikasikan)]. Universitas Islam Negeri Sumatera Utara.

Marginingsih, R. (2021). Financial Technology (Fintech) Dalam Inklusi Keuangan Nasional Di Masa Pandemi Covid-19. *Jurnal Akuntansi Dan Keuangan*, *8*(1). Http://Ejournal.Bsi.Ac.Id/Ejurnal/Index.Php/Moneter56

Masfiatun, Supriyadi, M., & Nahdila, M. (2023). Dampak Ekonomi Digital Dan Tingkat Inflasi Terhadap Pertumbuhan Sektor Ekonomi Di Indonesia Info. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *5*(6), 2745–2750. Https://Journal.Ikopin.Ac.Id/Index.Php/Fairvalue

Nurlina, & Chaira, T. M. I. (2017). Pengaruh Pertumbuhan Ekonomi Terhadap Distribusi Pendapatan Di Provinsi Aceh. *Jurnal Samudra Ekonomika*, *1*(2), 174–182.

Nurwulandari, A. (2020). Analisis Pengaruh Kurs, Sertifikat Bank Indonesia Dan Inflasi Terhadap Kinerja Reksadana Pendapatan Tetap Tahun 2015-2019. In *Komitmen: Jurnal Ilmiah Manajemen* (Vol. 1, Issue 1).

Pertiwi, H., & Marna, J. E. (2023). Analisis Pengaruh Transaksi Non Tunai Terhadap Pertumbuhan Ekonomi Indonesia. *Jurnal Salingka Nagari*, *02*(1), 36–46.

Rapanna, P., & Sukarno, Z. (2017). *Ekonomi Pembangunan* (H. Syamsul, Ed.). Cv Sah Media.

Reinsdorf, M., & Schreyer, P. (2019). Measuring Consumer Inflation In A Digital Economy. In *Measuring Economic Growth And Productivity: Foundations, Klems Production Models, And Extensions* (Pp. 339–362). Elsevier Inc. Https://Doi.Org/10.1016/B978-0-12-817596-5.00015-9

Setyawati, I., & Suroso, S. (2022). Idx Interest Rate, Inflation, Exchange Rate And Its Effect On The Composite Stock Price Index (Jci) For The Period January 2016 To August 2020. *1st Virtual Workshop On Writing Scientific Article For International Publication Indexed Scopus*, 481–486. Https://Doi.Org/10.2478/9788366675827-084

Solow, R. M. (1956). A Contribution To The Theory Of Economic Growth. In *Source: The Quarterly Journal Of Economics* (Vol. 70, Issue 1).

Sri, M. T. S., & Ascarya. (2003). *Kebijakan Sistem Pembayaran Di Indonesia* (8th Ed.). Pusat Pendidikan Dan Studi Kebanksentralan B.I.

Sukirno, S. (2006). *Ekonomi Pembangunan*. Kencana.

Sukirno, S. (2014). *Ekonomi Pembangunan: Proses, Masalah Dan Dasar Kebijakan*. Kencana Pranadamedia Group.

Syahputra, R. (2017). Analisis Faktor-Faktor Yang Mempengaruhi Pertumbuhan Ekonomi Di Indonesia. *Jurnal Samudra Ekonomika*, *1*(2), 183–191.