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Green Economy Model on Economic Fundamentals in Indonesia

Audre Aprillia[1], Rusiadi[2], Lia Nazliana Nasution[3]

[1]Master of Economics Study Program, Postgraduate Faculty, University of Pembangunan Panca Budi, Medan Indonesia
[2]Postgraduate Faculty, University of Pembangunan Panca Budi, Medan Indonesia
[3]Postgraduate Faculty, University of Pembangunan Panca Budi, Medan Indonesia

Corresponding Author: Audre Aprillia

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ABSTRACT

Green economy, as an economic concept that prioritizes a sustainable economy, has a correlation with economic fundamentals. Green economy not only covers aspects of economic growth, but also places the importance of environmental preservation and social empowerment as the main focus. These principles are the aim of the research to form a strong basis for building an economic model that not only provides long-term benefits for society and the environment, but also strengthens overall economic fundamentals in a sustainable way in Indonesia. VAR (Vector Autoregression) in the context of econometric analysis is a statistical method used to model the relationship between several time-series variables in research conducted. VAR analysis shows that result The VAR estimation results highlight the contribution of the Green Economy variable to Economic Fundamentals. GDP is mainly influenced by Greenflation and Green Consumption, indicating the significant impact of environmental inflation and green consumption. Green Credit is also influenced by these two factors, while Greenflation is influenced by GDP and Green Consumption. IRF analysis reveals variable responses to change, highlighting the importance of response stability in the medium to long term. In the Green Economy model, GDP growth and green consumption are the main pillars, driven by increased Green Consumption and Green Credit. The analysis results confirm the importance of adopting environmentally friendly practices in driving sustainable economic growth, in line with previous findings highlighting the positive impact of green technology and sustainable practices. The establishment and development of the Green Economy Model has a significant impact on economic fundamentals, providing a strong basis for sustainable and innovative economic policies. VAR analysis of IRF and FEVD tests helps reveal complex interactions between green economy variables, providing valuable insights for the formulation of effective and sustainable policies.

Keywords: Green Economy, Economic Fundamentals, VAR

INTRODUCTION

Economic fundamentals refer to the underlying factors that influence the stability and health of a country's economy (Jiao et al., 2023; Tucci et al., 2021). These factors include various indicators such as Gross Domestic Product (GDP), inflation, unemployment rate, interest rates, and trade balance(Aslam & Ghouse, 2023; Djannah Rosadi & Russidi, 2024). Apart from that, other components that are considered part of economic fundamentals include productivity

levels, political stability, infrastructure, and fiscal and monetary policies.(Caraiani et al., 2023). Solid economic fundamentals usually indicate that a country has a stable and developing economy, which in turn can attract investment from within and outside the country(Ascari & Fosso, 2024; Considine et al., 2023). On the other hand, weak economic fundamentals can be an indication of problems that hamper economic growth, increase the risk of a financial crisis, and reduce the overall welfare of society.(Chi, 2021).

Several problematic phenomena that show the impact of shaking economic fundamentals include the 1997-1998 Asian Financial Crisis and the European Debt Crisis in the 2010s, up to the Covid-19 pandemic in the late 2019s.(Kirchherr et al., 2023). The Asian Financial Crisis was largely caused by fundamental economic imbalances, including large current account deficits, high external debt, and currency exchange rate instability.(Nazliana Nasution et al., 2023; Valentine et al., 2024). This crisis caused a recession in many Asian countries and emphasized the importance of maintaining healthy economic fundamentals(Jiao et al., 2023). Meanwhile, the European Debt Crisis revealed huge public debt problems in countries such as Greece, Ireland, and Portugal. This crisis was triggered by unsustainable fiscal policies and economic growth that was not strong enough to support debt payments(Ganda, 2024; Jiao et al., 2023). This crisis highlights the importance of sustainable fiscal policy to maintain long-term economic stability. Furthermore, Indonesia's economic growth problems in 2023 include a slight slowdown in economic growth to 5.05%, slightly lower than the previous year which reached 5.31%(Rusiadi, Hidayat, et al., 2024; Xuan et al., 2023). This slowdown may be caused by various factors, including global uncertainty, high inflation, and potential disruption in economic activity due to the ongoing COVID-19 pandemic.(Aprilia & Adianti, 2020; Novalina et al., 2021). Even though economic growth is slowing, Indonesia is still showing resilience amidst the global economic storm and high inflation.

Green economy, which promotes sustainable and environmentally friendly economic growth, creates close links with indicators such as green consumption, green credit and greenflation (S. Chen & Yang, 2024; Russiadi, Yusuf, et al., 2024; J. Wang et al., 2021; Xu & Li, 2024). Green consumption, or environmentally friendly consumption, refers to consumer behavior that chooses products and services that are more sustainable and environmentally friendly(C. Wang et al., 2024). Consumption is one of the main elements in Gross Domestic Product (GDP) and has a significant impact on economic fundamentals(Double, 2024). High levels of consumption can increase GDP, which reflects healthy economic growth. Stable and increasing consumption drives the production of goods and services, creates jobs, and supports household incomes. In addition, high levels of consumption can increase investor confidence because it shows strong demand in the domestic market(Rusiadi, Hidayat, et al., 2024; J. Wang et al., 2021). Greenflation, or inflation caused by increasing costs for implementing environmentally friendly policies, will have a major impact on economic fundamentals(Djannah Rosadi & Russiadi, 2024). High inflation can reduce people's purchasing power, which in turn can reduce consumption and slow economic growth. To control inflation, central banks may need to raise interest rates, which could reduce investment and economic growth. In addition, uncontrolled inflation creates economic uncertainty, which can reduce investor confidence and hinder long-term investment(Ascari & Fosso, 2024; He et al., 2024)anjang. Furthermore, Green credit, or green credit, is financing aimed at sustainable and environmentally friendly projects(C. Wang et al., 2024). Credit plays an important role in supporting economic growth and financial stability. Easy and cheap access to credit can encourage business investment and infrastructure development, which increases productivity

and economic growth(Qiu & Yu, 2024). Credit available to consumers can increase purchasing power, which encourages consumption and increases GDP. However, uncontrolled credit growth can increase the risk of debt and financial crises, which can disrupt economic stability. Consumption, inflation, credit and economic growth are interconnected and influence economic fundamentals. Healthy consumption and credit can drive economic growth, while controlled inflation keeps purchasing power stable and supports investor confidence(He et al., 2024; Qiu & Yu, 2024). Strong economic growth creates jobs and income, which supports further consumption and investment. Therefore, maintaining a balance between these indicators is very important to maintain healthy and sustainable economic fundamentals.

This research focuses on the variables of the green economy model which have an influence on each other in the short term, medium term and long term in Indonesia. This is what differentiates it from other researches. This research analyzes the relationship between GDP, Green Consumption, Green Credit and Greenflation, with the aim of providing future policy recommendations regarding economic fundamentals with research structured in six parts including literature review, data and statistics, empirical methods, analysis results, as well as conclusions and implications policy.

LITERATURE REVIEW

This research refers to a combination of Mundell-Fleming theory, fundamental economic theory, and green growth theory which provides a broad understanding of how economic policy can influence the external and internal balance of a country by paying attention to its impact on the environment.(Aizenman, 2019). Mundell-Fleming theory is a framework in international economics that studies the interaction between fiscal policy, monetary policy, and the exchange rate system in the context of an open economy(Aizenman, 2019; Kempa & Nelles, 1998). This theory was developed by economists Robert Mundell and Marcus Fleming in the 1960s. The main aim of this theory is to understand how a country's economic policies influence its external and internal balance in a situation where the country is open to international trade and capital flows. The Mundell-Fleming theory provides a framework for understanding the relationship between fiscal and monetary policies, in the context of an open economy, which will influence a country's external and internal balance.(Aizenman, 2019; Kempa & Nelles, 1998; Lama & Medina, 2020).

Meanwhile, fundamental economic theory is a basic concept in economics that examines the factors underlying the health and economic growth of a country(Ade Novalina, 2021; Jiao et al., 2023; Tucci et al., 2021). This includes an understanding of macroeconomic indicators such as economic growth, unemployment rate, inflation, poverty rate, and balance of payments balance(Suhendi et al., 2022; Valentine et al., 2024). This theory is used to analyze and evaluate the economic conditions of a country and identify the challenges and opportunities it faces. However, there is no one individual who specifically created fundamental economic theory because this concept developed from various economic thoughts from experts and economic observers over the years. Economists such as Adam Smith, John Maynard Keynes, Milton Friedman, and many others have contributed to the development of understanding of fundamental aspects of economics(Novalina et al., 2023; Russiadi, 2024). Therefore, fundamental economic theory is more the result of the evolution of thought and the collective contributions of economists than a single creation by a single individual. Fundamental economic theory pays attention to macroeconomic indicators such as economic growth and inflation so that it helps in identifying challenges and opportunities in achieving external and internal balance(Djannah Rosadi &Russiadi, 2024).

On the other hand, green growth theory is an economic concept that emphasizes the importance of sustainable and environmentally friendly economic growth(Aslam & Ghouse, 2023; L. Chen et al., 2024). The main originator of this theory is Robert Solow, an American economist who won the Nobel Prize in Economics in 1987.(Gao, Wei, et al., 2024; Liu & Zhang, 2024). In his work, Solow highlights the importance of non-material factors of production, such as technological innovation and wise use of natural resources, in achieving long-term economic growth(Rusiadi, 2024; Song & Hua, 2024). The concept of green growth expands Solow's views by emphasizing the need to integrate environmental aspects into economic growth models, such as reducing pollution, efficient use of natural resources, and investment in renewable energy(Rusiadi, 2024). Since its emergence, green growth theory has become the basis for economic policy in many countries seeking sustainable and environmentally friendly economic development(Chi, 2021; Xuan et al., 2023). The combination of these three theories allows a comprehensive assessment of the impact of economic policies on external and internal balance and the environment, as well as how appropriate policies can support sustainable and inclusive economic growth.

MATERIALS & METHODS

VAR (Vector Autoregression) Model (Caraiani et al., 2023)is an econometric analysis technique that takes into account the reciprocal relationship between several time-series variables, the variables in the research include Green Consumption, Green Credit, Greenflation and GDP with a research period of 15 (fifteen) years, starting from 2009 to 2023 with the country The country studied is Indonesia(Double, 2024). In the VAR model, it is assumed that each variable in the system influences each other, either by other variables in the system or by itself in the previous period(Rusiadi, 2024; Russiadi, Yusuf, et al., 2024). Each variable uses secondary data with data sources via Data Indonesia of CEIC (https://www.ceicdata.com/en/country/indonesia). Thus, the VAR model allows us to understand the dynamics of interactions between these variables over time. The use of VAR models has become widespread and applied in various fields of economics, including macroeconomics, finance, and policy analysis. This model has several important applications, such as predicting variables, analyzing the impact of unexpected policies, identifying the transmission of impacts between economic variables, and testing causal relationships between these variables. Thus, VAR models provide a powerful tool for understanding and forecasting economic behavior in complex and dynamic contexts. There is a conceptual framework that formulates the VAR model as follows:

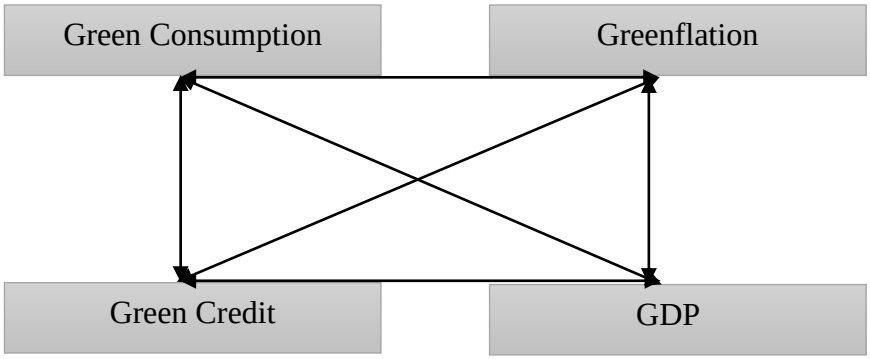

Figure 1. Conceptual Framework of the VAR Model
Source : Analysis Writer

STATISTICAL ANALYSIS

The formula for using the VAR model is described as follows:

GCNt = β10GCt-p+β11GF t-p+β12GDPt-p+β13GCNt-p+et1
GCt = β20GFt-p+β21GDPt-p+β22GCNt-p+β23GCt-p+et2
GFt = β30GDPt-p+β31GCNt-p+β32GCt-p+β33GFt-p+et3
GDPt = β40GCNt-p+β41GCt-p+β42GFt-p+β43GDPt-p+et4

The formula shows that:
GCN = Green Consumption (%)
GC = Green Credit (%)
GF = Greenflation (%)
GDP = Gross Domestic Product/Economic Growth (%)

Data source via CEIC Data Indonesia, namely:
Green Consumption:https://www.ceicdata.com/id/indicator/indonesia/natural-gas-consumption
Green Credit:https://tradingeconomics.com/indonesia/consumer-spending
Greenflation :https://www.ceicdata.com/en/indicator/indonesia/consumer-price-index-cpi-growth
GDP :https://www.ceicdata.com/en/indicator/indonesia/real-gdp-growth

RESULT

The development of the Green economy model on economic fundamentals is analyzed based on the following data:

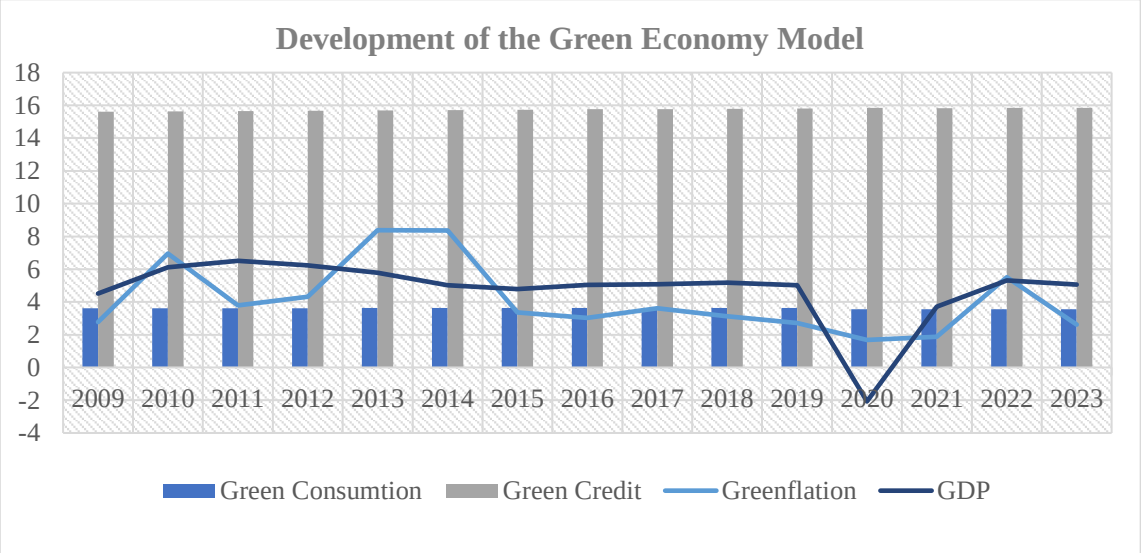

Figure 2. Development of the Green Economy Model on Economic Fundamentals in Indonesia
Source: Ceic Data, processed by the author (2024)

The data in the graph shows significant fluctuations in Indonesia's economic fundamentals from 2009 to 2023. GDP fluctuated from 4.51% in 2009 to 4.79% in 2015, then stabilized in 2016-2018 and reached a peak of 5.17% in 2018. Growth decline in 2019 it became 5.02% indicating the economy's vulnerability to external factors. The COVID-19 pandemic caused a drastic decline of -2.07% in 2020, but the economy began to recover with growth of 3.70% in 2021 and 5.31% in 2022. Although growth slowed to 5.05% in 2023, the economy remained resilient in the face of global challenges. Inflation also shows fluctuations, with 6.96% in 2010 and stable at 2.72% in 2019. In 2023, inflation was recorded at 2.61%, down from 5.51% in 2022, indicating the success of monetary policy in maintaining price stability. Green credit grew from 15.61% in 2009 to 15.85% in 2023, demonstrating a commitment to green project financing and sustainable economic development. Green consumption

is also volatile, growing 3.61% in 2009 and reaching a peak of 3.65% in 2015, then decreasing to 3.55% in 2023. The stability of green consumption shows the important role of the green sector in the economy, contributing to economic diversification, technological innovation, and increased energy efficiency. Next, through the VAR model, the data processing results begin with a data stationarity test using the Augmented Dickey Fuller (ADF) test to ensure the data does not cause biased regression. The McKinnon critical value is compared with the ADF value at a significance level of 1% to determine stationarity. The stationarity test was carried out on all variables used in the research as follows:

Table 1. Stationarity Test Results

Null Hypothesis: GDP has a unit root		
Levels	**t-Statistics**	**Prob.***
Augmented Dickey-Fuller test statistics	-2.370768	0.1661
1st	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	-2.937712	0.0725
2nd	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	-4.203427	0.0099

Null Hypothesis: GREEN_CONSUMTION has a unit root		
Levels	**t-Statistics**	**Prob.***
Augmented Dickey-Fuller test statistics	-0.715381	0.8115
1st	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	-3.502391	0.0061

Null Hypothesis: GREEN_CREDIT has a unit root		
Levels	**t-Statistics**	**Prob.***
Augmented Dickey-Fuller test statistics	-1.726031	0.3980
1st	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	1.799845	0.9986
2nd	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	-5.475170	0.0020

Null Hypothesis: GREENFLATION has a unit root		
Levels	**t-Statistics**	**Prob.***
Augmented Dickey-Fuller test statistics	-0.910041	0.7476
1st	t-Statistics	Prob.*
Augmented Dickey-Fuller test statistics	-4.429295	0.0061

Source: Data analysis, Eviews 10 **Significant at 1%

In table 1, the results of the Stationery Test above show that the ADF (Augmented Dickey Fuller) value for each stationary variable is at a different level. In the stationary GDP variable at the 2nd difference level. The Green Consumption variable is stationary at the 1st difference level. The Green Credit variable is stationary at the 2nd difference level and the Greenflation variable is stationary at the 1st difference level. All variables with a probability value of 0.00 < 0.01. Because all variables are stationary, further analysis can be carried out by testing the lag length, as follows:

Table 2. Results of Lag 1 and Lag 2 Length Tests

Vector Autoregression Estimates LAG 1			
Akaike information criterion	-5.463657		
Schwarz criterion	-4.550718		
Number of coefficients	20		
Vector Autoregression Estimates LAG 2			
Akaike information criterion	-7.446919		

Schwarz criterion	-5.882443		
Number of coefficients	36		

Source: Data analysis, Eviews 10

Schwarz Criterion (SC) and Akaike Information Criterion (AIC) are used to determine the optimal lag. The optimal lag has lower AIC and SC values than other lags. From the results of determining the lag in table 2 above, the AIC value at lag 2 (-7.446919) is lower than lag 1 (-5.463657), indicating that lag 2 is more optimal. Therefore, the analysis will continue using lag 2. Next, the testing of the Johansen cointegration test is described as follows:

Table 3. Results of Lag 1 and Lag 2 Length Tests

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalues	Statistics	Critical Value	Prob.**
None *	0.951855	77.59512	47.85613	0.0000
At most 1*	0.842539	38.15901	29.79707	0.0043
At most 2	0.555768	14.12754	15.49471	0.0795
At most 3	0.240674	3.579219	3.841466	0.0585
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				

Source: Data analysis, E views 10

Johansen cointegration testing reveals patterns of relationships between variables. Table 3. Above, shows that there are 2 (two) cointegrated equations at a significance level of 5%, it is proven that there is a long-term relationship between variables. To analyze the VAR test results, the next step is to analyze the results of the lag structure stability test, described in the following table and figure:

Table 4. Lag Structure Stability Test Results

Roots of Characteristic Polynomials	
Root	Modulus
0.932920	0.932920
0.195713 - 0.748669i	0.773827
0.195713 + 0.748669i	0.773827
-0.562212 - 0.525197i	0.769360
-0.562212 + 0.525197i	0.769360
0.419521 - 0.354547i	0.549274
0.419521 + 0.354547i	0.549274
0.169813	0.169813
No root lies outside the unit circle.	
VAR satisfies the stability condition.	

Source: Data analysis, E views 10

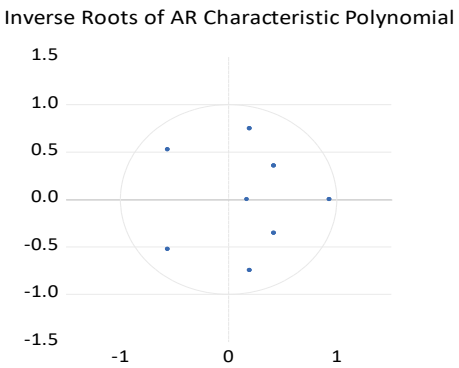

Figure 3. Inverse Roots of AR Characteristic Polynomial graph
Source: Data analysis, E views 10

In table 4 and figure 3 above, it is known that the results show that the root modulus value is below 1, in accordance with the figure above which shows the roots are in a circle. This indicates that by using Roots of Characteristic Polynomial and Inverse Roots of AR Characteristic Polynomia, the resulting model is stable. Thus, the lag stability test has been fulfilled, making it possible to continue the VAR analysis, as follows:

Table 5. Summary Test Results of VAR Estimates

Variable	Biggest Contribution	
	I	II
GDP	Greenflation	Green Consumption
Green Consumption	Green Consumption	GDP
Green Credit	Greenflation	Green Consumption
Greenflation	GDP	Green Consumption

Source: Data analysis, Eviews 10

The VAR estimation results in the table above reveal the contribution of each variable to the others. The first largest contribution to GDP is dominated by Greenflation and the largest contribution is by Green Consumption as a Green Economy model to economic fundamentals. The first largest contribution to Green Consumption is dominated by Green Consumption itself and the second largest contribution is by GDP. Green Credit is significantly influenced by Greenflation and Green Consumption. Greenflation is significantly influenced by GDP and Green Consumption. The response of variables to changes in other variables over different time periods is measured via IRF (Impulse Response Function). The next summary table displays the influence of a variable on changes in other variables over various time periods, as follows:

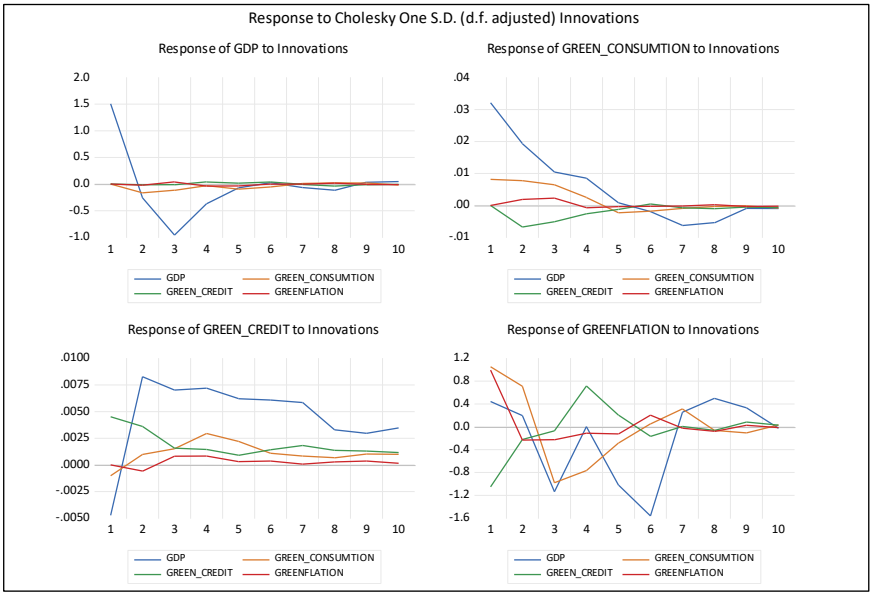

Figure 4. Summary graph of IRF (Impulse Response Function) test results
Source: Data analysis, E views 10

The response results to one standard deviation of the GDP, Green Consumption, Green Credit and Greenflation variables show a change in the direction of influence of each variable. Initially, what was positive turned into negative, and vice versa, what was initially negative became positive, both in the medium and long term. Apart from that, the figure also illustrates that the stability of the response of all variables is

formed in period 5 or the medium and long term. The next image shows the results of the FEVD (Forecast Error Variance Decomposition) test as follows:

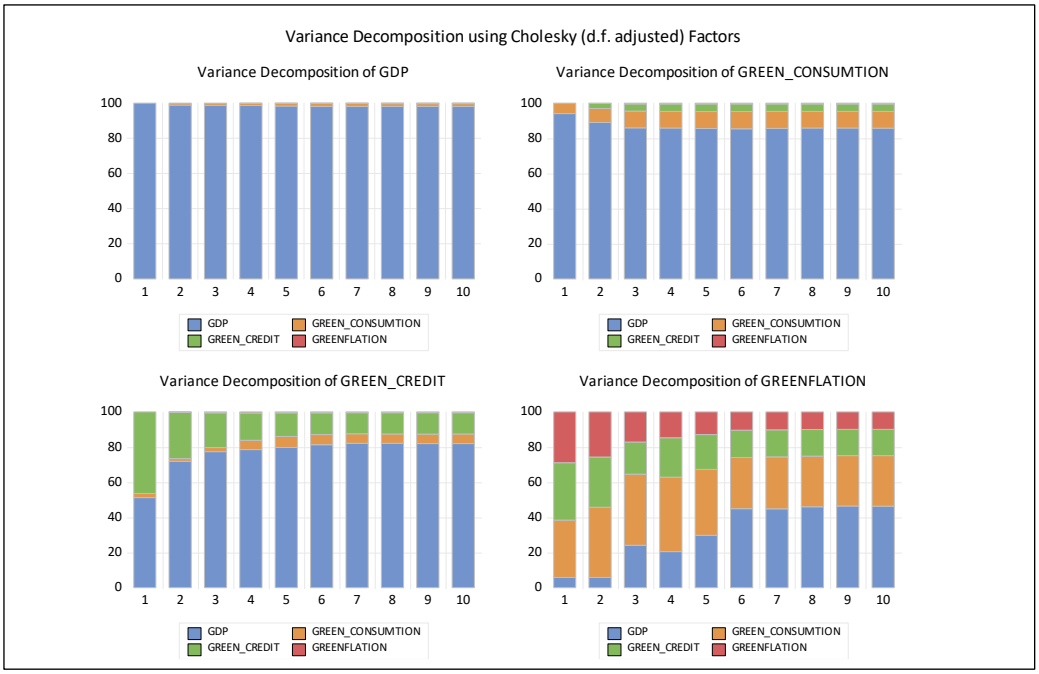

Figure 5. Summary graph of FEVD (Forecast Error Variance Decomposition) test results
Source: Data analysis, E views 10

Based on the results of the FEVD (Forecast Error Variance Decomposition) test in graphic image 5. Above, the formation of the Green Economy Model on Economic Fundamentals in the short term is through the GDP, Greem Consumption and Green Credit variables. Formation of the Green Economy Model for the Fundamental Economy in the medium term, namely through the variables GDP, Greem Consumption and Green Credit. (insert previous research). Meanwhile, in the long term, the formation of the Green Economy Model on the Fundamental Economy is through the GDP and Green Consumption variables.

DISCUSSION

Data shows that Indonesia's GDP experienced significant fluctuations from 2009 to 2023. GDP growth in 2009 was 4.51%, then reached a peak of 5.17% in 2018, and decreased to -2.07% in 2020 due to the COVID pandemic -19(Nasution et al., 2022; Novalina et al., 2020). Economic recovery began in 2021 with growth of 3.70%, reaching 5.31% in 2022, and slowing slightly to 5.05% in 2023. This fluctuation shows the vulnerability of the Indonesian economy to external factors such as the pandemic, which shook global economic stability and domestic, this research is in accordance with previous research(Aslam & Ghouse, 2023; Liu & Zhang, 2024). Inflation in Indonesia also shows significant fluctuations, with a peak reaching 6.96% in 2010. However, in 2019, inflation stabilized at 2.72%, and in 2023, inflation fell to 2.61% from 5.51 % in 2022. This decrease shows the success of Bank Indonesia's monetary policy in controlling prices and maintaining economic stability(Pratiwi et al., 2024). Inflation stability is important to maintain people's purchasing power and ensure sustainable economic growth(Djannah Rosadi &Russiandi, 2024; Huang et al., 2024). Green credit experienced growth from 15.61% in 2009 to 15.85% in 2023. This growth shows Indonesia's commitment to financing green projects that support sustainable economic development(He et al.,

2024; Qiu & Yu, 2024; C. Wang et al., 2024). Green finance is critical in driving technological innovation, energy efficiency, and climate change mitigation, all of which contribute to long-term economic stability and growth(Gao, Ullah, et al., 2024;Russiadi, Hidayat, et al., 2024). Green consumption, which also shows fluctuations, grew from 3.61% in 2009 to a peak of 3.65% in 2015, then decreased to 3.55% in 2023. Although the growth is not as big as green credit, the stability in green consumption shows that the green sector plays an important role in the Indonesian economy. Green consumption contributes to economic diversification, drives technological innovation, and improves energy efficiency.

The use of the VAR model begins with a data stationarity test using the Augmented Dickey Fuller (ADF) test to ensure the data does not cause biased regression.(Caraiani et al., 2023). The results show that the variables GDP, Green Consumption, Green Credit, and Greenflation are stationary at different levels of difference with a probability value of 0.00 < 0.01, indicating stationarity at a significance level of 1%. The next step is to determine the optimal lag using the Schwarz Criterion (SC) and Akaike Information Criterion (AIC). Lag 2 was chosen as the most optimal because it has lower AIC and SC values than lag 1. This ensures that the VAR model can capture data dynamics effectively without overfitting. Johansen cointegration testing revealed the two equations cointegrated at the 5% significance level, indicating the existence of a long-term relationship between the variables. Model stability is checked through a root modulus value below 1, indicating the resulting model is stable using Roots of Characteristic Polynomial and Inverse Roots of AR Characteristic Polynomial. The VAR estimation results show how each variable contributes to other variables in the context of a green economy. GDP is most influenced by Greenflation and Green Consumption, indicating that environmentally related inflation and green consumption have a significant impact on economic growth(Aslam & Ghouse, 2023; L. Chen et al., 2024; Djannah Rosadi & Russidi, 2024; Gao, Ullah, et al., 2024; Nazliana Nasution et al., 2023; Russidi, Hidayat, et al., 2024). Green Consumption itself is most influenced by itself and GDP, showing dependence on overall economic growth(Aslam & Ghouse, 2023;Russiadi, Hidayat, et al., 2024). Green Credit, as an important element of the green economy, is significantly influenced by Greenflation and Green Consumption(Ade Novalina, 2021; Hidayat et al., 2018;Russiadi et al., 2021). This shows that increasing green inflation and green consumption encourage the use of green credit(Qiu & Yu, 2024; C. Wang et al., 2024), which is important for financing environmentally friendly projects. In contrast, Greenflation is influenced by GDP and Green Consumption, which indicates a close relationship between economic growth and inflation triggered by environmentally friendly consumption activities.(Ascari & Fosso, 2024; Djannah Rosadi & Russidi, 2024; Huang et al., 2024). Through IRF analysis, it can be seen how a change of one standard deviation in the GDP, Green Consumption, Green Credit and Greenflation variables affects other variables. This response shows a change in the direction of influence: what was initially positive becomes negative, and vice versa, in the medium and long term. This illustrates the complex dynamics and interactions between variables in the green economy model, as well as the importance of response stability that is formed over a five-year or medium to long term period. Based on the FEVD test, the contribution of the main variables in forming the Green Economy model to economic fundamentals in various time periods can be identified. In the short term, the GDP, Green Consumption and Green Credit variables are the main factors. In the medium term, these three variables continue to play an important role, emphasizing the consistency and sustainability of their contribution to the green economy. Meanwhile, in the long term, the Green Economy model remains driven by GDP and

Green Consumption, indicating that economic growth and environmentally friendly consumption are the main pillars in a sustainable economic strategy(Ganda, 2024; Jiao et al., 2023; Kirchherr et al., 2023; Tucci et al., 2021; Xuan et al., 2023).

This analysis shows that economic variables such as GDP, Green Consumption, Green Credit, and Greenflation have internal dynamics that can be measured and analyzed validly(Rusiadi, 2024). Determining optimal lag and cointegration helps understand short and long run relationships between variables, important for understanding overall economic dynamics. The stability of the model increases confidence in the analysis results, helps understand the interaction of fundamental economic factors and provides a strong basis for better economic policy making(Jiao et al., 2023; Sanusi et al., 2018; Tucci et al., 2021). The variables in the Green Economy model interact with each other and contribute to economic fundamentals. Increases in Green Consumption and Green Credit support GDP growth, demonstrating the importance of adopting environmentally friendly practices in driving economic growth(Nazliana Nasution et al., 2023;Russiadi, Hidayat, et al., 2024). Greenflation, although it can be a challenge, also serves as an important indicator of the transition towards a greener and more sustainable economy. This research is in line with previous findings showing that the adoption of green technology and sustainable practices not only reduces environmental impacts but also drives long-term economic growth(Rusiadi, 2024; Yiming et al., 2024). A stable and effective Green Economy model can help address economic and environmental challenges simultaneously, ensuring that economic growth does not come at the expense of environmental sustainability(Croft et al., 2024; Gaies et al., 2024; Tavares & Almeida, 2024; Tucci et al., 2021). Overall, the establishment and development of the Green Economy Model has had a significant impact on economic fundamentals, providing a strong foundation for sustainable and innovative economic policies. VAR analysis and related methods such as IRF and FEVD help reveal the complex interactions between green economy variables, providing valuable insights for the formulation of effective and sustainable policies.

CONCLUSION

The VAR estimation results highlight the contribution of green economy variables to economic growth. GDP is mainly influenced by Greenflation and Green Consumption, indicating the significant impact of environmental inflation and green consumption. Green Credit is also influenced by these two factors, while Greenflation is influenced by GDP and Green Consumption. IRF analysis reveals variable responses to change, highlighting the importance of response stability in the medium to long term. In the Green Economy model, GDP growth and green consumption are the main pillars, driven by increased Green Consumption and Green Credit. The analysis results confirm the importance of adopting environmentally friendly practices in driving sustainable economic growth, in line with previous findings highlighting the positive impact of green technology and sustainable practices. The establishment and development of the Green Economy Model has a significant impact on economic fundamentals, providing a strong basis for sustainable and innovative economic policies. VAR analysis of IRF and FEVD tests helps reveal complex interactions between green economy variables, providing valuable insights for the formulation of effective and sustainable policies.

Declaration by Authors

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