



Analysis of the Determinants of Economic Growth in G20 Countries 2012-2021

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Abstract

Economic growth is one of the indicators that can be used by a country to assess and evaluate the condition of economic development within a country. This research aims to examine how government debt, foreign direct investment, foreign exchange reserves, and exports can affect economic growth and aims to determine the short-term and long-term relationship of the independent variable used to the dependent variable. The data used in this research is a type of panel data starting from 2012 to 2021 with the object of research of 19 countries in the G20 group. The analytical tool used in this research is Pooled Mean Group/Autoregressive Distributed Lag (ARDL). The results of this research show that in the short-term government debt, foreign direct investment has a positive and insignificant relationship with economic growth. On the other hand, exports have a positive and significant relationship to economic growth in the short term.

Keywords: Economic Growth, Government Debt, Foreign Direct Investment, Foreign Exchange Reserves, Exports

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INTRODUCTION

Economic growth is a process of increasing per capita output that is sustainable in the long term. Economic growth is an indicator of successful development whose main source is increasing people's living standards (Kumaat, et al., 2020). Therefore, the higher the economic

growth, the higher the welfare of a society. According to Yuni & Hutabarat (2021), economic growth is the process of continuously changing the economic conditions of a country towards a better condition over a period.

Economic growth can also be interpreted as the process of increasing the production

capacity of an economy which is realized in the form of an increase in national income (Rinaldi, 2017). Economic development itself is the capacity of an economy whose initial conditions are not good and are static over a long period of time to create and maintain an increase in Gross Domestic Product (GDP).

Economic development can never be separated from economic growth because economic development does not only include economic growth, but also includes broader things such as changes in savings and investment as well as economic structure (Todaro & Smith, 2006). Economic growth in countries with large economic capacity is in the spotlight and a benchmark for world economic stability. The group that is currently the axis of the world economy is the G20 Forum.

G20 is an abbreviation of "Group of Twenty", an international cooperation forum which includes 19 countries and a group of countries in Europe or the European Union as the 20th member. The G20 aims to address global economic and financial problems, such as financial market instability, debt crises, and international trade. The G20 is a group of 20 of the world's leading countries in economic terms representing more than 80% of total gross domestic product (GDP), 80% of global investment, 75% of world trade and 66% of the world's population.

The COVID-19 pandemic that has occurred since the end of 2019 has affected the entire world in various sectors. The spread of COVID-19 to 178 countries around the world, which accounts for 99.5% of global GDP, has caused concern in the international world. With the very high scale and speed of its spread, COVID-19 was officially declared by the World Health

Organization (WHO) as a global pandemic in March 2020.

Throughout 2020, this pandemic has infected more than 85 million people and caused the deaths of more than 1.8 million people, giving rise to a major health and humanitarian crisis in various countries and an increasing number of poor people in the world. With the spread of the COVID-19 virus throughout the world, various countries have tried to maintain the condition of their countries by implementing various strategies and policies which they feel are able to ease the burden caused by the pandemic that has attacked their countries in the economic sector.

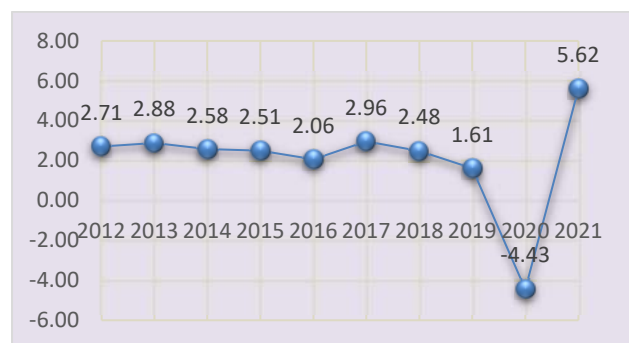


Figure 1. Average Economic Growth in G20 Countries 2012-2021 (% of real GDP growth)

Source: WorldBank, data processed, 2023

Based on figure 1 regarding the economic growth of G20 countries from 2012-2021 over the last ten years, the average economic growth of countries in the G20 is still in good condition. However, COVID-19, which has occurred since the end of 2019, has caused the economic growth of countries in the G20 to tend to slow down. However, when the pandemic occurred in 2019 – 2020 there was a significant decline which caused the average economic growth in G20 countries to decline.

All countries in the G20 experienced negative economic growth except Türkiye and China. This indicates that all countries in the G20 are experiencing economic decline and a slowdown in economic growth. The decline in economic growth caused by the COVID-19 pandemic in the G20 countries itself indirectly affects international trade, national expenditure & debt, investment, and the foreign exchange reserves of every country throughout the world.

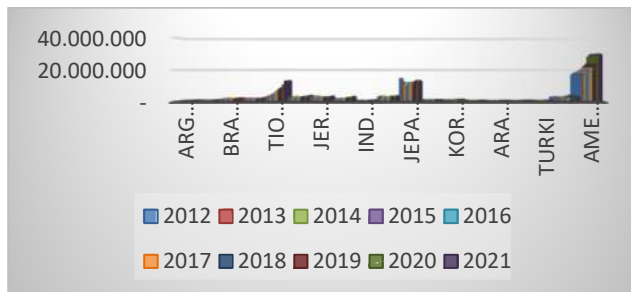


Figure 2. Total Government Debt in G20 Countries 2012-2021 (Million USD)

Source: Countryeconomy, data processed, 2023

Based on Figure 2 regarding Government Debt of G20 countries from 2012-2021. There is an increasing trend from year to year. Based on data I got from countryeconomy, G20 countries such as the United States, China, Japan, England, France, Italy, Germany, India, and Canada are the countries with the highest amount of debt in the world until 2021.

The large amount of national debt the countries in the G20 do not escape the needs of these countries to run their economies and develop. The choice of research objects in the form of countries in the G20 is because almost all G20 members have large government debts compared to other countries.

This is the focus of researchers here. Because, with the large amount of debt a country has, there will be a burden and

obligation for that country to pay its debt and this will later have an impact on the country's economy. Moreover, the G20 countries are a group of countries that have large economic capacity and contribute greatly to the world economy.

Basically, economic development gets funding from domestic and foreign revenues. The main source of domestic funds comes from taxes, results from natural resource management and State-Owned Enterprises (BUMN) (Yudiatmaja, 2012). Then, there are funding sources from abroad which are generally realized into two instruments, namely foreign investment, and foreign assistance in the form of loans/debts and foreign grants.

Foreign debt and foreign investment are used as sources of development financing because of the imbalance between savings and investment, so that through foreign financing sources, it is hoped that this inequality can be resolved (Purba, 2020).



Figure 3. Average Foreign Investment in G20 Countries 2012-2021 (Inflow Million USD)

Source: WorldBank, data processed, 2023

Based on figure 3, we can see that foreign investment in G20 countries decreased in 2019-2020. This happened due to the economic downturn in each country because of the COVID-19 pandemic. Foreign investors think

twice about investing outside their country. Global foreign direct investment (FDI) collapsed in 2020, falling 42% from USD1.5 trillion in 2019 to around USD859 billion (UNCTAD, 2021).

Apart from that, investment can also help in creating long-term economic stability. Investments in infrastructure such as roads, bridges and transportation networks can help create the basis for stable and sustainable economic growth. To increase investment in the economy, government support and favorable regulations are often needed.

The government can provide incentives or conveniences such as low taxes or subsidies for investment in certain sectors. By increasing investment, the economy can grow faster, create jobs, and provide long-term benefits to society. The use of the Foreign Investment variable is also thought to be very influential because every country needs funds to develop their country and is not immune from foreign interference. Apart from foreign investment, another indicator that is thought to have an influence on economic growth is foreign exchange reserves.

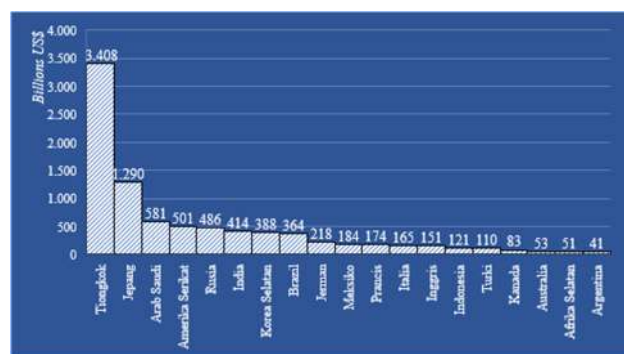


Figure 4. Average Foreign Exchange Reserves in G20 Countries 2012-2021 (Billion USD)

Source: WorldBank, data processed, 2023

Based on Figure 4, countries in the G20 have quite large foreign exchange reserves, namely tens to hundreds of trillions. The G20

country with the highest average foreign exchange reserves during 2012-2021 is China at around USD3.41 trillion, followed by Japan at USD1.29 trillion, then Saudi Arabia at USD581 billion, then the United States at USD501 billion, and Russia amounted to USD486 billion.

Meanwhile, the G20 country with the lowest average foreign exchange reserves is Argentina, namely only USD42.60 billion. After that there is South Africa at USD51.26 billion, and Australia at USD53.17 billion. Foreign exchange reserves are an important indicator in a country's economy. Because foreign exchange reserves are used as an instrument to pay off foreign debt, exchange rate stability and are a means of payment for international trade activities (Mildyanti & Triani, 2019).

Countries with sufficient foreign exchange reserves are also better able to respond to unstable economic situations such as financial crises, exchange rate fluctuations and inflation. Adequate foreign exchange reserves provide confidence and stability to foreign investors who wish to invest in the country. Investors will feel more secure if they know that sufficient foreign exchange reserves are available to guarantee necessary international payments and minimize risks.

According to Yugang (2017), foreign exchange reserves are influenced by foreign direct investment, trade balance, foreign debt, and exchange rates. If a country has sufficient foreign exchange reserves, then they can intervene in the market to strengthen the exchange rate of their currency, which in turn can help stabilize the prices of goods and services. In conclusion, sufficient foreign exchange reserves are very important for a country's economic growth. Adequate foreign exchange reserves provide stability and

confidence to foreign investors, enable countries to respond better to unstable economic situations, as well as help in managing inflation and preventing panic in financial markets.

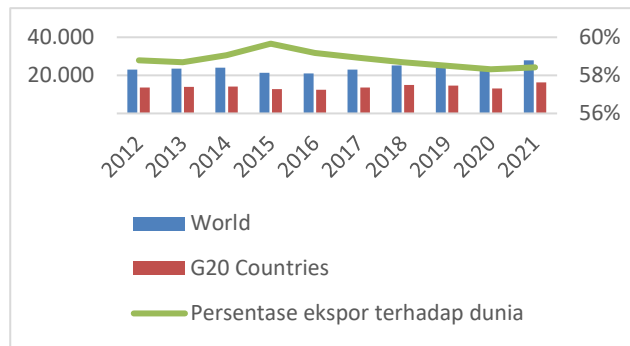


Figure 5. Comparison of Total World Exports with G20 Countries 2012-2021 (Billion USD)

Source: WorldBank, data processed, 2023

Based on the figure 5, the export value of countries in the G20 reaches 60% of the export value in the world. This indicates that the countries in the G20 control the supply of goods and services throughout the world as well as international trade. Apart from that, the trend in the export growth graph from 2012 to 2021 is upward.

However, when the crisis that occurred in 2020 due to the pandemic caused exports of goods and services throughout the world to decline and this was enough to hamper the economic growth of each country. If there is poor export performance, it will cause difficulties for most countries in financing imports and encourage them to seek foreign financial assistance (Edo, et al., 2020).

To increase exports, the country needs to encourage the development of industries that can produce competitive and good quality products. This can encourage innovation and technological improvements in domestic industry, which can help increase the country's

competitiveness. Countries also need to increase access to international markets through trade agreements, trade promotion, and financial support for exporters.

In Growth theory, Keynes explains that total consumption, especially consumption and investment, is the most important factor in determining the level of output and employment opportunities in the economy. Keynes argued that the government plays an active role in overcoming the problem of inequality and influencing economic growth.

One of the central concepts of Keynesian theory is the concept of effective demand. Keynes argued that domestic consumption and private sector capital spending were insufficient to fuel strong economic growth. In such a situation, the government can increase public spending to increase aggregate demand and stimulate the economy.

Keynes also argued that in a situation of unemployment, an increase in government spending could have a multiplier effect. In other words, each additional government spending increases people's income and expenditure, which in turn increases demand and overall economic growth.

In Keynesian theory, according to Keynesian theory, to accelerate economic growth, fiscal policy is needed both through government revenues in the form of taxes (Tax) and through public spending (Government Expenditure). The effect of any of these measures on economic growth is indicated by the expenditure multiplier.

This is a number that expresses the multiple of the increase in national production when capital expenditure or public spending increases. This coefficient provides information about the influence of fiscal policy (public

spending) on economic growth (Keynes in Mankiw, 2010).

According to Keynesian theory, GDP consists of four factors that influence it positively: consumption (C), investment (I), public spending (G) and net exports (NX). These four factors are in turn influenced by various factors such as income levels, price levels, interest rates, inflation, money supply, exchange rates and foreign interest rates (Primandari, 2017).

This theory assumes that government intervention is needed to spur economic growth and determine whether economic development in a country can run optimally. Government spending reflects government policy. Government spending has a theoretical basis which can be seen from the identity of the balance of national income, namely as follows:

$$Y = C + I + G + (XM)$$

Where Y is National income; C is Household consumption expenditure (consumption); I is Investment (investment); G is Government consumption expenditure (government expenditure); and (XM) is Net exports (Export-Import).

The traditional view (according to Keynes) holds that tax cuts will stimulate public spending and reduce national savings. The decline in national savings will cause an increase in interest rates and a scramble for investment in the real sector. Weak investment will affect the economy as a whole (Hakim, 2009). Ricardian Equivalence assesses that current government debt will become a burden on government spending next year. However, assuming society behaves wisely, the burden of foreign debt should not affect government

consumption (Ayunasta, 2019). Meanwhile, according to the modern view or Ricardian Equivalence (RE), government debt has no impact on savings and capital accumulation.

In this approach, consumers are aware that consumption does not only depend on current income but also has other influences, including government spending and debt. The impact of government debt on public consumption is the focus of this RE. RE's basic philosophy is that public debt now leads to higher taxes on future citizens, first proposed by David Ricardo.

Ricardian views apply consumer logic when assessing the influence of public debt on the economy using public consumption variables. It is assumed that consumers respond to fiscal policy rationally and withdraw government loans/debt. Consumers understand that the current increase in government debt resulting from expansionary fiscal policy will lead to higher taxes in the future. Thus, contingent consumers do not use additional after-tax income to spend on consumption but save to pay future tax obligations.

Endogenous Growth Theory is a growth theory which explains that long-term growth is determined within the model rather than by several growth variables that are considered exogenous. (Romer, 1994:3; Barro and Martin, 1999:38). Endogenous growth theory emerged as a further discussion of Neoclassical growth theory regarding diminishing marginal productivity of capital and income convergence in various countries (Maharani & Isnawati, 2014).

Endogenous Growth Theory differs from the neoclassical model because the long-term growth rate of an economy is endogenous, or largely driven by human decisions (Kopf, 2007). This theory describes economic growth

produced by factors in the production process, for example, economies of scale enhanced or caused by technological change; compared to external (exogenous) factors such as population growth.

In endogenous growth theory, the growth rate depends on one variable: the rate of return on capital. Variables such as inflation lower the rate of profit, which in turn reduces capital accumulation and slows economic growth. One of its characteristics explains the main difference between endogenous growth models and neoclassical economics.

In neoclassical theory, returns to capital decrease along with capital accumulation (Wijayanto, 2019). In endogenous growth theory, investment plays a role as physical capital and human capital (HR) also determines long-term economic growth. Savings and investment can encourage sustainable and sustainable economic growth (Mankiw, 2010).

The Economic Planning Advisory Commission (1995) states that, in endogenous

growth theory, technological improvements and advances resulting from investment can directly cause growth, so that investment can play a role in long-term economic growth (in Kurtiasih, 2019). Reungsri (2010) also emphasized that investment is an important factor in the endogenous growth model, investment can lead to increased production capacity and a significant increase in profits for economic growth (in Kurtiasih, 2019).

RESEARCH METHODS

The research conducted by the author entitled Analysis of Determinants of Economic Growth in G20 Countries 2012-2021 used quantitative methods. (Sugiyono, 2013) says that quantitative data is data in the form of numbers or qualitative data that is numbered or scored. This type of research is hypothesis testing research, namely research that test, identifies and describes the relationship pattern between two variables (dependent variable and independent variable).

Table 1. Operational Definition of Variables

Variable	Code	Description	Unit/ Description	Source
Economic Growth (GDP Growth)	GDP	Increase or decrease in the percentage of Gross Domestic Product from year to year.	Percent (%)	World Bank
Government Debt	DEBT	The total financial bonds of a country that must be paid within a certain time limit. Expressed in the form of Million USD.	Million USD	Countryeconomy
Foreign investment	FDI	The amount of capital, income & investment inflow from foreign countries into a country in an economic report	Million USD	UNCTAD
Foreign exchange reserves	DEV	The total of monetary gold holdings, special drawing rights, reserves of IMF members held by the IMF, and foreign exchange holdings under the control of monetary authorities.	Million USD	World Bank
Export	EX	The total value of goods and services sold in international trade. This value includes merchandise, freight, insurance, transportation, travel, royalties, licensing fees, and other services such as communications, construction, financial, information, business, personal, and government services.	Million USD	World Bank

Source : Data processed, 2023

This hypothesis testing study was chosen to determine the long-term and short-term relationship of the independent variables that the author chose with Economic Growth in 19 G20 Member Countries for the 2012-2021 Period. The research location and time used by researchers in this research covers 19 G20 member countries for the period 2012 - 2021.

The choice of 19 G20 member countries as research objects is because G20 countries control 85% of world GDP, 80% of global investment, 75% of world trade. The technique used in this research is using Eviews 10 software which is useful for processing data and testing hypotheses previously determined by the author. Meanwhile, the regression model used is ARDL (autoregressive distributed lag) Panel Data regression analysis.

Panel data regression is an analytical tool where regression data is used individually (cross-sectional) and within a certain time range (time series). The ARDL method is a type of method in econometrics. This method can estimate linear regression models by analyzing long-term relationships involving cointegration tests between time series variables.

The ARDL method was first introduced by (Pesaran and Shin, 1997) with the cointegration test method using the Bound Test cointegration test. The ARDL method has several advantages in its operation, namely that it can be used on short string data and does not require initial sorting of variables so it can be done on variables I (0), I (1) or a combination of both.

RESULTS AND DISCUSSION

The stationarity test is one of the tests carried out to fulfill the criteria for forming an econometric model. The Phillips-Peron (PP) Unit Root Test developed by Phillips and Peron

(1988) is the stationarity test used in this research. This method is used to test the existence of a unit root in a time series or to test whether all the variables studied, namely the dependent variable and the independent variable together, are stationary. Data from the variables used will be tested at level and first difference.

Table 2. Level Level Stationarity Test Phillips-Peron Test Method

Variable		Probability	Information
Name	Code		
Economic growth	GDP	0.0000	Stationary
Government Debt	DEBT	0.9999	Not Stationary
Foreign investment	FDI	0.0002	Stationary
Foreign exchange reserves	DEV	0.9959	Not Stationary
Export	EX	0.0255	Stationary

Source: Eviews 10 Output, 2023

Based on Table 2, it shows the stationarity test at level level. Of the five variables used in this research, there are three variables, namely economic growth, foreign investment, and exports which are stationary at the level level and two other variables such as government debt and foreign exchange reserves are not stationary at the level level, so further tests are needed at the first level differences.

The results of the stationarity test at the first difference level can be seen in Table 3 where when testing stationarity at the first difference level, all variables were declared stationary in this study. After carrying out a stationarity test with stationary data results. The next step is to run a cointegration test. Time series data can

deviate from the average in the short term but move simultaneously in the long-term leading to balance in the long term.

Table 3. First Difference Stationarity Test Phillips-Peron Test Method

Variable		Probability	Information
Name	Code		
Economic growth	GDP	0.0000	Stationary
Government Debt	DEBT	0.0206	Stationary
Foreign investment	FDI	0.0000	Stationary
Foreign exchange reserves	DEV	0.0000	Stationary
Export	EX	0.0001	Stationary

Source: Eviews 10 Output, 2023

The concept of cointegration is very important in time series analysis because it can help in understanding the long-term relationship between these variables. The cointegration test aims to see whether there is a long-term relationship between variables.

Table 4. Kao Residual Cointegration Test Results

ADF	t-Statistics	Prob.
	-9.264348	0.0000
Residual variance	16.21120	
HAC variance	11.14518	

Source: Eviews 10 Output, 2023

Kao Residual Cointegration Test is a cointegration test used in this research. If the ADF statistical value is greater than the critical value, then the data is said to be stationary. However, if the absolute value of the statistic is

below the critical value, then the data is not stationary.

Based on the results of the cointegration test using the Kao Residual Cointegration Test (Table 4), it can be seen that the probability value is 0.0000 and is less than the $\alpha = 5\%$. So it can be concluded that in this case there is cointegration. The existence of a cointegration relationship indicates the existence of a long-term relationship between the variables being studied. After carrying out the cointegration test, the next step is to determine the optimum lag in the model to be used. Determining the optimum lag in this model can be seen through the Akaike Info Criterion (AIC).

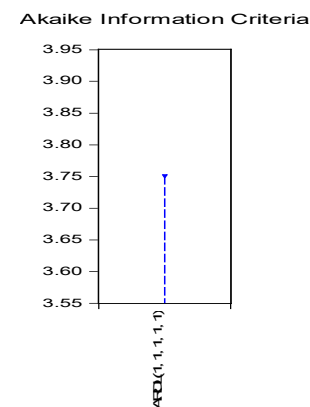


Figure 6. Determination of Optimum Lag

Source: Eviews 10 Output, 2023

In figure 6 it is known that the optimum lag or best model used in this research is the ARDL (1,1,1,1) model. This model was chosen because it has the smallest Akaike Info Criterion (AIC) value which indicates that the model it has the smallest error rate compared to other ARDL models. The existence of this optimum lag will ensure that all variables in the model equation influence each other up to one period earlier.

The t-statistical test analysis functions to test how each independent variable influences the dependent variable. This can be known and

analyzed by comparing the t-statistic value with the t-table. In this test, the t-table is obtained from $df=nk-2$. So in this study the value of

$df=190-4-2=184$, with a significance level of 0.05 and obtained a t-table result of 1.65318.

Table 5. Short Term Pooled Mean Group ARDL Estimation Results

Variable		Coefficient	Std. Error	t-Statistics	Prob.
Name	Notation				
ECM coefficient	COINTEQ01	-0.596819	0.144869	-4.119714	0.0001
Government Debt	D(DEBT)	3.72E-06	1.07E-05	0.348052	0.7286
Foreign investment	D(FDI)	0.000936	0.000489	1.914631	0.0587
Foreign exchange reserves	D(DEV)	-3.45E-05	3.35E-05	-1.029541	0.3060
Export Amount	D(EX)	5.87E-05	2.12E-05	2.776726	0.0067

Source: Eviews 10 Output, 2023

Based on table 5, it shows that the estimated results of the t-statistical test can be explained as follows: The Effect of Government Debt on Economic Growth The government debt variable has a t-statistic value of 0.348052, which is smaller than the t-table value, namely 1.65318. This can be interpreted to mean that government debt has a positive and insignificant influence on economic growth in the short term.

When government debt increases by 1 million USD, it can cause an increase in economic growth of 3.72E-06 percent in the short term. The Effect of Foreign Investment on Economic Growth The foreign investment variable has a t-statistical value of 1.914631 which is greater than the t-table value, namely 1.65318. This can be interpreted to mean that foreign investment has a positive and insignificant influence on economic growth in the short term.

When foreign investment increases by 1 million USDs, it can cause an increase in economic growth of 0.000936 percent in the

short term. The Influence of Foreign Exchange Reserves on Economic Growth. The foreign exchange reserve variable has a t-statistical value of -1.029541, which is smaller than the t-table value, namely 1.65318.

This can be interpreted to mean that foreign exchange reserves have a negative and insignificant influence on economic growth in the short term. When foreign exchange reserves increase by 1 million USDs, it can cause a decrease in economic growth of 3.45E-05 percent in the short term.

The Influence of Exports on Economic Growth The export variable has a t-statistical value of 2.776726 which is greater than the t-table value, namely 1.65318. This can be interpreted to mean that exports have a positive and significant influence on economic growth in the short term. When exports increase by 1 million USD, it can cause an increase in economic growth of 5.87E-05 percent in the short term.

Table 6. Long Term Pooled Mean Group ARDL Estimation Results

Name	Variable Code	Coefficient	Std. Error	t-Statistics	Prob.
Government Debt	DEBT	-1.99E-07	3.75E-08	-5.293888	0.0000
Foreign investment	FDI	5.87E-05	1.18E-05	4.962243	0.0000
Foreign exchange reserves	DEV	2.01E-06	1.32E-07	15.21589	0.0000
Export	EX	3.84E-07	1.52E-07	2.531029	0.0131

Source: Eviews 10 Output, 2023

Based on the results of Table 6, it is known that the long-term ARDL model estimation results are as follows: The government debt variable has a coefficient value of -1.99E-07 with a probability value of 0.0000 lower than $\alpha(0.05)$. It can be concluded that government debt has a negative and significant influence. When government debt increases by 1 million USDs, it will cause a decline in economic growth in the G20 group of countries by 1.99E-07 percent in the long term.

The foreign investment variable has a coefficient value of 5.87E-05 with a probability value of 0.0000 lower than $\alpha(0.05)$. This can be concluded if foreign investment has a positive and significant influence. When foreign investment increases by 1 million USD, it will increase economic growth in G20 group countries by 5.87E-05 percent in the long term.

The foreign exchange reserves variable has a coefficient value of 2.01E-06 with a probability value of 0.0000 lower than $\alpha(0.05)$. This can be concluded if foreign exchange reserves have a positive and significant influence. When foreign exchange reserves increase by 1 million USDs, it will cause an increase in economic growth in the G20 group of countries by 2.01E-06 percent in the long term.

The export variable has a coefficient value of 3.84E-07 with a probability value of 0.0131 lower than $\alpha(0.05)$. This can be concluded if exports have a positive and significant influence.

When exports increase by 1 million USDs, it will increase economic growth in the G20 group countries by 3.84E-07 percent in the long term.

Government debt is debt that a country has by borrowing bonds or a certain amount of money from another country at a certain interest rate and period of time. According to (Panizza & Presbitero, 2014), in their research on countries in the OECD, government debt in OECD countries has a negative relationship with economic growth and has negative causality.

The results of this research are in line with the results of research conducted (Asteriou, et al., 2018) on Asian countries, namely that government debt has a negative relationship in the long and short term. Increasing government debt will reduce the economic growth of Asian countries in the 1980-2012 period.

According to research findings (Asteriou, et al., 2018) said that increasing government debt will have a negative impact on growth in the short term, while reducing government debt will not have a positive impact on economic growth in the short term, but will most likely have a positive impact in the long term. According to research conducted by Shahor (2018) on the state of Israel, government debt will have a negative impact when it is at a ratio of 130% to GDP and above.

However, if the debt ratio is still below 130% of GDP, it will have a positive impact on Israel's economic growth. This is contrary to

research conducted by (Semjonova, 2017) in 176 countries in the world which states that debt has a moderately significant and negative relationship in the short term and in the long term it also has a negative relationship.

The results of this research show that in the short-term government debt has a positive and insignificant relationship with economic growth in the G20 group, which means that H_0 is accepted, and H_a is rejected. Furthermore, the long-term results of this research show that long-term government debt has a negative and significant relationship to economic growth in the G20 group, which means that H_0 is rejected, and H_a is accepted.

The results of this research show that government debt has no effect in the short term but has a significant effect in the long term. This is in line with research conducted by (Panizza & Presbitero, 2014), (Asteriou, et al., 2018), and (Semjonova, 2017). Furthermore, the results of this research are in accordance with the Ricardian Equivalence theory that the debt a country has will have an impact on subsequent generations and future generations will bear and pay debts from the past.

Based on the Pooled Mean Group estimation results in this study, it shows that in the short-term foreign investment has a positive and insignificant relationship with economic growth. Furthermore, the results of this research in the long-term show that foreign investment has a positive and significant relationship.

This is supported by research conducted by (Sukma & Anwar, 2021) which shows that foreign investment has a positive and significant relationship to Gross Domestic Product (GDP). Furthermore, research conducted by (Onafowora & Owoye, 2019) also said the same thing, namely that foreign investment has a

positive and significant relationship to economic growth in Caribbean Island countries.

Attracting foreign investment (FDI) will later help further economic growth (Onafowora & Owoye, 2019). Furthermore, in research (Cora & Wen, 2020), foreign investment has causality in the long term but not in the short term for economic growth in Indonesia. Other research results that support the results in this research are research conducted by (Wu, et al., 2020) explaining that foreign investment also has a positive and significant relationship with economic growth in China.

The results of this research show that in the short-term foreign investment has a positive and insignificant relationship to economic growth in the G20 group, which means that H_0 is accepted, and H_a is rejected. Furthermore, the long-term results of this research show that long-term foreign investment has a positive and significant relationship to economic growth in the G20 group, which means that H_0 is rejected, and H_a is accepted.

The results of this research show that foreign investment has no effect in the short term but has a significant effect in the long term. And this is in line with several previous studies as well as Keynesian growth theory with the expenditure method that researchers use. Countries in the G20.

Based on the results of research using the Pooled Mean Group, it shows that in the short-term foreign exchange reserves have a negative and insignificant relationship with economic growth. Furthermore, the results of this research in the long-term show that foreign exchange reserves have a positive and significant relationship.

This result is supported by research conducted by (Krušković & Maričić, 2015) which

states that an increase in foreign exchange reserves causes economic growth. Furthermore, research conducted by (Kaphle, 2021) shows the results that foreign exchange reserves have a significant relationship and have a significant impact on the economy of Nepal.

Research conducted by (Çetin, 2013) in China in 1982-2009 stated that foreign exchange reserves had a big influence on China's economic growth and had a long-term and significant relationship. Research conducted by (Polterovich & Popov, 2003) also supports the results of this research, namely that increasing foreign exchange reserves will encourage economic growth in the long term.

However, on the other hand, the results of this research contradict research conducted by (Perdana & Setyadharma, 2022) which states that foreign exchange reserves have a negative and significant relationship with economic growth. And it also contradicts the results of research conducted by (Jokolelono, et al., 2023) which states that foreign exchange reserves have a negative and significant impact on Indonesia's economic growth.

Based on the results of this research, it shows that in the short-term foreign exchange reserves have a negative and insignificant relationship with economic growth in the G20 group, which means that H_0 is accepted, and H_a is rejected. Furthermore, the long-term results of this research show that foreign exchange reserves in the long term have a positive and significant relationship to economic growth in the G20 group, which means that H_0 is rejected, and H_a is accepted.

The results of this research show that foreign exchange reserves have no effect in the short term but have a significant effect in the long term. Foreign exchange reserves have a

negative relationship in the short term which is thought to be influenced by exports, inflation, interest rates and foreign debt (Khusnatun & Hutajulu, 2021).

Based on the results in this research, it shows that in the short term, exports from G20 member countries have a positive and significant relationship to economic growth, this indicates that H_0 is rejected, and H_a is accepted. Furthermore, in the long term, exports have a positive and significant relationship, which means that H_0 is rejected, and H_a is accepted.

The results in this research are in line with research conducted by (Cora & Wen, 2020) which states that exports have a long-term and short-term relationship with economic growth. Furthermore, research (Lazarov, 2019) also says the same thing, namely that exports have a positive and significant causal relationship with economic growth for the period 1995–2017 in the country of Macedonia.

And, in research conducted by (Şahin & Kutluay Şahin, 2021) said that the increase in technology exports & agricultural exports will increase the economic growth of European countries which are the object of their research. However, technology exports have a greater influence on increasing economic growth than agricultural exports. Apart from that, the results of this research also contradict research conducted by (Bakari & Mabrouki, 2017) which said the opposite, namely, exports and imports in Panama have no causal relationship and have no effect on economic growth in Panama.

And, in research conducted by (Perdana & Setyadharma, 2022) it is stated that exports have a negative and significant effect on economic growth in 5-ASEAN countries in 2018-2020. The results of research (Farida & Yuliana, 2022) also say that in Indonesia the level of exports does

not have a significant impact on Indonesia's economic growth in 2006-2020.

The estimation results shown by the Pooled Mean Group illustrate that exports in G20 countries have a very influential impact on economic growth. This can be seen in the short and long term, which shows that exports have a significant influence on economic growth. This result is in line with Keynesian growth theory which researchers use, that a country with an open economy will be very dependent on international trade activities in the form of exports and imports.

Therefore, exports greatly contribute to a country's progress. Because all G20 member countries adhere to an open economic system. Countries with open economic systems rely on international trade activities in the form of state exports to gain profits in the form of foreign exchange or the country's own currency.

CONCLUSION

Based on the results of research findings and discussion analysis, this research can be concluded as follows: Government debt has a positive and insignificant effect in the short term but has a negative and significant effect in the long term on economic growth in the G20 group of countries. Government debt has a positive relationship in the short term, allegedly due to governments in G20 countries allocating debt for social needs and less allocated to productive things.

Furthermore, in the long term the country is burdened due to unproductive loan allocation and ultimately reduces economic growth. Foreign investment has a positive and insignificant effect in the short term but has a positive and significant effect in the long term on economic growth in the G20 group of

countries. The increase in economic growth due to foreign investment is suspected because the G20 group controls 80% of global investment. This indicates that investment, especially foreign investment, is very important for the economic progress of a country.

Foreign exchange reserves have a negative and insignificant effect in the short term but have a positive and significant effect in the long term. Foreign exchange reserves have a positive relationship in the short term, allegedly due to being influenced by export conditions, inflation, interest rates and foreign debt experienced by G20 countries.

The increase in economic growth due to foreign exchange reserves in the long term is thought to be because the international currencies held by various countries are the currencies of several G20 countries such as the USD, yen, euro and pound sterling. And also the G20 countries control international trade which has an impact on economic growth.

Exports have a positive and significant effect in the short term and a positive and significant effect in the long term. The increase in growth due to exports is thought to be because all G20 member countries adhere to an open economic system which makes international trade a driver of the economy. And also, the G20 controls 75% of world trade, which means that exports, which are a component of international trade, are very important for a country's income.

REFERENCES

- Ambarwati, S. (2008). Goods and Money Market Equilibrium: The Is-Lm Curve in Conventional Economics and Islamic Economics. Sharia economics general lecture journal.
- Ambarwati, S. (2008). Goods and Money Market Equilibrium: The Is-Lm Curve in Conventional

- Economics and Islamic Economics. Sharia economics general lecture journal.
- Asteriou, D., Pilbeam, K., & Pratiwi, C.E. (2021). Public debt and economic growth: panel data evidence for Asian countries. *Journal of Economics and Finance*, 45, 270-287.
- Asteriou, D., Pilbeam, K., & Pratiwi, C.E. (2021). Public debt and economic growth: panel data evidence for Asian countries. *Journal of Economics and Finance*, 45, 270-287.
- Australian Department of Foreign Affairs and Trade (2022). The G20. Accessed September 1, 2023, from <https://www.dfat.gov.au/trade/organisations/g20>.
- Australian Department of Foreign Affairs and Trade (2022). The G20. Accessed September 1, 2023, from <https://www.dfat.gov.au/trade/organisations/g20>.
- Ayunasta, P. (2019). Foreign debt and Indonesian public consumption: a Ricardian equivalence approach.
- Ayunasta, P. (2019). Foreign debt and Indonesian public consumption: a Ricardian equivalence approach.
- Badaraco, KVM, Diaz, EKT, & Cortez, JLP (2018). Especialización y Diversificación de las exportaciones por países (1981-2015). *Killkana sociales: Revista de Investigación Científica*, 2(3), 203-208.
- Badaraco, KVM, Diaz, EKT, & Cortez, JLP (2018). Especialización y Diversificación de las exportaciones por países (1981-2015). *Killkana sociales: Revista de Investigación Científica*, 2(3), 203-208.
- Bajpai, D. A. (2022). Foreign Direct Investment. *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)* Volume, 2.
- Bajpai, D. A. (2022). Foreign Direct Investment. *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)* Volume, 2.
- Bajraktari, N., Deda, E., & Pacukaj, S. (2022). The role of key economic and social indicators in the development of a country, as a primary way of government policies for the economic growth. *J. Educ. Soc. Res*, 12, 337-352.
- Bajraktari, N., Deda, E., & Pacukaj, S. (2022). The role of key economic and social indicators in the development of a country, as a primary way of government policies for the economic growth. *J. Educ. Soc. Res*, 12, 337-352.
- Bakari, S., & Mabrouki, M. (2017). Impact of exports and imports on economic growth: New evidence from Panama. *Journal of smart economic growth*, 2(1), 67-79.
- Bakari, S., & Mabrouki, M. (2017). Impact of exports and imports on economic growth: New evidence from Panama. *Journal of smart economic growth*, 2(1), 67-79.
- Bank Indonesia (2021). Indonesian Economic Report 2020.
- Barro, R. J., & Robert J. (1974). Are Government Bonds Net Wealth? *Journal of Political Economy*, 82(6), 1095-1117.
- Barro, R. J., & Robert J. (1974). Are Government Bonds Net Wealth? *Journal of Political Economy*, 82(6), 1095-1117.
- Barro, R. J., & Robert J. (1989). The Ricardian Approach to Budget Deficit, *Journal of Economic Perspective*, Vol. 3.
- Barro, R. J., & Robert J. (1989). The Ricardian Approach to Budget Deficit, *Journal of Economic Perspective*, Vol. 3.
- Basuki, AT, & Prawoto, N. (2015). Regression analysis in economics & business research: (equipped with SPSS & Eviews applications). Yogyakarta: RajaGrafindo Persada.
- Basuki, AT, & Prawoto, N. (2015). Regression analysis in economics & business research: (equipped with SPSS & Eviews applications). Yogyakarta: RajaGrafindo Persada.
- Bosman, K. (2016). South Africa: Trading international investment for policy space (No. 04/2016).
- Bosman, K. (2016). South Africa: Trading international investment for policy space (No. 04/2016).
- Cásares, E.R. (1998). Saving and Investment in a Two-Sector Model of Endogenous Growth of a Small Open Economy. *Estudios Económicos*, 13(2 (26)), 197-224. <http://www.jstor.org/stable/40311406>
- Çetin, H. (2013). Time series analysis of China's external debt components, foreign exchange reserves and economic growth rates. *The International Journal of Social Sciences*, 13(1), 1-15.
- Çetin, H. (2013). Time series analysis of China's external debt components, foreign exchange reserves and economic growth rates. *The International Journal of Social Sciences*, 13(1), 1-15.
- Coordinating Ministry for Economic Affairs of the Republic of Indonesia (2021). Looking Back at the Troika and the History of the G20 Presidency. Accessed September 28, 2023, from

- <https://www.ekon.go.id/publikasi/detail/3207/mene-lisik-back-troika-dan-histori-presidency-g20>.
- Coordinating Ministry for Economic Affairs of the Republic of Indonesia (2021). Looking Back at the Troika and the History of the G20 Presidency. Accessed September 28, 2023, from <https://www.ekon.go.id/publikasi/detail/3207/mene-lisik-back-troika-dan-histori-presidency-g20>.
- Cora, AND, & Wen, L.C. (2020). The relationship between foreign direct investment, exports and GDP growth in Indonesia. *PalArch's Journal of Archeology of Egypt/Egyptology*, 17(7), 2679-2691.
- Cora, AND, & Wen, L.C. (2020). The relationship between foreign direct investment, exports and GDP growth in Indonesia. *PalArch's Journal of Archeology of Egypt/Egyptology*, 17(7), 2679-2691.
- Countryeconomy.com. (2022). General government gross debt. Retrieved May 17, 2023, from <https://countryeconomy.com/national-debt>.
- Countryeconomy.com. (2022). General government gross debt. Retrieved May 17, 2023, from <https://countryeconomy.com/national-debt>.
- Dey, S. R., & Tareque, M. (2020). External debt and growth: role of stable macroeconomic policies. *Journal of Economics, Finance and Administrative Science*, 25(50), 185-204.
- Dey, S. R., & Tareque, M. (2020). External debt and growth: role of stable macroeconomic policies. *Journal of Economics, Finance and Administrative Science*, 25(50), 185-204.
- Dhewy, R.C. (2022). Quantitative Data Analysis Training for Writing Student Scientific Papers. *J-ABDI: Journal of Service to Mankiw*, N. Gregory. (2010). *Macroeconomics*, 7th edition, Worth Publisher
- Dhewy, R.C. (2022). Quantitative Data Analysis Training for Writing Student Scientific Papers. *J-ABDI: Journal of Community Service*, 2(3), 4575-4578.
- Dianita, D., & Zuhroh, I. (2018). Analysis of Indonesia's foreign exchange reserves 1990-2016. *JIE Journal of Economics*, 2(1), 119-131.
- Dianita, D., & Zuhroh, I. (2018). Analysis of Indonesia's foreign exchange reserves 1990-2016. *JIE Journal of Economics*, 2(1), 119-131.
- Edo, S., Osadolor, NE, & Dading, IF (2020). Growing external debt and declining exports: The concurrent impediments in economic growth of Sub-Saharan African countries. *International Economics*, 161, 173-187.
- Edo, S., Osadolor, NE, & Dading, IF (2020). Growing external debt and declining exports: The concurrent impediments in economic growth of Sub-Saharan African countries. *International Economics*, 161, 173-187.
- Fadhilah, N., & Sukmana, R. (2017). The influence of the Bank Indonesia Sharia Certificate (SBIS), Jakarta Islamic Index (JII), inflation rate, and composite stock price index (IHSG) on the exchange rate: autoregressive distributed lag (ARDL) approach. *Journal of theoretical and applied Islamic economics*, 4(10), 315203.
- Farida, A., & Yuliana, I. (2022). The Influence of Foreign Debt and Exports on Indonesia's Economic Growth (GDP) for the 2006-2020 Period. *MALIA: Journal of Islamic Economics*, 13(2), 181-192.
- Farida, A., & Yuliana, I. (2022). The Influence of Foreign Debt and Exports on Indonesia's Economic Growth (GDP) for the 2006-2020 Period. *MALIA: Journal of Islamic Economics*, 13(2), 181-192.
- Gazali, M. (2019). State Debt Budget Deficit and Optimizing Zakat in the APBN Islamic Economic Ideas. In *Proceedings of the National Scholars Seminar* (pp. 2-5).
- Gazali, M. (2019). State Debt Budget Deficit and Optimizing Zakat in the APBN Islamic Economic Ideas. In *Proceedings of the National Scholars Seminar* (pp. 2-5).
- Ginting, AM (2017). Analysis of the influence of exports on Indonesia's economic growth. *Trade R&D Scientific Bulletin*, 11(1), 1-20.
- Ginting, AM (2017). Analysis of the influence of exports on Indonesia's economic growth. *Trade R&D Scientific Bulletin*, 11(1), 1-20.
- Hammer, A. B., & Abbyad, N. (2018). Does China Still Have a Debt Problem?. *Executive Briefings on Trade (USITC)*.
- Hammer, A. B., & Abbyad, N. (2018). Does China Still Have a Debt Problem?. *Executive Briefings on Trade (USITC)*.
- Harahap, SF, & Tirtayasa, S. (2020). The Influence of Motivation, Discipline, and Job Satisfaction on Employee Performance at PT. Angkasa Pura II (Persero) Kualanamu Branch Office. *Maneggio: Master of Management Scientific Journal*, 3(1), 120-135.
- Harahap, SF, & Tirtayasa, S. (2020). The Influence of Motivation, Discipline, and Job Satisfaction on Employee Performance at PT. Angkasa Pura II

- (Persero) Kualanamu Branch Office. *Maneggio: Master of Management Scientific Journal*, 3(1), 120-135.
- Hilton, S. K. (2021). Public debt and economic growth: contemporary evidence from a developing economy. *Asian Journal of Economics and Banking*. Vol. 5 No. 2, pp. 173-193. <https://doi.org/10.1108/AJEB-11-2020-0096>
- Hilton, S. K. (2021). Public debt and economic growth: contemporary evidence from a developing economy. *Asian Journal of Economics and Banking*. Vol. 5 No. 2, pp. 173-193. <https://doi.org/10.1108/AJEB-11-2020-0096>
- Hu, Z. F., & Khan, M. S. (1997). Why is China growing so fast? *Staff Papers*, 44(1), 103-131.
- Hu, Z. F., & Khan, M. S. (1997). Why is China growing so fast? *Staff Papers*, 44(1), 103-131.
- Hutfilter, A.F., Kappeler, A., Schneider, D., & Semeraro, G.M. (2016). Boosting investment performance in Germany (No. 1326). OECD Publishing.
- Hutfilter, A.F., Kappeler, A., Schneider, D., & Semeraro, G.M. (2016). Boosting investment performance in Germany (No. 1326). OECD Publishing.
- Ibrahim, C. (2020). Corruption, public debt and economic growth—evidence from developing countries. *International Journal of Development Issues*, 20(1), 24-37.
- Ibrahim, C. (2020). Corruption, public debt and economic growth—evidence from developing countries. *International Journal of Development Issues*, 20(1), 24-37.
- Ishchy, U. B. (2020). The Role of Education on Economic Growth: Evidence from Turkey. *International Economic Journal*, 34(2), 347-369.
- Ishchy, U. B. (2020). The Role of Education on Economic Growth: Evidence from Turkey. *International Economic Journal*, 34(2), 347-369.
- Isufaj, M. (2013). Government's Role in the Economical Growth of a Country (2000-2011, Albania). *Mediterranean Journal of Social Sciences*, 4(2), 267.
- Isufaj, M. (2013). Government's Role in the Economical Growth of a Country (2000-2011, Albania). *Mediterranean Journal of Social Sciences*, 4(2), 267.
- Jacobo, A.D., & Jalile, I.R. (2017). The impact of government debt on economic growth: An overview for Latin America. *Quaderni del Dipartimento di Economia, Finanza e Statistica*, 28, 2017.
- Jacobo, A.D., & Jalile, I.R. (2017). The impact of government debt on economic growth: An overview for Latin America. *Quaderni del Dipartimento di Economia, Finanza e Statistica*, 28, 2017.
- Jokolelono, E., Djirimu, MA, Mangun, N., Darwis, I., & Jaya, A. H (2023). Determinant Factors on Indonesia's Economic Growth: An Analysis of Foreign Debt, Foreign Investment, Exports, and Exchange Reserves. *Journal of economics, finance and management studies*, doi: 10.47191/jefms/v6-i5-40
- Jokolelono, E., Djirimu, MA, Mangun, N., Darwis, I., & Jaya, A. H (2023). Determinant Factors on Indonesia's Economic Growth: An Analysis of Foreign Debt, Foreign Investment, Exports, and Exchange Reserves. *Journal of economics, finance and management studies*, doi: 10.47191/jefms/v6-i5-40
- Judge, L. (2009). The Influence of Foreign Debt, Fiscal Policy on Public Consumption in the Ricardian Equivalence Paradigm 1990-2004: Application of the Vector Autoregressions (VAR) Model. *Economic Journal of Emerging Markets*, 11(2). <https://doi.org/10.20885/ejem.v11i2.530>
- Judge, L. (2009). The Influence of Foreign Debt, Fiscal Policy on Public Consumption in the Ricardian Equivalence Paradigm 1990-2004: Application of the Vector Autoregressions (VAR) Model. *Economic Journal of Emerging Markets*, 11(2). <https://doi.org/10.20885/ejem.v11i2.530>
- Kaphle, R.R. (2021). Impact of foreign exchange reserves on economic growth in Nepal. *Journal of Management and Development Studies*, 30(1), 14-23.
- Kaphle, R.R. (2021). Impact of foreign exchange reserves on economic growth in Nepal. *Journal of Management and Development Studies*, 30(1), 14-23.
- Kartiasih, F. (2019). The impact of transportation infrastructure on economic growth in Indonesia using panel data regression. *Scientific Journal of Economics and Business*, 16(1), 67-77.
- Kartiasih, F. (2019). The impact of transportation infrastructure on economic growth in Indonesia using panel data regression. *Scientific Journal of Economics and Business*, 16(1), 67-77.
- Keynes, J. M. (1937). The general theory of employment. *The quarterly journal of economics*, 51(2), 209-223.
- Keynes, J. M. (1983). *Economic Articles and Correspondance: Investment and Editorial*. MacMillan for the Royal Economic Society.
- Khan, M., Khan, I., Bhabha, J., Qureshi, Q., Qureshi, N., & Khan, R. (2015). The role of financial institutions and economic growth: A literature review. *European Journal of Business and Management*, 7(1), 95-99.

- Khan, M., Khan, I., Bhabha, J., Qureshi, Q., Qureshi, N., & Khan, R. (2015). The role of financial institutions and the economic growth: A literature review. *European Journal of Business and Management*, 7(1), 95-99.
- Khusnatun, LL, & Hutajulu, DM (2021). Analysis of Factors Affecting Indonesia's Foreign Exchange Reserves. *Incentive Economies*, 15(2), 79-92.
- Khusnatun, LL, & Hutajulu, DM (2021). Analysis of Factors Affecting Indonesia's Foreign Exchange Reserves. *Incentive Economies*, 15(2), 79-92.
- Kopf, D. A. (2007). Endogenous growth theory applied: Strategies for university R&D. *Journal of Business Research*, 60(9), 975-978.
- Kopf, D. A. (2007). Endogenous growth theory applied: Strategies for university R&D. *Journal of Business Research*, 60(9), 975-978.
- Krušković, B.D., & Maričić, T. (2015). Empirical analysis of the impact of foreign exchange reserves on economic growth in emerging economies. *Applied Economics and Finance*, 2(1), 102-109.
- Krušković, B.D., & Maričić, T. (2015). Empirical analysis of the impact of foreign exchange reserves on economic growth in emerging economies. *Applied Economics and Finance*, 2(1), 102-109.
- Kumaat, RJ, Rotinsulu, DC, & Rumat, VA (2020). Analysis of Income Inequality and Its Effect on Poverty Through Economic Growth (Case of Talaud Islands District). In 6th Annual International Conference on Management Research (AICMaR 2019) (pp. 178-181). Atlantis Press.
- Lazarov, D. (2019). Empirical analysis of export performance and economic growth: the case of Macedonia. *International Journal of Trade and Global Markets*, 12(3-4), 381-393.
- Lazarov, D. (2019). Empirical analysis of export performance and economic growth: the case of Macedonia. *International Journal of Trade and Global Markets*, 12(3-4), 381-393.
- Li, K. X., Jin, M., & Shi, W. (2018). Tourism as an important impetus for promoting economic growth: A critical review. *Tourism management perspectives*, 26, 135-142.
- Li, K. X., Jin, M., & Shi, W. (2018). Tourism as an important impetus for promoting economic growth: A critical review. *Tourism management perspectives*, 26, 135-142.
- Magazzino, C., & Mele, M. (2022). Can a change in FDI accelerate GDP growth? Time-series and ANNs evidence on Malta. *The Journal of Economic Asymmetries*, 25, e00243.
- Magazzino, C., & Mele, M. (2022). Can a change in FDI accelerate GDP growth? Time-series and ANNs evidence on Malta. *The Journal of Economic Asymmetries*, 25, e00243.
- Maggi, E., & Mariotti, I. (2012). Globalization and the rise of logistics FDI: the case of Italy. *Foreign investment: types, methods, and impacts*, 29-60.
- Maggi, E., & Mariotti, I. (2012). Globalization and the rise of logistics FDI: the case of Italy. *Foreign investment: types, methods, and impacts*, 29-60.
- Maharani, K., & Isnowati, S. (2014). Study of investment, government spending, labor and economic openness towards economic growth in Central Java Province. *Journal of Business and Economics*, 21(1).
- Maharani, K., & Isnowati, S. (2014). Study of investment, government spending, labor and economic openness towards economic growth in Central Java Province. *Journal of Business and Economics*, 21(1).
- Mahzalena, Y., & Juliansyah, H. (2019). The influence of inflation, government spending and exports on economic growth in Indonesia. *Unimal Regional Economic Journal*, 2(1), 37-50.-
- Mahzalena, Y., & Juliansyah, H. (2019). The influence of inflation, government spending and exports on economic growth in Indonesia. *Unimal Regional Economic Journal*, 2(1), 37-50.-
- Mankiw, N. Gregory. (2010). *Macroeconomics*, 7th edition, Worth Publisher
- Marjanović, D., & Domazet, IS (2021). Foreign Direct Investments: A Key Factor for Business Globalization. In *Handbook of Research on Institutional, Economic, and Social Impacts of Globalization and Liberalization* (pp. 96-116). IGI Global.
- Marjanović, D., & Domazet, IS (2021). Foreign Direct Investments: A Key Factor for Business Globalization. In *Handbook of Research on Institutional, Economic, and Social Impacts of Globalization and Liberalization* (pp. 96-116). IGI Global.
- Marshalok, T., & Moroz, I. (2019). Impact of the Government Debt on Economic Development of Country. *World of finance*, (2(59)), 23-36.
- Marshalok, T., & Moroz, I. (2019). Impact of the Government Debt on Economic Development of Country. *World of finance*, (2(59)), 23-36.

- Matsumoto, H. (2022). Foreign reserve accumulation, foreign direct investment, and economic growth. *Review of Economic Dynamics*, 43, 241-262.
- Matsumoto, H. (2022). Foreign reserve accumulation, foreign direct investment, and economic growth. *Review of Economic Dynamics*, 43, 241-262.
- Mildyanti, R., & Triani, M. (2019). Analysis of Factors Affecting Foreign Exchange Reserves (Case Study in Indonesia and China). *Journal of Economic and Development Studies*, 1(1), 165-176.
- Minarni, M. (2021). Comparative Study of Ibn Taimiyah and John Maynard Keynes's Thoughts on Public Finance. *Scientific Journal of Islamic Economics*, 7(2), 734-747.
- Miyajima, K. (2020). What influences bank lending in Saudi Arabia? *Islamic Economic Studies*, 27(2), 125-155.
- Miyajima, K. (2020). What influences bank lending in Saudi Arabia? *Islamic Economic Studies*, 27(2), 125-155.
- Mrabet, Z., & Alsamara, M. (2017). The impact of parallel market exchange rate volatility and oil exports on real GDP in Syria: Evidence from the ARDL approach. *The Journal of International Trade & Economic Development*, 27(3), 333-349.
- Mrabet, Z., & Alsamara, M. (2017). The impact of parallel market exchange rate volatility and oil exports on real GDP in Syria: Evidence from the ARDL approach. *The Journal of International Trade & Economic Development*, 27(3), 333-349.
- Nicolini-Llosa, J. L. (2011). Dual equilibrium and growth cycle in Argentina. *International Review of Applied Economics*, 25(2), 185-207.
- Nicolini-Llosa, J. L. (2011). Dual equilibrium and growth cycle in Argentina. *International Review of Applied Economics*, 25(2), 185-207.
- Onafowora, O., & Owoye, O. (2019). Public debt, foreign direct investment and economic growth dynamics: Empirical evidence from the Caribbean. *International Journal of Emerging Markets*, 14(5), 769-791.
- Onafowora, O., & Owoye, O. (2019). Public debt, foreign direct investment and economic growth dynamics: Empirical evidence from the Caribbean. *International Journal of Emerging Markets*, 14(5), 769-791.
- Palembangan, IT, Kumaat, RJ, & Mandei, D. (2020). Analysis of the Influence of the BI Reference Interest Rate, SIBOR, and Rupiah Exchange Rate on Foreign Exchange Reserves in Indonesia (2011: Q1-2019: Q4). *Efficiency Scientific Periodical Journal*, 20(02).
- Palembangan, IT, Kumaat, RJ, & Mandei, D. (2020). Analysis of the Influence of the BI Reference Interest Rate, SIBOR, and Rupiah Exchange Rate on Foreign Exchange Reserves in Indonesia (2011: Q1-2019: Q4). *Efficiency Scientific Periodical Journal*, 20(02).
- Panizza, U., & Presbitero, A.F. (2014). Public debt and economic growth: is there a causal effect?. *Journal of Macroeconomics*, 41, 21-41.
- Panizza, U., & Presbitero, A.F. (2014). Public debt and economic growth: is there a causal effect?. *Journal of Macroeconomics*, 41, 21-41.
- Perdana, MAA, & Setyadharma, A. (2022). Determinants of GDP Growth in ASEAN-5 Using Panel Method. *Ecoplan*, 5(1), 64-71.
- Perdana, MAA, & Setyadharma, A. (2022). Determinants of GDP Growth in ASEAN-5 Using Panel Method. *Ecoplan*, 5(1), 64-71.
- Pettinger, T. (2022). Factors Affecting Economic Development. *International Journal of Development Strategies in Humanities, Management and Social Sciences*, 12(2), 117-120. <https://doi.org/10.48028/iiprds/ijdshtmss.v12.i2.o8>
- Polterovich, V., & Popov, V. (2003). Accumulation of foreign exchange reserves and long-term growth. NES Working Paper.
- Polterovich, V., & Popov, V. (2003). Accumulation of foreign exchange reserves and long-term growth. NES Working Paper.
- Popkova, E.G., Bogoviz, A.V., Pozdnyakova, U.A., & Przhedetskaya, N.V. (2018). Specifics of economic growth of developing countries. *Management of Changes in Socio-Economic Systems*, 139-146.
- Popkova, E.G., Bogoviz, A.V., Pozdnyakova, U.A., & Przhedetskaya, N.V. (2018). Specifics of economic growth of developing countries. *Management of Changes in Socio-Economic Systems*, 139-146.
- Primandari, NR (2017). The Influence of Export Value on Economic Growth in Indonesia for the 2000-2015 Period. *Collegial*, 5(2), 183-194.
- Primandari, NR (2017). The Influence of Export Value on Economic Growth in Indonesia for the 2000-2015 Period. *Collegial*, 5(2), 183-194.
- Purba, B. (2020). Analysis of Indonesia's Economic Growth for the 2009-2018 Period. *Humanities Journal: Journal of Social, Economic and Legal Sciences*, 4(2), 244-255.
- Purba, B. (2020). Analysis of Indonesia's Economic Growth for the 2009-2018 Period. *Humanities Journal*:

- Journal of Social, Economic and Legal Sciences, 4(2), 244-255.
- Rana, S. (2022). Why research on economic growth is important? Future research areas on economic growth. *FIIB Business Review*, 11(2), 127-129.
- Rinaldi, Mikhral. (2017). Analysis of the Influence of International Trade and Macroeconomic Variables on Economic Growth in Indonesia. *Indonesian Journal of Economics and Public Policy*, Vol. 4 No. 1 49-60.
- Rinaldi, Mikhral. (2017). Analysis of the Influence of International Trade and Macroeconomic Variables on Economic Growth in Indonesia. *Indonesian Journal of Economics and Public Policy*, Vol. 4 No. 1 49-60.
- Şahin, L. & Kutluay Şahin, D. (2021). The Relationship Between High-Tech Export and Economic Growth: A Panel Data Approach for Selected Countries. *Gaziantep University Journal of Social Sciences*, 20(1), 22-31. DOI: 10.21547/jss.719642
- Şahin, L. & Kutluay Şahin, D. (2021). The Relationship Between High-Tech Export and Economic Growth: A Panel Data Approach for Selected Countries. *Gaziantep University Journal of Social Sciences*, 20(1), 22-31. DOI: 10.21547/jss.719642
- Salim, A., Fadilla, F., & Purnamasari, A. (2021). The Effect of Inflation on Indonesia's Economic Growth. *Ekonomika Sharia: Journal of Sharia Economic Thought and Development*, 7(1), 17-28.
- Salim, A., Fadilla, F., & Purnamasari, A. (2021). The Effect of Inflation on Indonesia's Economic Growth. *Ekonomika Sharia: Journal of Sharia Economic Thought and Development*, 7(1), 17-28.
- Sardoni, C. (2021). The public debt and the Ricardian equivalence: Some critical remarks. *Structural Change and Economic Dynamics*, 58, 153-160.
- Sitorus, C. (2022). Determinants of Economic Growth in the Selected ASEAN Countries. *Efficient: Indonesian Journal of Development Economics*, 5(2), 155-162. <https://doi.org/10.15294/efficient.v5i2.52895>
- Semjonova, N. (2017). Government Debt and GDP Growth. In: Bilgin, M., Danis, H., Demir, E., Can, U. (eds) *Financial Environment and Business Development*. Eurasian Studies in Business and Economics, vol 4, 267-284. Springer, Cham. https://doi.org/10.1007/978-3-319-39919-5_21
- Semjonova, N. (2017). Government Debt and GDP Growth. In: Bilgin, M., Danis, H., Demir, E., Can, U. (eds) *Financial Environment and Business Development*. Eurasian Studies in Business and Economics, vol 4, 267-284. Springer, Cham. https://doi.org/10.1007/978-3-319-39919-5_21
- Shahor, T. (2018). The impact of public debt on economic growth in the Israeli economy. *Israel Affairs*, 24(2), 254-264.
- Shahor, T. (2018). The impact of public debt on economic growth in the Israeli economy. *Israel Affairs*, 24(2), 254-264.
- Sharma, N. (2021). Indian Economy: Current Trends & Future. *Journal of Contemporary Issues in Business and Government*, 27(3), 884-889.
- Sharma, N. (2021). Indian Economy: Current Trends & Future. *Journal of Contemporary Issues in Business and Government*, 27(3), 884-889.
- Sugiyono. (2013). Management research methods. Quantitative, qualitative, combination, class action and evaluation approaches. Bandung: Alfabeta.
- Sugiyono. (2013). Management research methods. Quantitative, qualitative, combination, class action and evaluation approaches. Bandung: Alfabeta.
- Sukma, I., & Anwar, K. (2021). The Effect of Foreign Investment, Government External Debt, And Government Expenditure on Gross Domestic Product in Indonesia. *Journal of Malikussaleh Public Economics*, 4(1), 20-29.
- Sukma, I., & Anwar, K. (2021). The Effect of Foreign Investment, Government External Debt, And Government Expenditure on Gross Domestic Product in Indonesia. *Journal of Malikussaleh Public Economics*, 4(1), 20-29.
- The World Bank (2023). Countries and Economies. Accessed September 18, 2023, from <https://data.worldbank.org/country>.
- The World Bank (2023). Countries and Economies. Accessed September 18, 2023, from <https://data.worldbank.org/country>.
- The World Bank (2023). Exports of goods and services (current US\$). Retrieved March 18, 2023, from <https://data.worldbank.org/indicator/NE.EXP.GNFS.CD>.
- The World Bank (2023). Exports of goods and services (current US\$). Retrieved March 18, 2023, from <https://data.worldbank.org/indicator/NE.EXP.GNFS.CD>.
- The World Bank (2023). GDP growth (annual %). Retrieved March 3, 2023, from <https://data.worldbank.org/indicator/NY.GDP.MKT.P.KD.ZG>.

- The World Bank (2023). GDP growth (annual %). Retrieved March 3, 2023, from <https://data.worldbank.org/indicator/NY.GDP.MKT.P.KD.ZG>.
- The World Bank (2023). Total reserves (includes gold, current US\$). Retrieved March 19, 2023, from <https://data.worldbank.org/indicator/FI.RES.TOTL.CD>.
- The World Bank (2023). Total reserves (includes gold, current US\$). Retrieved March 19, 2023, from <https://data.worldbank.org/indicator/FI.RES.TOTL.CD>.
- Todaro, M. and SC Smith. (2006). *Economic Development*. Jakarta: Erlangga.
- Todaro, M. and SC Smith. (2006). *Economic Development*. Jakarta: Erlangga.
- Todorova, T. (2022). Foreign Trade and Macroeconomic Effects of Exports. *Theoretical and Practical Research in Economic Fields (TPREF)*, 13(25), 31-43.
- Ulfa, R. (2021). Research Variables in Educational Research. *Al-Fathonah*, 1(1), 342-351.
- Ulfa, R. (2021). Research Variables in Educational Research. *Al-Fathonah*, 1(1), 342-351.
- Unctad.org (2022, June 9). Global foreign direct investment flows over the last 30 years. Retrieved March 18, 2023, from <https://unctad.org/datavisualization/global-foreign-direct-investment-flows-over-last-30-years>.
- Unctad.org (2022, June 9). Global foreign direct investment flows over the last 30 years. Retrieved March 18, 2023, from <https://unctad.org/datavisualization/global-foreign-direct-investment-flows-over-last-30-years>.
- Wijayanto, B. (2019). Endogenous Growth Theory. SSRN 3317961.
- Wijayanto, B. (2019). Endogenous Growth Theory. SSRN 3317961.
- Worldometers (2023). Countries in the world by population. Retrieved September 18, 2023, from <https://www.worldometers.info/world-population/population-by-country/>.
- Worldometers (2023). Countries in the world by population. Retrieved September 18, 2023, from <https://www.worldometers.info/world-population/population-by-country/>.
- Wu, M., & Huang, S. (2016). Endogenous Growth and Country Heterogeneity In *Economic Growth: Evidence From Selected OECD Countries*. *Eur. J. Econ. L. & Pol.*, 3, 1.
- Wu, M., & Huang, S. (2016). Endogenous Growth and Country Heterogeneity In *Economic Growth: Evidence From Selected OECD Countries*. *Eur. J. Econ. L. & Pol.*, 3, 1.
- Wu, W., Yuan, L., Wang, X., Cao, X., & Zhou, S. (2020). Does FDI drive economic growth? Evidence from city data in China. *Emerging Markets Finance and Trade*, 56(11), 2594-2607.
- Wu, W., Yuan, L., Wang, X., Cao, X., & Zhou, S. (2020). Does FDI drive economic growth? Evidence from city data in China. *Emerging Markets Finance and Trade*, 56(11), 2594-2607.
- Wulandari, LM, & Zuhri, S. (2019). The influence of international trade on Indonesia's economic growth in 2007-2017. *REP Journal (Development Economic Research)*, 4(2), 119-127.
- Wulandari, LM, & Zuhri, S. (2019). The influence of international trade on Indonesia's economic growth in 2007-2017. *REP Journal (Development Economic Research)*, 4(2), 119-127.
- Xu, M., Kim, S.H., & Moussawi, H. (2016). The US Government Debt: Consequences, Causes, and Solutions. *The Journal of Applied Business and Economics*, 18(1), 69.
- Xu, M., Kim, S.H., & Moussawi, H. (2016). The US Government Debt: Consequences, Causes, and Solutions. *The Journal of Applied Business and Economics*, 18(1), 69.
- Yahya, MT, Sabah, OH, & Hamdoun, MR (2020). The Reality of Developing Country Exports and its Impact on Economic Growth for the Period 1995-2018. *TANMIYAT AL-RAFIDAIN*, 39(127), 103-122.
- Yahya, MT, Sabah, OH, & Hamdoun, MR (2020). The Reality of Developing Country Exports and its Impact on Economic Growth for the Period 1995-2018. *TANMIYAT AL-RAFIDAIN*, 39(127), 103-122.
- Yudiatmaja Eko., Wahyu., (2012). The Trap of Foreign Debt for the Burden of Indonesia's Economy and Development, *Scientific Journal of Public Administration and Development*, Volume 3, Number 1.
- Yudiatmaja Eko., Wahyu., (2012). The Trap of Foreign Debt for the Burden of Indonesia's Economy and Development, *Scientific Journal of Public Administration and Development*, Volume 3, Number 1.
- Yugang, He. (2017). A Study on the Impact of some Factors on Holdings of Foreign Exchange Reserves in China.

American International Journal of Humanities and Social Science, 3(5).

Yugang, He. (2017). A Study on the Impact of some Factors on Holdings of Foreign Exchange Reserves in China.

American International Journal of Humanities and Social Science, 3(5).

Yuni, R., & Hutabarat, DL (2021). The Impact of International Trade on Indonesia's Economic Growth in 2009-2019. Commerce, 10(1), 62.