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Determinants of Economic Growth in Developing Countries of G20 Members

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ABSTRACT
This study purpose to analyze the determinants of economic growth in developing countries of G20 members, with variables (1) Economic Growth, (2) Foreign Direct Investment, (3) Inflation, (4) Total Population, and (5) Exchange Rates. The data in this study uses panel data from the 2013-2018, which consists of ten developing countries in G20 members, using linear regression and using the Random Effect Model (REM). The results shows that, (1) foreign direct investment has a positive and insignificant effect on the economic growth in developing countries of G20 members, this is caused by the lack of foreign direct investment into the country, which is caused by the inaccuracy of the government in regulations and policies for foreign Investment, (2) inflation has a negative and significant effect on the economic growth in developing countries of G20 members, this is caused by low inflation causing capital purchases to produce goods and services can be achieved, it will increases the production of goods and services and in the end will increases economic growth, (3) population has a positive and insignificant effect on the economic growth in developing countries of G20 members, this is caused by the large number of population who have not able to drive economic growth, because most of peoples do not have skills for work, labor who have skills will increases productivity and ultimately increases economic growth, (4) the exchange rate has a positive and significant effect on economic growth in developing countries of G20 members, this is caused by, if the exchange rate is appreciated then will increases the country's foreign exchange reserves, if foreign exchange reserves increases, the export demand will increases, automatic production of goods and services also increases, and at the end result of economic growth will also increases.

Keywords: *economic growth, fdi, inflation, population, exchange rate*

1. INTRODUCTION

In the last few decades, economic growth was not sufficiently explained by various theories and models, but also viewed from various perspectives that could be considered (Bere et al., 2014). Researchers and economists say that economic growth is needed for evolution and has become a human race. The theory of economic growth has evolved over time, depending on the period and economic dynamics. Also improvements in mathematical and statistical tools have had a significant impact in formulating new concepts and policies to be made (Boldeanu & Constantinescu, 2015). Economic growth is one important indicator that must be considered by each country globally (Darko & Kwasi, 2015). Where, economic growth becomes increasingly important to study, considering, each country will always try to increases the economic target as a measure of the success of a country in the long term. Not only that, a country that is able to maintain and even always increases economic growth is an

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achievement that certainly requires planning and vigilance in carrying out economic activities.

The occurrence of the global economic crisis that hit few countries in the world, caused a slowdown in world economic growth and led to economic downturn. The slowdown in world economic growth, in addition to causing the volume of world trade to decline, will also have an impact on the number of large industries threatened with bankruptcy, a decline in production, and world unemployment will increases, as a result for developing countries and emerging markets, these conditions can damage economic fundamentals and trigger an economic crisis.

Due to the slowdown in global economic growth, so the hope that will become the driving force of world economic growth are the strongest economies, namely the G20. At the G20 summits, the world's largest economy realized, the need to support the world economy, and agreed on a series of policies to generate growth. Factors that encourage and increases economic growth in the G20, need to be maintained and encouraged the level of economic growth.

There are several driving and inhibiting factors for a country in achieving economic growth. Countries that are able to maximize the driving factors, it will be easier to achieve economic growth. Otherwise, a country that is not able to minimize the inhibiting factors, it will be more difficult to increases economic growth. The key macroeconomic goals is economic growth, this is due for several reasons. First, the population is always increasing, so that with economic growth, it will be able to provide employment. Second, human desires and needs are always unlimited, so that with economic growth will be able to produce more goods and services, to meet those wants and needs. Third, efforts to create economic equality are more easily achieved in high economic growth. The following rate of economic growth in developing countries in the G20 in the last six years can be seen in the following table:

Table 1. Economic Growth of Developing Countries in G20 Members According to the 2013-2018 (%)

Numb.	Country	2013	2014	2015	2016	2017	2018	Averages
1	Argentina	2.41	-2.51	2.73	-2.08	2.67	-2.48	0.12
2	Brazil	3.00	0.50	-3.55	-3.31	1.06	1.12	-0.19
3	China	7.77	7.30	6.91	6.74	6.76	6.57	7.01
4	Indonesia	5.56	5.01	4.88	5.03	5.07	5.17	5.12
5	India	6.39	7.41	8.00	8.17	7.17	6.81	7.32
6	Mexico	1.35	2.80	3.29	2.91	2.12	2.14	2.44
7	Russian Federation	1.80	0.70	-2.31	0.33	1.63	2.25	0.73
8	Saudi Arabia	2.70	3.65	4.11	1.67	-0.74	2.43	2.30
9	South Africa	2.49	1.85	1.19	0.40	1.41	0.79	1.35
10	Turkey	8.49	5.17	6.09	3.18	7.47	2.83	5.54

Sources: World Bank, 2018

Table 1 shows, the economic growth conditions of developing countries in G20 members, experienced fluctuations every year, the highest average economic growth during 2013-2018 occurred in India at 7.32% and the lowest in Brazil at -0.19%. But over the past six years there have been countries that experienced a decline to deficits that occurred in Argentina, Brazil, Russia and Saudi Arabia, although the following year has increased. However, there are also countries that have increased growth, but over time, the condition has experienced a

decline that occurred in China, Indonesia, India, Mexico, South Africa, and Turkey.

Developing countries of G20 members are trying to increase their prosperity by creating a national development plan that will increase the capacity of the national economy to produce goods and services. The capacity for the production of goods and services in an economy is simply referred to as "economic growth", which is determined or influenced by several factors (Chirwa & Odhiambo, 2016; Dewan & Hussein, 2001; Mukupa, et al. 2016) consists of foreign direct investment, inflation, population, and the exchange rate.

Increasing in foreign direct investment will trigger an increase in economic growth because an increase in foreign direct investment indicates an increase in investment or capital formation. The increase in capital will result in an increase in the production of goods and services in the economy. Increased production of goods and services will lead to an increase in economic growth.

Low inflation makes a country's economy healthy and stable because inflation is an increase in the price of goods and services where if the price of goods and services is stable, capital purchases for the production of goods and services can be achieved and the creation of healthy market conditions will also increase economic growth. inflation causes the amount of profits to fall (rate of return), then reducing capital accumulation (capital accumulation) results in a decrease in economic growth.

A large population means more workers to carry out the production of goods and services. At the same time, it also means that more people consume goods and services, and an increase in demand for aggregate demand for goods and services, more production, and ultimately stimulates the country's economy and can increase a country's economic growth.

The exchange rate based on purchasing power parity (PPP) is increasing, then foreign exchange reserves will increase, foreign exchange reserves will increase the demand for exports will increase, the domestic economy becomes excited by producing large outputs and absorbing labor, poverty and unemployment are reduced, welfare increase, the end result of economic growth will also increase.

Fluctuations in economic growth can not be separated from the influence of these variable fluctuations. In addition there are also deviations between the results of previous studies with data, so that raises the phenomenon that must be investigated for reasons to find a solution to the problem.

Economic growth is very interesting to study because it provides a country's economic situation. The importance of examining the economic growth determinants in developing countries of G20 members is caused because economic growth is an indicator of economic stability determinants, to evaluate or be a reference and assessment of a country's economic performance.

2. METHODS

This study used balance panels data, where the number of time units is the same for each individual. The study was conducted in devloping countries of G20 members, consisting of ten countries, namely Argentina, Brazil, China, Indonesia, India, Mexico, Saudi Arabia, Russia, Turkey, and South Africa. Data for all variables in this study began from 2013 until 2018 sourced from the World Bank.

The specifications of this research model can be written in the form of an equation as follows:

$$Y_{it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 X_{4it} + \varepsilon_{it} \quad (1)$$

Where:

Y_{it} = Economic Growth
X_{1it} = FDI
X_{2it} = Inflation
X_{3it} = Population
X_{4it} = Exchane Rate
ε_{it} = Error term

α_0 = A constant

Economic Growth (Y) is economic growth from the development of gross domestic product (GDP) calculated based on constant prices in developing countries of G20 members. The data used is the 2010 constant GDP price growth based on the US dollar. Data obtained from the World Bank in 2013-2018 with the unit of measurement used is percent. Foreign direct investment (X1) is the total value of foreign direct investment in developing countries of G20 members. The data used is FDI shares of GDP. Data obtained from the World Bank in 2013-2018, with the unit of measurement used is percent. Inflation (X2) is the level of inflation in developing countries of G20 members. The data used is the GDP Deflator which compares the current price GDP against the constant price. Data obtained from the World Bank in 2013-2018 with the unit of measurement used is percent. Population (X3) is the total population based on the de facto, which counts all residents regardless of legal status or citizenship in developing countries of G20 members. The data used is the Population growth. Data obtained from the World Bank in 2013-2018 with the unit of measurement used is percent. Exchange rate (X4) is the total value of a country based on purchasing power parity (PPP). The data used is purchasing power parity growth. Data obtained from the World Bank in 2013-2018 with the unit of measurement is percent.

3. RESULTS AND DISCUSSION

Based on the results of the Chow Test, the chi-square probability of 0.0000 is smaller than the probability α = 0.05 for temporay Fixed Effect Model is selected, then the Hausmen Test, the Chi-Square probability of 0.9280 is greater than the probability of α = 0.05, the Random Effect Model is more appropriate for used, but still continuing to do the Lagrange Multiplier Test, the probability of 0.0000 is smaller than the probability of α = 0.05, so the Random Effect Model is more appropriate to be used in this study. Because the random effect model was chosen, the classic assumption test is no longer needed.

Table 2. Estimation Results Random Effect Model

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 06/15/20 Time: 21:18
Sample: 2013 2018
Periods included: 6
Cross-sections included: 10
Total panel (balanced) observations: 60
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.864865	1.851069	2.087909	0.0415
X_1	0.132881	0.303551	0.437756	0.6633
X_2	-0.177899	0.044486	-3.998975	0.0002
X_3	0.493744	1.053387	0.468720	0.6411
X_4	0.056105	0.021735	2.581396	0.0125

Effects Specification

	S.D.	Rho

Cross-section random		3.296363	0.8583
Idiosyncratic random		1.339162	0.1417
Weighted Statistics			
R-squared	0.366657	Mean dependent var	0.519343
Adjusted R-squared	0.320596	S.D. dependent var	1.577867
S.E. of regression	1.300573	Sum squared resid	93.03191
F-statistic	7.960196	Durbin-Watson stat	1.759352
Prob(F-statistic)	0.000039		
Unweighted Statistics			
R-squared	0.172046	Mean dependent var	3.174128
Sum squared resid	472.0936	Durbin-Watson stat	0.346702

Sources: Data Proceed with Eviews 9, 2020

Based on Table 2, the panel data regression results obtained by the following research model equation:

$Y_{it} = 3.864 + 0.132X_{1it} - 0.177X_{2it} + 0.493X_{3it} + 0.056X_{4it}$ (2)

The constant value obtained is 3.864 which means that without the influence of independent variables namely FDI (X1), Inflation (X2), Population (X3), and Exchange Rate (X4), the value of dependen variabel is Economic Growth (Y) of developing Countries in G20 members is 3.864. in other words, if the independent variables are fixed, then economic growth is 3.864%.

FDI has a positive and not significant effect on economic growth in developing countries of G20 members. Where the regression coefficient value is 0.132, with probability value is 0.6633 bigger than the probability α = 5%. It means, the more FDI increases, the economic growth will also increases and vice versa in developing countries of G20 members. FDI do not have a significant effect on the economic growth in developing countries of G20 members. Although it has a positive coefficient, the significance number indicates that the coefficient value has no significant effect. This is caused by the lack of foreign direct investment into the country, which is caused by the inaccuracy of the government in regulations and policies for foreign Investment. The estimation results are relevant to research from Obwona (2001), Inekwe (2013), Adams (2009), and Tang et al. (2008).

Inflation has a negative and significant effect on economic growth in developing countries of G20 members. Where the regression coefficient value is -0.177, with probability value is 0.0002 smaller than the probability α = 5%. It means, the more inflation increases, the economic growth will decreases and vice versa in developing countries of G20 members. Low inflation makes a country's economy will be healthy and stable because inflation is an increases in the price of goods and services, where if the price of goods and services is stable, then the purchase of capital for the production of goods and services can be achieved and the creation of healthy market conditions the economic growth will increases also. inflation also causes the amount of profits to fall (rate of return), then reduce capital accumulation (capital accumulation) resulting in a decrease in economic growth. The estimation results are relevant to research from Attari & Javed (2013) and Hwang & Wu (2011).

Population has a positive and not significant effect on economic growth in developing

countries of G20 members. Where the regression coefficient value is 0.493, with probability value is 0.6411 bigger than the probability α = 5%. It means, the more population increases, the economic growth will also increases and vice versa in developing countries of G20 members. Population do not have a significant influence on the economic growth of developing countries in G20 members. Although it has a positive coefficient, the significance number indicates that the coefficient value has no significant effect. this is caused by the large number of population who have not able to drive economic growth, because most of peoples do not have skills in work, skilled labor will increases productivity and ultimately increases economic growth. The estimation results are relevant to research from Klasen & Lawson (2007).

Exchange rate has a positive and significant effect on economic growth in developing countries of G20 members. Where the regression coefficient value is 0,056, with probability value is 0.0125 smaller than the probability α = 5%. It means, the more exchange rate appreciation, the economic growth will also increases and vice versa in developing countries of G20 members. Its caused by, if the exchange rate is appreciated then will increases the country's foreign exchange reserves, if foreign exchange reserves increases, the export demand will increases, automatic production of goods and services also increases, and at the end result of economic growth will also increases. The estimation results are relevant to research from Asid et al. (2012), Frankel et al. (2019), Azid et al. (2005), and Korkmaz (2016).

4. CONCLUSIONS

The conclution of this research are, 1) FDI has positive and not significant effect in economic growth in developing countries of G20 members. Therefore, the government should make regulations and policies that can benefit investors and the state 2) Inflation has negative and significant effect in economic growth in developing countries of G20 members. Therefore, the monetary sector needs to keep price stability so that makes a good market conditions and then increases the production of goods and services and economic growth. 3) Population has positive and not significant effect in economic growth in developing countries of G20 members.

Therefore, the government should control population growth such as planning programs and the government must improve the skills of workers 4) Exchange rate has positive and significant effect in economic growth in developing countries of G20 members. All in α = 5%. Therefore, needed for monetary and fiscal policy in maintaining and strengthening the exchange rate of local currency so that with a appreciation exchange rate it will increases the economic growth in developing countries of G20 members.

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