



INFLATION, FOREIGN EXCHANGE, INTEREST RATE, TRADE BALANCE, PAYMENT BALANCE ON GROWTH IN THE COVID-19 PANDEMIC

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Abstract: The purpose of this study is to determine the effect of inflation, foreign exchange rates, interest rates and trade balance on economic growth through an increase in the balance of payments. The research method used in this study is a quantitative descriptive research method using path analysis using AMOS 18. Variables of inflation, interest rates and the balance of trade affect economic growth through an increase in the balance of payments, where these three macroeconomic variables are capable of boosting economic growth, while the moderator variable for an increase in the balance of payments is the link and driver for the three variables such as inflation, interest rates and the trade balance did not contract against the increase in economic growth. The conclusion of this study is that partially inflation, interest rates and the trade balance have a significant effect on the economic growth variable and the moderator variable for increasing the balance of payments, while simultaneously the inflation variables, foreign exchange rates, interest rates and the trade balance has a significant effect on the variable of economic growth through the variable of increasing the balance of payments. Through the results of research that has been stated that the inflation variable, interest rates and trade balance affect economic growth through an increase in the balance of payments, where these three macroeconomic variables are things that are able to boost economic growth, while the moderator variable for an increase in the balance of payments is a link and a driving force for the three variables such as inflation, interest rates and the trade balance did not contract to the increase in economic growth.

Keywords: inflation, foreign exchange rates, interest rates, trade balance, economic growth, balance of payments

JEL Classification: E42, E60, E71.

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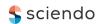
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Introduction

At this time there has been a major threat to human health, where the resistance of the human body is tested by the spread of a very wide disease outbreak and causing many deaths among the population throughout the world, not least in Indonesia, where the current epidemic spreads. This is called the spread of the Covid-19 virus outbreak (Corona Virus-19). During the last 2 years, the spread of disease outbreaks due to the Covid-19 virus has increased, where this virus can mutate into various types and spread quickly. This situation greatly affects the economic life of the community and also the country's economy, where the existence of these events creates





inconvenience for the community as economic actors, where the transmission of the Covid-19 virus is through contact with people who experience symptoms and people who carry the virus. As a result of the spread of the Covid-19 virus, the Government carried out massive social restrictions (PSBB) or better known as restrictions on community activities (PPKM). With this community restriction, it disrupts the economic activities of the community, so that the income obtained by the community is reduced, where the people's purchasing power is also reduced, so that the impact on the Indonesian economy declines. In addition to reduced community income, the business world engaged in services and industry also experienced the same problems, where the impact of PPKM, reduced demand for production, and layoffs, the conditions of Indonesia's macro economy around 2022 can be seen in Table 1 below:

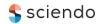
Table 1. Indonesia's Economic Condition

Macroeconomic Conditions	Quarter I 2020	Quarter II 2020	Quarter III 2020	Quarter IV 2020
Inflation (%)	0.1	0.05	0.85	0.79
Foreign Exchange Rate (Rp)	IDR 16,300	IDR 14,300	IDR 14,800	Rp14,660
Interest Rate (%)	4.75	4.25	3.75	3.75
Trade Balance (U\$)	U\$-3.9 Billion	U\$ 9.3 Billion	U\$ 1 Billion	U\$ 0.8 Billion
Balance of Payments (U\$)	U\$ -8.5 Billion	U\$ 2.9 Billion	U\$ 2.1 Billion	U\$ 0.2 Billion
Economic growth (%)	2.97	-5.32	-3.49	-2.20

Source: BPS and BI (2020).

During the period of 2022, low inflation conditions in the second quarter of 2022 amounted to 0.05%, where the inflation rate was low due to the halted economic activity due to Covid-19, so that people who carried out economic activities reduced their income and affected the purchasing power of the people, as a result the Government lowering interest rates by 3.75% in the third quarter of 2022. With the sluggish economic conditions and the recession during 2022, it affects the fluctuation of the rupiah exchange rate, where the exchange rate tends to weaken around Rp 14,800 in the third quarter of 2022 due to the increasing pandemic, and impacted on the trade balance which only decreased slightly or experienced a deficit in the second quarter of 2022, and affected the balance of payments which tended to decline, thus affecting Indonesia's economic growth during 2022 which experienced a contraction of -5.32% in the third quarter of 2022 until the fourth quarter experienced a deficit of -2.20% due to the decline in demand for production and commodities, thus impacting the slump in the Indonesian economy in 2022.

As a result of the spread of the Covid-19 virus, the Government carried out massive social restrictions (PSBB) or better known as restrictions on community activities (PPKM). With this community restriction, it disrupts the economic activities of the community, so that the income obtained by the community is reduced, where the people's purchasing power is also reduced, so that the impact on the Indonesian economy declines. In addition to the reduced income of the community, the business world engaged in services and industry also experienced the same problem, where the impact of PPKM, reduced demand for production, and layoffs, thus impacting the Indonesian economy whose economic growth was in the range of -5.32 %. During the period of 2022 low inflation conditions of 0.79%, where the inflation rate is low due to the halt in economic activities due to Covid-19, so that people who carry out economic activities reduce their income and affect people's purchasing power, as a result the Government lowers interest rates by 3.75%. With the sluggish economic conditions and the occurrence of a recession during 2022, it will affect the fluctuation of the rupiah exchange rate, where the exchange rate tends to weaken at around Rp. 14,660 due to the increasing Pandemic, and the impact on the trade balance which only increases slightly, and the impact on the balance of payments which tends to be negative., thus affecting Indonesia's economic growth during 2022 which experienced a contraction of -5.32% due to declining demand for production and commodities, thus impacting the Indonesian economy slump in 2022. The purpose of this study is to determine inflation, foreign exchange rates, interest rates and the trade balance affect economic growth through an increase in the balance of payments. This study only discusses the factors that affect economic growth through moderating variables, namely an increase in the balance of payments, where the factors that affect economic growth are part of the macro economy, namely inflation, foreign exchange rates, interest rates and the balance of trade, which are each each has an effect on economic growth through an increase in the balance of





payments.

1. Literature Review

1.1. Inflation

According to Asiedu, Sadekla and Bokpin (2022) inflation is a process of increasing the price of goods followed by an increase in costs or fees, thus affecting the purchasing power of the people and affecting the decline in economic growth. According to Badarau, Huart and Sangare (2021) inflation is a process of increasing the price of goods continuously, thereby weakening the economy and will reduce people's purchasing power. According to Bampi and Colombo (2021) inflation is a process of increasing the price of goods due to a mechanism that the price of goods is determined by market conditions. This causes the economy to decline and purchasing power weakens. According to Bresser-Pereira (2021) inflation is the process of increasing price increases supported by price changes through market mechanisms, and if it continues, it will affect the economic growth of the community. In accordance with the opinion of Can, et al (2021) inflation shows an increase in the price of certain goods which is carried out due to a market mechanism process that makes an item will rise and affect economic growth if it occurs continuously.

1.2. Foreign Exchange Rates

According to opinionCiriello (2021) the exchange rate is a price given by foreign currency transactions which is the unit price set for the transaction process. buying and selling foreign currency which is a reasonable limit paid when conducting transactions. According to the opinion of the Ministry of Industry, Kartal and Depren (2021) the exchange rate is a set price of funds which is determined by how much the sale and purchase proceeds from the foreign currency exchange rates traded in the market. According to Disli, et al (2021) the exchange rate is the value given when making transactions or trading foreign currencies, where this value is determined by a predetermined mechanism regarding the limit or threshold value for transactions. According to Dunford and Qi (2022) the exchange rate is related to the remuneration provided by parties who bring together sellers and buyers of foreign currency whose value can be determined through market mechanisms.

1.3. Interest Rate

According to opinionEmara and Zhang (2021) the interest rate is the value given when borrowing obligations at a financial institution, the value given is the value that can benefit the borrower to increase economic growth. According to Joshi, et al (2021) the interest rate According to Liu, et al (2021) the interest rate is one of the provisions made as a form of the government's obligation to protect and ease the burden on the borrower. borrowers in order to increase output in the interest of increasing economic growth. According to Makin and Layton (2021) the interest rate explains the set price which is a reasonable threshold for those who want to return funds to be able to help increase the country's economic growth. According to Meier, Gonzalez and Kunze (2021) interest rates are part of from the Government's policy in overcoming the difficulties experienced by those who want to return loan funds or credit funds for business, so that entrepreneurs who wish to lend funds are assisted and able to assist the Government in increasing economic growth through exports of their products. Gonzalez and Kunze (2021) interest rates are part of the Government's policy in overcoming the difficulties experienced by those who want to return loan funds or credit funds for business, so that entrepreneurs who want to lend funds are assisted and are able to assist the Government in increasing economic growth through exporting products, the production.Gonzalez and Kunze (2021) interest rates are part of the Government's policy in overcoming the difficulties experienced by those who want to return loan funds or credit funds for business, so that entrepreneurs who want to lend funds are assisted and are able to assist the Government in increasing economic growth through exporting products. the production.

1.4. Balance of trade

According to the opinion of the Prophet (2021) the trade balance is the difference in the value or amount of export and import activities in order to create value in order to increase economic growth. According to Obsfeld (2021) the trade balance is the total amount or value issued through free trade between countries, where According to Peruzzi and Terzi (2021), the trade balance is the overall value generated from economic transaction activities





between countries, where transactions carried out can help increase economic growth in each country. -each country. According to Piteli's opinion, Kafouros and Pitelis (2021) trade balance is a price generated from foreign trade activities that contribute to increasing the economic growth of a country. According to Rizwan (2021) the trade balance describes the overall amount generated from trade activities between countries, where the difference generated from exports minus imports.

1.5. Economic growth

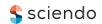
According to Saidu, et al (2021) economic growth is a condition, where the situation is able to increase the income generated to increase economic capacity. According to Shastri (2021) economic growth is the total or total value generated from economic activities or activities characterized by an increase and decrease in the percentage produced. According to Singh and Sosvila-Rivero (2021) economic growth is a condition of increasing additional income that occurs due to rapid and balanced economic activity by presenting a percentage as part of its assessment. According to Su,et al (2021) economic growth is part of the strategy carried out by the state in order to increase income from economic activities both from within and outside the country. According to Tang, Ding and Chen (2021) economic growth describes the extent to which the capabilities of the region or a country in order to produce output that can be used for export activities in order to increase income.

1.6. Improved Balance of Payments

According to Wunder, et al (2021) an increase in the balance of payments is a process of increasing payments in order to carry out export and import activities to increase economic activity and economic growth. According to Zhao (2022) an increase in the balance of payments is a process of increasing the number of payments made through export and Imports are ultimately intended to move the economy. According to Obsfeld and Rogoff (2021) an increase in the balance of payments creates something that can be used as a benchmark in increasing payments in economic activity, both domestic and foreign activities. According to Zhao, et al (2021) an increase in the balance of payments is closely related to an increase in financing to pay for transactions that occur between regions and between countries. According to the opinion of Tran, et al (2021) an increase in the balance of payments is closely related to the ability of a country to cut all transactions so that the transactions carried out are really aimed at increasing economic activity in order to increase economic growth.

2. Methodological approach

The research method used is descriptive quantitative. In accordance with Chiulli's opinion (2022) the quantitative descriptive research method describes a situation that is in accordance with the actual situation, where this actual situation can be concluded and taken as a suggestion that will be used as a reference for useful input for research. For quantitative descriptive data analysis carried out, namely by using path analysis using AMOS, where according to Chiulli (2022) path analysis using AMOS is an analysis carried out by finding mutually influencing relationships between independent variables on the dependent variable both directly and indirectly through moderator variables. The population of this study was taken from data originating from inflation, foreign exchange rates, interest rates, trade balances, economic growth and balance of payments in the last five years from 2016-2022, where the sampling technique in this study used the method purposive sampling, where according to Creswell (2014) the sampling technique with the purposive sampling method is a sampling technique according to certain conditions of a sample. In this case, the sample is taken through data originating from inflation, foreign exchange rates, interest rates, trade balances, economic growth and balance of payments in the last five years starting from 2016-2022, economic growth and balance of payments in the last five years starting from 2016-2022, where the sampling technique in this study uses the purposive sampling method, where according to Creswell (2014) the sampling technique with the purposive sampling method is a sampling technique in accordance with certain conditions of a sample. In this case, the sample is taken through data originating from inflation, foreign exchange rates, interest rates, trade balances, economic growth and balance of payments in the last five years starting from 2016-2022. economic growth and balance of payments in the last five years starting from 2016-2022, where the sampling technique in this study uses the purposive sampling method, where according to Creswell (2014) the sampling technique with the purposive sampling method is a sampling technique in accordance with certain conditions of a sample. In this case, the sample is taken through data originating from





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3. Conducting research and results

Regression Weights Analysis

Table 2. Composite Model Regression Weights

	Estimate	SE	CR	P
Economic growth < Inflation	.187	.267	.451	.324
Economic growth < Foreign Exchange Rates	-169	.254	679	454
Economic growth < Interest Rate	.161	.261	682	.466
Economic growth < Balance of trade	.150	.268	.432	.359
Improved Balance of Payments ← Inflation	.457	.255	.428	.322
Improved Balance of Payments <foreign exchange="" rates<="" td=""><td>069</td><td>.249</td><td>449</td><td>463</td></foreign>	069	.249	449	463
Improved Balance of Payments ← Interest Rate	.172	.262	684	.467
Improved Balance of Payments ← Balance of trade	.184	.270	.434	.362

Source: Data Processing Results, 2022.

Table 3. Regression Weights Composite Model

			Estimate	SE	CR	P
Improved Balance of Payments	<	Economic growth	.149	.246	.458	.340

Source: Data Processing Results, 2022.

Table 4. Standardized Regression Weights Composite Model

	Estimate
Economic growth < Inflation	.187
Economic growth < Foreign Exchange Rates	-169
Economic growth < Interest Rate	.161
Economic growth < Balance of trade	.150
Improved Balance of Payments <inflation< td=""><td>.457</td></inflation<>	.457
Improved Balance of Payments < Foreign Exchange Rates	069
Improved Balance of Payments < Interest Rate	.172
Improved Balance of Payments <balance of="" td="" trade<=""><td>.184</td></balance>	.184

Source: Data Processing Results, 2022.

Table 5. Standardized Regression Weights Composite Model

		Estimate
Improved Balance of Payments	< Economic growth	.149

Source: Data Processing Results, 2022.

Based on the results of the Composite Model Regression Weights analysis in Tables 1 and 2, it can be concluded that the inflation, interest rate, and trade balance variables have a significant effect on the variables of economic growth and an increase in the balance of payments, where the p value of the three variables is greater than 0, 05, while the variable of increasing the balance of payments has a significant effect on the variable of economic





growth, where the p value of the increase in the balance of payments is also greater than 0.05. To find out the indirect effect can be seen in Tables 6 and 7 below.

Table 6. Direct Effects

	Economic growth	Improved Balance of Payments
Inflation	.187	.457
Foreign Exchange Rates	-169	069
Interest Rate	.161	.172
Balance of trade	.150	.184

Source: Data Processing Results, 2022.

Table 7. Standardized Total Effect

	Economic growth	Improved Balance of Payments
Inflation	.437	.462
Foreign Exchange Rates	151	-169
Interest Rate	.144	.064
Balance of trade	.433	.384

Source: Data Processing Results, 2022.

Table 8. Direct Effects

	Economic growth	Improved Balance of Payments
Improved Balance of Payments	.149	.000

Source: Data Processing Results, 2022.

Table 9. Indirect Effect

	Economic growth	Improved Balance of Payments
Inflation	.161	.180
Foreign Exchange Rates	.153	.151
Interest Rate	.152	.151
Balance of trade	.159	.159

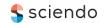
Source: Data Processing Results, 2022.

Based on Table 9 above, it can be concluded that the inflation variable has an indirect effect on economic growth through the moderating variable of an increase in the balance of payments, where from the output, the estimated value of 0.161 is positive. The foreign exchange rate variable has an indirect effect on economic growth through the moderating variable of an increase in the balance of payments, where from the output, the estimated value of 0.153 is positive, while the interest rate variable has an indirect effect on economic growth through the moderator variable of an increase in the balance of payments, where from the output results obtained an estimated value of 0.

Conclusion

Based on the results of research analysis, the conclusion of this study is that partially inflation, interest rates and the trade balance have a significant effect on the economic growth variable and the moderator variable for increasing the balance of payments, while simultaneously the inflation variables, foreign exchange rates, interest rates and the trade balance has a significant effect on the variable of economic growth through the variable of increasing the balance of payments. Through the results of research that has been stated that the inflation variable, interest rates and trade balance affect economic growth through an increase in the balance of payments, where these three macroeconomic variables are things that are able to boost economic growth, while the moderator variable for an increase in the balance of payments is a link and a driving force for the three variables such as inflation, interest rates and the trade balance did not contract to the increase in economic growth.

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writing-review and editing: Anton Atno Parluhutan Sinaga; visualization: Anton Atno Parluhutan Sinaga; supervision: Anton Atno Parluhutan Sinaga.

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References

- 1. Asiedu, Edward, Sadekla, Sylvester S. and Bokpin, Godfred A. (2022). Aid to Africa's agriculture towards building physical capital: Empirical evidence and implications for post-COVID-19 food insecurity, *Journal World Development Perspectives*, 20, 100269. [CrossRef].
- 2. Badarau, Christina, Huart, Florence and Sangare, Ibrahima.(2021). Macroeconomic and policy implications of eurobonds, *Journal International Review of Law and Economics*, 65, 105-594. [CrossRef].
- 3. Bampi, Rodrigo A., and Colombo, Jefferson A.(2021). Heterogeneous effects of foreign exchange appreciation on industrial output: Evidence from disaggregated manufacturing data, *Journal The Quarterly Review of Economic and Finance*, 80, 431-451. [CrossRef].
- 4. Bresser-Pereira, and Luiz Carlos. (2021). Brazil's quasi-stagnation and East-Asia growth: A new-developmental explanation, *Journal of Structural Change and Economic Dynamics*, 58, 500-508. [CrossRef].
- 5. Can, Ufuk, et al. (2021). The effectiveness of the post-Covid-19 recovery policies: Evidence from a simulated DSGE model for Turkey, *Journal Economic Analysis and Policy*, 71, p. 694-708. [CrossRef].
- 6. Chiulli, Roy M.(2022). Quantitative Analysis: An Introduction, CRC Press. [CrossRef].
- 7. Ciriello, Raffaele Fabio.(2021). Tokenized index funds: A blockchain-based concept and a multidisciplinary research framework, *International Journal of Information Management*, 61, 102-400. [CrossRef].
- 8. Creswell, John W.(2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, 4th Edition, London: SAGE Publication Inc. [CrossRef].
- 9. Croitorov, Olga, et al.(2022). Financial spillover and global risk in a multi-region model of the world economist, *Journal of Economic Behavior & Organization*, 177, 185-218. [CrossRef].
- 10. Depren, Ozer, Kartal, Mustafa Tevlik and Depren, Serpil Kilic.(2021). Changes of gold prices in COVID-19 pandemic: Daily evidence from Turkey's monetary policy measures with selected determinants, *Journal Technological Forecasting and Social Change*, 170, 120-884. [CrossRef].
- 11. Disli, Mustafa, et al.(2021). In search of safe haven assets during the COVID-19 pandemic: An empirical analysis of different investor types, *Journal Research International Business and Finance*, 58, 101-461. [CrossRef].
- 12. Dunford, Michael and Qi, Bing.(2022). Global reset: COVID-19, systemic rivalry and the global order, *Journal Research in Globalization*, 2, 100-121. [CrossRef].
- 13. Emara, Noha and Zhang, Yanhao.(2021). The non-linear impact of digitization on remittances inflow: Evidence from the BRICS, *Journal Telecommunication Policy*, 45, 102-112. [CrossRef].
- 14. Garin, Julio, Lesler, Robert and Sims, Eric.(2018). *Intermediate Macroeconomics*, University of Netre Dame Press [CrossRef].
- 15. Joshi, Toyanath, et al.(2021). Nepal at the edge of sword with two edges: The COVID-19 pandemics and sustainable development goals, *Journal of Agriculture and Food Research*, 4, 100-138. [CrossRef].
- 16. Liu, Yawen, et al.(2021). Countermeasures against economic crisis from COVID-19 pandemic in China: An analysis of effectiveness and trade-offs, *Journal of Structural Change and Economic Dynamics*, 59, 482-495. [CrossRef].
- 17. Makin, Nthony J. and Layton, Allan.(2021). The global fiscal response to COVID-19: Risks and repercussions, Journal Economic Analysis and Policy, 69, 340-349. [CrossRef].
- 18. Meier, Samira, Gonzalez, Miguel Rodriguez and Kunze, Frederick.(2021). The global financial crisis, the EMU sovereign debt crisis and international financial regulation: lessons from a systematic literature review, *Journal International Review of Law and Economics*, 65, 105-945. [CrossRef].
- 19. Nabi, Mahmoud Sami.(2021). Tunisia after the 2011's revolution: Economic deterioration should, and could have been avoided, *Journal of Policy Modeling*, 43(5), 1094-1109. [CrossRef].





- 20. Obsfeld, Maurice. (2021). Reprint: Two challenges from globalization, *Journal of International Money and Finance*, 114, 102-408. [CrossRef].
- 21. Obsfeld, Maurice and Rogoff, Kenneth. (2021). Revisiting speculative hyperinflations in monetary models, *Journal Review of Economic Dynamics*, 40, 1-11. [CrossRef].
- 22. Peruzzi, Michael and Terzi, Allesio.(2021). Accelerating Economic Growth: The Science beneath the Art, *Journal Economic Modeling*, 103, 105-593. [CrossRef].
- 23. Piteli, Eleni EN, Kafouros, Mario and Pitelis, Critos N.(2021). Follow the people and the money: Effects of inward FDI on migrant remittances and the contingent role of new firm creation and institutional infrastructure in emerging economies, *Journal of World Business*, 56(2), 101-178. [CrossRef].
- 24. Rizwan, Muhammad Suhail.(2021). Macroprudential regulations and systemic risk: Does the one-size-fits-all approach work? *Journal of International Financial Markets, Institutions and Money*, 74, 101-409. [CrossRef].
- 25. Saidu, MT, et al.(2021). Exploring the asymmetric effect of oil price on exchange rate: Evidence from the top six African net oil importers, *Journal Energy Reports*, 24 August 2021. [CrossRef].
- 26. Shastri, Shruti. (2021). The impact of infectious diseases on remittances inflows to India, Journal of Policy Modeling, 28 August 2021. [CrossRef].
- 27. Singh, Manish K., Marta and Sosvila-Rivero, Simon. (2021). Quantifying Sovreign Risk in the Euro Area, *Journal Economic Modeling*, 95, 76-96. [CrossRef].
- 28. Su, Chi-Wei, et al.(2021). Tokenized index funds: A blockchain-based concept and a multidisciplinary research framework, *Pacific-Basin Finance Journal*, 66, 101-519. [CrossRef].
- 29. Tang, Wenjin, Ding, Saijie and Chen, Hao. (2021). Economic uncertainty and its spillover networks: Evidence from the Asia-Pacific countries, *Pacific-Basin Finance Journal*, 67, 101-539. [CrossRef].
- 30. Tran, Yen, et al. (2021). Changes of gold prices in COVID-19 pandemic: Daily evidence from Turkey's monetary policy measures with selected determinants, Journal Review of Financial Analysis, 12 October 2021, 101879. [CrossRef].
- 31. Wunder, Sven, et al. (2021). Coronavirus, macroeconomy, and forests: What likely impacts? *Journal Forest Policy and Economic*, 131, 102-536. [CrossRef].
- 32. Zhao, Bo.(2022). COVID-19 pandemic, health risks, and economic consequences: Evidence from China, *Journal of China Economic Review*, 64, 101-561. [CrossRef].
- 33. Zhao, Qingbin, et al. (2021). Inequality hikes, saving surges, and housing bubbles, *Journal International Review of Economics and Finance*, 72, 349-363. [CrossRef].