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ANALYSIS OF ECONOMIC INDICATORS IN IMPROVING THE TRADE BALANCE IN INDONESIA FOR THE PERIOD 2013-2023

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Abstract: This study aims to analyze the monetary indicator variables on the stability of goods and services prices before and during the Covid-19 pandemic. The data used are secondary data obtained from the publications of the Central Bureau of Statistics (BPS) and Bank Indonesia (BI). The analytical method employed is the Error Correction Model (ECM) to examine the short-term and long-term relationships between monetary variables (money supply, interest rate, exchange rate, and inflation) and price stability. The results indicate that before the Covid-19 pandemic, the variables of money supply and exchange rate had a significant effect on price stability, while the interest rate had no significant effect. Meanwhile, during the Covid-19 pandemic, the interest rate and inflation significantly affected price stability, whereas the money supply and exchange rate were not significant. These findings suggest that monetary dynamics before and during the Covid-19 pandemic differed in their influence on the stability of goods and services prices.

Keywords: Monetary indicators, price stability, ECM, Covid-19 pandemic

INTRODUCTION

The current economic development in Indonesia is experiencing a fairly good increase. This has also led to an increase in purchasing power and demand among the Indonesian people. Over time, these needs cannot be met by the existing productivity in Indonesia. Domestic needs that cannot be produced are obtained from other parties through barter transactions. With the development of the economic system, barter transactions have been abandoned and replaced by the modern system we have today. This is what is referred to as economic development from a trade perspective. The economic development of a country is now inseparable from global economic conditions. Economic relations between countries are an important factor that influences the economic development of each country.

The trade balance is the difference between a country's exports and imports during a certain period. When exports exceed imports, it is called a trade surplus. When imports exceed exports, it is called a trade deficit. In general, it can be said that the trade balance can affect economic growth. It contributes positively by increasing domestic production, creating jobs, and increasing income from export sales. It can also increase a country's foreign exchange reserves, which are important for the stability of international transactions.

Global economic conditions are usually one of the factors that influence a country's export performance. The global economic conditions that are in the spotlight are the weakening demand from Indonesia's trading partner countries. This has an impact on the liquidity of Indonesia's export value.

LITERATURE REVIEW

1. International Trade

International trade is something that every country must engage in. Currently, there is



no country that is completely self-sufficient or isolated from economic relations with other countries. This is because no country can meet all of its needs independently. International trade occurs because of differences in the resources possessed by each region or country, as well as a country's ability to produce goods and services. An example of this is when a country wants to produce a certain good, but the cost of production is more expensive than purchasing the good from another country (Bakhtiar Efendi, 2022).

International trade is generally one of the main factors in increasing a country's GDP. International trade has been going on for thousands of years, but its impact on economic, social, and political interests has only been felt in recent centuries. International trade. International trade is very important because foreign trade will increase the consumption of a country (Mandeij, 2021).

2. Trade Balance

The trade balance is the sum of a country's exports minus its imports, also known as net exports (Mankiw, 2018).

International economics studies the fundamentals and benefits of trade, the reasons for and effects of trade restrictions, policies aimed at regulating international payments and receipts, and the impact of these policies on domestic and foreign welfare. International trade is conducted so that a country can establish relationships with other countries with the aim of meeting the needs for goods or services, expanding the global market, and improving the country's economy (Wibowo, 2021).

3. Exchange Rate

The exchange rate between two countries is the price of the currency used by the citizens of those countries to trade with each other. Exchange rates are divided into two types: real exchange rates, which are interest rates adjusted for the effects of inflation, and nominal exchange rates, which are interest rates that are usually reported without adjustment for the effects of inflation (Mankiw 2018).

RESEARCH METHOD

Types and Sources of Data

The data used in this study is secondary data obtained from Bank Indonesia on the website bi.go.id.

Data Collection Techniques

The data collection technique used in this study was documentation study, which involves collecting and processing data from previous information related to the issue being studied. The data used in this study was secondary data taken and processed from Bank Indonesia from 2013 to 2023 in the form of annual data, resulting in a total of 11 data points.

RESULTS AND DISCUSSION RESULTS

1. The Development of Indonesia's Trade Balance

One of the factors supporting economic development in Indonesia is collaboration with other countries in economic activities. This collaboration can be realized through trade between countries, which includes export and import activities. Exports and imports can be simply defined as sales and purchase transactions between countries that need each other, both in the form of services and commodities. A country's international trade is a trade relationship that involves the exchange of goods and services with other countries. International trade has actually existed since ancient times, but in a limited scope and quantity. Domestic needs that cannot be produced are obtained from other parties by conducting transactions through a barter system. With the development of the economic system, barter transactions have been abandoned and replaced by the modern system as it is today.

2. Research Variable Development

a. NP Level Development

NP, or trade balance, is the sum of a country's exports minus its imports, also known as the net exports generated by Indonesia each year and measured in percent. In this study, trade balance data was obtained from 2013 to 2023.



b. Development of EKS Level

Exports are activities involving the removal of goods from Indonesian customs areas to customs areas in other countries, or simply put, exports are activities involving the sale of goods produced by Indonesia from within the country to other countries each year and measured in percentages. In this study, export data was obtained from 2013 to 2023.

c. Development of IMP Levels

Imports are the activity of purchasing and bringing goods/services or commodities from abroad into the country legally through the trade process, which are produced by Indonesia every year and measured in percentages. In this study, export data was obtained from 2013 to 2023.

d. Exchange Rate Development

The exchange rate is the exchange value generated by Indonesia each year and measured in percent. In this study, exchange rate data was obtained from 2012 to 2022. The following is the exchange rate data development.

e. GDP Development

GDP is the Gross Domestic Product generated by Indonesia each year and measured in percent. In this study, interest rate data was obtained from 2013 to 2023.

3. VAR Method Results

1. Data Stationarity Test

Table 1. Stationarity Test Results with Unit Roots at Level

Variable	Augmented Dickey Fuller Value	Mc Kinnon Critical Value at a Significance Level of 1%	Prob	Description
NP	-3.124584	-3.592462	0.0321	Not Stationary
EKS	-2.886442	-3.588509	0.0550	Not Stationary
IMP	-1.069931	-3.588509	0.7193	Not Stationary
KURS	-2.260107	-3.588509	0.1891	Not Stationary
GDP	-4.877476	-3.592462	0.0003	Stationary

2. Results of Johansen Cointegration Test

Table 2. Johansen Cointegration Test

Date: 10/02/25 Time: 18:03

Sample (adjusted): 3 45

Included observations: 43 after adjustments Trend assumption: Linear deterministic trend

Series: NP EKS IMP KURS GDP Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.860447	245.4588	159.5297	0.0000
At most 1 *	0.731989	160.7784	125.6154	0.0001
At most 2 *	0.612284	104.1591	95.75366	0.0116
At most 3	0.469494	63.41740	69.81889	0.1457
At most 4	0.357286	36.15866	47.85613	0.3884
At most 5	0.187730	17.15029	29.79707	0.6289



Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

- * denotes rejection of the hypothesis at the 0.05 level
- **MacKinnon-Haug-Michelis (1999) p-values

3. Results of VAR Structure Lag Stability Test

Table 3. Structure Lag Stability Table

Roots of Characteristic Polynomial

Endogenous variables: NP EKS IMP KURS GDP

Exogenous variables: C Lag specification: 1 2 Date:10/02/25 Time: 18:04

Root	Modulus
0.867683 - 0.124661i	0.876592
0.867683 + 0.124661i	0.876592
0.799873 - 0.219594i	0.829469
0.799873 + 0.219594i	0.829469
0.815616	0.815616
0.310412 - 0.729453i 0.310412 + 0.729453i 0.059822 - 0.750268i 0.059822 + 0.750268i 0.411429 - 0.616176i 0.411429 + 0.616176i	0.792753 0.792753 0.752649 0.752649 0.740909
-0.333485 + 0.509625i	0.609040
-0.333485 + 0.509625i	0.609040
-0.550993	0.550993
-0.492409	0.492409
-0.047133	0.047133

No root lies outside the unit circle.

VAR satisfies the stability condition.

4. Vector Autoregression Analysis

Table 4. VAR Analysis Results

Vector Autoregression Estimates Date: 10/02/25 Time: 18:09 Sample (adjusted): 3 45

Included observations: 43 after adjustments Standard errors in () & t-statistics in []

	NP	EKS	IMP	KURS	GDP
NP(-2)	-0.148182	-0.453388	1.393469	0.018809	0.183491
	(0.18737)	(0.19417)	(1.28672)	(0.06203)	(0.14866)
	[-0.79087]	[-2.33496]	[1.08296]	[0.30322]	[1.23427]
EKS(-2)	-0.259593	-0.212790	-1.665426	0.092662	0.296110
	(0.15991)	(0.16573)	(1.09820)	(0.05294)	(0.12688)
	[-1.62332]	[-1.28399]	[-1.51651]	[1.75021]	[2.33374]
IMP(-2)	0.034919	-0.063226	-0.375146	0.000150	0.040923



RURS(-2)		(0.03052)	(0.03162)	(0.20956)	(0.01010)	(0.02421)
(0.59611) (0.61777) (4.09371) (0.19735) (0.47297) [0.00052] [-0.31599] [-0.41900] [2.14481] [2.12162] GDP(-2) -0.199946 (0.286520) -1.350624 (0.036081) -0.276237 (0.20680) (0.21431) (1.42016) (0.06846) (0.16408) [-0.96687] [1.33694] [-0.95104] [0.52701] [-1.68355] C -3.281867 (13.9840) (14.4921) (96.0336) (4.62970) (11.0954) [-0.23469] [1.09484] [1.78359] [-0.49615] [-0.79290] R-squared (0.595741) (0.715365) (0.896261) (0.763661) (0.638527) Adj. R-squared (0.346966) (0.540205) (0.832422) (0.618221) (0.416083) Sum sq. resids (0.589257) (0.328208) (0.278.859) (0.458403) (0.498398) (0.49839		[1.14430]	[-1.99929]	[-1.79014]	[0.01482]	[1.69018]
GDP(-2)	KURS(-2)	0.000307	-0.195208	-1.715255	0.423287	1.003470
GDP(-2)		(0.59611)	(0.61777)	(4.09371)	(0.19735)	(0.47297)
(0.20680) (0.21431) (1.42016) (0.06846) (0.16408) [-0.96687] [1.33694] [-0.95104] [0.52701] [-1.68355] C		[0.00052]	[-0.31599]	[-0.41900]	[2.14481]	[2.12162]
[-0.96687] [1.33694] [-0.95104] [0.52701] [-1.68355] C	GDP(-2)	-0.199946	0.286520	-1.350624	0.036081	-0.276237
C -3.281867 15.86657 171.2847 -2.297023 -8.797558 (13.9840) (14.4921) (96.0336) (4.62970) (11.0954) [-0.23469] [1.09484] [1.78359] [-0.49615] [-0.79290] R-squared 0.595741 0.715365 0.896261 0.763661 0.638527 Adj. R-squared 0.346966 0.540205 0.832422 0.618221 0.416083 Sum sq. resids 58.92257 63.28208 2778.859 6.458403 37.09421 S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977		(0.20680)	(0.21431)	(1.42016)	(0.06846)	(0.16408)
(13.9840) (14.4921) (96.0336) (4.62970) (11.0954) [-0.23469] [1.09484] [1.78359] [-0.49615] [-0.79290] R-squared 0.595741 0.715365 0.896261 0.763661 0.638527 Adj. R-squared 0.346966 0.540205 0.832422 0.618221 0.416083 Sum sq. resids 58.92257 63.28208 2778.859 6.458403 37.09421 S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977		[-0.96687]	[1.33694]	[-0.95104]	[0.52701]	[-1.68355]
[-0.23469] [1.09484] [1.78359] [-0.49615] [-0.79290] R-squared 0.595741 0.715365 0.896261 0.763661 0.638527 Adj. R-squared 0.346966 0.540205 0.832422 0.618221 0.416083 Sum sq. resids 58.92257 63.28208 2778.859 6.458403 37.09421 S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	C	-3.281867	15.86657	171.2847	-2.297023	-8.797558
[-0.23469] [1.09484] [1.78359] [-0.49615] [-0.79290] R-squared 0.595741 0.715365 0.896261 0.763661 0.638527 Adj. R-squared 0.346966 0.540205 0.832422 0.618221 0.416083 Sum sq. resids 58.92257 63.28208 2778.859 6.458403 37.09421 S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977		(13.9840)	(14.4921)	(96.0336)	(4.62970)	(11.0954)
Adj. R-squared0.3469660.5402050.8324220.6182210.416083Sum sq. resids58.9225763.282082778.8596.45840337.09421S.E. equation1.5054081.56010510.338240.4983981.194446F-statistic2.3946984.08406214.039345.2507032.870500Log likelihood-67.78737-69.32200-150.6392-20.25427-57.83796Akaike AIC3.9435994.0149777.7971701.7327573.480835Schwarz SC4.6398874.7112658.4934592.4290454.177124Mean dependent2.2260479.42950443.212938.5803032.576977		[-0.23469]	[1.09484]		[-0.49615]	[-0.79290]
Sum sq. resids 58.92257 63.28208 2778.859 6.458403 37.09421 S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	R-squared	0.595741	0.715365	0.896261	0.763661	0.638527
S.E. equation 1.505408 1.560105 10.33824 0.498398 1.194446 F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	Adj. R-squared	0.346966	0.540205	0.832422	0.618221	0.416083
F-statistic 2.394698 4.084062 14.03934 5.250703 2.870500 Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	Sum sq. resids	58.92257	63.28208	2778.859	6.458403	37.09421
Log likelihood -67.78737 -69.32200 -150.6392 -20.25427 -57.83796 Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	S.E. equation	1.505408	1.560105	10.33824	0.498398	1.194446
Akaike AIC 3.943599 4.014977 7.797170 1.732757 3.480835 Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	F-statistic	2.394698	4.084062	14.03934	5.250703	2.870500
Schwarz SC 4.639887 4.711265 8.493459 2.429045 4.177124 Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	Log likelihood	-67.78737	-69.32200	-150.6392	-20.25427	-57.83796
Mean dependent 2.226047 9.429504 43.21293 8.580303 2.576977	Akaike AIC	3.943599	4.014977	7.797170	1.732757	3.480835
*	Schwarz SC	4.639887	4.711265	8.493459	2.429045	4.177124
S.D. dependent 1.862886 2.300761 25.25445 0.806621 1.563114	Mean dependent	2.226047	9.429504	43.21293	8.580303	2.576977
	S.D. dependent	1.862886	2.300761	25.25445	0.806621	1.563114
Determinant resid covariance	Determinant resid c	ovariance				
(dof adj.) 18.36206	(dof adj.)		18.36206			
Determinant resid covariance 0.328066	Determinant resid covariance					
Log likelihood -464.1522	•					
Akaike information criterion 27.91406	Akaike information criterion		27.91406			
Schwarz criterion 33.48436	Schwarz criterion		33.48436			

Table 5. VAR Analysis Results

Variable	Largest contribution 1	Largest contribution 2
NP	IMPt-1 0.034	KURSt-1 0.0003
EKS	GDPt-1 0.28	IMPt-1 -0.06
IMP	NPt-1 1.39	IMP-1 -0.3
KURS	KURSt-1 0.42	EKS t-1 0.09
GDP	KURSt-1 1.003	EKSt-1 0.29

5. Impulse Response Function (IRF)

Table 6. Impulse Response Function NP

Response of NP:							
Period	NP	EKS	IMP	KURS	GDP		
1	1.505408	0.000000	0.000000	0.000000	0.000000		
2	0.616076	0.212390	-0.090591	0.072409	0.317577		
3	0.109609	-0.138249	0.149612	0.257875	0.131610		
4	-0.247483	-0.120285	0.043847	0.267133	0.072738		



5	-0.274042	-0.319040	0.007021	0.055336	-0.010843
6	-0.088306	-0.228126	0.025452	0.013957	-0.015706
7	-0.018690	-0.193861	-0.122051	-0.121993	0.025729
8	-0.044519	-0.147636	-0.241508	-0.167299	-0.009435
9	0.019097	-0.058062	-0.256677	-0.159739	-0.061345
10	0.321011	-0.761901	-0.671201	-0.310981	-0.239101
11	0.812901	-0.981238	0.928012	0.3190120	-0.129I101

Table 7. Impulse Response Function EKS

		I	Response of o	eks:	
Period	NP	EKS	IMP	KURS	GDP
1	0.127854	1.554857	0.000000	0.000000	0.000000
2	0.545605	0.718469	0.167265	-0.170202	0.039698
3	-0.208596	0.497163	-0.677579	-0.184712	0.103654
4	0.108104	0.311026	-0.706876	-0.150926	-0.040192
5	0.458008	0.730872	-0.526302	-0.037153	0.028382
6	0.500892	0.661313	-0.44084	-0.142282	0.159817
7	0.194076	0.419914	-0.550357	-0.222236	0.128282
8	0.127147	0.260101	-0.558337	-0.216212	-0.047211
9	0.264702	0.323730	-0.517345	-0.176221	-0.116804
10	0.239101	0.310921	-0.128710	-0.389101	-0.171019
11	0.389101	0.419091	-0.31901	-0.761019	-0.192109

Table 8. Impulse Response Function IMP

	Response of IMP:					
Period	NP	EKS	IMP	KURS	GDP	
1	-3.197703	-2.353327	9.545456	0.000000	0.000000	
2	-6.588892	-3.152644	7.705859	0.145484	0.220640	
3	-6.581558	-7.671092	7.086683	-0.785919	-0.381128	
4	-3.461264	-5.619840	7.800601	1.082635	0.134509	
5	-2.532923	-4.237323	7.428456	1.325968	1.269582	
6	-3.923494	-3.647257	7.123378	2.182095	1.524053	
7	-4.875613	-3.734684	6.921270	2.628575	1.133757	
8	-4.896109	-3.610948	6.681518	2.694386	0.789256	
9	-4.311176	-3.387367	6.265190	2.525716	0.725525	
10	-3.879109	-3.769101	5.376109	2.176510	0.876100	
11	-0.576109	-3.165891	5.879101	2.879109	0.981081	

Table 9. Impulse Response Function KURS

	Response of KURS:					
Period	NP	EKS	IMP	KURS	GDP	
1	-0.162591	0.167079	0.158353	0.411063	0.000000	
2	-0.088119	0.057211	0.047246	0.223412	0.020492	
3	-0.008860	0.158587	0.024078	0.194488	0.110115	
4	-0.054618	0.064117	-0.037792	0.063197	0.076868	
5	-0.035159	0.102347	-0.054595	0.085797	0.007854	
6	-0.018123	0.104714	-0.147535	0.026695	-0.023368	
7	0.035949	0.124228	-0.201277	-0.006999	-0.021674	
8	0.095916	0.138862	-0.233844	-0.052801	-0.000820	
9	0.119690	0.143841	-0.247228	-0.085647	0.004255	
10	0.138981	0.318910	-0.971011	-0.986110	0.981200	
11	0.651091	0.981201	-0.971901	-0.617109	0.128910	



Table 10. Impulse Response Function GDP

	Response of KURS:					
Period	NP	EKS	IMP	KURS	GDP	
1	-0.173798	0.11662	· -0.757452	-0.218160	0.872677	
2	-0.419173	-0.060392	-0.407429	-0.376593	0.447743	
3	0.005568	0.396058	0.376997	0.046023	-0.101402	
4	-0.161910	0.230466	0.247119	-0.040692	-0.296717	
5	-0.145728	-0.000253	-0.003255	0.007750	-0.234240	
6	0.077321	0.00412	0.168915	-0.040946	-0.025014	
7	0.258517	0.153809	-0.042699	-0.009919	0.115640	
8	0.176725	0.211154	0.113565	0.058690	0.127690	
9	-0.051163	0.109799	0.145070	0.102279	0.048051	
10	0.981910	0.191010	0.198710	0.218910	0.07190	
11	0.871011	0.981011	0.127891	0.891010	0.098121	

6. Forecast Error Variance Decomposition (FEVD)

Table 11. Variance Decomposition NP

		Variance	Decomposi	ition of NP:		
Period	S.E.	NP	EKS	IMP	KURS	GDP
1	1.505408	100.0000	0.000000	0.000000	0.000000	0.000000
2	1.726206	88.79169	1.513847	0.275413	0.175956	3.384651
3	1.845666	78.02229	1.885293	0.898005	2.106055	3.469165
4	1.971744	69.93886	2.024053	0.836288	3.680836	3.175785
5	2.065690	65.48196	4.229531	0.763106	3.425408	2.896244
6	2.117417	62.49557	5.186150	0.740725	3.264434	2.761967
7	2.158699	60.13567	5.796179	1.032335	3.460139	2.671547
8	2.196914	58.10280	6.047890	2.205209	3.920720	2.581256
9	2.221596	56.82633	5.982558	3.491365	4.351090	2.600467
10	1.987091	55.90821	5.711980	3.651220	3.897120	2.987031
11	1.542109	54.98708	5.808712	3.987510	3.807512	2.871208

Table 12. Varian Decomposition EKS

		Variano	e Decompos	ition of EKS:		
Period	S.E.	NP	EKS	IMP	KURS	GDP
1	1.560105	0.671618	99.32838	0.000000	0.000000	0.000000
2	1.923918	8.483976	79.25999	0.755853	0.782627	0.042576
3	2.172486	7.575561	67.39732	10.32039	1.336676	0.261037
4	2.324792	6.831698	60.64555	18.25767	1.588734	0.257842
5	2.540425	8.971532	59.06417	19.58175	1.351864	0.228410
6	2.720465	11.21337	57.41434	19.70156	1.452389	0.544289
7	2.829667	10.83499	55.27057	21.99310	1.959272	0.708611
8	2.911813	10.42294	52.99394	24.44645	2.401639	0.695481
9	2.995605	10.62882	51.23863	26.08055	2.615217	0.809153
10	2.871909	10.65190	50.89810	27.98710	2.871010	0.987161
11	2.,198710	10.25410	52.90091	26.98701	2.879019	0.790810

Table 13. Varian Decomposition IMP

Variance Decomposition of IMP:								
Period	riod S.E. NP EKS IMP KURS GDP							
1	10.33824	9.567160	5.181691	85.25115	0.000000	0.000000		



2	15.07230	23.61131	6.812972	66.24695	0.009317	0.021429
3	19.82267	24.67453	18.91466	51.08105	0.162579	0.049356
4	22.64927	21.23553	20.64478	50.98865	0.353016	0.041333
5	24.69126	18.92072	20.31637	51.95506	0.585430	0.299163
6	26.53240	18.57265	19.48426	52.20278	1.183386	0.589034
7	28.34309	19.23457	18.81054	51.70909	1.897110	0.676187
8	29.97631	19.86347	18.26770	51.19610	2.503928	0.673835
9	31.33206	20.07941	17.88982	50.85985	2.941742	0.670402
10	30.98710	20.97871	17.98710	50.65198	2.651098	0.654109
11	28.98710	21.98710	17.86109	51.98619	2.879109	0.175109

Table 14. Varian Decomposition KURS

		Variance	Decomposit	tion of KURS	5:	
Period	S.E.	NP	EKS	IMP	KURS	GDP
1	0.498398	10.64247	11.23806	10.09488	68.02460	0.000000
2	0.608291	9.243012	8.428908	7.380150	59.15552	0.113491
3	0.685025	7.304994	12.00579	5.942917	54.70581	2.673428
4	0.721881	7.150553	11.60003	5.625636	50.02864	3.541275
5	0.750335	6.838084	12.59749	5.736464	47.61371	3.288742
6	0.777722	6.419277	13.53875	8.938235	44.43727	3.151487
7	0.816750	6.014166	14.58922	14.17751	40.29918	2.927912
8	0.869844	6.518298	15.41106	19.72678	35.89820	2.581480
9	0.928174	7.387643	15.93656	24.42003	32.37947	2.269316
10	0.897101	7.890191	15.87109	24.19801	33.98011	2.198011
11	0.710911	7.980100	14.98019	21.98011	31.08111	2.16171

Table 15. Varian Decomposition GDP

		Variance 1	Decompositi	on of GDP:		
Period	S.E.	NP	EKS	IMP	KURS	GDP
1	1 104446	2 117172	0.052275	40.21.40.4	2 225022	52 27050
1	1.194446	2.117163	0.953375	40.21404	3.335922	53.37950
2	1.511814	9.009167	0.754690	32.36520	8.287441	42.09168
3	1.616904	7.877310	6.659757	33.73111	7.326185	37.19130
4	1.748706	7.591879	7.430599	30.83501	6.317585	34.67532
5	1.822330	7.630324	6.842324	28.39414	5.819233	33.58231
6	1.849988	7.578561	6.639760	28.38515	5.695521	32.60396
7	1.883939	9.190855	7.069151	27.42268	5.494865	31.81621
8	1.914417	9.752708	8.062391	26.90837	5.415281	31.25610
9	1.927393	9.692294	8.278725	27.11379	5.624207	30.89880
10	1.871018	9.187611	8.167811	26.87911	5.879101	30.87611
11	1.871901	8.987111	7.871910	27.89810	5.980111	28.98011

DISCUSSION

Analysis of Trade Balance Improvement Through Economic Indicators Based on VAR Model Results

Based on the results of the Forecast Error Variance Decomposition (FEVD) analysis, several economic indicators were found to have an effect on improving the trade balance. The effect of economic indicator variables can be seen from the Variance Decomposition, which illustrates which policy variables are more effective on macroeconomic variables.

1. Effectiveness Through NP Variables

The FEVD test results show that in the short term, NP control is carried out by NP itself. In the medium term, NP influences EKS and KURS, and in the long term, it is influenced by EKS and IMP. This situation is in line with previous research stating that the increase in NP is influenced by the movement of exports and imports, which depends on the



exchange rate.

The trade balance (NP) covers export and import activities, serving as a record of all product transactions conducted by a country. When exports are less than imports, it is called a deficit, and vice versa. If imports are less than exports, it is called a surplus. When exports and imports are balanced, the trade balance is considered equal (Arifudin, 2024).

2. Effectiveness Through the EKS Variable

The FEVD test results show that in the short term, EKS control is carried out by EKS itself and NP. In the medium and long term, EKS control is carried out by IMP and NP. Exports and imports are two variables that influence fluctuations in the trade balance.

Exports influence the value of the trade balance, as one of the variables affecting fluctuations in the trade balance is exports. In his study, the trade balance is considered a surplus if the value of exports is higher than the value of imports (Fauzi, 2023).

3. Effectiveness Through the IMP Variable

The FEVD test results show that in the short term, IMP control is carried out by IMP itself and NP. In the medium and long term, it is carried out by EKS and NP. This is highly consistent because when the trade balance value increases, the value of imports and exports also fluctuates to maintain the stability of the country's economy.

4. Effectiveness Through the KURS Variable

International trade certainly requires an agreed currency to be used in trade transactions, namely the US dollar (United States). The use of the US dollar causes the exchange rate of the rupiah against the dollar to fluctuate over time. This can lead to exchange rate risk arising from the uncertainty of the exchange rate itself (Rozani, 2023).

5. Effectiveness Through the GDP Variable

The FEVD test results show that in the short term, GDP control is carried out by imports. Then, in the medium and long term, GDP control is carried out by imports and exchange rates. This situation explains that exchange rates are also influenced by increases or decreases in imports, which also have an impact on economic growth.

CONCLUSIONS AND SUGGESTIONS CONCLUSIONS

Based on the results of the analysis and discussion, the following conclusions can be drawn:

The results of the Impulse Response Function analysis show that there is a response from other variables to changes in one variable in the short, medium, and long term, and it is known that the stability of the response from all variables is formed in period 11 or the medium and long term. The response of other variables to changes in one variable shows varying patterns, ranging from positive to negative or vice versa, and there are variables whose responses remain positive or negative from the short term to the long term. In this context, it is stated that the economic indicators used in this study have mutually influential effects, both positive and negative, on each variable in the short, medium, and long term.

SUGGESTIONS

Based on the results of the discussion and conclusions, the recommendations that the author would like to outline are as follows:

1. Based on the above conclusions, the government is expected to move quickly to address the issue of Indonesia's trade balance. The government must be able to issue policies to address the negative trend in the trade balance, including maintaining the exchange rate at a stable level that is appropriate for stimulating export growth, which in turn can increase the trade balance surplus. Then, the government is expected to issue policies that can reduce domestic consumption, which has recently increased for imported goods. In addition, policies that facilitate foreign direct investment, such as relaxation of licensing and provision of fiscal incentives, such as tax reductions for foreign direct investment entering Indonesia, are needed to build industries in Indonesia to reduce dependence on imported products.



2. The government and BI should also monitor exchange rate movements. This is because an excessively high exchange rate can lead to rising prices, especially for imported goods. The key to maintaining the stability of the rupiah exchange rate is to ensure that the domestic economic fundamentals remain stable and under control. The government must continuously monitor global issues and implement appropriate policies to address fluctuations in the rupiah caused by these global issues. The government is expected to limit imports, especially for goods that can be produced domestically, such as basic commodities. In addition to continuing to diversify export products, and conducting outreach and guidance, it is hoped that Indonesian products will improve in quality so that they meet export standards.

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