# CAUSAL MACRO-DYNAMICS VARIABLES AFFECTING INFLATION RATES IN OECD AND ECONOMIC BUILD-UP SCALE EFFECTS

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### ABSTRACT

In this study, we endeavor to establish a comprehensive panel data analysis framework focusing on recent fluctuations and adjustments in inflation rates across OECD countries. Our objective is to delve into the intricacies of these inflationary trends by considering the collective macro dynamics prevalent among the OECD member nations. The understanding of the underlying structure of macro variables, which serves as our foundational framework, and the hierarchical order of the inflation rates' impact assume a pivotal role in elucidating the causal relationships within the purview of the OECD. Furthermore, the implications extend to shaping future economic growth policies within the broader context of global economic integrations. The rationale behind scrutinizing these inflationary escalations on an OECD-wide basis over the past four decades is to illuminate the impact analysis more perspicuously and judiciously. This temporal approach allows us to discern the nuanced impact of inflation values, transcending the developmental variations among countries and accounting for the broader spectrum of inflation rate fluctuations. Additionally, our methodology elucidates the structural scale effects of lagged impact values within the OECD scope. These effects, contingent upon the average macro-dynamic variables employed in our econometric analysis, explain the intricacies of the economic relationships within the OECD. We acknowledge the significance of scale effects, wherein investment rates, exchange rate fluctuations, and current account to GDP rates, intertwined with average economic growth trends in the OECD, wield a direct influence. Our determination to delineate the macro impact values in terms of OECD average inflation values is grounded in the necessity to ascertain the level at which these economic processes interrelate.

**Key Words:** Current Deficits; Gross Domestic Products; Inflation; Macroeconomics Variables; OECD.

**JEL Codes:** E31; E61; E62.

## **1. INTRODUCTION**

Examining the factors affecting inflation in OECD countries requires analysing the integrity of standard macroeconomic impact variables despite the development differences between countries. The existence of a common macroeconomic impact dynamic despite the different development dynamics between countries reveals the importance of the difference in structural impact.



This phenomenon is also directly related to the development level of the countries and is involved in the process with an important impact mechanism, especially in the current account balances that represent the global financial balance. In addition, the financial balance differences expressed by OECD countries as expected values reveal their significance, especially with the changes in investment limits and GDP (Bismut & Ramajo, 2021: 497). Expressing the asset values of all OECD countries as macroeconomic variables with different values is deemed necessary for Panel Data analyses to gain meaning within a rational tendency. The reality on an OECD basis reveals a basic set of objectives in terms of analysis of changes in inflation values, which constitutes an important structural impact framework as a standard economic development policy to control inflation rates at the global level. This structural analysis approach can be expressed through a process of alignment with the different values that different OECD countries may express (Haugh et al., 2009: 23).

From another perspective, the primary purpose of our study is that each value of the employment- investment relationship ratios expresses a structural integrity that can be evaluated within economic growth trends with different scale effects. This hypothesis is based on assessing the mutual impact values of each value of average investment levels within the scope of the OECD. Also, it contributes to understanding economic growth trends to analyse changes in the periodic inflation rate. In this study, which examines the mechanisms affecting OECD inflation rates, the effects of variability in interest rates and potential GDP growth rates on inflation come to the fore (Holston et al., 2017: 8). In addition, the central axis of this study, in which debt trends are also evaluated among macroeconomic variables, is primarily to consider the potential GDP trend regarding inflation trends and to question the possible positive correlation of the increasing national income level with inflation. The variability of current account deficits, and primarily global inflation as an average value of current account deficits, which has emerged as a fundamental and widespread phenomenon within the scope of OECD, has emerged as an essential financial phenomenon dependent on exchange rate changes. In particular, the relationship between the increasing money supply of countries and the global level and demand seems to have turned into a goods supply market that triggers inflation increases and consumers begin to spend more money. However, with the recent rise in inflation rates, import costs have increased to high levels, negatively affecting the current account deficit. It should be emphasized that the increases in inflation rates within the scope of the OECD are far from being demand inflation and reflect cost inflation based on investments. Depending on the foreign trade balances, the position of the foreign trade balances in the process also appears to have a negative impact on the scale of the process. As a fiscally negative, this phenomenon has turned into a context that causes inflation rates to increase further in OECD countries, where the need for external financing increases (Tanzi & Fanizza, 1995: 14).



#### 2. REVIEW LITERATURE

One of the first studies on the macroeconomic components of the inflation effect was by Abdalla and Murinde 1997, which specifically focused on exchange rate variability. The relevant study, primarily based on the findings in Korea, Pakistan, and the Philippines, discussed the impact of price variability in emerging economies based on exchange rate variability at the old inflation level. The study by Uhlig in 2005 and Faini R (2006), which supports this study, provides a meaningful basis for determining the inflationary basis of monetary policies. It is also observed that the study conducted by McCarthy (2007), primarily based on industrialized countries, reached significant inflationary-based findings. The relevant research reached a substantial meaningful in national inflation values in some industrialized countries, especially concerning exchange rate variability and import prices. Another critical study by Prasertnukul et al., conducted in 2010, and Ciorana (2014) constitutes an essential econometric basis for OECD approaches and emerging economies. The study reveals that, along with critical inflationary findings, it also examines a positional target structure in Asian countries regarding inflation targeting of exchange rate variability and price levels. A critical study examining the macroeconomic relations of inflation, based on the USA as a developed economy and India as an emerging economy, was conducted by Aggarwal and Najia 2017, and Amankwah and Atta Sarfo (2019). Besides, Diegel and Nautz 2021, this study's macroeconomic dynamics and inflation relationship are meaningful findings for today's OECD countries, which support the model approach and findings in our study. In terms of macroeconomic relations of inflation, Kirca and Canbay's study on Turkey as a rising economy in 2021 also confirms these findings for OECD countries on the basis of macro determinations. Another study examining the macroeconomic relations of inflation based on China and African Perpective, an essential representative of the emerging economy, was conducted by Niu (2012) and later Gibatu et al. (2017). On the other hand, the studed of Corsetti et al. (2012) on fiscal risk, fiscal policy and macroeconomic stability put forth the macro determinations in the study provide a meaningful basis for determinations for today's OECD countries as financial crisis values. The related study by Fasanya and Awodimila (2020) on commodity price predictors of inflation revealed macroeconomic impact dynamics impact scales that support the studies of Gibatu et al. (2017) with their significant findings. Two of the most recent studies examining the causal relationship between inflation and macroeconomic variables is Adedeji et al. (2023) and Adrian et al. (2023) studies. In the study, the effects of macro variables based on the price of risk and macro- financial dynamics were subject to very significant determinations. The findings in Bhalla et al.'s 2023 macro effects of formal adoption of inflation targeting approach support the findings of Adrian et al. (2023). In addition, the study by Mcneil (2023) within the framework of monetary policy and the structure of inflation expectations with information frictions also confirms these current approaches and determinations regarding economic policy in terms of its current findings. Mester (2022), the role of inflation expectations in monetary policymaking, and the comprehensive two studies by



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Mlangeni and Buthelez (2024) within the scope of causal analysis of heterogeneous economic agents on monetary policy and inflation expectations have revealed essential findings regarding current causal analyses. The findings reveal current findings supporting the previous study named *Prices and Exchange Rates* by Rodriguez-Lopez 2011 prices and exchange rates, which enlarged scope scale values. The findings reveal current findings supporting the previous study named Prices and Exchange Rates by Rodriguez-Lopez 2011 prices and exchange rates, which enlarged scope scale values. The findings reveal current findings supporting the previous study named Prices and Exchange Rates by Rodriguez-Lopez 2011 prices and exchange rates, which enlarged scope scale values. In addition, these two studies mentioned above by Mester (2022) and Mlangeni and Buthelez (2024) supported by the previous study by Ray (2012) in the scope as related to testing Granger's causal relationship between macroeconomic variables and stock price behaviour.

# 3. PERIODIC CHANGES OUTLOOK OF INFLATION AND MACROECONOMIC IMPACT COMPONENTS IN THE OECD

This variability turned into a significant increasing trend after the Corona-19 pandemic, although inflation rates, which averaged around 8%, recorded a substantial decrease in 2009 and 2010. It is important to emphasize that today, in a structure where global inflation remains high, the effects of the increase are especially evident in OECD countries. On the other hand, this multiple variability in inflation increases the fluctuation effect among OECD countries due to the impact of countries having different inflation rates. Differences in the level of development and financial and macroeconomic stability of the countries within the OECD countries have created a significant change in the general inflation process (OECD, 2022: 5). Differences in food and energy prices are essential, especially in developing and emerging market countries. This situation has created a mechanism that further increases the average increase effects of all items of this inflationary variability. The existence of foreign energy dependence in underdeveloped OECD countries has created a structural change trend that causes significant fluctuations in inflation values over the entire OECD average. In addition, it is observed that fiscal policy differences and the practical mechanisms revealed by these differences create different impact values on macro values (Hosny, 2014: 214). In this context, Chart 1, which deals with the general fluctuation trend of all inflation rates after the 1990s and the differences in the contribution values of food and energy prices, allows us to monitor the changing trend in question visually:







**Source:** OECD (2024-a). *Statistics News Release: Consumer Price Index.* 7 February 2024, Reference period: December 2023, Paris: OECD Publications, 2024, p. 1. **Graphic 1.** Periodic Changes in Inflation Rates in OECD and Its Structural Distribution

When Chart 1 above is examined, it is observed that there are structural impact values that exceed approximately 10% and approach 11%. This variability also draws attention to the falling effect seen in May 2009. It can be explained as the stable position of prices at the global level, which significantly reduces the average inflation rates on an OECD basis. When combined with the panel data approach, the variability considered in our study points to significant fluctuations in which the macroeconomic variable effects of different countries affect their average values through the scale effect. At the same time, energy dependency, critical for OECD countries, emerges as an essential variable affecting inflation rates with the increase in foreign-dependent energy imports in underdeveloped and emerging market economies. In this context, the rise in energy prices in international markets and the fact that energy becomes more expensive for usable vehicles creates a structure that affects various values with different impact scales. On the other hand, the relationship impact between inflation and important macroeconomic variations is shaped by factors such as significant differences in employment levels and the increasing size of current account deficits in countries' growth policies (OECD, 2011: 3). These factors create impact scales that cause substantial fluctuations in the inflation rates observed in Chart 1.

A structure in which current account deficits are more prominent in OECD countries means that foreign trade balances lose value due to increasing the average inflation impact values. especially at the global level, with the effect of the exchange rate and import costs turning into a position that can trigger inflation. An international structure in which current account deficits are directly affected, especially by interest rates, reveals that it has become a critical phenomenon in the process, with the mutual impact scales of increases in current account deficits and inflation rates. In this context, incorporating debt trends within the inflation adjustment in the model reveals essential findings, especially in terms of indirectly explaining the variability in actual interest rates and the inflation relationship (Kerdrain et al., 2010: 22-23). The impact of variability in interest rates, along with understanding the actual impact values of inflation adjustment, allows scale effects to be considered more meaningfully. Another point emphasized in the study is the negative correlation relationship between the average growth effect and inflation. This situation indicates that interest rate variability comes to the fore when the sectoral financial needs of the money supply policy increase. The impact of accurate interest rates after adjusted inflation rates presented in Chart 3 follows the long-term process of change in debt values based on economic growth and the OECD average. The approach, in which the average of OECD debt trains is considered an average of GDP, aims to clarify the impact of economic growth and debt relationship on inflation in an inflationary process. Chart 2 visually supports the study's main findings and explains the dynamic relationships between the analysed variables.





**Source:** Claude Bismut and Ismaël Ramajo (2021). "Nominal and Real Interest Rates in OECD Countries, Changes in Sight After Covid-19?", *International Economics and Economic Policy*, 18, p. 496. https://doi.org/10.1007/s10368-021-00514-5.

**Graphic 2.** Inflation-Corrected Real Interest Rates, Economic Growth and Debt to GDP in OECD Countries as Average Rates

As observed in Chart 2, significant fluctuations in interest rates in OECD countries have brought about significant breaks at the fundamental level. Especially when these breaks are examined in the context of inflation-adjusted rates, they point to a distinct vicious circle that emerges with a direct interaction between interest and inflation increases. As highlighted in Chart 2, there is no significant and notable growth trend in Gross Domestic Product (GDP), which remains at approximately 3%. However, the severe debt increase that followed this period is considered an essential dynamic factor to the rise in inflation rates. When the variability in rates is examined, especially as interest rates, rising unemployment rates and rising debt trends, this phenomenon indicates a significant vicious circle that maintains a stable trend in GDP but is also associated with an increasing debt trend. This holistic structural change process has emerged more clearly in recent periods, especially within the OECD framework. It includes efforts to stimulate growth towards increasing debt securities, which do not significantly impact countries' economic growth trends (Cheung et al., 2010: 12). Inflationary analyses of the OECD have focused on the idea that the main reason for rising inflation rates is the increasing debt and GDP cycle, and financial tightening has been perceived as the justification for controlling the impact of interest rates. Within the framework of the analysis considered, this holistic structure is compatible with our findings, which show the significance of the scale effect values in increasing interest rate variability, especially when considering these trends with dynamics and based on economic growth (Angelas, 2015: 4).



## 4. EMPIRICAL METHOD AND FINDINGS

In inflation variabilities, determining the periodicity, it was foreseen to create a meaningful impact scale related to the subject in the macroeconomic as relation to the Gross Domestic Product GDP variability process in the relevant period. A periodic analysis, in which the variations in exchange rates directly associated with the findings in our study included in the creation of the empirical model, was also discussed in a factual framework related to debt to GDP rates. In brief, a public approach was adopted for the increases in the macroeconomic variability concerning inflation rates, which was considered included in the model. Time series-based variables such as the percentage change in Gross Domestic Product (GDP) are included in the model as factorial independent variables to represent the economic growth trend in OECD, which creates a possible structural contrast with the current deficits and sectoral investment rates. The reason for the chosen NARDL - Non-Linear Bounds Testing Approach Data Analysis approach is that the model is that the time series subject to the model is not in a linear trend framework. Ramsey verification test was used to test the model's reliability in determining the scale effects of independent components. Being all these, the reliability of the model and analysis results was tested by determining probability values within the framework of fixed and non-constant trends as a result of stationarity tests, where significance levels were considered at p < 0.05. NARDL -Non-Linear Boundary Test Approach Data Analysis was critical in determining the significance of the findings it provided for subsequent Threshold Analyses and their effects put forth meaningfully. In this context, a data analysis framework was applied based on applying the "Threshold Limit Test" of the significant standard deviation and R-square values, and the predictive values were further interpreted using the scale values. The theoretical framework of the NARDL analysis is also discussed concerning taking the basic framework of the NARDL model in detailed analyses after ensuring stationarity by differentiating the variability levels of each series, which this approach also reveals empirical effect value scale deviations processes that enlarged scope. The empirical, theoretical structure we consider is expressed as follows:

$$x_{t}^{-} = \sum_{i=1}^{p} \Delta x_{i}^{-} = \sum_{i=1}^{p} \min(\Delta x_{i}, 0)$$

$$x_{t}^{+} = \sum_{i=1}^{p} \Delta x_{i}^{+} = \sum_{i=1}^{p} \max(\Delta x_{i}, 0)$$
.....(1)
$$H_{0}: \beta_{2} = \beta_{3} = 0$$

$$H_{1}: \beta_{2} \neq \beta_{3} \neq 0$$

$$Y_{i} = \beta_{0} + \beta_{1}X_{i} + \beta_{2}\hat{Y}_{i}^{2} + \beta_{3}\hat{Y}_{i}^{3} + u_{i}$$
.....(2)



$$OECD_{INF}_{R}Tpvr_{t}^{-} = \sum_{i=1}^{p} \Delta OECD_{INF}_{R}Tpvr_{i}^{-}$$

$$= \sum_{i=1}^{p} (OECD_{INF}_{R}Tpvr^{0}, 0) \dots (4)$$

$$OECD_{INF}_{R}Tpvr_{t}^{+} = \sum_{i=1}^{p} \Delta OECD_{INF}_{R}Tpvr_{i}^{+}$$

$$= \sum_{i=1}^{p} \max (OECD_{INF}_{R}Tpvr^{0}, 0) \dots (5)$$

On the other hand, to verify the accuracy of our model and the meaning of our findings, it is also aimed to monitor impulse value changes with the var model approach and to reveal the configuration values of the integration values of the model we have established. The considered Theoretical Framework of the VAR-Vector Autoregression Model is like below:

$$\Delta = (1 - a_{11}) (1 - a_{22}) - a_{12}a_{21}$$

$$\mathbf{X}_{t} = \frac{1}{\Delta} \begin{bmatrix} 1 - a_{22} & a_{12} \\ a_{21} & 1 - a_{11} \end{bmatrix} \begin{bmatrix} a_{10} \\ a_{20} \end{bmatrix} + \sum_{i=0}^{\infty} A_{1}^{i} \mathbf{e}_{t-i}$$

$$= \frac{1}{\Delta} \begin{bmatrix} a_{10} (1 - a_{22}) + a_{12}a_{20} \\ a_{20} (1 - a_{11}) + a_{21}a_{10} \end{bmatrix} + \sum_{i=0}^{\infty} A_{1}^{i} \mathbf{e}_{t-i}$$

$$\mathbf{X}_{t} = \mu + \sum_{i=0}^{\infty} A_{1}^{i} \mathbf{e}_{t-i}$$
(7)

Table	1.	Expressions	of	Independent-Dependent	Components	in	The	Concerned
Econo	met	tric Model						

OECD_INF_RT	Inflation Rates in OECD
	(as a percentage by Year)
OECD_FIS_BL	Fiscal Balances to GDP in OECD
OECD_EXC_CH_RT	Average Exchange Changes Rates in OECD
	(as a percentage by Year)
OECD_CR_AC_GDP	Average Current Account Deficits to GDP in OECD
	(as a percentage by Year)

Unit root tests for the dependent and independent variables we use in our model are essential as they show that our model works correctly. The prior structure of the variables and the probabilities



of their 1-degree differences were determined in determining the unit root tests. The determined values, including the variables' fixed trend and variable trend positions and the structural probability statistical values, are shown in Table 2 below:

	At Lev	el			
		OECD_INF_RT	OECD_FIS_BL	OECD_EXC_CH_RT	OECD_CR_AC_GDP
With	t				
Const.					
	с	-4.8978	-4.4716	-1.2720	-4.3111
	Prob.	0.0003	0.0010	0.6325	0.0015
With		***	***	n0	***
Consta	antnt a				
Trend					
	С	-4.8316	-4.5356	-0.9871	-4.1921
	Prob.	0.0020	0.0043	0.9340	0.0105
		***	***	n0	**
Witho	ut				
Consta	antt				
Trend					
	С	0.1974	-0.8639	0.2635	-3.7427
	Prob.	0.7381	0.3353	0.7572	0.0004
		n0	n0	n0	***
	<u>At Firs</u>	<u>st Difference</u>			
		d(OECD_INF_)	R) d(OECD_FIS_	B) d(OECD_EXC_CH	_R)d(OECD_CR_AC_GD
With					
Consta	ant treno	d			
	С	-11.9847	-6.9555	-9.6738	-4.5725
	Prob	. 0.0000	0.0000	0.0000	0.0008
		***	***	***	***
With		J			
Consta	ant trend	u L			
	С	-11.8216	-6.8141	-9.7410	-4.5420
	Prob	. 0.0000 ***	0.0000 ***	0.0000 ***	0.0046 ***



Without								
Constant								
Trend								
(	С	-12.0739	-7.0753	-9.7901	-4.6086			
1	Prob.	0.0000	0.0000	0.0000	0.0000			
		***	***	***	***			
Notor								

# Notes:

(\*) Significant at the 10%; (\*\*)Significant at the 5%;

(\*\*\*) Significant at the 1% and (no) Not Significant

(\*\*\*\*) Null Hypothesis: the variable has a unit root

As seen in Table 2 above, it is observed that the unit root values of the dependent and independent variables in periodical probability values are lower than the significance value of 0.05. On the other hand, it also means a structure in which unit root values and unit root determinations are out of the question, with the locations of this model that can be expressed in different structures for each impression in the probability values; that is, no unit root effect value relationship direct not in the model.

First of all, it emphasizes the effective use of the vector autocorrelation model and cointegration approaches in the process of determining inflation effects. In the analysis process, the vector autocorrelation VAR model stands out as the main method used to determine the inflation effects within the OECD scope. This model provides the opportunity to examine the interaction of macro variables in detail by determining the values that affect inflation. It is possible to follow these cointegration and adjustment coefficients findings determined regarding the VAR model in Table 3 below:

# Table 3. VAR Model Cointegration and Adjustment Coefficients Findings and Standard Deviations

Log likelihood -239.7139783							
Normalized Cointegrating Coefficients							
OECD_INF_RT	OECD_FIS_BL	OECD_ EXC_CH_RT	OECD_CR_AC_GDP				
1.000000	0.460012	-6.576823	-1.370640				
	(0.56345)	(1.38323)	(0.39775)				
0.000000	1.000000	0.000000	1.069132				
			(1.40052)				
0.000000	0.000000	1.000000	-10.81967				



(3.47461)

#### \*Standard Error in Parentheses

#### Adjustment Coefficients

D(OECD_INF_RT)	-0.035685	0.075950	-0.029537				
	(0.04540)	(0.37439)	(0.02334)				
	0.006318	-0.983759	-0.067457				
D(OECD_EXC_CH_RT)	(0.07665)	(0.64398)	(0.03169)				
	0.116914	-0.467990	-0.065927				
	(0.03537)	(0.26528)	(0.04859)				
D(OECD_CR_AC_GDP)	0.227638	-0.437448	-0.038488				
D(OECD_FIS_BL)	(0.65487)	(0.43874)	(0.54387)				
*Standard Errors in Parentheses							
Determinant reside covario	unce (dof adj.): 1	.664488					
Determinant reside covario	unce (dof adj.): 1 22.73564	.664488					
Determinant reside covario Schwarz criterion Number of coefficients	nce (dof adj.): 1 22.73564 78	.664488					
Determinant reside covaria Schwarz criterion Number of coefficients R-squared 0.404504	nce (dof adj.): 1 22.73564 78	.664488					
Determinant reside covariaSchwarz criterionNumber of coefficientsR-squared0.404504Adj. R-squared0.06	unce (dof adj.): 1 22.73564 78 54220	.664488					

In Table 3, R-squared is "0.404504" and Adj. R-square "0.064220" was determined by the VAR model based on the above cointegration values. The impact scale effects of D(OECD\_INF\_RT) for OECD fiscal balances is as "-0.035685". This is "0.075950" and "-0.029537" for the privatized OECD average exchange rate volatility and current account deficits. These values are meaningful for the values we determine next.

In addition, the impulse sensitivity of the graph of the contribution of the scale effect value of the independent variables on the dependent variable to the dependent and independent variables is presented below:





**Graphic 3.** Periodic Meaningfulness of OECD Inflation Rates on Fiscal Balances and Exchange Variability

The charts in Graphic 3 above show that the sensitivity of inflation, which we take as a basis within the scope of OECD as independent variables, primarily reveals a significant sensitivity to fiscal balances and the exchange rate. This significance can be expressed similarly and shows an absolute sensitivity variability taken as the average value based on the countries in question. This means OECD is a process and a periodic position in which each inflation value affects the next inflation value. It is possible to watch this effect location Graph 4 below to this concerned context:





**Graphic 4.** Periodic Meaningfulness of OECD Inflation Rates on Fiscal Balances and Exchange Variability

As seen in Chart 4 above, there is a phenomenon in which an ongoing inflation rate within the OECD has a structure that continues to this day. This phenomenon reveals that, as seen in Chart 5 above, it creates a context in which increases in inflation rates also affect subsequent inflation rates. This phenomenon, which creates a vicious circle, reveals the structure in which the dynamics directly affecting OECD average inflation values are effective in subsequent periods.



Again, at this stage, it can be put forward the theoretical prediction framework of the periodic impact value distribution of the components of the relevant model by expressed as the basis we used in creating our NARDL prediction equation:

# Forecasting Equation:

OECD\_INF\_RT = C(1)\*OECD\_INF\_RT(-1) + C(2)\*OECD\_INF\_RT(-2) + C(3)\*OECD\_INF\_RT(-3) + C(4)\*OECD\_FIS\_BL\_POS + C(5)\*OECD\_FIS\_BL\_POS(-1) + C(6)\*OECD\_FIS\_BL\_POS(-2) + C(7)\*OECD\_FIS\_BL\_NEG + C(8)\*OECD\_FIS\_BL\_NEG(-1) + C(9)\*OECD\_FIS\_BL\_NEG(-2) + C(10)\*OECD\_EXC\_CH\_RT\_POS + C(11)\*OECD\_EXC\_CH\_RT\_POS(-1) + C(12)\*OECD\_EXC\_CH\_RT\_POS(-2) + C(13)\*OECD\_EXC\_CH\_RT\_NEG + C(14)\*OECD\_CR\_AC\_GDP\_POS + C(15)\*OECD\_CR\_AC\_GDP\_NEG + C(16)\*OECD\_CR\_AC\_GDP\_NEG(-1) + C(17)\*OECD\_CR\_AC\_GDP\_NEG(-2) + C(18)\*OECD\_CR\_AC\_GDP\_NEG(-3) + C(19)

The coefficient within the framework of the NARDL prediction model written above reveals the model expansion framework that expresses the significance of the impact expansion of the components in the process regarding our findings. Below, the scale effect coefficient values obtained regarding the effect values of the variables in the cointegrating equation framework above are expressed.

D(OECD_INF_RT) =	+ 4.506026748773
	- 0.839442184357*0ECD_INF_RT( -1)
	+ 0.203202423759*0ECD_FIS_BL_POS (-1)
	- 0.736600830156*0ECD_FIS_BL_NEG (-1)
	- 0.236941754047*0ECD_EXC_CH_RT_POS (-1)
	+ 0.211340258425*0ECD_EXC_CH_RT_NEG**
	- 0.143588342236*0ECD_CR_AC_GDP_POS**
	+ 0.094700987931*0ECD_CR_AC_GDP_NEG (-1)
	+ 0.105559866779*D(OECD_INF_RT (-1))
	+ 0.336556015931*D(OECD_INF_RT (-2))
	+ 0.432453094546*D(OECD_FIS_BL_POS)



- 0.698808289662*D(OECD_FIS_I	BL_POS (	-1))
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- 0.643689211836\*D(OECD\_FIS\_BL\_NEG)

- + 0.883073920459\*D(OECD\_FIS\_BL\_NEG (-1))
- 0.520172175386\*D(OECD\_EXC\_CH\_RT\_POS)
- 0.223456657038\*D(OECD\_EXC\_CH\_RT\_POS (-1))
- + 0.158632294630\*D(OECD\_CR\_AC\_GDP\_NEG)
- 0.080020925744\*(OECD\_INF\_RT
- (0.24206840\*OECD\_FIS\_BL\_POS(-1)
- 0.87748846\*0ECD\_FIS\_BL\_NEG (-1)
- 0.28226096\*OECD\_EXC\_CH\_RT\_POS (-1)
- + 0.25176273\*0ECD\_EXC\_CH\_RT\_NEG (-1)
- 0.17105209\*0ECD\_CR\_AC\_GDP\_POS (-1)
- + 0.11281419\*0ECD\_CR\_AC\_GDP\_NEG (-1)
- + 5.36788219)
- + 0.662585010476\*D(OECD\_CR\_AC\_GDP\_NEG(-2)))

In addition to the integration effect values of the NARDL model above, the statistical and scale effect values on the dependent variable determined within the framework of the NARDL model can be seen. The scale effect values for the established model defined in Table 4 below are presented within the framework of the four-lag model.

1 able 4. Scale Effect values and Staustical Findings in NAKDL Model Approach***	Table 4.	<b>Scale Effect</b>	Values and	Statistical	<b>Findings in</b>	NARDL	Model	Approach**
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Variables	Zero	1.Latency	2. Latency	3. Latenc y	4. Latenc
	Latency				У
ΔOECD_INF_RT*		0.266118	0.230996	-0.336556	
		(0.206014)	(0.182421)	(0.222136)	
$\Delta OECD_FIS_BL(+)$	0.4324532	-0.928059	0.698808		



		(0.41632	6)	(0.545239)	(0.378009)
$\Delta OECD_FIS_BL(-)$		-0.64368	9	-0.790162	0.790162
		(0.19841	5)	(0.554423)	(0.554423)
ΔOECD_EXC_CH_RT (+)		-0.52017	2	0.059774	0.223457
		(0.24945	4)	(0.241584)	(0.188078)
$\Delta OECD_EXC_CH_RT$ (-)		0.211340 (0.22379	) 4)		
$\Delta OECD_CR_AC_GDP(+)$	-0.143588 (0.289179)				
$\Delta OECD_CR_AC_GDP$ (-)	0.158632	-0.143952	0.742606	-0.662585	
	(0.323971)	(0.372974)	(0.370939)	) (0.23553)	
Variance Inflation Factors**	1	0.0469076	0.0664954	0.39490	3.7549
Scaled Coefficients**		1.34792	-0.4437962	1 - 0.78326	-1.6357

Other Decisive Statistical Findings								
R-Squared	0.715860	Adjusted	0.415007	NARDL	-180.3667			
		<b>R-Squared</b>		Wald	(6.71812)			
				Test:				
	Equation:							
F-statistic	2.379431	Ramsey Reset Test	39.76495	Jarque- Bera	0.950085			
CointEq(-1)	-0.839442	Probability	0.00416	Median	-0.040112			
	(0.176855)	(F-statistic)						
* Depended Variable ; ** For Depended Variable ***Included observations: 36 after adjustments: Maximum dependent lags: 3								

maximum dependent lags: 5. menuaeu obs 50 alter aujustillents, i



As seen in Table 4 above, the significance values R-Squared "0.715860" and Adjusted R-Squared "0.415007" express a significance level with the scale effects created on the dependent variable. In particular, the positive and negative value correspondences regarding the impact values of the independent variables reveal the impact values regarding the decrease and increase of the relevant independent variables. The error coefficient value being "CointEq (-1) -0.839442" and the standard deviation values being low on the "0.176855" scale confirm the significance of R-Squared "0.715860" and Adjusted R-Squared "0.415007" values within the framework of these standard deviations. The most striking situation for the OECD here is that, in terms of fiscal balances, the dependence of fiscal balances on inflation creates scale effect deviations in the impact values, which increase and decrease depending on the value fluctuations. As seen in Table 4 above, where fiscal balances continue positively, inflation impact values as " $\Delta OECD_FIS_BL(+)$ 0.4324532" positively affect inflation rates. It is observed that inflation values are negatively affected in a negative process experienced by financial balances with each unit deviation, creating a macro variable effect that causes an increase in inflation within the scope of "ΔOECD\_FIS\_BL(-) - 0.643689". It should be emphasized that macro variables, especially the OECD average variability in the exchange rate, have a similar impact level. In other words, it is significant that a proportional value in which the value of exchange rate variability rates increases creates a " $\Delta OECD_EXC_CH_RT(+)$  -0.520172" unit value deviation on inflation. A unit decrease in average exchange rate variability positively affects inflation as " $\Delta OECD_EXC_CH_RT(-)$  0.211340". In Chart 5 below, it is possible to monitor the abbreviations in the scale effect values of the macro variables within the framework of the NARDL model regarding the scale impacts we mentioned above and the average variability levels of these deviations depending on the impact scales:



Graphic 5. Scaling of NARDL Model Regarding Scale and the Variability of The Deviations.

As observed in Chart 5 above, the very short-term sensitivity of the positive impact values on an annual basis, where the proportional variability of the increase in the exchange rate



decreases significantly, is striking. A structure in which the impact values of the exchange rate variable on OECD inflation rates are affected for a short time is vital in terms of inflationary policies.



**Graphic 6.** Graphic 5. Scaling in NARDL Model Current Account Deficits to GDP and Its Variability

As considered equivalent to Chart 6 above as related to Table 4, it is observed that the short-term increase scale effect values of the current account deficit on a GDP basis have a short-term negative increase effect on the unit inflation increase as "OECD\_CR\_AC\_GDP(+) - 0.143588" in the period when the average current account deficit as a proportion of GDP decreases, it is seen that its short-term effect is positive on inflation by OECD\_CR\_AC\_GDP (-) 0.158632". The delayed controlled positive current account deficit effects of average inflation rates in the medium and long term are also "0.143952", albeit small-scale effects. " and "0.742606" reveal a position where scale effects are expressed with positive variable values.

# **5. DISCUSSION**

Understanding inflation variability within the framework of OECD average values is an important issue affecting all countries' macroeconomic performance. In this context, to carry out the analysis correctly, a careful approach should be taken regarding which macroeconomic variables to choose. An analysis framework associated with these variables must be created for the results to be meaningful. This necessity emphasizes the existence of all kinds of theoretical studies that focus on understanding impact values, especially those related to current macroeconomic balances in which inflation values are primarily accepted. In this context, for analyses to be based on current impact values, a complete understanding of the current economic situation and the basis of current impact values are needed. Differences in development levels between countries cause economic impacts to differ. Therefore, a theoretical framework is inevitable, leading to analyses emphasizing the primary topicality of constantly updated impact values. For the meaningfulness of the



analyses, it is crucial to consider the differences between development levels within this theoretical framework.

#### **Theoretical Implications:**

Understanding the causes of inflation variability over OECD average values requires basing macroeconomic analyses on a solid foundation. This basis, together with the selection of the correct variables, the creation of the analysis framework and the consideration of development levels, will provide a better understanding of the impact of inflation on economic impacts. Macroeconomic structure variations relate the factors affecting inflation rates in the OECD, especially the average fiscal balance, exchange rate variability and current account deficit/Gross Domestic Product (GDP) ratios, and also provide the basis for the emergence of a meaningful theoretical average structure. These macroeconomic variables, as the main macro variables, reveal some differences between OECD countries despite differences in the level of development. This means interpretations are valuable in establishing standard policies on specific critical issues. Especially in the context of the public economy, it is crucial to evaluate this structural value and analyse at what position and scale the impact values of these variables create an impact within the mutual interaction values. However, simple analyses that include the effects of these limited numbers of macro variables may not be sufficient to determine possible future policy steps. Each determination is compatible with the OECD literature to prove the analysis is realistic and valid as the theoretical framework.

This alignment allows the analysis to be evaluated within a broader academic context. Within the scope of the OECD, it is observed that there are some theoretical problems in calculating inflationary variables based on the average value. The basis of these problems lies in the fact that different countries have various fiscal policies and diversity in monetary and fiscal policy priorities. Financial policies, especially those with significant deviations at the global level, can cause macroeconomic deviations in developing economies that represent emerging economies, which leads to limitations in the creation of theoretical models. In addition, the different perceptions of impact scales by different countries bring a theoretical difficulty in understanding the relationships with other macro variables. For this reason, a structure in which an econometric panel data analysis is made in which all countries are considered necessitates a theoretical application framework based on a healthier model choice. In this application, factors such as ignoring seasonal variables and including dummy variables in the model as small effect values raise some problems regarding the rationality of the empirical model put forward theoretically. However, despite these difficulties, the existence of a holistic model in the creation of common policy theories that are developing within the framework of the OECD and aiming at global economic cooperation makes various theoretical perspectives that highlight empirical analyses based on different socio-economic data inevitable. This theoretical infrastructure provides an application infrastructure that allows the determination of more accurate and rational impact values by periodically examining the panel data impact scales made on all



OECD countries. In this context, a theoretical application emerges in which a scaled inflation level controlled globally is managed with the same policies.

### **Practical Implications:**

A global process in which the determined values come to the fore as common causes of inflation in practical application mainly brings to the fore the existence of standard policies in practice. However, it is also seen that different practices, which come to the fore with financial policies practices, also find a place in the process as a form of practice subject to deviation. An important reason is that some impact values targeted as theoretical infrastructure are subject to differences in acceptable tolerance limits by some OECD member countries. The expectations of different impact values of some crucial variations of public interventions from other countries, primarily based on financial values, for all applications also highlight the difference in acceptability of the impact values on inflation for different applications. Inflationary policies that can be considered nationally for each country in controlling inflation can often create contradictions with global policies and standard policies within the OECD. This negative relationship in practice arises from a structure in which optional macro variables evaluated at different values, especially economic development, have a scale effect on various targets.

Deviations in different structural targets regarding economic targets, especially the position that the differences in country approaches that may cause these deviations have a significant consequence effect, bring to the agenda the application of different fiscal policies with other theoretical approaches, especially in country practices that can be expressed with different fiscal- monetary values. This situation brings the inflationary approaches and impact variables within the scope of OECD to the level of contradictions at the global level. Different inflationary approaches at various levels also differentiate the impact values based on all kinds of financial-monetary values that can be associated with other values. It is understood that studies in the application areas cause different values to be included in global applications beyond the causal tests of deviation values that contradict empirical studies. The existence of the need for standard policies on the OECD basis, especially in bringing the ongoing macroeconomic determinations to the agenda, is frequently discussed by the OECD Financial Affairs Committee, which brings to the fore the practices aimed at controlling the inflationary structure in its agenda. As a result, the values determined by empirical studies also reveal that they find a place in the process by creating a contradictory infrastructure with the standard political decisions taken. Still, it should not be forgotten that these approaches may cause deviations in analysis results that are far from rational in practice. The method in which a determined monetary policy is not implemented in the fight against inflation, especially in practical applications, can be considered the second important reason. In particular, differences in money supply approaches and monetary policies emerge as an important practical reason for the deviations in our determined values. In inflation analysis on an OECD basis, focusing on the impact values of macro variables can be an essential criterion for policy regulations.



#### **Limitations and Future Research Directions**

Especially in the OECD, understanding the role of macro changes in assessing their impact on inflation rates and their limitations in future research directions is of great importance for formulating public policies. In this respect, panel data correlation analysis offers a critical approach to examining the relationship between the current account deficit rate, GDP level and inflation based on future investments. Determining the relationship between household labour power, labour force level, and inflation in this model is a phenomenon that should be emphasized in future research and in creating possible models to question the existence of a potential threshold effect in inflation rate variability analysis. At this point, the aim is to ensure that countries living in a structure that has recently turned into an unemployment trend with different investment levels are associated with inflation and that this phenomenon should be included in public instructions for the future. In this context, determining the effect of the employment level on the inflation relationship between the investment level in the past and the current levels is vital in understanding and defining the inflation impact scale constraints.

This relationship means that before and after positive and negative impact values are evaluated in a framework where our model will be used on a larger scale. In the analysis of the impact of macro variables on inflation conducted on an OECD basis, the observation that current account deficit positions and exchange rate variability, to which investment levels are directly related, create a lower trend effect in other countries except Japan, which is meaningful in understanding the constraints of possible inflationary policies. This is because global unemployment continues widely across countries and creates an inflationary trend by negatively affecting OECD average investment rates. Similarly, investment distortions resulting from increased unemployment rates in the Eurozone show a linear correlation with rising inflation, in limitations in future research directions creating a similar bias effect across countries. These findings confirm the impact of changes in investments on inflation and are evaluated in line with the literature in this field intended for the future. In this context, focusing on employment trends as a vital macro variable makes an indispensable investment strategy approach for the sustainability of future economic stability within the general framework of the OECD inevitable for future periods. Because the structure in which the increases in inflation rates within the scope of the OECD are far from classical demand inflation is a generally accepted view. A negativity that affects the limitations and future research directions positions can inevitably result in an adverse impact scale reflecting cost inflation. This fact will be able to probably reveal undesired a consequence of the adverse financial effects it creates based on investments. These deviations also make the priority decision- making approaches for applications that significantly impact the macro variable values we consider regarding inflation meaningful in the process.



#### 6. CONCLUSION

The increasing effect of inflation rates on an OECD basis may have directly impacted important macro variables, especially current account deficits and exchange rate fluctuations. Among our determinations, a triple independent variable selection was made in order of priority in selecting macro variables affecting inflation. The primary justification for this choice reflects the aim of achieving more effective and accurate results for policymakers. However, a periodic approach emerges in which these effects mostly affect the average fiscal balances, and the sensitivities and impulse values regarding fiscal balances are higher. Especially today, global inflation has increased, and the priorities in the impact values of existing macro variables have changed recently. In addition to exchange rate variables with current account deficits, the impact of exchange rate variability on inflation at the national level appears to have a negative impact on financial documents. It has been observed that inflation values tend to decrease in the OECD average for countries, especially in periods when fiscal balances improve and reach a positive value. This improvement is taking place in a period when fiscal policies, especially with political approaches, have turned into a policy focused on fighting inflation. This process of structural change shows that efforts towards increased debt securities in OECD countries, although not having a significant impact on economic growth trends, have further increased inflation rates due to the adoption of increased lending. This situation has turned into an inflation process that further impacts the increasing monetary level and negatively affects the financial balances in the markets. This observation also reveals that although other variables are questioned on an OECD basis, priority variables such as current account deficits and exchange rate variability make it inevitable to question the future impact values of investments. In particular, it is understood that inflation fundamentals create a significant cost inflation effect arising from production input costs rather than demand inflation and that this effect creates a considerable purchasing power deviation in global trade understandings. It should also be emphasized that, despite the difference in development between countries, some standard criteria in the fight against inflation are inevitable globally in a structure where countries are considered individually. This structural reality makes it unavoidable that different inflationary scale effects are frequently brought to the agenda and a structure that comes to the fore in shaping political instruction decisions. It is understood that the increase in current account deficits affects inflation as an important source of financing and that there is a significant external inflation threat arising from import policies for these countries. As a result, focusing on more comprehensive methodologies in inflation analyses can help policymakers make more effective decisions, and the consistency of these analyses with the literature increases the reliability of the determinations made.



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Graphic A-1. Root Mean Square, Variance and Covariance Ratio Values in the Model



# Appendix 2.

### **Table A-1. Current Threshold Calculations**

Bai-Perron tests of L+1 vs. L Sequentially Determined Thresholds:Thresholdvaryingvariables:OECD\_FIS\_BL,OECD\_EXC\_CH\_RTOECD\_CR\_AC\_GDPThreshold non-varying variables:@TRENDThreshold test options:Trimming 0.15, Max. thresholds 5, Sig. level 0.05

Sequentiar 1 Statistic determined in esholds. S					
		Scaled	Critical		
Threshold Test	F-statistic	F-statistic	Value**		
0 vs. 1 *	20.21200	60.63599	13.98		
1 vs. 2 *	11.70668	35.12005	15.72		
2 vs. 3 *	21.64479	64.93437	16.83		
3 vs. 4	2.089375	6.268126	17.61		

Sequential F-statistic determined thresholds: 3

\* Significant at the 0.05 level.

\*\* Bai-Perron (Econometric Journal, 2003) critical values.

## Summary

Discrete Threshold Specification Variable: OECD_INF_RT				
Estimated number of thresholds: 3, Sample: 1983 2022				
Method: Bai-Perron tests of L+1 vs. L Sequentially				
Determined Maximum number of thresholds: 5				
Threshold values:				
	Sequential	Repartition		
1	3.1999999	2.6999999		
2	2.6999999	3.1999999		
3	3.8999999	3.8999999		

