Yayın Geliş Tarihi: 2022-12-10

Yayın Onay Tarihi: 2023-12-26

DOI No:10.35343/kosbed.1402668

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Minimum Wage, Inflation and Income Distribution Relationship: Case of 40 Country

Asgari Ücret, Enflasyon ve Gelir Dağılımı İlişkisi: 40 Ülke Örneği

Abstract

Today, the widely accepted notion is the worsening income distribution, prompting extensive academic research into its influencing factors. Notably, the money supply surge post the 2008 global economic crisis escalated inflation rates, thrusting inflation into national economic agendas. However, consensus on how inflation impacts income distribution remains elusive. This study endeavors to elucidate the inflation-income distribution relationship, employing panel data analysis across 40 countries from 2008 to 2020. Despite no identified cointegration relationship during this period, countries' initiatives to enhance income distribution bear significance. Specifically, the minimum wage policy stands out as a method to address income distribution disparities. However, subsequent tests, grouping countries by minimum wage increase rates, failed to reveal cointegration relationships. Results suggest the intricate nature of the inflation-income distribution correlation, influenced by other economic policies and inflation types.

Keywords: Inflation, GINI Coefficient, Minimum Wage
Jel Codes: E24, E31

Özet

Günümüzde gelir dağılımının kötüleşmekte olduğu görüşü genel olarak kabul görmekte olup; bu durum, etkileyen faktörlere dair geniş kapsamlı akademik araştırmalara yol açmaktadır. Özellikle, 2008 küresel ekonomik krizinden sonraki para arzındaki artış, enflasyon oranlarını yükseltmiş ve enflasyonu ulusal ekonomik gündemlere taşımıştır. Ancak, enflasyonun gelir dağılımını nasıl etkilediği konusunda görüş birliği henüz mevcut değildir. Bu çalışma, 2008'den 2020'ye kadar olan dönemde 40 ülke üzerinde panel veri analizi kullanarak enflasyon-gelir dağılımı ilişkisini aydınlatmaya çalışmaktadır. Bu dönemde belirlenen bir eşbütünleşme ilişkisi olmamasına rağmen, ülkelerin gelir dağılımını artırmaya yönelik girişimleri önem taşımaktadır. Özellikle, asgari ücret politikası, gelir dağılımı uçurumlarını ele almanın bir yöntemi olarak öne çıkmaktadır. Ancak, asgari ücret artış oranlarına göre ülkeleri gruplandıran ileri testler, eşbütünleşme ilişkilerini ortaya koymada başarısız olmuştur. Sonuçlar, enflasyon-gelir dağılımı ilişkisinin karmaşık doğasını, diğer ekonomik politikalar ve enflasyon türleri tarafından etkilendiğini göstermektedir.

Anahtar Kelimeler: Enflasyon, GINI Katsayısı, Asgari Ücret
Jel Kodları: E24, E31

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Introduction

One of the most important problems that economies try to solve is the injustice in income distribution. Although many policies have been tried to eliminate these injustices, the problem has not been solved. Recent financial and global crises have led to an increase in inequality levels, especially in developed economies. (Mumtaz & Theophilopoulou 2017: 410). In addition, an increase in the GINI coefficient has been observed in Turkey in the last fifteen years. For this reason, many studies are being conducted on the reasons for this deterioration in income distribution. Technological developments have increased the importance of human capital and contributed to income inequality. In addition, many different factors such as globalization, increasing international trade, and changes in family structure increase income inequality. However, it cannot be said that these reasons fully explain the deterioration in income distribution. In particular, it has not been decided how the monetary policy implemented in countries affects income distribution.

Previous studies have obtained many contradictory results regarding the relationship between inflation and income distribution. Some studies have not found any relationship between inflation and income distribution. Some studies have concluded that there is a positive, negative or non-linear relationship. These studies will be explained in detail in the literature section.

For example, Galbraith (1998) argues that strict inflation targeting policies cause stagnation, leading to higher unemployment rates and increased inequality (Galbraith, 1998:10). Coibion et al. (2012) state that expansionary monetary policy increases share prices. This generally benefits wealthier households that own stocks (Coibion et al., 2012:16). As can be seen, it is claimed that inequality in income distribution has increased as a result of expansionary and contractionary monetary policies. The effect of inflation on income distribution, which is related to complex and uncertain processes, will be discussed in detail in the first chapter, the theoretical framework.

One of the reasons for conflicting results in studies on the subject may be that the effects of other factors are ignored. In the study of Law and Soon (2020), which investigated the relationship between inflation and income distribution, the effect of institutional quality was emphasized. The study concluded that institutional quality improves income inequality. It has been suggested that policy makers establish a better bureaucratic system in order to reduce income distribution inequality.

Governments implement many policies to improve income distribution. Transfer expenditures for the poor, progressive taxes, minimum social security in rural areas, free education and minimum wage are among these policies. Among these policy initiatives, the minimum wage policy is the most controversial (Lin & Yun, 2016:2).

A decrease in the real minimum wage could benefit the poor by making hiring easier. A minimum wage that is too high may worsen the situation of the poor by increasing unemployment. However, assuming minimum wage regulations are followed, the group of employees at the bottom of the wage distribution can benefit from this regulation and increase their welfare.

Governments usually set the nominal minimum wage. Therefore, inflation reduces the real minimum wage. If there is downward nominal inelasticity in wages, governments may choose to reduce the real minimum wage to reduce demand during periods of inflation. In addition, since the minimum wage is increased periodically (for example, six months), inflation during this period will also reduce the real minimum wage. Easterly & Fischer (2001) states that the effect of inflation on the real minimum wage is quite strong. As a result of the analysis, it was concluded that increasing the inflation rate from zero to, for example, 20 percent would reduce the real wage by eight points (Easterly & Fischer 2001: 176-177).

In addition, in the study of Lin and Yun (2016) on China for the period 2004-2009, it is stated that minimum wage changes significantly helped reduce earnings inequality at the lower end of the

earnings distribution. However, it was found that the minimum wage had no effect on earnings inequality at the upper end of the distribution. (Lin & Yun, 2016:23). Litwin's (2015) study focuses on the relationship between minimum wage and income inequality in 17 countries that are members of the Organization for Economic Cooperation and Development (OECD) for the period 1980-2010. The study shows that increases in the real minimum wage can reduce income inequality, although there is a diminishing effect as the minimum wage increases (Litwin, 2015: 13,18-19). A result contrary to the mentioned studies was obtained in the study of Suryani and Woyanti (2021). In the study covering the period 2010-2018 in Yogyakarta Province of Indonesia, the coefficient of the minimum wage variable on the GINI index was found to be 0.360076. It has been stated that the result is consistent with the Neoclassical economic theory, which argues that an increase in the minimum wage will increase income inequality rather than reduce it (Suryani & Woyanti, 2021:178).

As will be discussed in the first chapter, inflation has many different impact channels on income distribution that are difficult to measure. Inflation also affects the minimum wage. This effect is not only easily measurable but also affects income distribution. (Litwin, 2015. Lin & Yun, 2016. Suryani & Woyanti, 2021). In addition, increasing the real minimum wage can be seen as an indicator of the government's sensitivity to improving income distribution. Within the framework of the mentioned effects, the study aims to explain whether the minimum wage change makes a difference on the effect of inflation on income distribution.

In this regard, a panel data set consisting of data from 40 countries was used for the period 2008-2020, and Gengenbach, Urbain and Westerlund panel cointegration test was used as the method. In order to test whether the minimum wage makes a difference in the effect of inflation on income distribution, the data set of 40 countries was divided into two groups according to the change rates of the minimum wage in the relevant period. Cointegration analyzes were performed on two groups of data sets according to high and low minimum wage increases.

1. Theoretical Framework

Depending on the typical characteristics of countries, the channels through which inflation can affect income distribution may differ. These channels may have worsening or improving effects on income distribution. A few of these channels can be listed as follows.

Inflation can affect income distribution through wages and government subsidies (Sarısoy & Koç, 2010: 343-344). Generally, households that earn most of their income as wages are in low-income groups. In particular, if the bargaining power of wage earners is low, wages that are not indexed to inflation are eroded. A similar situation generally applies to government aid that is not indexed to inflation. In an inflationary environment, the real value of these aids will decrease. Thus, income inequality will increase (Aktaş & Dokuzoğlu, 2022: 451; Law & Soon, 2020: 1735). Even if wages and government subsidies are indexed to inflation, since the indexing process is done at certain periods (for example, every six months), inflation that will occur over the past period will reduce the value of real wages and government subsidies, especially in periods of high inflation.

One of the channels through which inflation affects income distribution is wealth income. Low-income groups often hold a large portion of their wealth in hard currency. Wealthy segments, on the other hand, preserve their wealth in the form of both capital and hard currency. In this case, inflation taxes low-income groups more heavily (Yue, 2011: 16). Low-income groups also experience difficulty accessing financial markets due to entry barriers and costs. For this reason, low-income groups may earn less financial gains such as interest, dividends, and trading differences from financial assets denominated in foreign currency or indexed to inflation. This situation increases income inequality by negatively affecting the poor, who cannot use different financial instruments to better protect themselves against inflation. (Monnin, 2014: 4).

The loss of predictability in the markets due to price instability during inflation periods may also affect income distribution. The income of households that can predict inflation will increase more than the income of households that do not expect inflation. Additionally, low-income households spend most of their income on basic needs. Since the price elasticity of demand is low, especially for basic needs such as food, income distribution is distorted to the detriment of low-income households that have to make these expenses. (Emek & Yerdelen Tatoğlu, 2020: 303).

On the other hand, there are also thoughts that inflation can reduce income inequality. The "debtor-creditor hypothesis" is one of these thoughts. When using debt at fixed interest, inflation transfers income from nominal lenders to nominal borrowers. As Laidler and Parkin (1975) summarize, inflation hurts the incomes of the poor and the rich the most because the middle class generally has more nominal debt than the poor and rich. Thus, it is claimed that inflation reduces income inequality (Yue, 2011: 16). A similar situation applies to the nominal liabilities of the public. Since the government generally borrows from high-income groups, it can be concluded that inflation can improve income distribution (Aktaş & Dokuzoğlu, 2022: 451). It is stated in the literature that another channel through which inflation affects income distribution is the tax bracket creep effect. In countries where a progressive tax system is applied, if the tax brackets are not adjusted at all or adjusted with a delay according to inflation, the amount of tax paid increases even though there is no increase in real purchasing power (Heer & Süssmuth, 2003: 1). So far, it has been tried to explain that the effect of inflation on income distribution is related to interrelated and complex processes. In our study investigating the effect of inflation on income distribution, we will test which of the above-mentioned theoretical effects is stronger.

2. Empirical Literature

Many studies have been conducted on the relationship between inflation and income distribution. However, these studies found different results according to different periods, countries with different development levels, and different starting values of inflation and income distribution. Studies have found both positive, negative and non-linear relationships between inflation and income distribution. However, there are also studies that find little or no relationship between two variables.

Table 1: Literature Research

Author/Year	Country	Period	Conclusion
Bach &Ando (1957)	USA	1939-1954	The article states that there is no clear consensus among economists about who gains and loses from inflation. A group of leading economists argues that wages lag profits in an inflationary environment. Another group claims that debtors make profits at the expense of creditors in an inflationary environment. As a result of the research, it was reported that there is little evidence that moderate inflation has a serious impact on income distribution. It is also stated that the redistributive effect of inflation between debtors and creditors is significant.
Björklund (1991)	Sweden	1958-1978	Analysis was performed using three data sets. It was revealed that inflation had an impact on income distribution in only one data set. In this data set, inflation is positive for lower income groups.

Table 1 (continued): Literature Research

Author/Year	Country	Period	Conclusion
Easterly& Fischer (2001)	38 Industrialized, Developing Countries	1995	According to an international survey of 31,869 respondents in 38 countries, the disadvantaged are relatively more likely than the advantaged to mention inflation as the most important source of concern. It has also been found that high inflation tends to increase poverty and reduce the share of the bottom quintile and minimum wage earners.
Albanesi (2007)	51 Industrialized and Developing Countries	1966-1900	The study suggests that low-income households are more vulnerable to inflation because they hold more cash as a fraction of their total purchases and have lower bargaining power in the political process. In the analysis made with the OLS method, the relationship between inflation and GINI coefficient was found to be positive (0.21).
Jäntti & Jenkins (2010)	United Kingdom	1961-1999	The study was conducted using parametric models. Inflation was found to have no significant impact on income inequality.
Yue (2011)	South Korea	1980-2002	According to the results of the analysis, no evidence of cointegration between inflation and GINI coefficient was found in South Korea.
Monnin (2014)	10O ECD Countries	1971-2010	A U-shaped link has been found between long-term inflation and income inequality. At lower levels of inflation, observed income inequality is higher. At an inflation rate of 13%, income inequality is minimized. Then it rises as inflation increases.
Jauch & Watzka (2016)	138 Developed and Developing Countries	1960-2008	As a result of the analysis made according to the fixed effects and 2SLS estimation methods, inflation is the only control variable that is consistently significant. However, due to the small inflation coefficient, the effect was found to be economically small.

Table 1 (continued): Literature Research

Author/Year	Country	Period	Conclusion
Bükey & Çetin (2017)	Türkiye	1980-2014	The analysis was performed using the least squares method. According to the analysis results, one unit increase in inflation increases the GINI coefficient by approximately 0.06 units.
Mumtaz& Theophilopoulou (2017)	United Kingdom	1969-2012	In the study conducted using Structural Vector Autoregression Model (SVAR) with quarterly data; It has been concluded that contractionary monetary policy shocks lead to an increase in earnings, income and consumption inequality.
Balcilar et al. (2018)	50 USA States	1976-2007	It has been found that the relationship between income inequality and the inflation rate depends on the level of the inflation rate. Below a 3.5% inflation rate, there is a negative relationship between inflation and income inequality. If it is above this threshold, the relationship is positive.
Saimi-Namini & Hudson (2019)	24 Developed 66 Developing Countries	1990-2014	A nonlinear relationship has been found between inflation and income inequality. It is stated that due to structural differences, inflation has different effects on income inequality in developed countries and developing countries.
Emek& Yerdelen Tatoğlu (2020)	27 Developed 31 Developing Countries	1991-2018	According to the estimation results, the effect of the inflation rate on the GINI coefficient in developing countries was found to be negative and significant but at a very low value (-0.55). In the RC (random coefficients) and MG (mean group) estimates made for developed countries and the entire panel, the effect of the inflation rate on income inequality was not found to be significant.

Table 1 (continued): Literature Research

Author/Year	Country	Period	Conclusion
Akbulut (2021)	Türkiye	1983-2019	The analysis was performed using the least squares method. According to the analysis result, a one unit increase in the CPI variable increases the GINI coefficient by 0.00013. The study also concluded that the increase in the share of public domestic debt interest payments in GDP caused the Gini coefficient to increase.
Çelik & Erkişi (2022)	24 Countries in the High Income Group	1990-2017	The Driscoll-Kraay standard error random effects estimator was used in the study. It was concluded that a 1 unit increase in inflation reduces the GINI coefficient by 0.028.
Dilber& Hatipoğlu (2022)	8 OECD Countries	2007-2019	Dumitrescu-Hurlin panel causality test was used in the study. No causality relationship was found between inflation and income distribution in either direction. For the countries within the scope of the study, a policy recommendation has been made that financing budget deficits by printing money instead of borrowing will help ensure income justice.

3. Empirical Analysis

In this part of the study, information about the data and analysis method will be given. The analysis results obtained will be shared.

3.1. Data and Methodology

The study worked with a panel data set consisting of data from 40 countries for the period 2008-2020. The number of countries is limited to 40 due to limited GINI index data and the lack of a nationwide minimum wage in Germany, Austria, Finland, Switzerland and Italy throughout the period. The reason why the analysis data starts from 2008 is to see whether the expansionary monetary policy practices implemented after the 2008 crisis made a difference with the results of previous research on the subject.

The countries used in the analysis are listed in Table 2. Countries marked with an asterisk at the end indicate the countries where the minimum wage increased more than the other group in the 2008-2020 period.

Table 2: Countries Included in the Study

United Kingdom	Cyprus	Costa Rica*	Romania*
Belarus*	South Korea	Latvia*	Russian Fed.*
Belgium	Georgia	Lithuania*	Slovakia*
Bulgaria*	Holland	Luxembourg	Slovenia
Czech Republic*	Ireland	Hungary*	Thailand*
Dominican Rep.	Spain	Malta	Türkiye*
Ecuador*	Israel	Paraguay	Ukraine*
Indonesia*	Canada	Peru	Uruguay*
Armenia*	Kyrgyzstan*	Poland*	New Zeland
Estonia*	Colombia	Portugal	Greece

The data and their explanations used in preparing the analysis are shown in Table 3.

Table 3: Data and Explanations

GINI Index	gini	The GINI index, used as the dependent variable in the study, is an indicator frequently used in studies on income distribution. This index measures the extent to which income distribution among individuals or households in an economy deviates from perfectly equal distribution. A GINI index of 0 represents complete equality, while an index of 100 represents complete inequality. Data covering the period 2008-2020 were taken from the World Bank website.
Inflation	inf	GDP Deflator was used as the independent variable in the study. The GDP deflator is the ratio of GDP in current local currency to GDP in constant local currency. Data covering the period 2008-2020 were also taken from the World Bank website.

Table 3 (continued): Data and Explanations

Minimum Wage	In order to measure the effect of the minimum wage on the relationship between inflation and income distribution, the countries that make up the data set are divided into two groups: countries where the minimum wage increases faster and countries where the minimum wage increases more slowly. While making this distinction, countries were ranked by calculating the percentage increase or decrease in the minimum wage in the 2008-2020 period. The ranking is based on purchasing power parity in 2017 US dollars. Data were taken from the International Labor Organization website.

The model used in the study is as follows.

$$gini_{it}=\beta_0+ \beta_1 inf_{it}+u_{it}\ i=1\ldots N,\ t=1\ldots T \quad (1)$$

Theoretically, inflation has an impact on income distribution through many channels. For this reason, GDP Deflator was added to the model as an independent variable to represent inflation. In the first model, coefficient estimates will be made for all 40 countries. Thus, it is planned to determine the general relationship. Then, countries will be divided into two groups according to the minimum wage increase and the answer to the question of how minimum wage policies change the effect of inflation on income distribution will be sought.

Panel time series data was used in the analysis. When using panel time series, the tests and estimation methods to be performed differ depending on whether there is a cross-sectional dependence between the parameters and whether the parameters are homogeneous or heterogeneous. For this reason, firstly Pesaran (2004) CD test regarding cross-section dependence was conducted. Homogeneity testing was carried out with the Swamy S test. (Vardar & Koç, 2021: 321)

3.2. Cross-Section Dependency

If there is a cross-sectional dependence in the error terms, first generation estimation methods are weak because they do not take this relationship into account. For this reason, a cross-sectional dependency test was first performed during the analysis phase. Since N>T was in the data used in the analysis, it was used that Pesaran (2004) CD test, which is known to give better results than Breusch Pagan (1980) LM test in case of N>T (Yerdelen Tatoğlu, 2020a:237-240). Test results are given in Table 4.

Table 4: Pesaran (2004) CD Test Results

Model	Variable	CD Test Result	Prob. Value	Correlation Coefficient
All 40 Countries	GINI Index	15.33	0.000	0.152
	Inflation	21.63	0.000	0.215
20 Countries with Low Minimum Wage Increases	GINI Index	12.75	0.000	0.257
	Inflation	8.01	0.000	0.161
20 Countries with High Minimum Wage Increases	GINI Index	2.78	0.005	0.056
	Inflation	13.44	0.000	0.270

According to the Pesaran (2004) CD test results in Table 4, the H_0 hypothesis is rejected and it is concluded that there is cross-sectional dependence in the data used. According to these results, it would be more accurate to use second generation panel unit root tests, which are used in the presence of cross-sectional dependence.

3.3. Homogeneity Test

Homogeneity test is also among the preliminary tests to be performed to determine the method to be used. According to the test results, if the series are homogeneous, the first group of tests will need to be used, and if the series are heterogeneous, the second group of tests will need to be used.

In the Swamy S test, to test the random coefficients model (RCM), only the difference between the fixed parameter heterogeneous fixed effects estimators and the weighted average matrices of the unit-specific least squares estimators is examined. Hypothesis to be tested;

$$H_0: \beta_i = \beta \qquad (2)$$

It is established as equation (2) and indicates that the parameters are homogeneous (Yerdelen Tatoğlu, 2020b:97). Test results are presented in Table 5.

Table 5: Swamy S Homogeneity Test Results

Model	Chi2 Test Statistics	Prob. Value	Degrees of Freedom
All 40 Countries	655.35	0.0000	78
20 Countries with Low Minimum Wage Increases	190.48	0.0000	38
20 Countries with High Minimum Wage Increases	261.30	0.0000	38

According to the Swamy S test results in Table 5, the H_0 hypothesis is rejected and it is concluded that the parameters are not homogeneous and vary from unit to unit.

3.4 Panel Unit Root Test

As a result of the cross-sectional dependency tests, it was found that there was cross-sectional dependency in the series used in the analysis. For this reason, in the continuation of the analysis, the stationarity of the series will be tested with second generation panel unit root tests.

As stated before, since the number of units (groups) in the series (N) is larger than the observation value (T) of each unit, the multivariate augmented Dickey Fuller (MADF) panel unit root test, which is among the second generation panel unit root tests, cannot be used. For this reason, the stationarity of the series will be tested using the cross-sectionally augmented Im, Pesaran and Shin (CIPS) test, which allows N>T condition. The test was conducted without trend and allowing constant. The test results obtained can be seen in Table 6.

Table 6: Cross-Sectionally Augmented Im, Pesaran and Shin (CIPS) Panel Unit Root Test Results

Model	Variable	Level Values		First Difference	
		Z[t-bar]	Prob. Value	Z[t-bar]	Prob. Value
All 40 Countries	GINI Index	1.433	0.924	-2.322	0.010
	Inflation	-1.158	0.123	-5.510	0.000
20 Countries with Low Minimum Wage Increases	GINI Index	-0.828	0.204	-5.292	0.000
	Inflation	-0.502	0.308	-3.343	0.000
20 Countries with High Minimum Wage Increases	GINI Index	0.261	0.603	-5.483	0.000
	Inflation	1.425	0.923	-3.083	0.001

It is understood from the panel unit root test results that the series are not stationary with their level values. In all three models, when the first differences of the series are taken, the series become stationary at the 5% significance level.

When regression analysis is performed with non-stationary data, spurious regression problems may occur in panel data as well as in time series. However, if there is a cointegration relationship between the data, the regression analysis can be meaningful. Therefore, the analysis will continue with cointegration tests.

3.5 Cointegration Analysis

While cointegration analysis allows examining whether there is a long-term equilibrium relationship between series, it also indicates that linear combinations of two or more series with unit roots may be stationary (Engle, Granger, 1987: 264). Since all series used in the study are I (1), it will be tested whether there is a cointegration relationship.

Inter-unit correlation and heterogeneity were detected in the series following cross-sectional dependence and homogeneity tests. Taking these situations into consideration, Gengenbach, Urbain and Westerlund (2016) panel cointegration test will be used. This test is an error correction based cointegration test that uses a common factor structure. In this test, the error correction model in equation (3) was used:

$$\Delta y_i = d\delta_{y.x_i} + \alpha_{y_i} y_{i,-1} + \omega_{i,-1}\gamma_i + \upsilon_i \pi_i + \varepsilon_{y.x_i} = \alpha_{y_i} y_{i,-1} + g_i^d \lambda_i + \varepsilon_{y.x_i} \qquad (3)$$

In the first stage of the test, the ordinary least squares estimate of the model is obtained for each unit and the $H_0: \alpha_{y_i} = 0$ hypothesis is tested with the help of the t test.

The basic hypothesis is $H_0: \alpha_{y_1} = \cdots = \alpha_{y_N} = 0$, and the alternative hypothesis is $H_1: \alpha_{y_1} < 0$ for at least one i (Yerdelen Tatoğlu, 2020a:205-207).

Table 7 shows the Gengenbach, Urbain and Westerlund panel cointegration test results;

Table 7: Gengenbach, Urbain and Westerlund (2016) Panel Cointegration Test Results

Model	Coefficient	T-bar	Prob. Value
All 40 Countries	-0.589	-1.247	>0.1
20 Countries with Low Minimum Wage Increases	-0.683	-1.639	>0.1
20 Countries with High Minimum Wage Increases	-0.486	-1.395	>0.1

4. Conclusion

As a result of the analysis, the relationship between inflation and income distribution was not found to be significant in our model for the 40 countries studied. Moreover, when the countries were divided into two groups, those where the minimum wage increased more and those where it increased less, and the analysis was repeated, the relationship between inflation and income distribution was not found to be significant.

Bach and Ando (1957) state that there is little evidence that moderate inflation has a serious impact on income distribution among major income groups. The authors also note that this effect is clearly more complex than is often suggested. The results obtained support this view. It is explained in the theoretical framework section that inflation has effects such as devaluing wages and subsidies in real terms, reducing predictability in markets, causing income transfer from lenders to borrowers, shifting tax brackets upwards, and affecting less those who hold their wealth as assets. These effects cannot be interpreted entirely in favor or against a particular group. For example, a person in the upper income group may work for a wage, while a person in the lower or middle income group may have a large amount of debt compared to their income. Additionally, reduced predictability in markets may result in loss of income for everyone. It should not be forgotten that even if the unpredictability of inflation in the first stage affects some segments negatively, as the period of inflation gets longer, every segment will take precautions against inflation.

Another issue to consider when dealing with the issue is that the cause of inflation varies from country to country. The fact that the root cause and rate of inflation varies from country to country requires us to be careful when choosing the data set used when examining the relationship between inflation and income distribution.

In addition, in the study, the data set was divided into two groups according to the increase rate of the minimum wage, which is among the policies implemented by governments to improve income distribution. A linear cointegration relationship between inflation and income distribution could not be found in the country group where the minimum wage was increased more quickly or in the country group where it was increased more slowly.

However, previous studies on the subject have found a significant relationship between inflation and income distribution in countries with similar economic conditions. For this reason, it is thought that the relationship between inflation and

income distribution has a structure that varies depending on the economic policies implemented in the country and the type of inflation experienced, rather than being a general economic rule. In future studies, the use of nonlinear methods may lead to possible differences in findings.

Ethical Aspect of The Research: The research doesn't require ethical-based permission.

Conflict of Interest: The authors declared that; they have no conflict of interest.

Author Contributions: Idea – S.K., S.V.; Design – S.K., S.V.; Inspection - S.K.; References – S.K., S.V.; Data Collecting and Processing – S.V.; Analysis and Commentm – S.K., S.V.; Literature Review – S.V.; Writing - S.K., S.V.; Critical Review – S.K., S.V.

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