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Glawe, Linda; Wagner, Helmut

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ORIGINAL PAPER



Inflation and inequality: new evidence from a dynamic panel threshold analysis

Linda Glawe¹ · Helmut Wagner²

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Abstract

This paper investigates nonlinearities in the inflation-inequality relationship using a dynamic threshold panel data model and data for 101 countries over the period 1985–2020. We find that inflation rates exceeding 6% are associated with higher income inequality whereas below this threshold, the correlation remains insignificant. From a monetary policy perspective, these findings suggest that a disinflation policy will likely lead to a more equal income distribution in high-inflation countries whereas there is no such effect in a low-inflation setting. In addition, we find that a higher initial level of inequality as well as unemployment has an inequality-enhancing effect. Contrary to previous research, our inflation threshold is endogenously determined, and we control for the Nickell bias arising from the inclusion of the lagged level of inequality. Moreover, our paper covers a much longer time period and also a broader set of developed and developing countries. Our findings have important policy implications, especially against the background of the recent sharp increase in inflation.

Keywords Inflation · Income inequality · Dynamic panel threshold model · Monetary policy

JEL Classification $O11 \cdot E31 \cdot D31$

1 Introduction

The impact of inflation on income inequality has recently received accelerated interest among researchers and policy experts. The skyrocketing inflation rates in several countries since the second half of 2021 — partly a result of demand–supply imbalances related to supply chain bottlenecks and accumulated household savings

Linda Glawe linda.glawe@wiwi.tu-chemnitz.de

¹ Chemnitz University of Technology, Thüringer Weg 7, 09126 Chemnitz, Germany

² Faculty of Economics, University of Hagen, 58084 Hagen, Germany

during the pandemic, but also because of higher energy prices — have exacerbated perceptions of rising inequality and also placed the focus on central banks and their monetary policy measures (cf. Schnabel 2021).

Consumers around the world are seeing higher prices for goods and services; poor households which usually lack the means to preserve their purchasing power, for instance, due to limited access to financial markets, are particularly hard hit. Even though some reasons for the price increases may be country-specific, inflation is turning into something of a worldwide phenomenon.¹ The Eurozone's annual inflation rate hit 4.9% in November 2021, the highest since recordkeeping began in 1997 (Eurostat 2022). Since then, there has been a continuous upward trend in consumer prices, culminating in inflation surpassing the 10% threshold in both October and November of 2022. The Baltic states, Italy, and Germany have seen particularly strong increases. Recent figures indicate that inflation in Germany marked an all-time high with an annual average inflation rate of 7.9% in 2022. The USA reached its highest inflation level in nearly 40 years in 2021 with a rate of 7%; the rate for 2022 was still significantly high at 6.5%. Various emerging market economies have been hit even harder, including Turkey and Argentina where inflation rates exceeded 70% in 2022. In that context, the central banks' varying monetary policy responses are the subject of public debate. Among others, the different approaches of the FED and ECB with respect to their disinflationary policies have been heavily discussed. Given the considerations above, it appears of utmost importance to reopen the debate on the impact of inflation on the income distribution and to add new insights.

So far, the literature focusing on the inflation-inequality nexus has reached contrary conclusions. While some authors find inflation to be inequality enhancing (see, e.g. Dollar and Kraay 2001; Scully 2002; Albanesi 2007; Beck et al. 2007), others report a negative correlation between these two variables (see, e.g. Blinder and Esaki 1978; Mocan 1999; Heer and Maussner 2005; Sun 2011; Maestri and Reoventini 2012; Coibion et al. 2017), and still others find inflation to be unrelated to the income distribution (examples include Sarel 1997; Chu et al. 2000).² These mixed results have led to the expression *inflation-inequality puzzle* (cf. Galli and van der Hoeven 2001).

From a theoretical standpoint, there indeed exist various channels through which inflation might decrease or enhance inequality (Balcilar et al. 2018; cf. also Sect. 2 for short overview). As argued by Galli and van der Hoeven (2001), these different channels unfold their effects only for certain ranges of inflation. This implies that the relationship between inflation and the income distribution is likely to be characterized by inflation thresholds. Several empirical studies have confirmed that there is indeed a U-shaped relationship between inflation and income inequality (cf. Bulir 2001; Galli and van der Hoeven 2001; Balcilar et al. 2018); however, most of them have focused on the period prior to the global financial crisis or even up to the turn of the century. Moreover, only few authors have investigated the nonlinear relationship for a broad set of countries (Bulir 2001 being one of the few exceptions) but rather focused on the USA or a small selection of advanced countries. Besides data coverage, the majority of studies focusing

¹ There are some exceptions though, e.g., Japan, the Maldives, Bolivia, and Saudi Arabia.

² There is also a body of literature that considers the opposite relationship, namely impact of income inequality on macroeconomic outcomes; however, these studies focus rather on fiscal outcomes. Prominent examples include Banerjee and Duflo (2003) and Galor (2000).

on inflation thresholds rather impose the threshold values; to our knowledge, there is no paper in which the threshold is endogenously determined (cf. Hansen 1999 on this issue).³ In addition, most studies ignore potential endogeneity problems arising from the inclusion of the initial (lagged) level of income inequality (that is, the level of inequality of the previous period; cf. also Kremer et al. 2013 on this issue).

Taking into account potential endogeneity biases and the existence of inflation thresholds implied by theoretical considerations, the dynamic panel threshold model appears to be the natural starting point for an empirical analysis of the inflation-inequality relationship in a panel data setting. In our paper, we follow the approach of Kremer et al. (2013) who combine the static panel threshold model of Hansen (1999) and the instrumental variable estimation of the cross-sectional model introduced by Caner and Hansen (2004) thanks to the application of the forward orthogonal deviations transformations put forward by Arellano and Bover (1995). Other studies usually ignore the potential endogeneity bias or decide to exclude the initial level of inequality from their regressions to avoid the endogeneity problems. However, these strategies can lead to biased estimates of the inflation thresholds and thus to misleading conclusions regarding the impact of inflation on inequality in the respective inflation regimes.

Using a sample of 101 developed and developing countries, we find an inflation threshold value of about 6% statistically significant at the 1% level. Inflation has a positive correlation with inequality if it is above this threshold, whereas the coefficient of inflation is negatively signed and insignificant below the threshold. From a monetary policy perspective, these findings suggest that a disinflation policy will likely lead to a more equal income distribution in high-inflation countries whereas there is no such effect in a low-inflation setting. In addition, we find that the initial level of inequality and the unemployment rate are both positively correlated with the net Gini index.

The remainder of the paper is organized as follows. Section 2 briefly summarizes the theoretical considerations behind a nonlinear impact of inflation on inequality. In addition, we discuss the empirical evidence on the inflation-inequality nexus. Section 3 then describes our data and introduces our estimation strategy, the dynamic threshold model of Kremer et al. (2013) as an extension of Hansen's (1999) static model. Our estimation results are presented in Sect. 4. Concluding remarks are provided in Sect. 5.

2 Theoretical considerations and empirical evidence

Monetary policy and its effects on the inflation rate can lead to a redistribution of income because inflation affects different sources of income differently — for instance, commodity prices change much faster than wages — and each household's income sources differ (capital income vs labor income or a mix of both) which implies that the effect of inflation on the total household income is heterogeneous (cf. Balcilar et al. 2018).

As discussed by Galli and van der Hoeven (2001), the net long-run impact of restrictive monetary policy on income inequality depends on the *initial inflation*

³ In contrast, studies investigating nonlinearities in the inflation-growth or debt-growth relationships frequently use threshold models (cf. Kremer et al. 2013; Chudik et al. 2015).

rate. In *high-inflation* countries, disinflation can reduce income inequality because of a slower erosion in money purchasing power (via several channels, especially through the increase in the real value of monetary assets and unindexed transfers), higher long-run growth (e.g., by stimulating investment, cf. Romer and Romer 1998; Dollar and Kraay 2001), and lower real interest rates (due to decreasing risk premiums). However, these effects are likely to be rather trivial in *low-inflation countries* which in turn have a higher chance of running into a permanent inflation-unemployment trade-off dilemma which can worsen income inequality (cf. Galli and van der Hoeven 2001; Wyplosz 2000; Akerlof et al. 1996).

Based on these theoretical considerations, we would expect that in the long run, inflation should have a detrimental effect on inequality if the initial level of inflation is relatively high, whereas it could have an inequality-reducing effect in a low-inflation setting.

There is a considerable empirical literature investigating the inflation-inequality nexus; however, so far, existing studies on this topic have reached contrary conclusions. While Dollar and Kraay (2001), Bulir and Gulde (1995), Scully (2002), Albanesi (2007), and Beck et al. (2007) report a positive relationship between inequality and inflation, the studies of Blinder and Esaki (1978), Mocan (1999), Brandolini and Sestito (1994), Heer and Maussner (2005), Sun (2011), Maestri and Reoventini (2012), and Coibion et al. (2017) find that inflation rather reduces inequality. The mixed evidence has led to the expression "inequality-inflation puzzle." Common to the above listed papers is, however, that they focus solely on the *linear* impact of inflation on inequality. Only a rather small segment of the inequality-inflation literature allows for nonlinearities. For instance, Bulir (2001) investigates the relationship between inflation and the income distribution using a cross-sectional dataset comprising 75 developing and developed countries with the help of dummy variables which each represent a different range of inflation. He finds that reducing inflation significantly decreases income inequality in a hyperinflation setting, whereas moving from low to very low inflation (defined as being below 5%) results in rising inequality. A similar conclusion is reached by Galli and van der Hoeven (2001) who use fixed effects panel regression for a sample of 15 OECD countries and the USA. They include the squared inflation rate to depict the nonlinear effect. Galli and van der Hoeven (2001) find that increasing inflation reduces inequality in low-inflation countries while it leads to a more unequal income distribution in countries which have a high initial inflation rate. The estimated inequality-minimizing inflation rate is around 6% in the USA and 12% for the sample of OECD countries. Balcilar et al. (2018) also find a U-shape relationship between inflation and income inequality across US states over the period 1967-2009 using a semiparametric IV estimation approach with the threshold varying between 2 and 5.6%, depending on the specification.

3 Data and estimation strategy

In the following, we will first describe our data (in Sect. 3.1) and subsequently introduce our estimation strategy (in Sect. 3.2).

3.1 Data and descriptive statistics

Our dynamic threshold analysis of the inflation-inequality relationship is based on an unbalanced 5-year panel of 101 countries covering the period 1985 to 2020. The choice of period is based on data availability. It is worth noting that our paper also covers data for more recent periods, whereas previous studies have mostly not taken into account the period after the global financial crisis. The majority of this literature is even only covering the period up to the late 1990s/early 2000s. In the following Sects. 3.1.1 to 3.1.3, we will briefly introduce our dependent variable (income inequality) as well as our set of explanatory variables, including the inflation rate. Summary statistics are provided in Table 2 in the Appendix 1.

3.1.1 Income inequality

Our dependent variable income inequality is measured by the net Gini coefficient after taxes and transfers. This series is obtained from the Standardized World Income Inequality Database (SWIID) compiled by Frederik Solt (2020). The SWIID database uses the Luxembourg Income Study (LIS) and the World Inequality Indicators Database (WIID) in order to build a comprehensive cross-national panel of Gini coefficients standardized across sources and measures. Even though no inequality database is completely satisfactory, the SWIID dataset appears to be the best choice in a panel setting regarding both, coverage and consistency (cf. Acemoglu et al. 2015). The mean of our inequality variable is about 36.5 with a standard deviation of 8.4. Finland is the country with the lowest net Gini index (20.7), whereas South Africa has the most unequal income distribution in our sample (with a score of 63.3).

3.1.2 Inflation rate

The inflation rate is calculated as the annual percentage change of the consumer price index (CPI) using data from the International Financial Statistics (IFS) of the International Monetary Fund (IMF). The average annual inflation rate over the sample period is around 3.38% ($e^{1.22} = 3.38$) with a relatively high standard deviation of 3.25% ($e^{1.18} = 3.25$) (cf. also Table 2 in the Appendix 1). As depicted in Fig. 1, the dispersion of inflation rates is considerable; therefore, we follow Ghosh and Phillips (1998) and use the logarithmic value of inflation rates in order to avoid the results being distorted by a few extreme observations. Since our sample contains negative inflation rates, we follow Khan and Senhadji (2001) and Drukker et al. (2005) and use the semi-logarithmic transformation, which is described in Eq. (1):

$$\widetilde{\pi}_{it} = \begin{cases} \pi_{it} - 1, \text{ if } \pi_{it} \le 1\% \\ \ln(\pi_{it}), \text{ if } \pi_{it} > 1\% \end{cases}$$
(1)

Following Kremer et al. (2013), π is defined such that an inflation rate of 3.38% (our sample mean) enters the semi-log transformation with 3.38 and not 0.0338. This implies a value of $\tilde{\pi} = 1.22$. By contrast, an inflation rate of for instance 0.5% implies



Fig. 1 Distribution of inflation rates. a "Normal" inflation rate. b Inflation rate after semi-log transformation. Source: IFS (2021). Notes: Five-year average of annual inflation rates, 1985–2020

a value of $\tilde{\pi} = -1.50$. The semi-logged inflation rates are considerably more symmetric and in line with the normal distribution (cf. Figure 1).

3.1.3 Additional control variables

Besides the initial Gini index, we include various macroeconomic control variables, namely the unemployment rate, the initial income level in constant 2017 PPP adjusted prices, openness measured as the trade share in GDP, and the share of public expenditures in GDP. The choice of control variables is based, among others, on Khan and Senhadji (2001), Drukker et al. (2005), and Bulir (2001). Data on control variables is obtained from the World Bank's WDI database (2021) and the IMF's World Economic Outlook October 2021. More information on the control variables (as well as descriptive statistics) can be found in Table 2 in the Appendix 1.

3.2 Estimation strategy

In order to analyze the potentially nonlinear relationship between inflation and income inequality, we employ Kremer et al.'s (2013) dynamic panel threshold model which extends the static setup of Hansen (1999). It builds upon the cross-sectional threshold model of Caner and Hansen (2004) which uses GMM-type estimators. One key advantage of this model is that it allows us to control for endogenous regressors. In our empirical application where we analyze the role of inflation thresholds in the relationship between inflation and income inequality ($y_{it} = GINI_{it}$), the endogenous regressor is the initial level of income inequality (measured as the net Gini index of the previous period, i.e., $GINI_{it-1}$). Thus, our empirical specification is given by Eq. (2)

$$y_{it} = \mu_i + \alpha y_{i,t-1} + \beta_1 \pi_{it} I(\pi_{it} \le \gamma) + \beta_2 \pi_{it} I(\pi_{it} > \gamma) + \delta X_{it} + \varepsilon_{it},$$
(2)

where the subscripts i = 1, ..., N and t = 1, ..., T index the countries and, respectively, the time periods in the sample. y_{it} denotes the net Gini index of country *i* at

time *t*, and $y_{i,t-1}$ is the lagged dependent variable. μ_i is the country-specific effect, and ε_{it} is the independent and identically distributed error term with a mean of zero and a variance of σ^2 . $I(\bullet)$ presents an indicator function which takes the value 1 if the argument in parenthesis is valid and zero otherwise, indicating the regime defined by the threshold variable, π_{it} , the inflation rate, and the threshold level denoted by γ . Please note that in our case, the threshold variable and regime-dependent variable are the same. X_{it} is a vector of regime-independent control variables described in Sect. 3.1.3.

Our dynamic model is estimated in a three-step procedure (cf. Kremer et al. 2013 for a detailed description): In the first step, we estimate a reduced form of the endogenous variable $(y_{i,t-1})$ as a function of the instruments⁴ on a set of regressors. For the initial Gini index, we use higher lags of the Gini index as instruments. The endogenous variable $y_{i,t-1}$ is then replaced in the structural equation by the predicted values (that is, $\hat{y}_{i,t-1}$). In step two, we estimate Eq. (2) through least squares for a fixed threshold (γ) where $y_{i,t-1}$ is replaced by $\hat{y}_{i,t-1}$. The resulting sum of squares is denoted by $S(\gamma)$. This step is repeated for a strict subset of the support of the threshold variable π . In the third step, the estimator of the threshold value γ is chosen based on the smallest sum of squared residuals, that is $\hat{\gamma} = \operatorname{argmin} S_n(\gamma)$. The critical values for determining the 95% confidence interval are given by $\Gamma = \gamma : LR(\gamma) \le C(\alpha)$, where $C(\alpha)$ presents the 95% percentile of the asymptotic distribution of the likelihood ratio statistic $LR(\gamma)$

the 95% percentile of the asymptotic distribution of the likelihood ratio statistic $LR(\gamma)$ (cf. Hansen 2000 and Caner and Hansen 2004). Once $\hat{\gamma}$ is determined, GMM is applied to estimate the slope coefficients.⁵

4 Estimation results

Our results for the empirical relation between inflation and inequality are presented in Table 1. Column 1 shows our benchmark results with the control variables lagged net Gini index, the unemployment rate, and the initial income level.⁶ We find an inflation threshold value of about $e^{1.77} = 5.87 \approx 6$ which is statistically significant at the 1% level. As shown in the second panel, inflation is positively correlated with the net Gini index if it is above the threshold (with a coefficient of 0.972 significant at the 5% level). Below the threshold, the coefficient of inflation is negatively signed; however, it is insignificant at the 10% level. This implies that inflation only has an inequalityenhancing effect when it is above 6%. In that case, a 1% rise in inflation increases the net Gini index by 0.00972. If for instance the inflation rate increases from 7 to 15%, which corresponds to a 114% increase, the net Gini index will increase by about 1.11 units. From a monetary policy perspective, these findings indicate that a disinflation

⁴ These instruments can be $y_{i,l-2}$ to $y_{i,l-P}$ with P = T - 1. According to Roodman (2009), the proliferation of instruments may lead to an over-fitting of instrumented variables. Therefore, we restrict the maximum lag length so that the number of instruments is always kept considerably below the number of groups (in our case, countries). In our specifications, we use up to three lags, however, also using fewer lags does not change our key findings (in some cases, the efficiency is somewhat reduced).

⁵ We finally test for the significance of the chosen threshold. In particular, we test the null hypothesis of linearity against threshold non-linearity using a bootstrapping procedure.

⁶ These are the control variables used most frequently by other studies analyzing the inflation-inequality nexus.

Table 1 Inflation thresholds and income inequality		(1)	(2)
1 5	Panel A: threshold estimate		
	γ	1.77%	1.75%
	95% confidence interval	[1.28-2.32]	[1.03-2.33]
	Bootstrap <i>p</i> -value	0.008	0.000
	Panel B: impact of inflation		
	β_1	-0.547	-0.138
		(0.452)	(0.315)
	β_2	0.972**	0.762**
		(0.463)	(0.383)
	Panel C: impact of covariates		
	Initial Gini index	0.870***	0.705***
		(0.133)	(0.099)
	Unemployment rate	3.122***	1.853*
		(1.187)	(1.027)
	Initial income	1.287	1.125
		(1.095)	(1.054)
	Trade share in GDP		-1.775^{+}
			(1.557)
	Gov. expenditures in GDP		-3.052^{+}
			(1.942)
	Investment share in GDP		-1.333
			(1.784)
	Constant	-14.391	18.094
		(15.982)	(11.864)
	Observations	544	489
	Number of countries	101	97

Data sources: As described in the main text. Notes: Robust standard errors are given in parentheses. "***," "**," and "+" denote significance at the 1, 5, 10, and 15% level

policy will lead to a more equal income distribution if the initial inflation rate surpasses our critical threshold, whereas there is no such effect in a low-inflation setting.⁷⁸

Panel C presents the coefficients for the control variables. The coefficient of the initial net Gini index is positive and highly significant (0.87 with a s.e. of 0.13), suggesting that past inequality has an impact on the current income distribution. The unemployment rate also has a significant positive effect on income inequality with a coefficient of 3.12, implying that the 1% increase in unemployment exacerbates inequality by 0.03 units. The initial per capita income is statistically insignificant.

When adding more control variables into the model in column 2, the magnitude of the regime-dependent coefficients decreases; however, the coefficient in the second

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⁷ The analogous applies to an expansionary monetary policy. According to our results, a decrease in the interest rates in a high-inflation context (like it can currently be overserved in Turkey) will lead to higher inequality.

⁸ Including time dummies does not change our key findings.

regime, β_2 , which now amounts to 0.762, is still significant at the 5% significance level. The coefficients of the trade and government expenditures shares in GDP are both negatively signed (implying an inequality-reducing effect) and very close to being statistically significant (with *p*-values of 0.106 and 0.116, respectively), whereas the investment share in GDP is insignificant.⁹

Our results regarding the critical inflation threshold are broadly in line with the estimates reported by Bulir (2001); however, in Bulir's (2001) study, the threshold is not endogenously derived. Balcilar et al. (2018) also report a similar threshold level; however, their analysis is restricted to the USA. Finally, our identified inflation threshold is somewhat smaller than that reported by Galli and van der Hoeven (2001) who only focus on 15 developed countries.

Which countries are, according to our results, affected by an inflation-induced rise in inequality? The EU's average yearly inflation rate was 2.9% in 2021, which is outside the confidence interval of our main specification. However, it rose to 9.2% in 2022, clearly surpassing our 6% threshold. Many New Member States that joined the EU in 2004, including Hungary, Latvia, Lithuania, and Estonia, reported particularly high inflation rates of more than 15%. But also some EU core members such as Germany and Italy have seen considerable increases in consumer prices, with Germany's rate rising from 3.2 to 8.7% and Italy's rate increasing from 1.9 to 8.7%. Both countries have been particularly hard hit by the energy crisis due to their dependence on energy imports from Russia.

Turkey, which reported an inflation rate of almost 50% in January 2022, particularly stands out among European countries. The government has unfortunately decided to pursue an expansionary monetary policy which has further fueled inflation. According to our results, an expansionary monetary policy in such a high-inflation setting would undoubtedly have an inequality-enhancing effect. If we look at the average yearly inflation rate in Turkey, we can see that it increased from 12.3% in 2020 to 19.6% in 2021 which corresponds to a 59% increase. Based on our estimation results, this would result in a 0.57 unit increase in the net Gini index. Subsequently, the inflation rate rose even further to 72.3% in 2022, which, according to our results, would lead to a 2.6 unit increase in the Gini index. Even when focusing on 5-year average differences, our estimations predict an increase of approximately 2 units.

How does the situation look like in the rest of the world? More than 70% of all countries worldwide reported an inflation rate above our critical threshold of 6% at the end of 2022/beginning of 2023. This also implies that — if inflation rates keep rising — we can very likely expect further deteriorating income distributions in many countries unless restrictive monetary policies are installed. However, it is important to keep in mind that inflation and monetary policies aimed at bringing rising prices under control have not only an impact on inequality, but also on other variables, such as the economic growth rate. For instance, the critical threshold for the inflation-growth relationship lies at around 2% which corresponds to the inflation targets of most central banks (cf. Kremer et al. 2013). It is usually argued that below the threshold, inflation can have a growth-enhancing effect, while above the threshold, it has an adverse impact on the growth rate of the economy. For some inflation ranges, there might be a trade-off between a growth-enhancing and inequality-reducing impact.

⁹ Excluding Turkey from our sample does not affect our key results.

An interesting avenue for future research corresponds to transmission channels which drive the nonlinear relationship between inflation and inequality. An intuitive explanation is that countries with high inflation also face high budget deficits which are financed via increases in money supply.¹⁰ Fiscal policy is unlikely to use tax policy or other instruments for income redistribution in such a scenario. Another question is whether specific policy choices for an open economy, such as monetary policy independence or capital controls can affect the link between inflation and inequality.

5 Conclusion

Inequality is one of our most pressing global challenges (cf. Blanchard and Rodrik 2021). After not having been the main focus of the academic literature and media for quite a long time, the recent (partly pandemic-related) skyrocketing inflation rates and exacerbated perceptions of rising inequalities have led to an increased interest in the inflation-inequality nexus. Our paper contributes to this current discussion by extending the previous literature in various directions. First, we cover a much longer time period and also a broader set of developed and developing countries. Second, our paper is the first to employ Kremer et al.'s (2013) dynamic threshold panel model to investigate potential nonlinearities in the inequality-inflation relationship. The use of this model has several advantages, for instance, our inflation threshold is endogenously determined rather than imposed. Moreover, it allows us to control for the problem of endogeneity of control variables such as the lagged dependent variable which can have important implications for the threshold parameters. Finally, unlike most other related studies, we use inequality data from the SWIID database, which offers the most comprehensive and consistent inequality measure for panel regressions.

Our results indicate that inflation rates exceeding 6% are associated with higher income inequality, whereas below this threshold, the correlation remains insignificant. From a monetary policy perspective, these findings suggest that a disinflation policy will likely lead to a more equal income distribution in high-inflation countries whereas there is no such effect in a low-inflation setting. In addition, we find that a higher initial level of inequality and unemployment both lead to a more unequal income distribution.

If inflation rates keep rising, we can very likely expect (further) deteriorating income distributions in many countries. Our findings imply that especially countries with a relatively high inflation level like for instance Brazil, Argentina, and Turkey can use disinflation policies effectively in order to decrease income inequality. With respect to a potential disinflation policy by the ECB, the picture is, however, somewhat less clear since the *yearly* inflation rates in several Eurozone countries are not above the critical threshold (however, they still lie in the range of the confidence interval for some countries).¹¹

Finally, it is important to note that inflation and inflation-reducing policy measures have not only an effect on inequality but also on other macroeconomic indicators and, thus, should be considered in a broader (and country-specific) context.

¹⁰ From a broader perspective, such a link between inflation and budget deficit constitutes a core mechanism of first-generation currency crisis models as outlined in Krugman (1979).

¹¹ See Eurostat (2022), https://ec.europa.eu/eurostat/databrowser/view/tec00118/default/table?lang=en.

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lable Z Description	of the key variables					
Variable name	Description	Data source	Mean	SD	Min	Max
Inequality	Net Gini Index	SWIID, Solt (2020)	36.47	8.43	20.74	63.26
Inflation rate	Inflation rate (semi-log transformation)	IMF, WEO, Oct 2021	1.22	1.18	-3.27	7.22
Initial income	Log of GDP p.c., PPP, const. 2017 prices	IMF, WEO, Oct 2021	9.77	0.85	6.95	11.63
Unemployment	Log of unemployment rate (% of total labor force)	IMF, WEO, Oct 2021	1.98	0.63	-1.46	3.55

14-1 5.0 È Table 3 Five-year average of (1985-2020). All variables except for the Net Gini Index are in logs. For the inflation rate, we use a semi-log transformation (cf. Section 3 for more detailed explanations)

3.55 4.08 6.05 4.51

> 2.19 2.64 0.57

> > 3.46 4.34

World Bank, WDI (2021) World Bank, WDI (2021) IMF, WEO, Oct 2021

Log of sum of exports and imports (% of GDP)

Log of total investment (% of GDP)

Investment rate Globalization Log of gov. expenditures (% of GDP)

Gov. expenditure

0.59 0.37

0.27

3.13

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Data availability All data used in this paper is publicly available. For more details, please refer to the data description in the paper.

Declarations

Conflict of interest The authors declare no competing interests.

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