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EFFECT OF INFLATION ON INCOME DISTRIBUTION

ABSTRACT

In this study, we attempt to examine if inflation has any impact on income distribution (the GINI coefficient). To find that out, we applied VECM on the variables GINI coefficient (a measure of income inequality or income distribution) and INF (inflation rate) on US data from 1990 to 2020. We find that while inflation has no impact on income distribution in the short run, it has a negative impact in the long run. The possible explanation for inflation to have negative impact on Gini coefficient in the long run is that although the rich people derive their income from profit, rent, and interest which tend to increase during inflation, but if interest paid to own rental properties rises by such a greater proportion than the proportionate rise in rent that the difference between the two rises is so large to offset the rise in interest income following an inflation episode, then the income ratio must fall causing income inequality between the rich and the poor to decline thereby lowering the value of Gini coefficient, which is exactly what might have happened in U.S. case over the study period. On the other hand, the possible explanation for the finding that inflation had negative but insignificant impact on Gini coefficient in the short run is that, when inflation occurs and passes the threshold set by the central bank (e.g. the Federal Reserve in the U.S.), it raises the target federal funds rate, which then causes all other interest rates to rise. However, the Fed responds, with a lag, to any change in inflation rate, output and employment as collecting and analyzing the relevant data and formulating an appropriate policy and implementing it takes time, the Fed's contractionary monetary policy to combat inflation comes with a lag too. Also, even when the Fed raises the federal funds rate to combat inflation, the transmission mechanism through which the federal funds rate influences other interest rates takes some time to play itself out. Further, if economic agents view this hike in federal funds rate as a temporary phenomenon, they may not respond the way expected and the rent and other interest rates may remain unaffected in the short run. As such, the effect on earnings of high-income people coming from raised interest rate and rent following a contractionary monetary policy of the Fed also comes

with a lag. Therefore, any effect of inflation on high-income people's earning and thereby on Gini coefficient migh have been absent in the short run.

Keywords: GINI Coefficient; Income Distribution; Inflation; VECM; VAR
JEL Classification: E31; E52; E64

Riassunto

Effetti dell'inflazione sulla distribuzione del reddito

In questo articolo cerchiamo di stabilire se l'inflazione ha un impatto sulla distribuzione del reddito (coefficiente di GINI). A questo scopo si applica il modello VECM sul coefficiente di GINI (una misura di disuguaglianza nella distribuzione del reddito) e il tasso di inflazione INF sui dati relativi agli USA nel periodo 1990-2020. È stato riscontrato che l'inflazione determina effetti sulla distribuzione del reddito solo nel lungo periodo, non nel breve periodo. Una possibile spiegazione di ciò può essere che la popolazione più ricca ricava il suo reddito dai profitti, dalle rendite e dagli interessi, forme di reddito che durante l'inflazione tendono ad aumentare. Tuttavia, se gli interessi pagati per acquisire una proprietà aumentano in proporzione maggiore dell'aumento della rendita, così che la differenza è talmente elevata da compensare l'aumento degli interessi dovuto all'inflazione, allora la quota di reddito dei ricchi scende causando nel breve periodo una diminuzione della disuguaglianza del coefficiente di GINI. Si può supporre che ciò sia successo negli USA nel periodo citato. Un'altra spiegazione possibile dell'effetto negativo ma non significativo dell'inflazione sul coefficiente di GINI nel breve periodo potrebbe essere che quando un fenomeno inflazionistico si verifica e supera il target fissato, la Federal Reserve aumenta il tasso di interesse sui Federal Funds, determinando di conseguenza un aumento di tutti gli altri tassi di interesse. Invero, la Federal Reserve risponde con ritardo a qualunque cambio del tasso di inflazione, di produzione e di occupazione dal momento che raccogliere e analizzare i dati, formulare una politica appropriata e implementarla richiede tempo: alle decisioni di una politica monetaria restrittiva per combattere l'inflazione si arriva con ritardo. Anche quando la Federal Reserve alza i tassi per ridurre l'inflazione, il meccanismo di trasmissione impiega un po' di tempo prima di raggiungere lo scopo. Inoltre, se questo aumento dei tassi da parte della Federal Reserve venisse considerato un fenomeno temporaneo dagli operatori finanziari, essi potrebbero non reagire nella maniera prevista e di conseguenza le rendite e gli altri tassi di interesse potrebbero, nel breve periodo, non essere influenzati da questa manovra. Allo stesso modo, l'atteso effetto sui redditi alti a seguito dell'aumento dei tassi di interesse e delle rendite come conseguenza di una

politica monetaria restrittiva potrebbe verificarsi in ritardo. Quindi si può concludere che nel breve periodo l'inflazione potrebbe non causare alcun effetto sui redditi elevati e sul coefficiente di Gini.

1. Introduction

The national income of a country comprises of (a) compensation of employees, (b) proprietors' income, (c) rental income of persons, (d) corporate profits, (e) net interest, (f) taxes on production and imports less subsidy, (g) business current transfer payments, and (h) current surplus of government enterprises. When inflation occurs, proprietors' income (i.e. profit) rises as prices of the products they sell rise; rental income of persons rises as owners of rental property tend to raise rent to keep the real rent unchanged following inflation; corporate profits rise, which raises dividend received by stockholders; and net interest rate rises as the central bank raises the lending rates to combat the inflation. Since the rich derive majority of their income in the form of proprietors' income, rent on rental properties, dividend out of corporate profits, and interest, an inflation episode tends to raise incomes to the rich. On the other hand, the poor derive their income mainly in the form of compensation of employees which tends to remain stagnant and irresponsive to any inflation episode. So, episodes of inflation must widen the income gap between the rich and the poor and raise the value of Gini coefficient – a measure of income gap or inequality. A closer look at the Lorenz Curves drawn on U.S. data on income distribution shown below (in Figure 1) points to that fact. The Lorenz curves under perfect income distribution, income distribution before inflation, and income distribution after inflation are depicted by the blue line, the red line, and the green line respectively.

Based on the below Lorenz curves the Gini coefficient (a measure of income inequality) is computed as following:

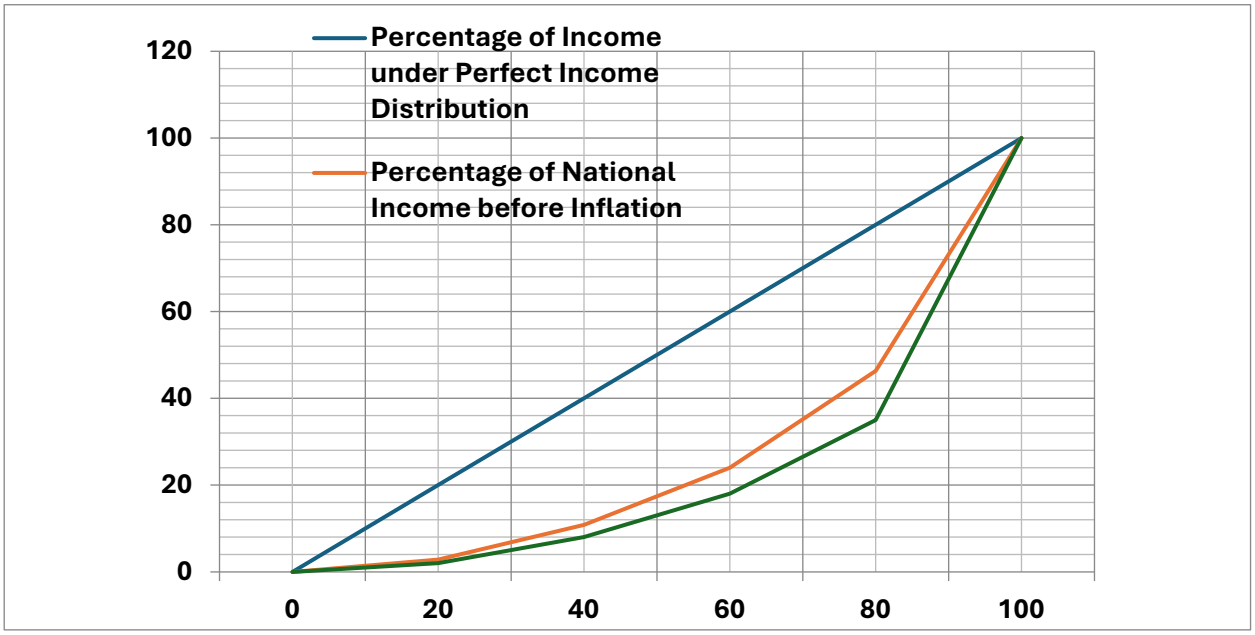
$$\text{Gini coefficient} = \frac{\text{Area between the perfect income distribution line and any particular income distribution line}}{\text{Area below the perfect income distribution line}}$$

So, we calculated the Gini coefficient before and after an inflation episode as,

$$\text{Gini coefficient before inflation} = \frac{\text{Area between the blue line and the red line}}{\text{Area below the blue line}}$$

$$\text{Gini coefficient after inflation} = \frac{\text{Area between the blue line and the green line}}{\text{Area below the blue line}}$$

FIGURE 1 - *Lorenz Curves under Various Income Distributions*



It is obvious that the Gini coefficient after inflation is greater than that before inflation, which indicates that inflation did widen income inequality in the United States. So, it is interesting to investigate if any statistical relationship exists between the rate of inflation and the value of Gini coefficient and if that relationship persists over a period of time and is robust enough to draw any conclusion on. In this study, therefore, we attempt to see whether inflation has any impact on or relationship with the Gini coefficient (a measure of income inequality) in case of the United States.

In the literature, several studies can be found on this issue. One such study is by Monnin (2014). He studies the link between income inequality and inflation with six control variables, such as economic development level, business cycle, unemployment, unionization, and openness to international trade and skill-biased technological change on data from ten OECD countries over the period 1971-2010. His study finds a U-shaped link between long-run inflation and income inequality, that is, low inflation rates are associated with higher income inequality and as inflation

rises, income inequality decreases until the inflation rate reaches the level of 13 percent and then starts rising again.

A similar study by Siami-Namini and Hudson (2019) on 24 developed and 66 developing countries over the period 1990-2014 finds no bi-directional Granger causality between inflation and income inequality in the short-run, but finds bi-directional Granger causality in the long run for both developed and developing countries.

Sieron (2017) examines the relationship between inflation and income inequality and claims that inflation which accelerated after the collapse of the Bretton Woods system in 1971 could have contributed to the rise in income inequality in the US.

A paper by Bulíř (2001) finds positive impact of price stability on income distribution and the impact in a nonlinear fashion, that is, reduction in inflation from hyperinflationary levels significantly lowers income inequality, while further reduction toward a very low level of inflation seems to bring about negligible additional gains in the Gini coefficient.

Law and Soon (2020), in their study on unbalance panel dataset consisting of 4-year non-overlapping average for 65 developing and developed countries over the period 1987-2014, find that inflation will worsen income inequality but the effect of inflation will be mitigated by better institutional quality.

Nantob (2015) conducted a study on 46 developing countries over the period 2000-2012 using GMM estimator and finds that higher inflation is associated with higher income inequality up to the inflation level of about 109%, after that income inequality starts decreasing.

Thalassinos *et al.* (2012) analyze the relationship between income inequality and inflation in 13 European countries for the period 2000 to 2009 and find inflation to have a positive and significant effect on income inequality.

A similar study by Al-Marhubi (1997) finds that countries with greater inequality have higher inflation.

Albanesi (2007), in his study, finds that inflation and income inequality are positively related.

A study by Zheng *et al.* (2020) explores the effect of inflation on income inequality in a growth model with variety expansion and menu costs. The study finds inflation to determine income inequality via both asset-value and interest-rates effects. They also find that higher inflation turns base effects negative, stifling economic growth and mitigating income inequality.

Karunaratne (2011) analyses the evolution of monetary policy design in Australia over the period 1973Q3-1998Q3 applying a Vector-Error-Correction Model (VECM). He finds that CBI and other institutional proxies and macroeconomic distortions Granger causes inflation.

Alvarez and Medici (2024) examine the source of inflation in Argentina during this century and especially in the last decade and find that devaluations triggered by dynamics linked to the external sector resulting from financial deregulation and inflows of external liabilities to be the source of inflation in the country.

There have also been some studies using the HANK (heterogeneous agent neo-Keynesian) model and RANK (representative agent neo-Keynesian) model, such as, those by Kaplan *et al.* (2023) and by Auclert *et al.* (2020) to examine the income distributional effect of monetary policy. In their studies, monetary policy tool is a cause variable whereas income distribution is an effect variable. But they fail to realize that the monetary policy tool itself is an effect variable taken in response to inflation. These models also fail to explain how other factors triggered by an inflation episode can collectively affect income distribution, of which the monetary policy is one.

Our study, however, is different from these other studies and will, therefore, make a significant contribution to the current body of knowledge in this field in the following ways: (a) our model has a strong theoretical underpinning as we develop an income distribution model based on Cobb-Douglas production function and have theoretically shown how inflation can affect the income of the owners of capital (the rich) and that of the owners of labor (the poor) and thereby widens the income between the two classes, which has never been done before at least to our knowledge; (b) in order to make sure our findings are not biased, we examined the residuals from our model to make sure they are free from serial correlation and heteroskedasticity problems, which again has not been done before; (c) we examine both the short-run and the long-run effect of inflation on income inequality using a VECM model, which has never been done before at least on U.S. data; (d) to test the robustness of our findings we conducted the Granger causality test which confirms

our findings; (e) we use recent US data that also covers pre- and post-COVID periods; and (f) finally, we also offer an economic explanation to the transmission mechanism for our findings.

We have organized this study in the following manner: section 2 logically develops the model of inflation and income inequality, section 3 points the data sources, section 4 details the empirical analyses and findings, and section 5 summarizes the findings.

2. THE MODEL

How an inflation episode influences income distribution can also be shown through a nation's production function. A nation's production function can be stated in Cobb-Douglas form as,

$$Q = a_0 K^{a_1} L^{a_2} \tag{1}$$

where, Q is the quantity of output, K and L are quantity of capital and labor respectively, and a_0, a_1, and a_2 are coefficients. Based on the above production function, marginal products of capital and labor can be calculated as follows:

$$Marginal\ product\ of\ capital = \frac{\partial Q}{\partial K} = a_0 a_1 K^{a_1 - 1} L^{a_2} \tag{2}$$

$$Marginal\ product\ of\ labor = \frac{\partial Q}{\partial K} = a_0 a_2 K^{a_1} L^{a_2 - 1} \tag{3}$$

The marginal revenue product of the two factors of production can be calculated as,

$$Marginal\ revenue\ product\ of\ capital = \frac{\partial Q}{\partial K} = P a_0 a_1 K^{a_1 - 1} L^{a_2} \tag{4}$$

$$Marginal\ revenue\ product\ product\ of\ labor = \frac{\partial Q}{\partial K} = P a_0 a_2 K^{a_1} L^{a_2 - 1} \tag{5}$$

Here, P is the price of the product. Since profit is maximized if each factor of production is paid the compensation that is equal to its marginal revenue product, that is, when

$$Rental: r = P a_0 a_1 K^{a_1 - 1} L^{a_2} \tag{6}$$

$$Wage: w = P a_0 a_2 K^{a_1} L^{a_2 - 1} \tag{7}$$

So, the income of the owners of capital and that of the owners of labor can be expressed as,

$$Income\ of\ the\ owners\ of\ capital: Kr = K P a_0 a_1 K^{a_1 - 1} L^{a_2} = P a_0 a_1 K^{a_1} L^{a_2} \tag{8}$$

$$Income\ of\ the\ owners\ of\ capital: LW = L P a_0 a_2 K^{a_1} L^{a_2 - 1} = P a_0 a_2 K^{a_1} L^{a_2} \tag{9}$$

Here, K is the quantity of capital and L is the quantity of labor. So, the ratio of income of the owners of capital to that of laborers, with no other sources of income to both factors, can be expressed as,

$$\frac{Income\ of\ owners\ of\ capital}{Income\ of\ laborers} = \frac{Pa_0a_1K^{a_1}L^{a_2}}{Pa_0a_2K^{a_1}L^{a_2}} = \frac{a_1}{a_2} \tag{10}$$

Since the owners of capital also derive a significant portion of their income from net rent (rent earned on residential and commercial properties minus interest paid on money borrowed to own those properties) and from interest on their savings, while the poor mostly derive their income from labor, equation 10 can be modified as,

$$\frac{Income\ of\ the\ rich}{Income\ of\ the\ poor}$$

$$= \frac{Income\ of\ owners\ of\ capital + Rental\ Income - Interest\ paid\ to\ own\ the\ properties + Interest\ income}{Income\ of\ laborers}$$

$$= \frac{a_1 + Net\ Rental\ income + Interest\ income}{a_2} \tag{11}$$

If the numerator of equation 11 rises by a greater (smaller) proportion than the denominator following an inflation episode, then the left hand side expression rises (falls) and income gap between the rich and the poor rises (falls) causing the Gini coefficient to rise (fall). Further, since technology of production does not change very often, it is safe to assume that there is no change in returns to scale, that is, no change in a_1 and a_2. So, if interest paid to own rental properties rises by such a greater proportion than the proportionate rise in rent and if the difference between the two rises is so large to offset the rise in interest income following an inflation episode, then the income ratio falls causing income inequality between the rich and the poor to decline thereby raising the value of Gini coefficient, otherwise income inequality and, therefore, the Gini coefficient rise. So, to examine how Gini coefficient (a measure of income inequality) is influenced by the rate of inflation this study proposes simple VECM (vector error correction model) models one for each the long run and the short run respectively (equation 8 and equation 9) as follows:

$$GINI_t = a_0 + a_1 INF_t \tag{12}$$

$$\Delta \mathrm{GINI_t} = b_1 \mathrm{ECT_{t-1}} + c_1 \Delta \mathrm{GINI_{t-1}} + c_2 \Delta \mathrm{GINI_{t-2}} + \ \ldots + c_n \Delta \mathrm{GINI_{t-n}} + d_1 \Delta \mathrm{INF_{t-1}} + d_2 \Delta \mathrm{INF_{t-2}} + \ldots + d_n \Delta \mathrm{INF_{t-n}} + b_0 \tag{13}$$

where, GINI is the Gini coefficient and INF is the inflation rate. If a_1 turns out to be positive and statistically significant, then we will conclude that inflation raises the Gini coefficient and widens the income gap in the long run. Similarly, if $c_1, c_2, \ldots c_n$ turn out to be positive and statistically significant, it will imply that any increase in the rate of inflation increases the value of GINI (i.e. income inequality) and widens the income inequality in the short run either. Further, if b_1 turns out to be negative and less than 1, it implies that any deviation in the value of the dependent variable, GINI, will be corrected toward its long-run value.

3. THE DATA

We obtained the data on US inflation rates (INF) from WorldData: Development of Inflation Rates in the United States (INF) (https://www.worlddata.info/america/usa/inflation-rates.php) and that on Gini coefficient (GINI) from Statista: U.S. Household Income Distribution from 1990 to 2020 (GINI) (https://www.statista.com/statistics/219643/gini-coefficient-for-us-individuals-families-and-households/). Our data covers the period from 1990 to 2020. The purpose of selecting this period is to make sure that the data includes both inflationary and recessionary periods to have a better understanding of the relationship between our model variables.

4. EMPIRICAL ANALYSIS

To find out if any long-run relation exists between our model variables, GINI and INF, we must first find out if they are integrated of the same order, which we examined by running the augmented Dickey-Fuller test and obtained the following result:

TABLE-1 - *Result from Dickey-Fuller Test*

Variable	t-statistic	Critical Value at 5%	Stationary?
GINI	-3.135229	-2.971853	Stationary
INF	-4.161795	-2.963972	Stationary

The result indicates that both variables are integrated of the same order, I(0). So, we ran the vector autoregressive model to determine the appropriate lag length needed for the Johansen cointegration test to determine if any long-run relationship exists between the two variables and obtained the following results.

TABLE 2 - *Result from Lag Selection Test*

Lag	LogL	LR	FPE	AIC	SC	HQ
0	47.22068	NA	0.000106	-3.478514	-3.381737	-3.450646
1	63.04072	27.98930	4.27e-05	-4.387748	-4.097418	-4.304143
2	73.59635	17.05140*	2.60e-05*	-4.892027*	-4.408144*	4.752686*

Since five of the six criteria indicate that the appropriate lag length is 2, we conducted the Johansen cointegration test with the lag length of two and obtained the following results.

TABLE 3 - *Result from Johansen Cointegration Test*

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.446753	24.75970	15.49471	0.0015
At most 1*	0.253474	8.185083	3.841465	0.0042

The test indicates that there are two cointegrating vectors between the two variables. Therefore, we run a vector error correction model. Estimation of the model yielded the following results.

Long-Run Equation:

$$GINI_t = 0.509188 - 0.018290INF_t \quad (14)$$
$$(-6.26231)$$

Short-Run Equation:

$$\Delta GINI_t = -0.207750ECT_{t-1} - 0.336059\Delta GINI_{t-1} - 0.230566\Delta GINI_{t-2}$$
$$(-1.42543) \qquad (-1.72291) \qquad (-1.09205)$$
$$+ 0.002603\Delta INF_{t-1} + 1.03e-06\Delta INF_{t-2} + 0.003462 \quad (15)$$
$$(1.25609) \qquad (0.00062) \qquad (2.41360)$$

The figures in parentheses are associated t-values. However, before using the estimated model, it is important to make sure that the estimated coefficients are unbiased, that is, they do not suffer from serial correlation or heteroskedasticity problems. To that end we conducted the serial correlation and heteroskedasticity tests and obtained the following results.

Since all probabilities in table 4 are greater than 0.05, there is no serial correlation. Similarly, all the probabilities in table 5 are greater than 0.05 indicating the absence of heteroskedasticity in the error term. Thus, the estimated model is good enough to be used to interpret its result.

TABLE 4 - *Result from Serial Correlation Test*

VEC Residual Serial Correlation LM Tests
Date: 02/14/24 Time: 09:11
Sample: 1990 2020
Included observations: 28

Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	6.447788	4	0.1681	1.707909	(4, 38.0)	0.1684
2	3.599622	4	0.4629	0.918570	(4, 38.0)	0.4632
3	5.061300	4	0.2811	1.316456	(4, 38.0)	0 2814
Null hypothesis: No serial correlation at lags 1 to h						
Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	6.447788	4	0.1681	1.707909	(4, 38.0)	0.1684
2	8.725352	8	0.3660	1.130274	(8, 34 .0)	0.3686
3	18.32013	12	0.1063	1.719527	(12, 30.0)	0.1121

The t-values shown in equation 14 and 15 indicate that the coefficient associated with the independent variable, INF is negative and significant in the long-run equation and negative but insignificant in the short-run equation, which implies that while inflation has no effect on the income distribution (inequality) measured by the Gini coefficient in the short run, it has negative impact in the long run.

TABLE 5 - *Result from Heteroskedasticity Test*

VEC Residual Heteroskedasticity Tests (Levels and Squares)
Date: 02/14/24 Time: 09:11
Sample: 1990 2020
Included observations: 28

Join test:

Chi-sq	df	Prob.
33.53056	30	0.3000

Individual components:

Dependent	R-squared	F(10, 17)	Prob.	Chi-sq(10)	Prob.
res 1 *res l	0.381932	1.050504	0.4462	10.69408	0.3818
res2*res2	0.493623	1.657180	0.1727	13.82143	0.1813
res2*res1	0.186559	0.389887	0.9337	5.223650	0.8757

These findings are unexpected. The possible explanation for inflation to have negative impact on Gini coefficient in the long run is that although the rich people derive their income from profit, rent, and interest which tend to increase during inflation, but if interest paid to own rental properties rises by such a greater proportion than the proportionate rise in rent that the difference between the two rises is so large to offset the rise in interest income following an inflation episode, then the income ratio must fall causing income inequality between the rich and the poor to decline thereby lowering the value of Gini coefficient, which is exactly what might have happened in U.S. case over the study period. On the other hand, the possible explanation for the finding that inflation had negative but insignificant impact on Gini coefficient in the short run is that, when inflation occurs and passes the threshold set by the central bank (e.g. the Federal

Reserve in the U.S.), it raises the target federal funds rate, which then causes all other interest rates to rise. However, the Fed responds, with a lag, to any change in inflation rate, output and employment as collecting and analyzing the relevant data and formulating an appropriate policy and implementing it takes time – due to the so-called policy lag – Fed's contractionary monetary policy to combat inflation comes with a lag too. Also, even when the Fed raises the federal funds rate to combat inflation, the transmission mechanism through which the federal funds rate influences other interest rates takes some time to play itself out. Further, if economic agents view this hike in federal funds rate as a temporary phenomenon, they may not respond the way expected and the rent and other interest rates may remain unaffected in the short run. As such, the effect on earnings of high-income people coming from raised interest rate and rent following a contractionary monetary policy of the Fed also comes with a lag. Therefore, any effect of inflation on high-income people's earning and thereby on Gini coefficient migh have been absent in the short run.

In order to test the robustness of our findings from the VECM model, we conducted the Granger causality test, result from which is presented below.

TABLE 6 - *Result from Granger Causality Test*

Pairwise Granger Causality Tests
Date: 02/14/24 Time: 08:58
Sample: 1990 2020
Lags: 5

Null Hypothesis:	Obs	F-Statisic	Prob.
INF does not Granger Cause GINI	26	1.59667	0.2210
GINI does not Granger Cause INF		1.27747	0.3242

Since the probability of the null hypothesis that INF does not Granger Cause GINI is 0.2210, which is greater than 0.05, we do not reject the null hypothesis, meaning INF doesn't Granger Cause GINI. Thus, the Granger causality test proves the robustness of our findings from our VECM model in the short run.

5. Summary and conclusion

When prices rise and inflation occurs, proprietors' income (i.e. profit) rises; rental income of persons rises as the owners of residential and commercial rental properties raise rents to keep the real rental income constant; corporate profits rise and thereby the dividend received by stockholders; and interest income to holders of interest bearing accounts as well as corporate and government bonds rises. Thus, an episode of inflation usually tends to raise the earnings of high-income people, as high-income people derive a significant portion of their income in the form of proprietors' income, rent, dividend, and interest. The rise in the income of high-income people then is expected to widen the income gap and raise the value of Gini coefficient (a measure of income gap). In this study, therefore, we attempt to see whether inflation has any impact on income distribution (GINI). To that end, we applied VECM to examine the long-run and the short-run relations between the variables GINI and INF (inflation rate) on US data from 1990 to 2020. We find that while inflation has no impact on income distribution in the short run, it has a negative impact in the long run, which is unexpected. To test the robustness of our findings from the VECM, we the Granger causality test to examine if any of our model variables affect the other. The Granger causality test verified the findings from our VECM model. The possible explanation for inflation to have negative impact on Gini coefficient in the long run is that although the rich people derive their income from profit, rent, and interest which tend to increase during inflation, if interest paid to own rental properties rises by such a greater proportion than the proportionate rise in rent that the difference between the two rises is so large to offset the rise in interest income following an inflation episode, then the income ratio must fall causing income inequality between the rich and the poor to decline thereby lowering the value of Gini coefficient, which is exactly what might have happened in U.S. case over the study period. On the other hand, the possible explanation for the finding that inflation had negative but insignificant impact on Gini coefficient in the short run is that, when inflation occurs and passes the threshold set by the central bank (e.g. the Federal Reserve in the U.S.), it raises the target federal funds rate, which then causes all other interest rates to rise. However, the Fed responds, with a lag, to any change in inflation rate, output and employment as collecting and analyzing the relevant data and formulating an appropriate policy and implementing it takes time, the Fed's contractionary monetary policy to combat inflation comes with a lag too. Also, even when the Fed raises the federal funds rate to combat inflation, the transmission mechanism through which the federal funds rate influences other interest rates takes some time to play itself out. Further, if economic agents view this hike in

federal funds rate as a temporary phenomenon, they may not respond the way expected and the rent and other interest rates may remain unaffected in the short run. As such, the effect on earnings of high-income people, coming from raised interest rate and rent following a contractionary monetary policy of the Fed, also comes with a lag. Therefore, any effect of inflation on high-income people's earning and thereby on Gini coefficient might have been absent in the short run.

The policy implication of this study is that the Fed can pursue its contractionary monetary policy to combat inflation free of any worry about its repercussion on income distribution and income inequality.

The limitation of this study is that it investigates the direct link of inflation to income distribution. The future studies, therefore, can be focused on all other channels through which inflation can affect the earnings of high-income people and thereby the income distribution and income inequality.

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