The impacts of inflation on income inequality: The role of institutional quality

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Introduction

- The income inequality has numerous economic and social effects.

- Among the determinants of income inequality investigated in the previous studies are:

1) Economic development level (Monnin, 2014).
2) Unemployment (Monnin, 2014).
3) Institutional factors (Amendola, Easaw & Savoia, 2013)
4) Monetary policy (interest rate or inflation rate) (Colciago et al. 2019).

Introduction

- The focus of the paper is inflation
- Previous studies such as Monnin (2014), Narob (2015), Balcilar, Chang, Gupta, and Miller (2018), Siami-Namini and Hudson (2019) has find either linear or nonlinear impacts of inflation.
- Theoretical impacts of inflation on income inequality

1) Increase income inequality by lower purchasing power of the poor and real value of government aids (regressive tax).

2) Reduce income inequality by inflating nominal income and lead to higher income tax (progressive tax)

Introduction

- The objectives of the paper are:

1) To study the inflation-income inequality nexus using panel data.
2) The role of institutional quality in that nexus.

- Rationale of the second objective:

1) Better institutional quality will tend to offer inclusive economic planning and promote a more equal income distribution
2) According to Law, Tan and Azman-Saini (2014), the poor are more protected in a well-design institutional framework.

Methodology and Data

- Uses the two-step System GMM estimator to tackle the effect persistency.
- Deploys an unbalanced panel set (4-year non-overlapping average data from 1987 to 2014) from 65 developed and developing countries.

$$LIE_{i,t} = \beta_0 + \beta_1 LIE_{i,t-1} + \beta_2 LINS_{i,t} + \beta_3 INF\_CPI_{i,t} + \beta_4 LINS_{i,t} \times INF\_CPI_{i,t} +$$

$$\beta_5 UNE_{i,t} + \beta_6 LOPEN_{i,t} + \beta_7 LFD_{i,t} + \eta_i + \varepsilon_{i,t} \qquad (1)$$

Note 1: orthogonise the interaction term to avoid strong correlations between interaction term and its components.

Note 2: Outliers are identified by using the Cook's distance outlier test and excluded from the test.

Methodology and Data

Variables	Unit of Measurement	Data Source
Income inequality index (post-tax and post-transfer)	Index	Standardised World Income Inequality database
International Country Risk Guide	Index	PRS group
Unemployment rate	%	World Development Indicator databank
the ratio of the merchandise trade to GDP	(% of GDP)	World Development Indicator databank
the ratio of domestic credit to private sector by bank to GDP	(% of GDP)	World Development Indicator databank

Methodology and Data

- The overall impact of inflation and institutional quality is examined by getting the marginal effect.

$$\frac{\partial LIE}{\partial LINS} = \beta_2 + \beta_4 LINF \quad (2)$$

$$\frac{\partial LIE}{\partial INF\_CPI} = \beta_3 + \beta_4 INS\_CPI \quad (3)$$

- (Source: Brambor, Clark, and Golder, 2006)

- The instruments of the system GMM are decided by imposing the conditions that the instruments for the first-differenced equation are the two and more lags of the endogenous variables. For the level equation, the instruments applied are the one lag of the first-difference of endogenous variables.

- Robustness: the growth rate of GDP deflator as indicator of inflation.

Table 1. The two-step system GMM estimation results (dependent variable: the natural logarithm of *LIE*)

	Column (1)	Column (2)	Column (3)
lagged of *LIE*	0.987***	0.989***	0.990***
	(0.00209)	(0.00236)	(0.00295)
LINS	-0.0180***	-0.0157***	-0.0136***
	(0.00333)	(0.00381)	(0.00511)
INF_CPI	7.19e-05***		5.21e-05***
	(1.87E-05)		(1.96E-05)
*LINS * INF_CPI*	-0.000211***		-0.000169***
	(5.25E-05)		(5.27E-05)
INF_DEF		6.01e-05***	
		(1.79E-05)	
*LINS * INF_DEF*		-0.000218***	
		(5.69E-05)	
UNE	-4.57E-05	-0.0003	-0.00076
	(0.00041)	(0.00044)	(0.00055)
LOPEN	0.00337**	0.000882	0.000139
	(0.00152)	(0.00171)	(0.00194)
LFD	0.0236***	0.0230***	0.0223***
	(0.00178)	(0.00172)	(0.00269)
Observations	340	337	340
Number of groups	65	65	65
Number of instrument variables	45	45	39
AR(2): P-value	0.212	0.205	0.218
Hansen: P-value	0.18	0.318	0.168
The marginal effect of institutional quality			
Maximum	-0.63167***	-0.64885***	-0.50485***
Mean	-0.02312***	-0.02097***	-0.01772***
Minimum	-0.01737***	-0.01504***	-0.01312***
The marginal effect of inflation			
Maximum	-0.00075***	-0.00079***	-0.00061***
Mean	-0.00066***	-0.0007***	-0.00053***
Minimum	-0.00037***	-0.00039***	-0.0003***

Notes: *** and ** indicate the statistical significance level of 1% and 5%, respectively. Time dummies are included in the model but are not reported here to conserve space. The value in parentheses refers to standard error.

Conclusions and Suggestions

- The coefficient signs alone suggest that inflation acts like regressive tax and good institutional contributes to lower income inequality
- In terms of marginal effects, both variables reduces the income inequality.
- Policy implications:

1) Develop institutional framework (lower inflation, improve quality of bureaucracy etc.) in designing policy to overcome income inequality.

2) While inflation seems to reduce inflation, the impact is larger when institutional quality is at the maximum.

3) The aggregate impact of inflation is rather small. Lower pressure on central banks to act if the policy purpose is to alleviate income inequality???

Conclusions and Suggestions

- Future researches could looks at:

1) Developed countries vs developing countries
2) Cross check the conclusions with interest rate
3) Non-linearity
4) Micro-level study (Household data).

Reference

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Thanks for your attention