

# INFLATION AND INEQUALITY: DOES POLITICAL STRUCTURE MATTER?\*

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## Abstract

Several studies have reported a positive correlation between inflation and inequality over the period 1965-1990. This correlation vanishes when the analysis is extended to the 1990s. This paper shows the data still exhibits a positive correlation conditional on political structure.

**Key words:** Inequality, Inflation, Political Economy

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## **I Introduction**

Political economy approaches to policy making have for long recognized the role of socioeconomic polarization in driving macroeconomic outcomes. In particular, a number of theoretical studies have linked inequality to inflation and delayed stabilization (Alesina and Drazen 1991; Cukierman et al 1992; Albanesi 2002). Several empirical examinations have found evidence of a positive correlation between income inequality and inflation over the period 1965-1990 (Sachs 1989; Beetsma and Van Der Ploeg 1996; Al-Marhubi 1997). This positive correlation has been attributed to the influence of inequality on populist ideologies, political instability, and distributional conflicts in the determination of fiscal policy. Consequently, and especially in the absence of more efficient forms of revenues, governments resort to inflationary financing of fiscal deficits.

What is missing in the empirical literature is an adequate characterization of the role of political structure in facilitating the transmission of socioeconomic polarization into inflation outcomes.<sup>1</sup> This note demonstrates the importance of this interaction between political structure and inequality in driving inflation for a large sample of countries over the period 1960-2000. We present empirical evidence supporting the existence of a positive correlation between inflation and inequality but only conditional on political structure.

## **II Inflation, Inequality and Political Structure**

Studies of Latin America in the 1980s blamed conflicts between the rich and poor for generating populist pressures for inflationary financing (Sachs 1989). Evidence for this positive correlation between inequality and inflation has been found in several examinations of cross-country data. This evidence from the pre-1990 period does not carry over into the 1990s where numerous episodes of high inflation in the transition economies took place in low inequality countries.<sup>2</sup> Indeed, the positive correlation between inequality and inflation vanishes when the data is extended to include a larger sample of countries through 2000. Are these contrasting stylized facts driven by sampling considerations or conceptual problems in the empirical analysis?

As is well known, the inflationary episodes of Latin America took place in the context of political instability that was reflected in high government turnover and electoral competition in newly democratizing countries (Edwards 1993). As a result, an important conclusion found in the earlier literature was that democracies were more prone to

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<sup>1</sup> By contrast, the focus in the political science literature has been on the impact of political structure on inflation with little attention to socioeconomic polarization. See Desai et al. (2003) for a survey of that literature.

<sup>2</sup> This positive correlation has been reported unconditionally as in Beetsma and Van Der Ploeg (1996), conditional on income only as in (Albanesi 2002) and conditional on other correlates of inflation as in (Al-Marhoubi 1997). Our claim that the positive correlation vanishes when the data and country coverage is expanded is true conditional on income or not. We later show the same to be true when other correlates of inflation are included.

inflation. By contrast, the high inflation countries in the transition economies were characterized by weak political competition and unconstrained power of elite groups compared to countries with more open political systems (Aslund, Boone and Johnson 1996). The contrasting experiences of Latin America and the transition countries suggest that the relationship between inequality and inflation is influenced by political structure.

Although not (adequately) addressed in empirical studies, the interaction between inequality and political structure in driving inflation has been articulated in a number of theoretical papers that analyzed the role of inflation as a mechanism for redistribution (Albanesi 2002; Beetsma and Van Der Ploeg 1996).<sup>3</sup> These models typically predict that inflation and inequality will be positively correlated in more democratic countries due to populist pressures for redistribution. On the other hand, conditions of low inequality would not necessarily lead to low inflation if political structures are captured by elites who enjoy access to credits from the financial system (Desai et al 2003). In this case, one would not observe a positive correlation between inflation and inequality. We demonstrate these predictions in what follows.

### III New Empirical Evidence, 1960-2000

To investigate the interaction between inequality and political structure in explaining inflation, we have assembled data from 120 countries over the period 1960-2000. The data has been organized as 5-year averages and inflation,  $\pi_t$ , has been transformed as

$$D_t = \frac{\pi_t}{\pi_t + 1}.$$

We include standard determinants of inflation used in the literature: fiscal

balance, GDP growth, GDP per capita, financial depth, openness, instability and central bank turnover.<sup>4</sup> In addition, we add inequality, measured by the Gini coefficient, and two measures of political structure, the Gastil and Polity indices. These two indices assess the degree of political openness and competition in a country, i.e., the democratic tendency of a political system. Throughout the analysis, we utilize a panel specification that includes a lagged-dependent variable, country effects and time dummies.

Table 1 reports the empirical results.<sup>5</sup> The regression in column 1 indicates that inequality when inserted alone is statistically insignificant although other correlates of inflation are significant and carry the correct sign. Columns 2 and 3 each augment the specification with the two measures of political structure. Both are insignificant and the Gini coefficient remains insignificant. However, when income inequality is interacted with political structure, the coefficients on inequality, political structure and the interaction terms are significant (column 4 and 5). Column 6 adds central bank turnover to the

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<sup>3</sup> (The one exception is Beetsma and Van Der Ploeg (1996). Their results, however, are confined to the pre-1985 period, their country coverage is limited, and their treatment of political structure is exclusive to democracies).

<sup>4</sup> For data definitions and sources, see Desai et al. (2003).

<sup>5</sup> The coefficients on the openness variable and GDP per capita are insignificant throughout. For brevity, we do not report them.

specification. Although several coefficients lose their significance - due in part to the large reduction in sample size- our variables of interest retain their significance.

These empirical results strongly suggest that the relationship between inequality and inflation is conditional on political structure. In particular, inequality is positively correlated with inflation but only in more democratic political systems. In non-democratic systems, the tendency for the opposite correlation prevails. According to the results in column 5 of Table 1, the most open political system ( $Gastil=1$ ) with a high Gini coefficient of around 0.65 would experience the same level of inflation as the most closed political structure ( $Gastil=0$ ) with a low Gini coefficient of around 0.35.

Table 2 presents several sensitivity checks to our main result focusing on the *Gastil* index. First, the basic finding is general and not confined to the inflationary episodes of Latin America in the 80s and the transition countries in the 90s. The results, however, are driven by the experience of developing as opposed to the OECD countries. In the latter group, the Gini coefficient is positive and significant when inserted alone (column 3); this is consistent with our results since the OECD is composed of democracies. Developing countries, on the other hand, represent a mix of political structures. As a result, the Gini coefficient is insignificant when added alone (column 4) but positive and significant when interacted with political structure (column 5).

Table2 also reports empirical estimates using a generalized method of moments (GMM) estimator that is intended to address the potential bias of OLS estimates in the presence of country effects and a lagged dependent variable as well as reverse causality that may apply to several independent variables including economic growth, financial depth, instability and the *Gini* coefficient. There is evidence, for example, that inflation can lead to low economic growth (Bruno and Easterly 1998) and financial disintermediation (Boyd, Levine, and Smith 2001). We reformulate our empirical specification in accordance with two variants of the Arellano-Bond first-differenced GMM estimator. The coefficients in columns 5 and 6 confirm our previous results.

#### **IV Conclusion**

This paper investigated the role of political structure in facilitating the transmission of socioeconomic polarization into inflation outcomes. Using a comprehensive dataset over the period 1960-2000, we presented robust evidence showing that the level the competitiveness of the political system is central to the widely reported positive correlation between inflation and inequality.

## References

- Albanesi, S. 2002. "Inflation and Inequality." Working Paper, Department of Economics, Duke University.
- Al-Marhoubi. 1997. "A Note on the Link Between Income Inequality and Inflation." *Economics Letters* 55: 317-319.
- Alesina, A. and A. Drazen. 1991. "Why Are Stabilizations Delayed?" *American Economic Review* 81: 1170-1188.
- Åslund, Anders, Peter Boone, and Simon Johnson. 1996. "How to Stabilize: Lessons From Post-Communist Countries." *Brookings Papers on Economic Activity* 1: 217-313.
- Beetsma, Roel M. W., and Frederick Van Der Ploeg. 1996. "Does Inequality Cause Inflation? The Political Economy of Inflation, Taxation and Government Debt." *Public Choice* 87: 143-62.
- Boyd, J. H., Ross Levine, and Bruce D. Smith. 2001. "The impact of inflation on financial sector performance." *Journal of Monetary Economics* 47 (2): 221-248.
- Bruno, Michael, and William Easterly. 1998. "Inflation crises and long-run growth." *Journal of Monetary Economics* 41 (1): 3-26.
- Cukierman, Alex, S. Edwards, and G. Tabellini. 1992. "Seignorage and Political Instability." *American Economic Review* 82 (3): 537-55.
- Desai, R., A. Olofsgard, and T. Yousef. 2003. "Democracy, Inequality, and Inflation". Working Paper, Georgetown University.
- Edwards, S. 1994. "The Political Economy of Inflation and Stabilization in Developing Countries". *Economic Development and Cultural Change* 42: 235-265.
- Sachs, J. 1989. "Social Conflict and Populist Policies in Latin America". NBER Working Paper No. 2897. Cambridge, MA: NBER.

TABLE 1  
Inflation, Inequality and Political Structure

	Dependent Variable: $\pi/(\pi+1)$					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Fiscal Balance</i>	-0.428** (0.195)	-0.445** (0.196)	-0.450** (0.198)	-0.557** (0.196)	-0.526** (0.200)	-0.187 (0.287)
<i>Growth</i>	-1.758** (0.231)	1.764** (0.233)	-1.845** (0.241)	-1.832** (0.231)	-1.917** (0.241)	-0.502 (0.444)
<i>Financial Depth</i>	-0.093** (0.025)	-0.089** (0.026)	-0.093** (0.027)	-0.086** (0.025)	-0.090** (0.026)	-0.247** (0.112)
<i>Instability</i>	0.071** (0.022)	0.063** (0.023)	0.070** (0.023)	0.052** (0.021)	0.059** (0.023)	0.022 (0.037)
<i>Gini</i>	-0.144 (0.095)	-0.141 (0.099)	-0.133 (0.098)	-0.698** (0.191)	-0.463** (0.175)	-1.194** (0.569)
<i>Gastil</i>	-	-0.025 (0.031)	-	-0.417** (0.119)	-	-0.567 (0.374)
<i>Polity</i>	-	-	0.003 (0.027)	-	-0.222** (0.101)	-
<i>Gini × Gastil</i>	-	-	-	0.995** (0.293)	-	1.331** (0.654)
<i>Gini × Polity</i>	-	-	-	-	0.545** (0.238)	-
<i>Central Bank Turover</i>	-	-	-	-	-	0.083* (0.043)
<i>Inflation<sub>t-1</sub></i>	0.245** (0.036)	0.221** (0.037)	0.240** (0.037)	0.226** (0.036)	0.239** (0.036)	0.183** (0.086)
<i>Country Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Time Dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	420	399	409	399	409	195
<i>N</i>	118	117	114	117	114	56
<i>R<sup>2</sup></i>	0.43	0.42	0.42	0.44	0.44	0.27
<i>Wald <math>\chi^2</math></i>	219	201	215	220	224	3.14

Standard errors are in parentheses; \* and \*\* indicate significance at the 10 % and 5 %, respectively.

**TABLE 2**  
**Sensitivity and Robustness Tests**

Dependent Variable: $\pi/(\pi+1)$							
	Regional Effects <sup>1</sup>		Income Effects <sup>2</sup>			GMM Estimates <sup>3</sup>	
	Latin America	Transition Economies	OECD countries	Developing countries	Developing countries	One-step	Two-step
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Fiscal Balance</i>	-0.572** (0.198)	-0.637** (0.189)	0.037 (0.083)	-0.465** (0.207)	-0.563** (0.209)		
<i>Growth</i>	-1.795** (0.232)	-1.324** (0.235)	-0.090 (0.228)	-2.250** (0.245)	-2.292** (0.243)		
<i>Financial Depth</i>	-0.082** (0.026)	-0.078** (0.024)	-0.007 (0.004)	-0.061** (0.026)	-0.063** (0.025)		
<i>Instability</i>	0.053** (0.023)	0.052** (0.022)	0.029** (0.013)	0.045** (0.023)	0.038** (0.023)		
<i>Gini</i>	-0.679** (0.208)	-0.393* (0.214)	0.153** (0.052)	-0.026 (0.095)	-0.448** (0.188)		
<i>Gastil</i>	-0.369** (0.133)	-0.375** (0.132)	-0.014 (0.027)	0.007 (0.035)	-0.317** (0.128)		
<i>Gini × Gastil</i>	0.826** (0.355)	0.953** (0.313)	-	-	0.780** (0.298)		
<i>Inflation<sub>t-1</sub></i>	0.223** (0.036)	0.187** (0.039)	0.870** (0.063)	0.252** (0.036)	0.259** (0.036)		
<i>Country Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Time Dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	420	399	103	349	349		
<i>N</i>	118	117	20	101	101		
<i>R<sup>2</sup></i>	0.45	0.50	0.90	0.48	0.49		
<i>Wald <math>\chi^2</math></i>	220	283	2073	504	529		

**Notes:** Standard errors are in parentheses; \* and \*\* indicate significance at the 10 % and 5 %, respectively.

(1) The regressions in columns 1 and 2 augment the model with a set of interactions between the regional dummies, the Gini coefficient and the Gastil index. We do not report these results since our primary interest is testing whether the original interactions are affected.

(2) The income effects are tested by estimating the model with the two sub-samples: the OECD and developing countries. The same results are found when an income per capita threshold of \$10000 is used.

(3) (Coefficients are generated using a one-step GMM estimator with asymptotic standard errors robust to cross-section and time-series heteroskedasticity in parentheses. All instrumental variables are lagged X or more periods. The instrument set includes up to X lags of the dependent variables, one lag of Gini coefficient, and X lags of growth. All variables are estimated in first differences except the Gastil index and their interactive terms, which are in levels.)