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Individualism and Inflation

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Abstract

This paper examines the relationship between the individualism-collectivism dimension of culture and inflation for 100 countries from 1972 to 2011. The results indicate that individualism has a strong causal negative effect on inflation. Individualism also strengthens the effectiveness of central bank independence in promoting low inflation. These findings are robust to estimation methods, sample composition, measures of individualism and inclusion of controls.

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1. Introduction

Why some countries suffer from persistently higher inflation rates than others is one of the most enduring question in economics. A diverse literature has demonstrated that inflation is a complex and multidimensional phenomenon with several potential causes, including economic, political, social and institutional factors (Ha et al., 2019). Despite the prominent role attributed to culture in determining various socio-economic outcomes,[1] its role in explaining cross-country differences in inflation has not been systematically explored. This paper fills this gap in the literature by examining the effect of culture on inflation, a monetary indicator of how well an economy performs in terms of price stability, an outcome of fundamental concern to policymakers because of its first-order effects on welfare. In investigating the role of culture on inflation, this paper focuses on the individualism-collectivism (IC) dimension of culture, the main driver of cultural diversity across countries (Kashima and Kashima, 2003; Oyserman et al., 2002) and most influential in explaining economic outcomes (Gorodnichenko and Roland, 2011; 2017; Nikolaev et al., 2017).

The IC dimension of culture denotes the contrast between societies that define people regardless of their group affiliation and those that define people on the basis of their group affiliations (Hofstede, 2001, p. 209). According to Hofstede (1991, p. 51), individualistic societies are those "in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family." Individualism values personal freedom, independence, self-reliance and personal accomplishments over collective flourishing. It rewards social status to personal achievements such as innovations, discoveries and problem-solving. In contrast, collectivism values strong and cohesive in-groups, conformity, interdependence and cooperation and fulfilment of collective goals and interests (Hofstede, 1980; Triandis, 1995).

Using a dataset for 100 countries over the 1972-2011 period, this study finds that the IC dimension of culture has a statistically significant negative impact on inflation. In addition, the evidence indicates that central bank independence (CBI) is more effective in reducing inflation in countries with greater individualistic values. These finding are robust to estimation techniques, sample compositions, an alternate measure of the IC dimension of culture and inflation covariates.

The rest of the paper is structured as follows. The next section provides several reasons why inflation can be expected to be lower in countries with stronger individualistic values. Section 3 describes the methodology and data. Section 4 presents the results. Section 5 concludes.

2. Relationship between culture and inflation

Drawing on insights from different strands of the economics literature on culture, this study hypothesizes that IC values can affect inflation directly and indirectly through its impact on other outcome variables which have previously been identified as significant determinants of inflation.

[1] For recent contributions, see, for example, Ang (2019), Bennett and Nikolaev (2020), Davis and Williamson (2019), Ezcurra (2021) and Gorodnichenko and Roland (2017).

The direct channels rely on the individualistic traits of independence, overconfidence bias, higher level of risk tolerance and attitudes toward government intervention. These traits have underpinned many of the arguments linking individualism to economic outcomes in recent literature, such as the adoption of floating exchange rates (Cao et al., 2020) and likelihood of bank failures (Berger et al., 2020).

First, individualists are more independent (Hofstede, 2001) and have less government interventionist attitudes (Pitlik and Rode, 2017; Gorodnichenko and Roland, 2015). Unlike collectivists who see a benevolent government creating stability through active intervention, individualists see the government as a possible barrier to achievement and stability (Ang and Fredriksson, 2018). They are distrustful of government and are more open to constraining executive power (Gorodnichenko and Roland, 2015). Thus, it is reasonable to expect that individualistic countries are more likely to prefer institutional mechanisms that insulate macroeconomic policy from the political process and to impose constraints on discretionary macroeconomic policy through the adoption of independent central banks and rules-based approaches such as inflation-targeting and fiscal rules. Economic theory and empirical evidence show that constraining monetary policy discretion helps to enforce a low inflation equilibrium (Rogoff, 1985; Garriga, 2016; Nurbayev, 2018).

Second, individualists tend to exhibit the overconfidence bias (Hofstede, 2001; Markus and Kitayama, 1991), which may cause them to support limiting macroeconomic policy discretion even if they are aware of the consequent economic costs of doing so. The confidence bias is the tendency people have that their abilities are above average and their predictions overly precise (Cao et al., 2020; Chui et al., 2013; Shao et al., 2013).[2] Overconfidence bias causes them to believe that they can handle the risks of unpredictable economic events better than the government. Thus, rather than have the government intervene on their behalf to manage economic risks, individualists are more likely to prefer making their own decisions. Overconfidence in their abilities may thus make individualists more likely to support the adoption of institutional mechanisms that restrain government activism such as CBI and fiscal rules, which help achieve low inflation.

Third, individualists tend to have a higher level of risk tolerance (Hofstede, 2001; Cao et al., 2020; Li et al.,2013) and, thus, may be more willing to tolerate the economic risks that may arise from tying the hands of monetary and fiscal authorities. For example, individualists with less interventionist attitudes may be willing to tolerate the risks of adopting mechanisms that constrain discretionary monetary and fiscal policies. In particular, Rogoff (1985) has demonstrated that while insulating monetary policy from politicians through the adoption of CBI may reduce inflation, there is a risk of more cyclical variability in economic activity as governments lack flexibility in using monetary policy to smooth shocks to the economy.

Finally, individualists are wary of government infringements on the individual's drive to self-achievement and are therefore less inclined to support government interventionism into the economic sphere (Pitlik and Rode, 2017, p. 579). Since inflation is a tax (on money holdings) that

[2] Cao et al. (2020), note that in the questionnaire used to construct the individualism index, respondents in individualistic countries tended to agree more with the statement: ''Decisions made by individuals are usually of higher quality than decisions made by groups" (Hofstede, 2001).

transfers resources from individuals to government and deprives individuals of enjoying their wealth, it is plausible that individualistic societies will prefer low inflation and support policies and mechanisms that help keep inflation low.

In addition to the above direct effects, individualism may also affect inflation indirectly through its impact on other economic outcomes and institutions, which have been shown to be important determinants of inflation. Individualism, for example, has been linked to economic and financial development, lower income inequality and higher institutional quality. These outcomes, hypothesized to be endogenous to individualism, have been associated with lower inflation.

First, individualistic societies tend to have higher levels of development measured by output per worker, innovation and productivity (Kyriacou, 2016; Gorodnichenko and Roland, 2017). In turn, economic development has been shown to be a significant determinant of inflation and widely used as a control variable in studies on the causes of inflation (de Carvalho et al., 2018).

Second, The IC cultural divide has also been associated with income inequality within a country (Fevre, 2016; Nikolaev et al., 2017; Binder, 2019a), which some empirical studies has confirmed to have an impact on inflation (Al-Marhubi, 2000; Binder, 2019b; Albanesi, 2007). This suggests the possibility that income inequality may act as indirect channel linking the IC dimension of culture with inflation.

Third, financial development is another plausible channel through which the IC dimension of culture may affect inflation. Prior research has shown that individualistic countries tend to have higher levels of financial development (Ang, 2019). Financial development, in turn, has been associated with low inflation and CBI (Posen, 1995). A fourth possible transmission channel that may help explain the effect of the IC cultural divide on inflation is political instability. For example, Ezcurra (2020) has documented a negative and significant relationship between individualism and political instability, a phenomenon which has also been associated with inflation outcomes (Cukierman et al., 1992; Edwards and Tabellini, 1991).

Finally, institutions are another indirect channel linking IC values with inflation. Individualism cultivates a demand for high-quality institutions characterized by the rule of law, transparency and democratic accountability (Greif, 1994; Licht, 2007; Klasing, 2013; Kyriacou, 2016). These norms of good governance, in turn, have been shown to increase the effectiveness of CBI in reducing inflation (Nurbayev, 2018).

3. Data and methodology

The impact of the IC dimension of culture on inflation is examined by estimating the following regression model:

$$ln\,(inflation_{it}) = \alpha_i + \beta_1 Individualism_i + X_{it}\gamma + \delta_t + \mu_{it} \quad (1)$$

where *i* is country and *t* time interval, *Individualism* is an index denoting the strength of a country's individualism, X_{it} is a vector of control variables, δ_t controls for time fixed effects that are common to all countries and μ_{it} is a random error term. An unbalanced panel dataset is used

comprising 100 advanced and emerging countries from 1972 to 2011. The selection of 100 countries is dictated by data availability on the measure of individualism, while the choice of time period is dictated by CBI data, which starts from 1972 and ends in 2012.

Cross-section ordinary least squares, pooled ordinary least squares (Pooled-OLS) and random effects (RE) estimation are used to investigate the relationship between individualism and inflation. Although each estimation strategy is subject to distinct drawbacks, their parallel implementation is perhaps the best way to account for potential weaknesses in any individual strategy. First, and in line with much of recent empirical work on the consequences of culture, a cross-sectional framework is used based on data averaged over the entire 1972-2011 period. One drawback of using cross-sectional data in the presence of a time-invariant independent variable (*Individualism*) is the arbitrary selection of the time-period of the dependent variable (inflation), which may affect the results. To address this concern, the study employed a panel approach which allowed testing of the link between individualism and inflation for different time periods of the dependent variable.

For panel estimation, the sample period is split into four 10-year non-overlapping time intervals (1972-1981, 1982-1991, 1992-2001, and 2002-2011) and the variables are averaged over each of these four intervals. Focusing on 10-year annual averages avoids cyclical variations that might bias the estimates. For the panel dataset, the relationship between individualism and inflation is first examined using Pooled-OLS estimation. Pooled-OLS estimation produces efficient and consistent estimates if cross-country effects are zero. To account for possible unobserved country-specific and time-invariant effects beyond differences in the IC dimension of culture, RE estimation is employed. The time-invariance of the index of individualism and other controls preclude application of fixed-effects estimation.

Inflation is measured as the logarithm of the average annual percentage change in the Gross Domestic Product (GDP) deflator. The logarithmic transformation is used to reduce the sensitivity of the results to outliers. Following the literature, the degree of individualism is measured by Hofstede's (2001) individualism-collectivism index, a cross-sectional measure using a 100-point scale with higher values indicating stronger individualistic values. Numerous studies have validated the Hofstede's index of individualism across both time and samples (Beugelsdijk et al., 2015; Oyserman et al., 2002; Schimmack et al., 2005). To check for robustness, an alternative index of the IC dimension of culture developed by Schwartz (1994) was also employed.

The vector of controls X_{it} in the baseline specification consists of variables that have been found to be significant determinants of cross-country differences in inflation rates in prior literature, including several that are outcome variables explained by individualism itself. These include real GDP per capita, openness to international trade, central bank independence, degree of exchange rate flexibility, financial development, institutional quality, and ethnic fractionalization. Ethnic fragmentation is included to address the risk that a significant estimate on the IC cultural variable is not capturing the effect of ethnic factors that may be closely related to other possible cultural dimensions. In addition, ethnic fractionalization also serves as a crude proxy for political instability. CBI and exchange rate flexibility help to capture and isolate the direct effect of individualism on inflation beyond its possible indirect impacts that operate through these formal institutional arrangements. In the inflation literature, CBI and exchange rate fixity are regarded as

institutional mechanisms that insulate central banks from political pressures to inflate the economy. Openness to international trade is included to control for the prediction from the time-inconsistency models of macroeconomic policy that the benefits of surprise inflation are decreasing in the degree of openness, and thus the lower is the equilibrium inflation rate in more open economies (Romer, 1993). Finally, institutional quality and financial development are included as mediating variables to account for the indirect impact of individualism on inflation. As pointed out in Section 2, individualism is an important determinant of institutional quality and financial development, which in turn have been shown to increase the effectiveness of CBI in reducing inflation. Although income inequality is another mediator variable for the indirect transmission channel connecting individualism to inflation, it is not included in our baseline specification as a control variable because its inclusion reduces the sample size appreciably. Nonetheless, results from its inclusion as a check on robustness and possible omitted variable bias are also presented.

Data on inflation, real GDP per capita, financial development (measured by domestic credit to the private sector as a share of GDP), income inequality (measured by the Gini coefficient) and trade openness (measured as exports and imports as a share of GDP) are from the World Bank's World Development Indicators (WDI). Ethnic fractionalization is from Alesina et al. (2003) and the index of CBI is from Garriga (2016). Institutional quality is proxied by democracy, measured by the variable Polity2 obtained from Marshall et al. (2017). Finally exchange rate flexibility is from Ilzetzki et al. (2019). All variables are averaged over the relevant intervals, apart from those that are time-invariant. Table 1 reports descriptive statistics for the variables of interest.

Table 1 Descriptive statistics (Averaged over 1972-2011 period)

	N	Mean	St.Dev	Median	IQR	Min	Max
Inflation (logs)	100	2.442	1.218	2.144	1.242	.538	6.599
Individualism	100	39.24	22.024	31	38.5	6	91
Real GDP per capita (logs)	99	8.777	1.443	8.919	2.26	5.41	11.157
Trade openness	98	76.162	47.67	63.289	43.836	20.046	344.107
CBI	97	.484	.154	.48	.192	.139	.859
Exchange Rate Flexibility	100	2.408	1	2.288	1.337	1	4.775
Domestic credit (logs)	95	3.721	.829	3.823	1.297	1.537	5.107
Polity2	96	3.316	5.949	3.975	10.359	-10	10
Ethnic fractionalization	99	.409	.246	.415	.453	.002	.859

Note: IQR and CBI refer to inter-quartile range and central bank independence.

4. Results

Figure 1 depicts the preliminary evidence on the association between individualism and inflation (measured on a logarithmic scale) averaged over the 1972-2011 period. It reveals a clear negative

relationship between the two indices of individualism and inflation, suggesting that, by and large, countries with stronger individualism have lower inflation. To formally estimate the link between the IC dimension and inflation, the study conducts regression analysis that controls for other correlates of inflation.

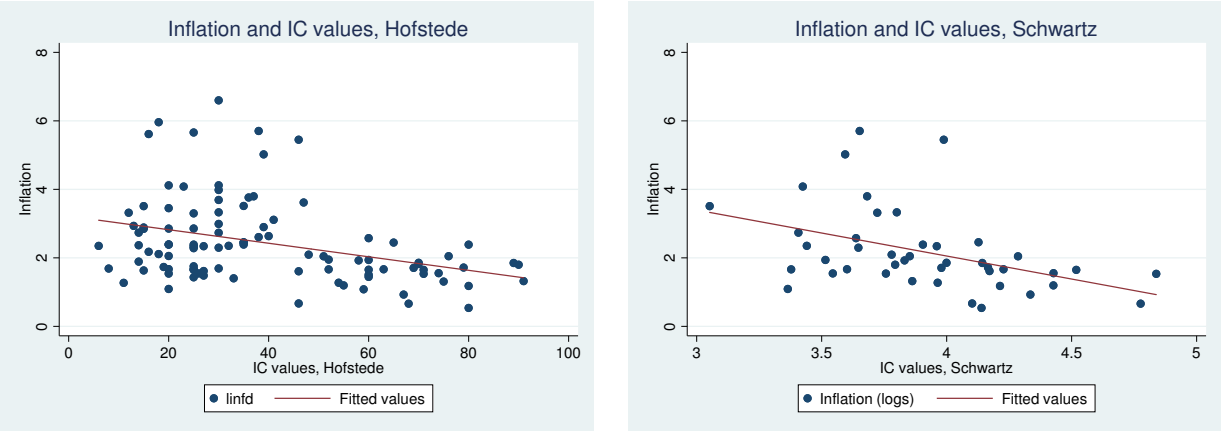

Figure 1. Scatter-plots of inflation and individualism-collectivism indices.

Table 2 presents bivariate regression results from the three estimation methods using Hofstede's index of individualism. Standard errors clustered at the country level are reported in parentheses.

Table 2 Inflation and Individualism bivariate regression results

VARIABLES	(1) Cross-section	(1) Pooled-OLS	(2) RE
Individualism	-0.020***	-0.016***	-0.016***
	(0.004)	(0.003)	(0.003)
Constant	3.217***	2.294***	2.283***
	(0.231)	(0.149)	(0.151)
Countries/Observations	100/	100/356	100/356
R-squared	0.128	0.171	
Period fixed effects		Yes	Yes
Adjusted R-squared	0.119	0.162	
F-stat / Wald $\chi 2$	25.57***/	26.21***/	/113.00***
Breusch Pagan LM test			75.51***
Within-R^2			0.211
Between-R^2			0.140
Overall-R^2			0.171

Note: Cross-section refers to cross-sectional data, Pooled-OLS is OLS estimation on panel data and RE is random effects estimation on panel data. Country clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The results indicate a statistically significant negative relationship between individualism and inflation, suggesting that countries with stronger individualistic values tend, on average, to have

lower inflation. Moreover, the estimated impact of individualism on inflation is quantitatively large. The point estimate in column (1) based on cross-sectional data, for example, suggests that a one-standard deviation increase in individualism (22 units) leads to a 5.06 percentage point reduction in inflation for a country whose inflation rate is at the mean level of 11.5 percent. Similarly, for a country with a sample median inflation rate of 8.53 percent, a one standard deviation increase in individualism decreases inflation by 3.75 percent.[3] Finally, the fraction of the variation in inflation explained by the IC cultural divide is non-trivial: IC dimension of culture alone accounts for around 13 percent of the cross-country variation in inflation rates.

Table 3 controls for other determinants of inflation. Although income inequality is a mediator variable connecting individualism to inflation, it is not included as a control variable in the baseline specification (columns (1) to (3)) because its inclusion reduces appreciably the sample size. However, to allay concerns about omitted variable bias, column (4) adds income inequality as an additional control variable. The results in column (4) are from Pooled-OLS rather than RE estimation since the Breusch-Pagan LM test failed to reject that null hypothesis that the error variances across countries is zero when income inequality is included in the inflation equation.

As seen in Table 3, the estimates on the IC dimension of culture remain negative and statistically significant, although the magnitude of their estimated effect on inflation is slightly reduced with the inclusion of controls. Most of the control variables have the expected signs, although only trade openness and domestic credit are consistently significant. The insignificance of the estimate on CBI in the cross-sectional setup (column 1) is not unexpected as the measure of CBI is averaged over a 40-year period. Averaging the CBI index over so many decades mask its variation over time, rendering it quite uninformative. In contrast, results from the panel framework show a statistically significant negative relationship between CBI and inflation as both the Pooled-OLS and RE estimations exploit the variation in CBI over time.

Table 3. Inflation and Individualism regression results

VARIABLES	(1) Cross-section	(2) Pooled-OLS	(3) RE	(4) Pooled-OLS
Individualism	-0.012**	-0.013***	-0.012***	-0.006*
	(0.005)	(0.004)	(0.004)	(0.003)
Real GDP per capita (in logs)	0.042	0.154*	0.118	0.135
	(0.127)	(0.086)	(0.084)	(0.086)
Trade openness	-0.004*	-0.004**	-0.003**	-0.001
	(0.002)	(0.002)	(0.002)	(0.001)
Central bank independence (CBI)	0.229	-0.871*	-0.870*	-0.751*
	(0.820)	(0.480)	(0.445)	(0.415)
Exchange rate flexibility	0.335***	-0.010	-0.011	-0.081
	(0.113)	(0.088)	(0.076)	(0.097)
Domestic credit (in logs)	-0.521**	-0.620***	-0.595***	-0.611***

[3] With the dependent variable expressed in logarithms, the effect of a one unit increase in individualism on inflation depends on the value of inflation, calculated as $\partial inflation/\partial Individualism = \beta_1 \times inflation$).

	(0.208)	(0.112)	(0.114)	(0.122)
Democracy (Polity2)	0.011	0.021*	0.020*	-0.021
	(0.015)	(0.011)	(0.011)	(0.014)
Ethnic fractionalization	0.024	0.349	0.316	-0.264
	(0.550)	(0.376)	(0.366)	(0.318)
Income inequality (Gini)				0.039***
				(0.012)
Constant	3.815***	3.785***	3.931***	2.459***
	(0.863)	(0.609)	(0.620)	(0.710)
Countries/Observations	89/	89/222	89/222	82/164
Period fixed effects		Yes	Yes	Yes
R-squared	0.338	0.418		0.511
Adjusted R-squared	0.272	0.387		0.472
F-stat / Wald $\chi 2$	8.461***/	15.30/***	/175.07***	/15.11***
Breusch Pagan LM test			25.41***	
Within-R^2			0.283	
Between-R^2			0.480	
Overall-R^2			0.417	

Note: Cross-section refers to cross-sectional data, Pooled-OLS is OLS estimation on panel data and RE is random effects estimation on panel data. Country clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Finally, we explore the possible effect of the interaction between individualism and CBI on inflation. An interesting strand of the inflation literature suggests that delegating monetary authority to an independent central bank with a price stability mandate may not necessarily guarantee low inflation unless formal institutions are sufficiently robust to ensure consistency between the written law and actual practice (Nurbayev, 2018). In the absence of high-quality institutions, governments may ignore CBI, as stated in law, and compel central banks to pursue objectives which may conflict with their stated commitment to price stability. Empirically, a significant body of literature which has explored the effect of the interaction between CBI and the rule of law on inflation demonstrates that CBI reduces inflation only under the presence of checks and balances, democratic accountability and political stability and freedom of the press. It is therefore interesting to examine the extent to which the effect of CBI (formal institution) is conditioned by one of the most significant drivers of cultural disparity across countries, the IC cultural divide (informal institution).

To empirically investigate the interaction effect of individualism and CBI on inflation, equation (1) is extended by adding a multiplicative interaction term of Hofstede's individualism index and CBI into the regressions. The equation with the interaction term is shown in equation (2)

$$ln(inflation_{it}) = \alpha_i + \beta_1 Individualism_i + \beta_2 CBI_{it} + \beta_3(Individualism_i \, X \, CBI_{it}) + \beta X_{it} B + \delta_t + \mu_{it} \quad (2)$$

In an interaction model comprising constitutive and multiplicative interaction terms, the marginal effect of CBI on inflation and its statistical significance has to be interpreted conditional on its

interaction with individualism. Specifically, the marginal effect of CBI conditional on individualism is calculated by $\beta_2 + \beta_3 Individualism$.

Table 4 reports the marginal effects of CBI on inflation conditional on the strength of individualism from the three estimation methods using the same set of controls as in Table 3. The results in columns (1) to (3) of Table 4 are obtained using the baseline specification which does not include income inequality. Again, to address concerns about omitted variable bias, the specification in column (4) adds income inequality to the regression and, hence, the reduced number of observations. As with Table 3, Pooled-OLS rather than RE estimation is employed in estimating the specification with income inequality in column (4) of Table 4 since the Breusch-Pagan LM test failed to reject that null hypothesis that the error variances of across countries is zero. The conditional marginal effects of CBI on inflation are evaluated at the 25th, 50th, and 75th percentile values of individualism. To conserve on space, Table 4 does not report estimates for the control variables.

As can be seen in Table 4, the results obtained from Pooled-OLS and RE estimation show that the marginal impact of CBI on inflation is conditional on the strength of IC values. Specifically, the marginal effect of CBI is insignificant in countries with low individualism, but the negative effect becomes statistically significant in countries with stronger individualistic cultural values. More precisely, CBI has a statistically significant and negative effect on inflation when the individualism score is around 40, a value close to the mean of individualism score of 39 and above the median value of 31.

Table 4. Inflation and Individualism regression results (interactive effects)

	(1)	(2)	(3)	(4)
VARIABLES	Cross-section	Pooled-OLS	RE	Pooled-OLS
Individualism	-0.008	-0.007	-0.005	-0.001
	(0.017)	(0.009)	(0.009)	(0.008)
Central bank independence (CBI)	0.593	-0.352	-0.330	-0.381
	(1.882)	(0.852)	(0.798)	(0.898)
Individualism x CBI	-0.009	-0.012	-0.012	-0.008
	(0.036)	(0.014)	(0.013)	(0.014)
Marginal effect of CBI at:				
25th percentile of Individualism	0.407	-0.589	-0.579	-0.540
	(1.261)	(0.643)	(0.593)	(0.660)
50th percentile of Individualism	0.304	-0.715	-0.716	-0.627
	(0.975)	(0.553)	(0.507)	(0.544)
75th percentile of Individualism	0.043	-1.042	-1.065	-0.850
	(0.842)	(0.489)**	(0.463)**	(0.383)**
Observations	89	89/222	89/222	82/164
Period fixed effects		Yes	Yes	Yes
R-squared	0.339	0.420		0.512

Adjusted R-squared	0.264	0.386		0.469
F-stat / Wald $\chi 2$	7.374***/	15.39***/	/193.75***	14061***
Breusch-Pagan LM test			25.50***	
Within-R^2			0.285	
Between-R^2			0.483	
Overall-R^2			0.418	

Note: Cross-section refers to cross-sectional data, Pooled-OLS is OLS estimation on panel data and RE is random effects estimation on panel data Country clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

A battery of sensitivity tests was conducted to check for the robustness of the results. To conserve on space, these results are not reported, but are available upon request. First, the findings are robust to the inclusion of additional controls used in the inflation literature such as economic growth and origin of country's legal systems. Second, the time fixed effects (period dummies) were excluded to check that they do not capture the slow changes in CBI over time, thereby creating a multicollinearity problem. As expected, excluding the time dummies increased the size and statistical significance of CBI on inflation in regressions based on equation (1) and the marginal effect of CBI conditional on individualism in regressions based on equation (2). Exclusion of time fixed effects, however, produced no marked changes in the estimates and significance of the other variables, including individualism. The significant impact of CBI on inflation in equations (1) and (2) with the inclusion of time fixed effects in Tables 3 and 4 suggests that multicollinearity does not pose a problem and inclusion of time fixed effects is not redundant. Third, the results were also robust to Schwartz's (1994) index of IC cultural values. Fourth, excluding some outlying observations on inflation (values of log inflation > 6) from the sample based on a visual inspection of the raw data for outliers did not change the results in any significant way.

Finally, the study considered the possibility that the individualism variable may be endogenous due to reverse causality. With endogeneity bias, OLS estimates cannot be interpreted as reflecting a causal influence of culture on inflation. Yet reverse causality is unlikely to be an important issue in this study. It not obvious what the feedback mechanisms are through which inflation, measured over a short time horizon, could impact cultural values that change slowly - on the order of centuries or millennia (Roland, 2004; Williamson, 2000). Nonetheless, these concerns are addressed through an instrumental variable (IV) estimation strategy. Individualism was jointly instrumented by a linguistic variable on pronoun drop developed by Davis and Abdurazokzoda (2016) and an epidemiological variable on historical prevalence of infectious diseases created by Murray and Schaller (2010).[4] Despite a significant first-stage relationship between individualism and the chosen instruments, the Hausmann test failed to reject the null hypothesis of exogeneity at conventional significance levels, thereby supporting the notion that IC values should be treated as an exogenous variable.

[4] These variables are used to induce exogenous variation in the IC values index, variation that is in principle uncorrelated with the error term, and then to use this exogenous variation to calculate the parameter estimates for the IC values index.

5. Conclusions

This study examined empirically the relationship between the IC dimension of culture and cross-country differences in inflation outcomes. The results confirmed a strong negative relationship between the IC dimension of culture and inflation. Individualism also strengthens the effectiveness of CBI in promoting low inflation. These findings are robust to different estimation techniques, sample compositions, measures of IC cultural values and inflation covariates.

It is difficult to pinpoint specific policy implications. Culture is a slow-evolving informal institution and one that is not easily amenable to manipulation. Even if malleable, cultural manipulation is anathema to free and open societies. Therefore, to maintain price stability in countries with low individualism, strengthening other factors that contribute to low inflation such as integration into the global economy, financial development and CBI are more viable options.

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