The corruption and income inequality puzzle: Does political power distribution matter?

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Abstract: The literature on income inequality outcomes of corruption is so far inconclusive. The counter-intuitive idea that corruption may reduce income inequalities and increase social welfare challenges the conventional view of the harmful impact of corruption on income distribution. This paper provides new insights into the corruption-income inequality nexus by emphasizing the role of political power distribution. We find that lower levels of corruption are associated with reduced inequalities at the world level regardless of corruption types. However, a closer look reveals that the counter-intuitive relationship holds only in developing countries due to the uneven distribution of political power. In such countries, income inequalities decline as corruption rises because the uneven distribution of political power leads non-dominant groups to engage in corruption to access public services they are entitled to or get credits to support their income-generating activities.

Keywords: Income inequality, Corrupt activities, Power distribution among social groups;

JEL Codes: P16; P37; P5

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I. Introduction

A wealth of literature highlights the harmful effects of corruption on domestic and foreign investment (Beekman *et al.*, 2014; Gillanders, 2014; Habib and Zurawicki, 2002; Méon and Sekkat, 2005; Wei, 2000); economic growth (Aidt, 2009; Cieslik and Goczek, 2018; Dzhumashev, 2014; Gyimah-brempong, 2002; Lisciandra and Millemaci, 2016; Mauro, 1995; Mo, 2001; Tanzi and Davoodi, 1998); and budget deficits, inequality and poverty (Alesina and Angeletos, 2005; Apergis *et al.*, 2010; Glaeser and Saks, 2006; Gyimah-brempong, 2002; Jong-sung and Khagram, 2005; Oto-peralías *et al.*, 2013). Of particular interest for this paper is the abundant literature on the relationship between corruption and income inequality (Fisman and Svensson, 2007; Gupta et al., 2002; Gyimah-brempong, 2002; Gyimah-brempong and Camacho, 2006). To the best of our knowledge, no study deals with the dominant political group's contribution in shaping the effects of various corruption types according to the separation of political power. Moreover, no study analyzes the type of corruption as previous studies consider corruption as a general phenomenon. Departing from that common ground, we decompose corruption into the three political powers existing in a state. Therefore, this article critically contributes to the existing literature by demonstrating how political power distribution among social groups reconciles two opposite empirical views regarding corruption's influence on income inequalities while focusing on the different corruption types in an eclectic way.

Specifically, two views emerge from the empirical literature on corruption and inequality. The first one considers corruption as exacerbating income inequality (Apergis *et al.*, 2010; Glaeser *et al.*, 2003; Gupta *et al.*, 2002; Pedauga *et al.*, 2016). For instance, corruption creates permanent distortions in income redistribution through the tax channel by facilitating tax evasion and reducing resources for social programs in education or health (Gupta *et al.*, 2002). As beneficiaries of tax evasion and exemptions are more likely to be the rich, the tax burden generally falls on the poor. Moreover, corruption changes the composition of social spending in a way that increases the income of a specific class (wealthy people and those protected by the courts) at the expense of more vulnerable social groups (Glaeser *et al.*, 2003). The Latin American case supports this view, as bureaucracy would explain corruption's effects on inequality (Pedauga *et al.*, 2016). Hence, an environment with low corruption levels contributes to reducing inequalities (Eicher *et al.*, 2009).

In contrast, a second viewpoint suggests that corruption attenuates inequalities and increases social welfare in the face of an ineffective bureaucracy, hence acting as a lubricant (Leff, 1964; Lui, 1985). Similarly, corruption contributes to overcoming bureaucratic rigidities and maintaining efficient resource allocation when corrupters compete for the same service (Bardhan, 1997). Therefore, corruption is a Coasian negotiating mechanism with bribes as the only compensatory payment, contributing to reducing inequalities (Boycko *et al.*, 1995). Evidence shows that corruption is less harmful (more beneficial) when it internalizes negative externalities resulting from uncoordinated and rent-seeking behaviors (Blackburn and Forgues-puccio, 2009). Indeed, if civil servants organize as a monopoly entity, corrupters find no more incentives to be involved in multiple separate bilateral negotiations with public officials. In this way, corruption generates less uncertainty, as payments are transparent

and predictable, leading to a greater supply of public goods and improved well-being of the poorest. On the empirical side, the beneficial effects of corruption in Latin America's inequality result from the redistributive impact in the informal sector (Andres and Ramlogan-Dobson, 2011). Hence, corruption promotes income redistribution among the poor within the informal sector, leading to a decline in inequalities, while institutional reforms to reduce corruption would tend to increase income inequality.

In an attempt to reconcile these two strands of the same literature, some authors postulated the existence of an inverted U-shaped relationship between corruption and inequality (Murphy *et al.*, 1991, 1993). According to this hypothesis, there is an optimal level of corruption (or optimal corruption threshold) below which corruption increases income inequality while the latter decreases above the threshold. Empirically, (Li *et al.*, 2000) found an optimal corruption threshold of 4.34 for a sample of 47 developed and developing countries over the period 1980-1992, among which 26 have a level of corruption above the threshold. Chong and Calderón (2000) used a sample of 105 developed and developing countries to demonstrate that public anti-corruption policies are only effective below a tolerance threshold of 2.91. However, developing countries with high inequality and corruption levels may be trapped in a vicious circle, regardless of their institutional development. In their case, income inequalities may increase corruption (Dutta and Mishra, 2013) and promote the weakening of institutions, hence rising income inequality (Chong and Gradstein, 2007; Sonin, 2003). Thus, there is no real consensus on the effects of corruption on income inequality. Moreover, both lobby groups and high ethnic fragmentation in developing countries appear to be essential aspects of reconciling the literature on corruption and inequality in a political economy approach.

Although no studies had previously focused on the link between political power distribution, corruption, and inequality, some related areas have been explored and help justify this paper's theoretical underpinning. For example, evidence shows that individuals with coercive power might be prone to implement predatory policies if they have limited society participation. In contrast, they will enforce policies that promote prosperity when considered in an inclusive approach (Olson, 2000). Thus, the government's willingness to use regulation for redistributing income may depend on various social groups' ability to influence its decision, especially since political choices are highly likely to be targeted at favoring an elite group (Bueno De Mesquita *et al.*, 2005). What distinguishes dictatorship from democracy is the size of the dominant political group (or elites) with respect to the population's size. On the same note, the more power is concentrated within a group, the more it favors the government's transfers to powerful groups (Deacon, 2009). This is even more the case since the joint distribution of economic and political power plays a crucial role in shaping governments' regulatory and fiscal policies (Rio and Lores, 2016). Some empirical evidence also suggests that the elite can maintain control over political power through corruption to partially capture the wealth created in tax benefits and rents on public spending (Acemoglu *et al.*, 2013, 2015; Acemoglu and Robinson, 2006, 2013). Put differently, the elite that controls power can intentionally avoid promoting the interests of less powerful individuals or those excluded from political decisions because of the implications on the democratic game, thus contributing to a low

redistribution of wealth and widening income inequality. While this reasoning applies to wealthy elites (Acemoglu *et al.*, 2015), it also extends to political elites and even ethnic elites.

Indeed, the separation of powers is one essential principle in democracies since constitutionalists have long insisted on the split-up between the three power (legislative, executive, and judicial) to prevent abuses (Padovano *et al.*, 2003; La Porta *et al.*, 2004). For instance, an independent judiciary power improves the political accountability of democratic systems compared to political systems with only two branches - executive and parliamentary – (Padovano *et al.*, 2003), since judges subject to the legislature or executive influence are less likely to make objective assessments. Several studies have also highlighted the effect of judicial independence on reducing corruption. The separation of powers and the existence of counterweights are safeguards against government corruption (Alt and Lassen, 2008). On the same note, States with higher judicial independence levels and more rigid constitutions experience lower levels of corruption than States with opposite characteristics.

The above discussion justifies the two main hypotheses we investigate in this paper: (i) the effects of corruption on inequality differ according to the development level. In developed countries, the intuitive positive relationship between corruption and inequalities applies, while the opposite holds in developing countries. (ii) In the latter, corruption and power distribution across social groups matter in explaining the counter-intuitive relationship. Some types of corruption would limit the rise in income inequalities in a situation of uneven distribution of political power. In that case, a dominant group corners the public resources and forces non-dominant ones to engage in corrupt activities, leading to inefficient resource allocation and income inequalities. However, these inequalities might not be as higher as in a situation of no corruption. In contrast, the intuitive effects of corruption on income inequalities still hold in developed countries where political power tends to be equally distributed, irrespective of corruption types. On the empirical side, we investigate the relationship between corruption types, income inequality, and the power distributed among social groups on a large sample of 172 countries over 1975-2017. As our main variables of interest are weakly time-variant, we rely on the new sequential linear panel data estimator in its dynamic form (Kripfganz and Schwarz, 2019), while effectively addressing the endogeneity which arises from reverse causality between our regressors and the dependent variable. Moreover, we distinguish between developing countries (low and lower-middle-income) and their developed counterparts (upper-middle and high income). The proxy for income inequalities is the UNU-WIDER Gini index.

We find that a one-unit fall in corruption indexes makes income inequalities decline by at least 0.85 unit at the world level. However, the counter-intuitive relationship between corruption and income inequalities holds only in developing countries. That is, a one-unit decrease in corruption leads income inequalities to rise by at least 0.88 unit. In both developed and developing countries, the effects of reduced corruption in the legislature have the highest magnitudes, everything else being equal. However, for developing countries, the impact of reduced executive corruption on income inequalities has a higher magnitude when political power is monopolized. We

also find a threshold effect suggesting that reducing corruption levels in executive and legislature results in higher income inequalities in developing countries

The rest of the article is organized as follows: section two elaborates on the transmission channels between corruption and income inequality through political power distribution. Section three presents the data and our methodology. Section four presents and discusses the main results. Section five provides evidence of the robustness of previous results. Section six concludes the paper.

II. Transmission channels

Theoretically, the role of political power concentration in shaping the corruption-income inequality relationship stems from its link with corruption (Kaufman, 1998). Indeed, under political power concentration, the elite monopolizes power and intentionally prevents the promotion of the interest of those excluded from political decisions through corruption (Acemoglu *et al.*, 2013, 2015; Acemoglu and Robinson, 2006, 2013). Moreover, when a segment of the society feels the political system has not served its interests, it will use corruption to circumvent the harmful effect of political power concentration (Jain, 2001). In other words, the non-dominant group bribes bureaucrats to get access to services or speed up bureaucratic procedures (Jain, 2001, Rose-Ackerman, 1998).

Since governments tend to under-invest in human capital in highly corrupt countries by spending less on education and health (Ehrlich and Lui, 1999; Mauro, 199; Gupta et al., 1998), educational inequality rises accordingly (Coady and Dizioli, 2017). Indeed, corruption reduces government revenue (Shleifer and Vishny 1993; Hindriks, Keen, and Muthoo 1999), which in turn lower the level of government output and services, including the provisioning and financing of education services in many countries (Bearse, Glomm, and Janeba 2000). In such a context, access to education becomes even more skewed since the poor are relatively excluded from the consumption of public education services or only have access to lower qualitative public services (Tang and Wang, 2021). Therefore, the poor use bribes to benefit from services they are entitled to, which helps break the intergenerational transmission of income inequality (Jain, 2001; Barro and Lee, 2013; Corak, 2013; Hanushek, 2013).

In addition to the aforementioned mechanism, the credit channel also mediates the relationship between corruption and income inequality when political power is unevenly distributed. Indeed, the elite group benefits from preferential access to financial resources due to their level of income and collaterals when subscribing to new loans. Hence, corruption leads to a skewed redistribution of financial resources to the benefit of rent-seekers (especially investors with political connections), with no corresponding benefits to the rest of society (Cooray and Schneider, 2018). In a context of high information asymmetries, the injured group would be more subject to moral hazard and engage in petty corruption to get credits that would help develop income-generating activities. However, this occurs at the cost of higher levels of non-performing loans for the banking system (Barth et al. 2004).

III. Data and Methodology

We use annual data within an unbalanced panel. We classify 172 countries into 95 upper-middle- or high-Income (developed) countries and 77 low and lower-middle-income (developing) countries for the period 1975–2017, following the 2019 World Development Indicators classification. With this data in hand, we investigate the income inequality-corruption nexus within and across homogenous groups of countries. We depart from standard specifications (Andres and Ramlogan-Dobson, 2011; Barro, 2000; Lundberg and Squire, 2003) by accounting for the reverse causality between our regressors and the dependent variable. Indeed, one can intuitively assume that education inequality and income inequality are positively correlated, although the direction of causality remains unclear. Moreover, the intergenerational transmission of poverty implies that present levels of income inequalities would determine future ones, as suggested in Barro and Lee (2013), Corak (2013), and Hanushek (2013). Hence, the feedback effects of income inequalities are also potential causes of endogeneity in this framework. Therefore, we mitigate these drawbacks with the following dynamic equation, where we set all the first stages variables as endogenous.

$$Gini_{it} = \alpha_0 + \eta_t + \beta_0 Gini_{it-1} + \beta_1 Corrupt_{it}^{k} + \beta_2 X_{it} + e_{it} \qquad (1)$$

where α_0 is the intercept; η_t is the time-specific fixed effect; β_i are coefficients to be estimated; X_{it} is a set a of control variables; e_{it} is the stochastic error term; i and t stand for countries and years respectively. The dependent variable is the usual proxy of income inequality (income inequalities), the Gini index is drawn from the Standardized World Income Inequality Database (SWIID 7.1, Solt, 2016). This database uses a custom missing-data multiple-imputation algorithm to standardize observations gathered from 5 of the most reputed databases combined with many other data from national statistical offices worldwide. In this way, the SWIID ensures that available income equality data are comparable over time for the broadest set of countries (Solt, 2016). $Corrupt_{it}^{k}$ are the types of corruption considered in this study. We distinguish between legislature corrupt activities, judicial corruption decisions and executive corruption. Legislature corrupt activities capture the extent to which members of the legislature abuse their position for financial gain, including accepting bribes or facilitating the gain of government contracts for firms owned by the legislator (or his relatives). Similarly, corrupt judicial decisions indicate the frequency with which agents make undocumented extra payments or bribes to speed up or delay the judicial process to obtain favorable decisions. Values of these variables range from the least democratic to the most democratic, meaning that this variable's rise implies less corrupted activities. The executive corruption index measures either how routinely members (or agents) of the executive allow favors in return for any inducements (financial, material, or personal) or how often they misappropriate public funds for personal use. As this index runs from less corrupt to more corrupt activities in the original dataset, we replace it with its opposite to facilitate harmonized interpretations.

With this baseline specification, we consider a twofold perspective as income inequalities (within or across countries) may result from either a difference between poor and rich in terms of resources and incentives for

accumulation or instead, in returns of human capital that could reflect barriers or market failures (Young, 2013). In this perspective, the baseline specification also includes:

- **Domestic credit provided by the financial sector** is a proxy for financial development that embraces gross credits to various sectors plus net credit to the central government provided by monetary authorities and deposits money in banks and other financial corporations[1]. Three theories emerge in the literature on financial development and income inequalities. The first one suggests that wealthy people benefit more from financial development than the poor, contributing to expands income inequality (Chiu and Lee, 2019; Hasan *et al.*, 2021; Jauch and Watzka, 2015; Nabi, 2015; Sehrawat and Giri, 2015; Seven and Coskun, 2016). At the opposite end, the second theory posits that poor people are much less excluded from the financial sector as financial development improves, implying that financial development helps to mitigate income inequalities (Banerjee and Newman, 1993; Clarke *et al.*, 2003; Deininger and Squire, 1998; Ehrlich *et al.*, 2014; Johansson and Wang, 2014; Ravallion, 2001; White and Anderson, 2001). Finally, the third theory, also known as the financial Kuznets curve hypothesis, reconciles the first two by suggesting an inverted U-shaped relationship between financial development and income inequalities. In the early stage of financial development, the financial sector is much more profitable to rich people, leading to widening income inequalities. But after a threshold of financial development (to be determined), poor people can raise their investment level since the financial sector provides them with the required level of capital more efficiently. In these circumstances, the income distribution becomes fairer as demonstrated by Greenwood and Jovanovic (1990), recently supported by Kim and Lin (2011) or Shahbaz et al. (2015) as well as Baiardi and Morana (2018) to name but a few. Considering this, we do not expect a specific sign from the proxy of financial development.

- **Educational inequality** is the Gini coefficient indicating the disparity in education levels achieved by the population aged 15 years or older. This variable aims to capture the population's education distribution as a key determinant of income inequalities since income (production) per-capita is a function of inputs' allocation from the neoclassical perspective. As for financial development, the literature provides mixed evidence on educational inequality's effects on income inequalities. On the one hand, some find a positive relationship between these variables by highlighting the importance of education expansion in promoting economic growth, as well as its role in curbing the intergenerational transmission of poverty, which in turn prevents the rise in income inequality in the future (Barro and Lee, 2013; Corak, 2013; Hanushek, 2013). Theoretically, a recent model demonstrated that income distribution results from education level and distribution across the population (Coady and Dizioli, 2017; Tang and Wang, 2021). Consistent with the theoretical findings, they provide empirical evidence that when controlling for persistence, endogeneity, and heterogeneity with panel data techniques, the positive relationship between education inequality and income inequalities is stable across the various estimators used on a sample of 109 countries over 1980-2010. Expansion in education also reduces

[1] This includes finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies.

educational disparities, especially in developing countries like Taiwan over 1976-2003 (Lin, 2007). On the other hand, Dabla-norris et al. (2015) found little evidence on the link between educational inequality and income inequalities. Indeed, they did not obtain any statistically significant relationship between education inequality and income inequalities, using fixed-effects estimation on a country-panel data of 70 advanced and developing countries covering the period from 1970 to 2010. Despite this latter result, we follow the main strand of the literature by expecting a positive relationship between educational inequality and income inequalities

- **Urban population** refers to the share of people living in urban areas in percentage of the total population, as defined by national statistical offices. By including this variable, we intend to test two competing hypotheses. On the one hand, workers would sort themselves into rural or urban areas in a two-sectors economy according to their skills or intrinsic abilities (Lagakos and Waugh, 2013). Hence, we could expect that urbanization reflects differences in living standards across rural and urban populations, implying income inequalities since the mean income is higher in urban areas. But on the other hand, urbanization would also not correlate significantly with the gap in living standards between rural and urban areas due to the informal sector size in developing countries (Young, 2013). In this second case, one should not positively associate urbanization with the reduction of income inequalities.

- **Age dependency ratio** is the ratio of dependents people (both young and older people) to the working-age population. This variable reflects the effect of another aspect of population structure on income inequalities. Indeed, dependency affects income inequalities since population aging may increase disparities within the older people group characterized by substantial income dispersion (Dong *et al.*, 2018). Income inequalities may also rise as the group of young people dependent on the working population increases. For instance, higher income inequality in the older group may result from differences in skills, non-labor earnings, and physical capital accumulated during the working life. Thus, even if retirement is associated with the loss of labor earnings, dependency at a high level may lead to more income inequalities because of a large non-labor earning dispersion (Deaton and Paxson, 1994a, 1994b; Schultz, 1997).

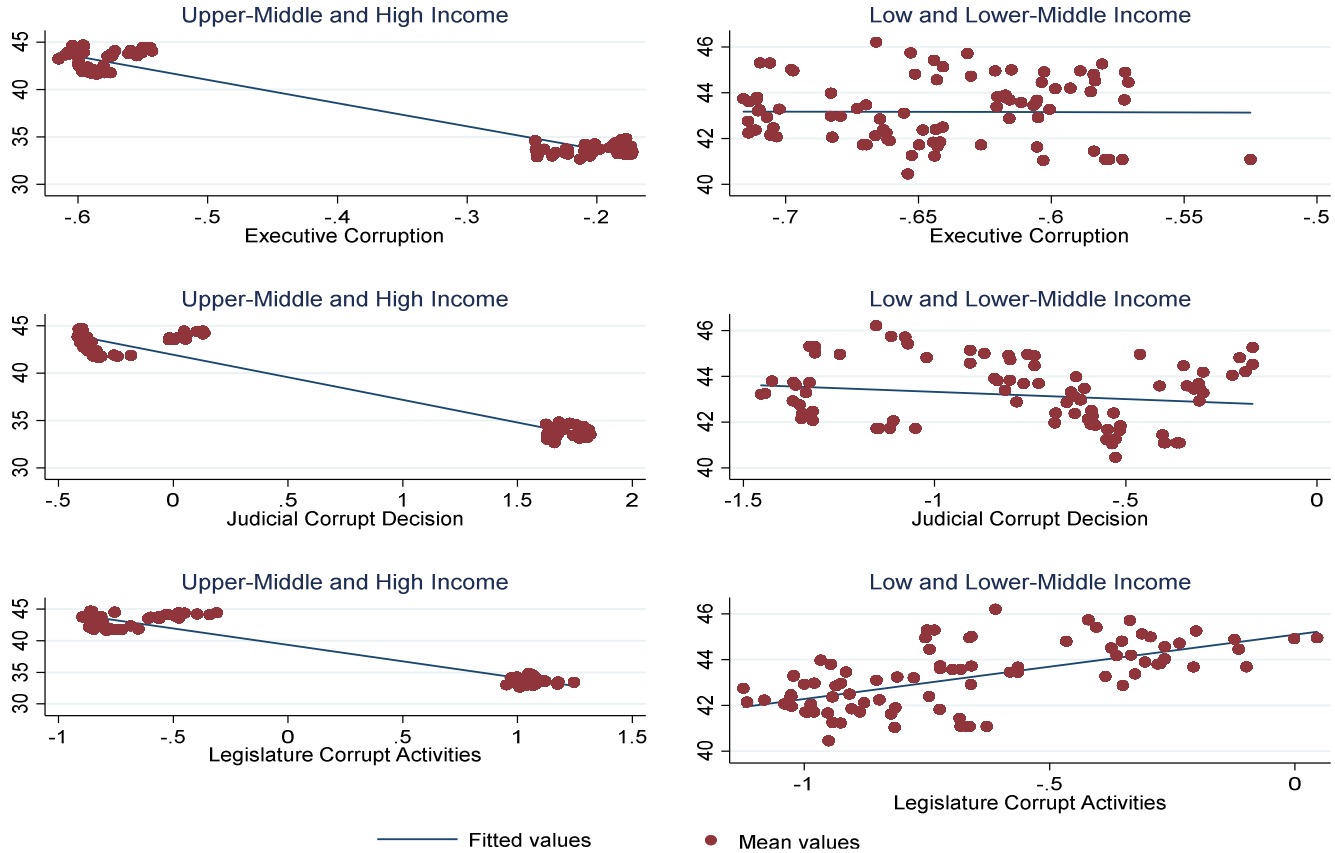
As table 1 shows, developed and developing countries have different levels of income inequalities and corruption. For instance, developed countries have lower mean Gini coefficients and higher corruption indexes, indicating a fairer distribution of income and a lower mean level of corruption (Shahbaz *et al.*, 2015; Slottje and Raj, 1997). The striking feature regarding the data, as shown in figure 1, is the correlation between income inequalities and corruption types according to the level of development. Specifically, low levels of corruption (higher indexes) are associated with lower Gini coefficients in Upper-Middle and High-Income countries. In contrast, the opposite holds in Low and Lower-Middle Income countries.

Table 1 - Descriptive statistics of variables over the period 1975–2017

Variables	Observations	Mean	Standard Deviation	Min	Max
Whole Sample					
Income Inequality	5,660	40.223	10.130	16.230	74.300

Legislature Corrupt Activities	6,495	-0.173	1.364	-3.251	3.381
Judicial Corrupt Decision	7,038	0.087	1.503	-3.288	3.332
Executive Corruption [2]	7,056	-0.499	0.299	-0.009	-0.978
Domestic Credit Provided by the Financial Sector	5,563	54.568	58.765	-114.694	2,066.185
Educational Inequality	4,563	37.054	21.984	3.771	98.413
Urban Population Percentage	7,046	51.712	23.958	3.525	100.000
Age Dependency ratio	7,043	69.968	20.634	16.452	119.139
Upper-Middle and High Income					
Income Inequality	3,299	38.283	10.235	16.23	74.300
Legislature Corrupt Activities	3,710	0.235	1.407	-2.620	3.381
Judicial Corrupt Decision	3,818	0.790	1.457	-3.288	3.332
Executive Corruption	3,861	-0.381	0.298	-0.009	-0.961
Domestic Credit Provided by the Financial Sector	2,927	73.500	61.029	-114.694	345.721
Educational Inequality	2,559	24.909	12.184	3.771	80.518
Urban Population Percentage	3,846	66.870	17.940	11.884	100.000
Age Dependency ratio	3,843	57.867	15.442	16.452	109.066
Low and Lower-Middle Income					
Income Inequality	2,361	42.933	9.332	21.500	73.300
Legislature Corrupt Activities	2,785	-0.716	1.089	-3.251	3.001
Judicial Corrupt Decision	3,220	-0.747	1.068	-2.980	2.250
Executive Corruption	3,195	-0.642	0.231	-0.032	-0.978
Domestic Credit Provided by the Financial Sector	2,636	33.546	48.097	-18.422	2,066.185
Educational Inequality	2,004	52.563	21.957	8.919	98.412
Urban Population Percentage	3,200	33.493	16.399	3.525	77.648
Age Dependency ratio	3,200	84.500	16.23	34.522	119.139

Figure 1 – Income Inequality and Types of Corruption Across Levels of Development



Note: Author's construction. Corruption indexes range from less democratic (more corrupt) to more democratic (less corrupt) countries. Therefore, higher values of each index indicate the reduction in corruption.

Baseline Specification: The Sequential Linear Panel Data Estimator

In panel data models, it is usual to rely on OLS with a full set of individual and time fixed effects instead of a random-effects model, especially when assuming that the explanatory variables correlate with the unobserved individual effects. In this case, the non-observed heterogeneity and time-series components generate

[2] Values of executive corruption range from more corrupt to less corrupt.

autocorrelation or heteroskedasticity. The model is then re-estimated, allowing for various forms of misspecification through the Huber-White correction of standard-errors. However, the OLS fixed-effects model is only efficient in the presence of time-varying regressors. Otherwise, the model incorporates the time-invariant regressors in the fixed-effects component. Therefore, time-invariant regressors are perfectly collinear with the unit-specific dummy variables, resulting in the impossibility to validate the hypothesis of individual heterogeneity with the usual Fisher-type test (Greene, 2012). We thus avoid using OLS-fixed effects in this paper, as some variables (Corruption Indexes) are almost time-invariant (see Table 1).

To circumvent this drawback, we rely on the recent sequential linear panel data (SLPD) estimator consisting of a two-stage procedure to identify the coefficients of time-invariant regressors (Kripfganz and Schwarz, 2019). In the first stage, we estimate the coefficients from time-varying regressors. Then, we compute the first-stage estimation residuals, which we regress on the time-invariant regressors in the second stage. Contrary to traditional techniques, this estimator achieves identification by using instrumental variables à la Hausman and Taylor (1981) before adjusting the second-stage standard errors to account for any estimation error in the first-stage (Kripfganz and Schwarz, 2019).

Simply put, the issue raised by the presence of time-invariant regressors is summarized in the following equation:

$$y_{it} = \alpha\, y_{it-1} + \mathbf{x}_{it}'\boldsymbol{\beta} + \mathbf{f}_i'\boldsymbol{\gamma} + e_{it} \quad , \text{ with} \quad e_{it} = \alpha_i + u_{it} \tag{2}$$

where i is the number of units, t is a fixed number of time periods, $\mathbf{x}_{it}$ is a $(K_x, 1)$ vector of time-varying regressors, $\mathbf{f}_i$ is a $(K_f, 1)$ vector of time-invariant regressors that incorporates an intercept, and α_i is the unobserved unit-specific effect. This equation assumes that some regressors correlate with the unobserved unit-specific effect. For the identification purpose, Kripfganz and Schwarz (2019) rewrite it as follows:

$$\mathbf{y}_i = \mathbf{y}_{i,-1} + \mathbf{X}_i\boldsymbol{\beta} + \mathbf{F}_i\boldsymbol{\gamma} + \mathbf{e}_i \quad , \qquad \text{with} \quad \mathbf{e}_i = \alpha_i \boldsymbol{\iota}_T + \mathbf{u}_i \tag{3}$$

where $\mathbf{y}_i = (y_{i1}, y_{i2}, ..., y_{iT})'$, $\boldsymbol{\iota}_T$ is a $(T, 1)$ vector of ones. With this hand, two matrices are defined: $\mathbf{W}_{yxi} = (\mathbf{X}_i)$ the matrix of time-varying regressors, which coefficients $\boldsymbol{\theta} = \boldsymbol{\beta}'$ are estimated in the first step, and $\mathbf{W}_{yxfi} = (\mathbf{W}_{yxi}, \mathbf{F}_i)$ is the full regressor matrix.

III. Results

III.1. Corruption and Income Inequalities in the World

To verify our hypothesis that corruption's effects on inequalities differ according to the development level, we start by estimating equation (1) using the above sequential linear estimator. As a result, Table 2 shows that lower levels of corruption are associated with a decrease in income inequality at the world level, regardless of the proxy for corruption. It is worth recalling that corruption indicators range from the least democratic to more

democratic countries, meaning that an increase indicates a smaller corruption level. Consistent with the theoretical discussion, income inequalities reduce with higher domestic credit provided by the financial sector. In contrast, the urban population and age dependency increase income inequality. The usual identification strategy with regional and time dummies yields similar results in Table A3 in appendices.

Table 2 – Sequential Linear Estimation (Whole Sample)

	Legislative	Judicial	Executive
Time-Variant / First Stage			
Lagged Income inequality, Gini	0.494***	0.455***	0.452***
	(0.066)	(0.069)	(0.075)
Domestic credit provided by the financial sector (% of GDP)	0.041**	0.041**	0.038*
	(0.019)	(0.021)	(0.023)
Educational inequality, Gini	-0.067*	-0.074*	-0.042
	(0.040)	(0.042)	(0.037)
Urban population (% of total)	-0.064*	-0.064*	-0.057
	(0.038)	(0.038)	(0.039)
Age dependency ratio	0.043**	0.049***	0.034*
	(0.017)	(0.018)	(0.019)
Constant	24.597***	26.239***	25.521***
	(4.107)	(4.433)	(4.497)
Time-Invariant / Second Stage			
Legislature corrupt activities	-1.028**		
	(0.443)		
Judicial corruption decision		-0.853**	
		(0.414)	
Executive Corruption			-4.798**
			(2.284)
Constant	-0.729	-0.602	-2.664**
	(0.551)	(0.557)	(1.281)
Observations	2950	3191	3191
Hansen J test of equation1 [a]	0.961	0.868	0.734

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Kripfganz and Schwarz (2019) corrected standard errors in parentheses. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

a. The number of instruments and Hansen J test for equation 2 are not displayed as the equation is exactly identified. Indexes for corruption range from least democratic to more democratic. Thus, a rise of these indexes means the reduction of corruption.

Table 3 shows results from equation 1 estimates in two sub-samples organized in two levels of developments to facilitate comparison with the existing literature. We distinguish between developed countries (upper-middle and high income) and developing countries (low and lower-middle-income), following the 2019 World Development Indicators classification. Interestingly, it now appears that the counter-intuitive relationship between corruption and income inequality holds only in developing countries (columns 3 to 5). When corruption reduces, income inequalities rise in developing countries, whereas the relationship reverses in developed countries. The other explanatory variables are affected with previous signs. For instance, domestic credit provided by the financial sector is associated with a negative sign for developing countries. Educational inequality is negatively linked to income inequality irrespective of the level of development, while urbanization is less significant in reducing these inequalities in developing countries. Finally, age dependency positively affects income inequality in both groups. The usual identification strategy with regional and time dummies yields similar results, as presented in Table A4 in appendices.

Table 3 – Sequential Linear Estimation (Levels of Development)

Dynamic equation/Two-steps GMM	Developed Countries (Upper-Middle and High Income)			Developing Countries (Low and Lower-Middle Income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Time-Variant / First Stage						
Lagged Income inequality, Gini	0.286***	0.273***	0.247***	0.551***	0.576***	0.531***
	(0.072)	(0.069)	(0.075)	(0.026)	(0.037)	(0.039)
Domestic credit provided by financial sector	0.017***	0.015***	0.017***	-0.080***	-0.046***	-0.053***
	(0.005)	(0.004)	(0.004)	(0.023)	(0.010)	(0.013)
Educational inequality, Gini	-0.167***	-0.184***	-0.189***	-0.021*	-0.059**	-0.050**
	(0.057)	(0.071)	(0.072)	(0.011)	(0.024)	(0.020)
Urban population (% of total)	-0.078**	-0.138***	-0.141***	0.043**	0.038	0.050*
	(0.037)	(0.049)	(0.051)	(0.020)	(0.032)	(0.029)
Age dependency ratio	0.038*	0.050*	0.049*	0.052***	0.058***	0.060***
	(0.023)	(0.026)	(0.026)	(0.012)	(0.012)	(0.015)
Constant	31.783***	40.357***	41.631***	16.227***	15.957***	16.475***
	(4.667)	(5.425)	(5.495)	(1.688)	(2.837)	(2.812)
Time-Invariant / Second Stage						
Legislature corrupt activities	-1.877***			0.907*		
	(0.602)			(0.519)		
Judicial corruption decision		-2.173***			0.884*	
		(0.585)			(0.475)	
Executive Corruption			-8.771***			5.263**
			(3.218)			(2.273)
Constant	0.002	0.928	-3.895**	0.491	1.074	3.535**
	(0.983)	(1.122)	(1.803)	(0.703)	(0.678)	(1.599)
Observations	1655	1729	1729	1295	1462	1462
Hansen J test of equation1 [a]	0.315	0.336	0.308	0.510	0.523	0.300

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Kripfganz and Schwarz (2019) corrected standard errors in parentheses. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

a. The number of instruments and Hansen J test for equation 2 are not displayed as the equation is exactly identified. Indexes for corruption range from least democratic to more democratic. Thus, a rise of these indexes means the reduction of corruption.

Overall, these results are consistent with the view that corruption contributes to overcoming bureaucratic rigidities and maintaining efficient resource allocation when corrupters compete for the same service (Bardhan, 1997). This is especially the case of developing countries where governments tend to under-invest in human capital by spending less on education and health because of rent-seeking behavior. However, in developed countries, the observed income inequalities may not be explained by corruption. Instead, they would stem from various other reasons, including the financial development and regulation that have fueled private interests from wealthy incumbents (Agnello et al., 2012; Rajan and Ramcharan, 2011; Benmelech and Moskowitz, 2010), contributing to increasing the gap between the poor and the rich. Another reason would be the spending cuts supported by fiscal consolidation programs implemented in developed countries in the past recent years (Agnello and Sousa, 2012). Last but not least, income inequality may rise in developed countries due to a strengthened patent protection policy on innovations when the number of differentiated products is fixed in the short-run (Chu et al., 2021). This effect only fades out in the long run as the number of products adjusts endogenously.

III.2. How the Power Distribution by Social Group Shapes the Relationship Under Study

Estimating equation (1) tells us the extent to which developing countries differ from the rest of the world, consistent with the findings of (Dobson and Ramlogan-Dobson, 2012). However, it does not yield any particular

insight as to the reason for this difference. Hence, we assess how the power distribution across social groups (PDSG) shapes the relationship under study by incorporating interaction terms in equation (1). Relying on the SLPD estimator, we estimate the following:

$$Gini_{it} = \alpha_0 + \eta_t + \beta_0 Gini_{it-1} + \beta_1 Power_{it} + \beta_2 Corrupt_{it}^{k} + \beta_3 Power_{it} * Corrupt_{it}^{k} + \beta_4 X_{it} + e_{it} \quad (4)$$

where $Power$ is the power distribution across social groups, the remaining variables being defined as previously. The PDSG, indicators of corruption, and the interaction terms enter this equation as weakly time-varying regressors since summary statistics reveal their almost nil within variability (see Table 4). As a definition, PDSG measures, within each country, the political power of social groups organized by caste, ethnicity, language, race, region, religion, or some combination thereof. Thus, social group identity is likely to vary across countries and over time, with the possibility that one person belongs to several groups. Lower values indicate a political power control by a minority of the population, with no frequent changes. In contrast, higher values show that social group identities are not relevant to politics since they have roughly the same political power.

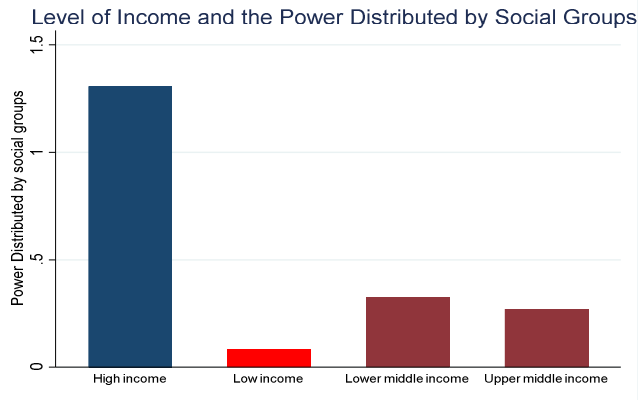
Table 4 – Summary statistics, interactions terms

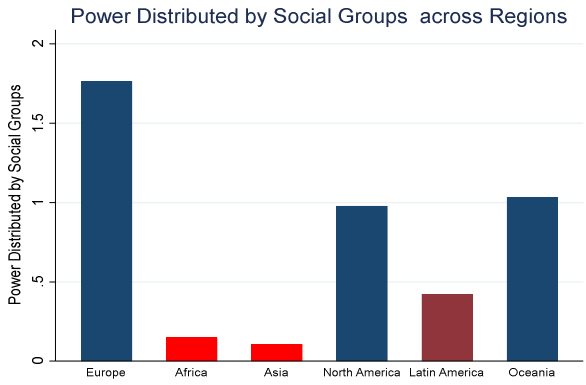
Variable		Mean	Std. Dev.	Min	Max	Observations
Power distributed by social group	overall	.6344723	2.170736	-4.109147	11.4933	N = 6495
	between		1.961365	-2.684275	11.27171	n = 172
	within		.7920478	-3.452215	7.149152	T bar = 37.7616
Power distributed by social group # Legislature corrupt activities	overall	.548391	1.250067	-2.681869	3.453951	N = 7082
	between		1.14363	-2.557391	3.397218	n = 172
	within		.496393	-2.273995	2.996125	T bar = 41.1744
Power distributed by social group # Judicial corruption decision	overall	.913078	2.244401	-5.857226	11.09461	N = 7038
	between		2.078799	-3.331401	10.80897	n = 171
	within		.8033908	-4.502625	6.56272	T bar = 41.1579
Power distributed by social group # Executive corruption index						
	overall	-.0634317	.6429295	-1.925393	2.152832	N = 7056
	between		.5610592	-1.470186	1.722286	n = 172
	within		.3196197	-1.863597	2.036198	T bar = 41.0233

Note: Author's construction. N is the number of observations; n the number of cross-section units, and T-bar is the average number of years under consideration.

Figure 2 shows the political power distribution across social groups according to levels of development and geographic regions. There is evidence of variations across the different categories since political power is more equally distributed as the development level increases. For instance, Europe, North America, or Oceania have higher index values than Asia or Africa, and high-income countries have a better political power distribution than the rest.

Figure 2 – Power Distributed by Social Groups across Levels of Development and Regions





Note: Author's construction.

Table 5 presents the results from equation 4 estimates. Contrary to our first results, when we add the PDSG, corruption indicators appear with non-significant coefficients, the former being seldom significant (columns 3 and 6). However, interactions are affected with significant coefficients, revealing that the effects of reduced legislature corrupt activities (-1.031 and -1.425) are on average higher than those of judicial and executive corruption, irrespective of the level of development. In other words, a reduction of corruption in legislature tends, on average, to reduce income inequalities. Nevertheless, Figure 3 illustrates marginal effects of corruption according to the distribution of political power and corroborates our central hypothesis as coefficients associated with the corruption proxies are significant only in developing countries for lower values of PDSG (uneven distribution). When PDSG is highly unevenly distributed (index below the first quartile), corruption in the executive branch has a higher impact (9.32) than in the legislature (1.19) and the judicial (0.88).

Simply put, lower corruption in developing countries significantly increases income inequality when a minority of the population monopolizes political power. This effect disappears as the political power distribution across social groups becomes more equitable. Developing countries are thus different from their developed counterparts, where there is only a significant relationship between low corruption and low-income inequalities as the political power distribution is fair. As proof of robustness, we re-estimated the same equation with a broader set of control variables, including the total trade as a share of GDP, the total rent of natural resources, the share of credit to the private sector over GDP, inflation, and the per capita GDP. These variables account for several aspects: globalization, natural resource dependency, the weight of the private sector, prices, and income levels. The results presented in Table A1 in appendices are fully in line with table 5 below. We also observe no change in our results when considering the usual identification techniques with regional and time dummies, using pooled and robust OLS (see tables A5 and A6 in appendices).

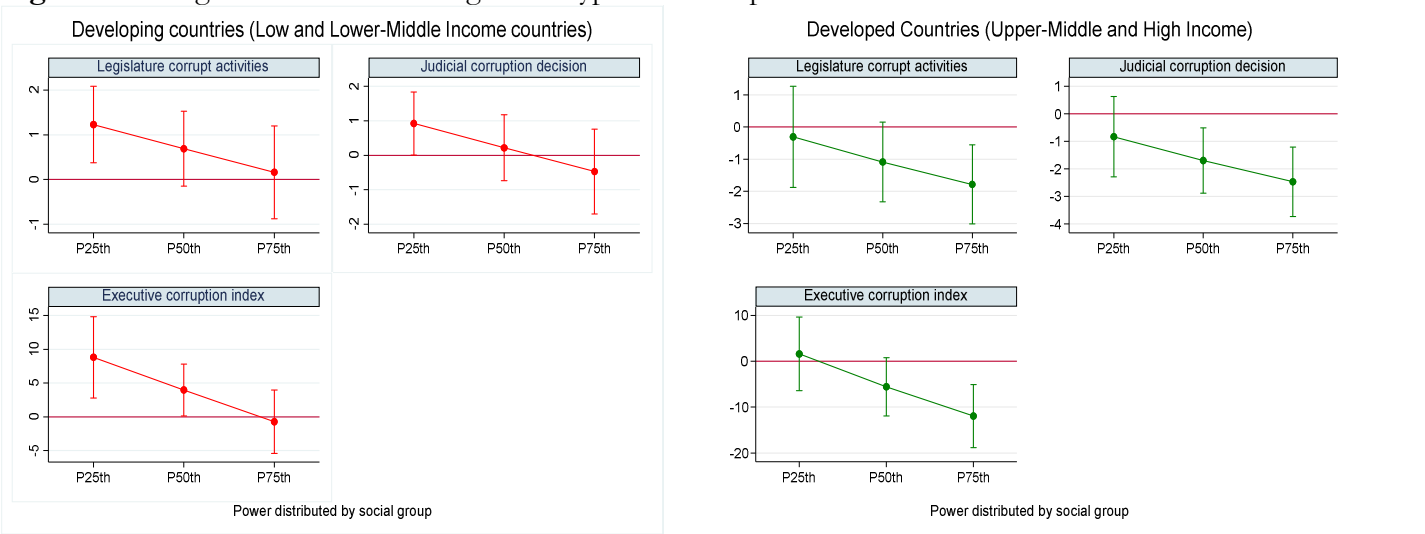
Table 5 – Sequential Linear Regression, Interaction Between PDSG and Income Inequality

Dynamic equation/Two-steps GMM	**Developed Countries (Upper-Middle and High Income)**			**Developing Countries (Low and Lower-Middle Income)**		
	(1)	(2)	(3)	(4)	(5)	(6)
Time-Variant / First Stage						
Lagged Income inequality, Gini	0.289***	0.268***	0.256***	0.537***	0.552***	0.558***
	(0.072)	(0.075)	(0.075)	(0.033)	(0.025)	(0.029)
Domestic credit provided by financial	0.016***	0.015***	0.016***	-0.051***	-0.047***	-0.033***
	(0.005)	(0.005)	(0.004)	(0.011)	(0.007)	(0.005)

Educational inequality, Gini	-0.183***	-0.169**	-0.189***	-0.067***	-0.087***	-0.031*
	(0.035)	(0.072)	(0.073)	(0.018)	(0.019)	(0.016)
Urban population (% of total)	-0.074*	-0.137***	-0.142***	0.052	0.046**	0.054***
	(0.038)	(0.050)	(0.051)	(0.045)	(0.017)	(0.021)
Age dependency ratio	0.041*	0.043	0.051*	0.068***	0.059***	0.050***
	(0.024)	(0.027)	(0.028)	(0.012)	(0.009)	(0.010)
Constant	31.502***	40.375***	41.164***	17.953***	19.799***	14.954***
	(4.733)	(5.488)	(5.525)	(2.767)	(1.663)	(2.432)
Time-Invariant / Second Stage						
Power distributed by social group	-1.867**	-0.645	-4.919***	-0.615*	-0.617	-4.384**
	(0.887)	(0.846)	(1.655)	(0.332)	(0.405)	(1.919)
Legislature corrupt activities	-0.287			0.837**		
	(0.808)			(0.418)		
Judicial corruption decision		-0.804			0.411	
		(0.748)			(0.467)	
Executive Corruption			1.799			5.311**
			(4.141)			(2.147)
Power distributed by social group # Legislature corrupt activities	**-0.843****			**-0.658****		
	(0.387)			**(0.284)**		
Power distributed by social group # Judicial corruption decision		**-0.935****			**-0.860*****	
		(0.384)			**(0.323)**	
Power distributed by social group # Executive corruption index			**-7.737*****			**-5.885****
			(2.265)			**(2.371)**
Constant	1.629	1.314	3.404	0.963*	0.448	4.037**
	(1.433)	(1.285)	(3.055)	(0.561)	(0.675)	(1.659)
Observations	1655	1729	1729	1295	1462	1462
Number of Instruments Equation 1	26	26	26	44	44	44
Hansen J test of equation1 [a]	0.289	0.279	0.285	0.312	0.440	0.443

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Kripfganz and Schwarz (2019) corrected standard errors in parentheses. [a] The number of instruments and Hansen J test for equation 2 are not displayed as the equation is exactly identified. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

Figure 3 – Marginal Effects according to the types of Corruption



Note: Author's construction.

These findings are consistent with our theoretical expectations. Indeed, political power concentration induces higher corruption, especially in developing countries. In such countries, non-dominant groups, excluded from political decisions, use petty corruption (for example, in judiciary decisions) to either access services they are entitled to or speed up bureaucratic procedures. Moreover, as financial resources only benefit the rent-seekers (especially investors with political connections), non-dominant groups also engage in corrupt activities to access

credits that support income-generating activities. On the contrary, the case of developed countries shows that with a less concentrated distribution of political power comes a more efficient resources allocation. Hence, the reduction in corruption significantly helps reduce income inequalities.

IV. Robustness check

IV.1. Alternative Techniques to Deal with Endogeneity: The Two-Steps GMM Estimator

As a first proof of robustness, we use conventional identification techniques to further deal with the endogeneity resulting from reverse causality between the dependent and some variables in the first stage of our equations. Specifically, we estimate a two-steps system GMM model on non-overlapping five-year averages, as explained by the following equation:

$$Gini_{i\bar{T}} = \alpha_0 + \eta_r + \beta_0 Gini_{i,\bar{T}-1} + \beta_1 Power_{i\bar{T}} + \beta_2 Corrupt^k_{i\bar{T}} + \beta_3 Power_{i\bar{T}} * Corrupt^k_{i\bar{T}} + \beta_4 X_{i\bar{T}} + e_{i\bar{T}} \quad (5)$$

where $\bar{T} = 1975, 1980, ..., 2015$, the remaining components being defined as previously. Table 6 below presents the results of our estimates, based on an appropriate set of lagged variables as instruments. In columns 4 to 5, the interactions between corruption indexes and the power distributed by social groups are only significant for developing countries. Interestingly, reduced legislature corruption has a higher average impact than executive and judicial corruption. Furthermore, Figure 4 of marginal effects now reveals that reducing judicial or executive corruption results in increased income inequalities in developing countries with high political power monopolization. In contrast, the legislature's corruption has a slightly significant effect with low values of the PDSG in developing countries (PDSG index < 20th decile).

Table 6 - Two-Step S-GMM on Five Years Means, Interaction Between PDSG and Income Inequality

Dynamic equation/2-steps S-GMM	**Developed Countries (Upper-Middle and High Income)**			**Developing Countries (Low and Lower-Middle Income)**		
	(1)	(2)	(3)	(4)	(5)	(6)
Income Inequality, lagged	0.230**	0.150	0.070	0.188	0.133	0.243*
	(0.094)	(0.119)	(0.101)	(0.135)	(0.117)	(0.133)
Legislature corrupt activities	1.774			0.689		
	(1.700)			(2.233)		
Judicial corruption decision		4.955*			-2.061	
		(2.567)			(2.860)	
Executive Corruption			9.728			-3.506
			(10.465)			(12.719)
Power distributed by social group	-3.200		-18.603*	-4.284*	0.841	-1.649
	(2.151)	(3.947)	(9.932)	(2.289)	(3.525)	(3.827)
Power distributed by social group # Legislature corrupt activities	**-2.187***			**0.875**		
	(1.196)			**(0.766)**		
Power distributed by social group # Judicial corruption decision		**-3.492**			**0.404**	
		(2.212)			**(1.216)**	
Power distributed by social group # Executive corruption index			**-25.948****			**1.367**
			(12.740)			**(6.706)**
Control Variables	***YES***	***YES***	***YES***	***YES***	***YES***	***YES***
Observations	202	235	235	279	287	287
Number of Countries	52	55	55	71	71	71
Number of Instruments	24	24	24	24	24	24
Hansen Test, Probability	0.18	0.24	0.07	0.11	0.34	0.21
AR2 Test, Probability	0.40	0.11	0.11	0.13	0.12	0.14
F test, Probability	0.05	0.16	0.00	0.00	0.00	0.00

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Windjmeier's corrected standard errors in parentheses. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

Figure 4 – Marginal Effects according to the types of Corruption

Note: Author's construction. The histograms in the background depict the distribution of the conditioning variable.

As an alternative, we applied Lewbel's methodology that further addresses endogeneity by identifying structural parameters in the absence of suitable external instruments. In that case, the estimator achieves identification by ensuring that regressors are uncorrelated with the product of heteroscedastic errors. The results presented in Table A2 in appendices corroborate our previous results. Corruption attenuates income inequalities when political power distribution is unfair, with a more pronounced effect in developing countries.

V.2. Alternative Assessment of Nonlinearities: The Threshold Effect of the PDSG

We now investigate the non-linear relationship between corruption and inequality through the PDSG, using the panel threshold effect model (Hansen, 1999). To this end, the estimated equation is specified as follows:

$$Gini_{it'} = \alpha_0 + \eta_i + \beta_{10}^{'} X_{it'} + \beta_{11}^{'} Power_{it'} + \beta_{12}^{'} Corrupt_{it'}^{k} + \left[\beta_2^{'} Corrupt_{it'}^{k} \left(\boldsymbol{Power}_{i,t'-1} , \gamma \right) \right] + e_{it'} \quad (6)$$

where $Corrupt_{it'}^{k}$ is the regime-dependent variable, $\boldsymbol{Power}_{i,t'-1}$ is the threshold variable, and γ is the unknow threshold parameter which allows considering two regimes with coefficients $\beta_{12}^{'}$ and $\beta_{2}^{'}$. Results in Table 7 are consistent with our previous findings. Specifically, the threshold effect is found significant in each column from (1) to (6), as confirmed by the 95% confidence intervals at the bottom of the table. In developing countries, the effect of corruption on inequality is significantly lower beyond the threshold, while this relationship fails to appear in developed countries since coefficients are not or hardly significant. Importantly, below the threshold, reducing levels of corruption in executive and legislature result in the highest levels of income inequality in developing countries, while this effect is only significant for judicial corruption in developed countries.

Table 7 – Panel-Threshold Regression

	Low and Middle-Lower Income Countries			Upper-Middle and High-Income Countries		
	(1)	(2)	(3)	(4)	(5)	(6)
Domestic credit provided by the financial sector (% of GDP)	-0.002	-0.007	-0.001	0.010	0.008*	0.011*
	(0.023)	(0.019)	(0.021)	(0.007)	(0.004)	(0.006)
Educational inequality, Gini	-0.040	0.057	-0.043	-0.193*	-0.238**	-0.195*
	(0.137)	(0.142)	(0.136)	(0.098)	(0.111)	(0.106)
Urban population (% of total)	-0.233*	-0.057	-0.179	0.001	0.016	0.013
	(0.130)	(0.114)	(0.134)	(0.076)	(0.085)	(0.079)

Age dependency ratio (% of working-age population)	-0.019	-0.026	0.014	0.110***	0.141***	0.108***
	(0.079)	(0.087)	(0.082)	(0.037)	(0.043)	(0.037)
			REGIME 1			
Power distributed by social group	***-0.228***	***-1.932***	***-0.960***	***0.405***	***-1.083***	***-1.490***
	(1.035)	***(1.447)***	***(0.928)***	***(0.766)***	***(0.682)***	***(0.999)***
Legislature corrupt activities	***3.848******			***0.184***		
	(0.836)			***(0.593)***		
Judicial corruption decision		***2.843****			***3.219******	
		(1.537)			***(0.899)***	
Executive Corruption			***10.197******			***3.363****
			(1.775)			***(1.933)***
			REGIME 2			
Legislature corrupt activities	***1.594******			***1.061***		
	(0.445)			***(0.655)***		
Judicial corruption decision		***1.150***			***0.859***	
		(1.504)			***(0.521)***	
Executive Corruption			***9.844******			***-1.106***
			(1.596)			***(2.283)***
Observations	340	340	340	740	740	740
Threshold/	-0.406 /	-0.406 /	-0.441 /	-0.022 /	0.519 /	-1.203 /
95% Confidence Interval	[-0.518 -0.361]	[-0.441 -0.361]	[-0.596 -0.406]	[-0.105 0.016]	[0.452 0.576]	[1.202 1.261]
R-squared	0.507	0.492	0.498	0.181	0.187	0.181
F	43.76	33.77	26.84	13.57	12.73	13.27

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Robust standard errors in parentheses. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

V.3. Alternative Assessment: The Palma ratio as a proxy for income inequality

As a final robustness assessment, we replace the Gini coefficient for income inequality with the Palma ratio that gained an increasing audience since its launch in 2013. While the Gini index measures the share of the total income earned by each population segment, the Palma ratio divides the wealthiest group's income share (the top 10%) by that of the poorest 40% of the population. In that way, evidence shows that the Palma ratio is more sensitive to changes in the distribution tails as it shows how much the top 10% of people's earnings diverge from the lowest-earning 40% (Cobham and Sumner, 2013). Considering this, we re-estimate the relationship between corruption and income inequality using Lewbel's approach to endogeneity with lagged variables as instruments. Interestingly, the results in Table 8 align with our previous findings since income inequalities decline with higher corruption, in an unfair power distribution context, especially in developing countries.

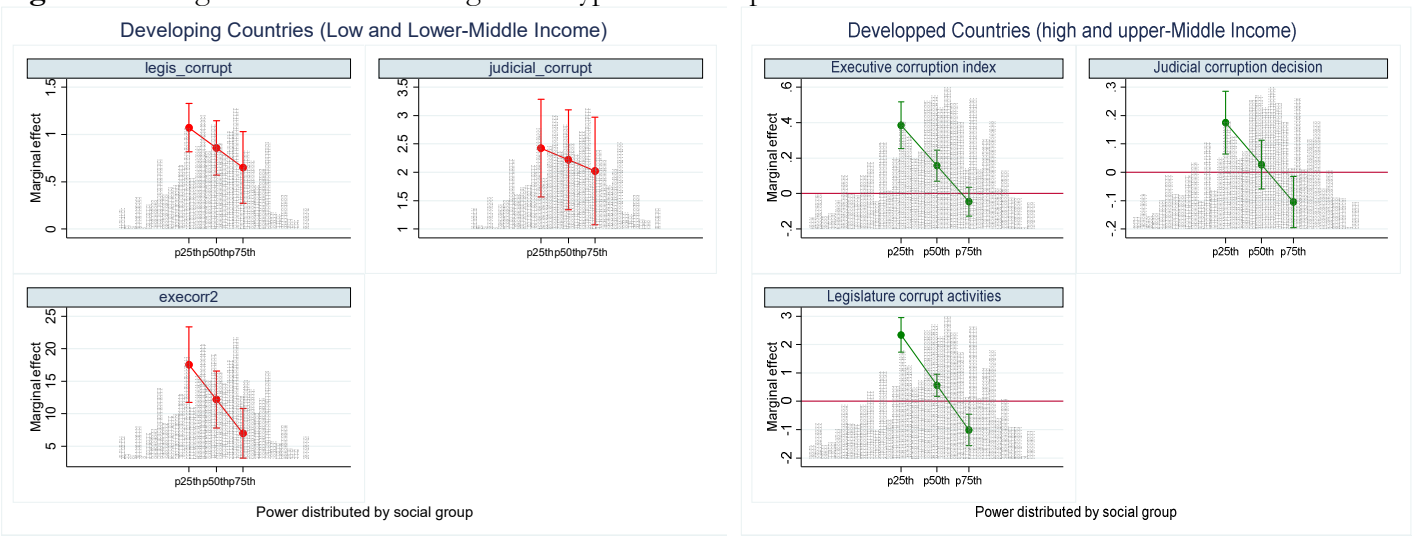
Table 8 – Robustness check: The Palma ratio of income inequalities

Lewbel's estimator	**Developed Countries (Upper-Middle and High Income)**			**Developing Countries (Low and Lower-Middle Income)**		
	(1)	(2)	(3)	(4)	(5)	(6)
Domestic credit provided by financial	-0.002*	-0.003**	-0.001	-0.003	-0.004	-0.014***
	(0.001)	(0.001)	(0.001)	(0.003)	(0.004)	(0.004)
Educational inequality, Gini	0.010	0.007	-0.002	-0.003	0.020***	0.002
	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)
Urban population (% of total)	-0.026***	-0.022***	-0.027***	0.027***	0.036***	0.046***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.006)	(0.008)
Age dependency ratio	0.054***	0.041***	0.051***	0.079***	0.097***	0.098***
	(0.005)	(0.004)	(0.005)	(0.007)	(0.008)	(0.009)
Power distributed by social group	-0.498***	-0.416***	-1.286***	-0.392***	-0.567***	-5.334***
	(0.066)	(0.068)	(0.127)	(0.119)	(0.164)	(1.064)
Legislature corrupt activities	0.392***			0.916***		
	(0.068)			(0.138)		
Judicial corruption decision		0.179***			2.277***	
		(0.057)			(0.444)	
Executive Corruption			2.386***			13.656***
			(0.316)			(2.407)
Power distributed by social group # Legislature corrupt activities	-0.246***			-0.260***		
	(0.037)			(0.093)		
Power distributed by social group # Judicial corruption decision		-0.160***			-0.248*	

		(0.031)			(0.131)	
Power distributed by social group # Executive corruption index			-1.914***			-6.512***
			(0.248)			(1.385)
Constant	2.349***	2.802***	3.865***	-0.654	-1.852***	6.276***
	(0.328)	(0.308)	(0.402)	(0.510)	(0.653)	(1.562)
Observations	1396	1500	1500	800	885	885
R-square	0.38	0.36	0.37	0.32	0.02	-0.32
Underidentification test [a]	405.50	359.52	325.35	163.79	52.60	41.25
Underidentification (p-value)	0.00	0.00	0.00	0.00	0.00	0.00
Weak identification test [b]	684.46	583.33	126.59	109.56	22.84	16.55

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01. Robust standard errors in parentheses. The estimated equation is exactly identified. Therefore, we only report the Kleibergen-Paap rk LM and Cragg-Donald Wald F statistics. We further recall that corruption indexes range from least democratic to more democratic countries. Thus, a rise in one of these indexes means a reduction in corruption.

Figure 5 – Marginal Effects according to the types of Corruption



Note: Author's construction.

V. Conclusion and Policy Implications

This article aimed to investigate the trinity between corruption, income inequality, and the power distributed across social groups in a large sample of 172 developed and developing countries over 1975-2017. We contribute to the existing literature by demonstrating how political power distribution across social groups reconciles two opposite theories on the link between corruption and income inequalities. On the empirical side, this study stands out from the rest of the literature by relying on the new sequential panel data estimator that deals with regressors' weak time-variance, which generates perfect collinearity between time-invariant regressors and fixed-effects. We also addressed endogeneity issues in static and dynamic equations, using competing estimators to ensure robustness. Finally, we investigated nonlinearities with the panel threshold effect model.

Overall, we conclude that low levels of corruption are associated with the decrease in income inequality at the world level, regardless of corruption types. However, when distinguishing between development levels, the

counter-intuitive relationship between corruption and income inequalities holds only in developing countries. In other words, when corruption reduces, income inequalities rise because, in such countries, the uneven distribution of political power leads non-dominant groups to engage in corruption to access public services they are entitled to or get credits. Moreover, considering the PDSG and corruption types simultaneously, we find that reduced corruption in the legislature has a higher impact on income inequalities. However, when elite groups monopolize political power, income inequalities worsen as corruption reduces. Consistent with these results, we also find evidence of a threshold effect in developing countries, as the corruption's impact on inequality is significantly lower beyond the threshold. Specifically, below the threshold, reducing corruption in the executive and legislature results in higher income inequalities in developing countries.

To sum up, low levels of corruption significantly increase income inequalities when a minority of the population monopolizes the political power in developing countries. Still, this effect fades as political power is more equitably distributed across social groups. Hence, developing countries differ from their developed counterparts, for which we found no significant relationship between corruption and inequality, irrespective of the level of political power repartition.

The main policy implications are on the educational, financial, and political systems' sides, especially for developing countries. First, education would, directly and indirectly, affect developing countries by providing economic agents with the necessary knowledge and skills to create income-generating activities and increasing potential voters' capacity to monitor the government's actions to reduce inequalities and corruption. Evidence already shows how corruption impacts income inequalities via human capital formation and distribution (Gupta et al., 2002; Eicher et al., 2009). Second, financial inclusion would prevent socially disadvantaged people from engaging in corrupt activities to access public resources while supporting their integration into the labor market and income inequalities reduction. Finally, our findings emphasize the need for fair competition and turnover at the executive and administrative management level to curb the political power monopolization and corruption in the executive, legislative and judicial branches. Indeed, Bliss and Tella (1997) showed that political competition would help reducing corruption. Also, higher representativeness for socio-ethnic groups and gender policies would improve the political power distribution in developing countries.

VI. References

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VII. Appendices

Table A0 – Sample

Countries	**Executive Corruption rank**	Countries	**Judicial corruption decision rank**	Countries	**Legislature corrupt activities**
		Upper-Middle and High-Income countries			
Equatorial Guinea	*1*	Azerbaijan	*1*	Dominican Republic	*1*
Turkmenistan	*2*	Thailand	*2*	Turkmenistan	*2*
Azerbaijan	*3*	Botswana	*3*	Paraguay	*3*
Thailand	*4*	Lebanon	*4*	Thailand	*4*
Bahrain	*5*	France	*5*	Azerbaijan	*5*
Dominican Republic	*6*	Hungary	*6*	Kazakhstan	*6*
Iraq	*7*	Norway	*7*	Guatemala	*7*
Kazakhstan	*8*	Belarus	*8*	Panama	*8*
Paraguay	*9*	Armenia	*9*	Mexico	*9*
Libya	*10*	Seychelles	*10*	Iraq	*10*
Saudi Arabia	*11*	Greece	*11*	Gabon	*11*
Gabon	*12*	Colombia	*12*	Kuwait	*12*
Maldives	*13*	Kazakhstan	*13*	Serbia	*13*
Guatemala	*14*	Denmark	*14*	Maldives	*14*
Lebanon	*15*	Portugal	*15*	Jordan	*15*
Montenegro	*16*	Kuwait	*16*	Armenia	*16*
Venezuela	*17*	Japan	*17*	Venezuela	*17*
Guyana	*18*	Croatia	*18*	Suriname	*18*
Mauritius	*19*	Latvia	*19*	Libya	*19*
Belarus	*20*	Macedonia	*20*	Colombia	*20*
Kuwait	*21*	Venezuela	*21*	Brazil	*21*
Russia	*22*	United States of America	*22*	Equatorial Guinea	*22*
Armenia	*23*	Peru	*23*	Russia	*23*
Macedonia	*24*	China	*24*	Algeria	*24*
Malaysia	*25*	Poland	*25*	Lebanon	*25*
Serbia	*26*	Algeria	*26*	Montenegro	*26*
Mexico	*27*	Hong Kong	*27*	Macedonia	*27*
Iran	*28*	Oman	*28*	Slovenia	*28*
Bosnia and Herzegovina	*29*	Estonia	*29*	Qatar	*29*
Qatar	*30*	Ecuador	*30*	Slovakia	*30*
Algeria	*31*	Turkey	*31*	Guyana	*31*
Ecuador	*32*	Maldives	*32*	Iran	*32*
Argentina	*33*	Russia	*33*	Mauritius	*33*
Romania	*34*	Namibia	*34*	Bosnia and Herzegovina	*34*
Albania	*35*	Iran	*35*	Croatia	*35*
Greece	*36*	United Kingdom	*36*	Romania	*36*
Croatia	*37*	Ireland	*37*	Peru	*37*
Peru	*38*	Germany	*38*	South Korea	*38*
Namibia	*39*	Dominican Republic	*39*	Italy	*39*
Czech Republic	*40*	Mexico	*40*	Cuba	*40*
South Korea	*41*	Montenegro	*41*	China	*41*
Brazil	*42*	Saudi Arabia	*42*	Seychelles	*42*
Colombia	*43*	Panama	*43*	Albania	*43*
Panama	*44*	Argentina	*44*	Belarus	*44*
Cuba	*45*	Equatorial Guinea	*45*	Turkey	*45*
Fiji	*46*	Chile	*46*	Argentina	*46*
China	*47*	Trinidad and Tobago	*47*	Malaysia	*47*
Turkey	*48*	Qatar	*48*	South Africa	*48*
Seychelles	*49*	Bahrain	*49*	Latvia	*49*
South Africa	*50*	South Africa	*50*	Costa Rica	*50*
Jordan	*51*	Romania	*51*	Ecuador	*51*
Bulgaria	*52*	Suriname	*52*	Fiji	*52*
Hungary	*53*	Albania	*53*	Greece	*53*
Suriname	*54*	Mauritius	*54*	Hungary	*54*
Oman	*55*	Libya	*55*	Czech Republic	*55*
Hong Kong	*56*	Cyprus	*56*	Jamaica	*56*
Slovakia	*57*	Sweden	*57*	Japan	*57*
Israel	*58*	Guatemala	*58*	Israel	*58*
United Arab Emirates	*59*	Serbia	*59*	Botswana	*59*
Chile	*60*	South Korea	*60*	Bulgaria	*60*
Botswana	*61*	Bosnia and Herzegovina	*61*	Poland	*61*
Trinidad and Tobago	*62*	Jamaica	*62*	Lithuania	*62*
Jamaica	*63*	Bulgaria	*63*	Bahrain	*63*
Slovenia	*64*	Cuba	*64*	Cyprus	*64*

Cyprus	*65*	Israel	*65*	Ireland	*65*
Latvia	*66*	Lithuania	*66*	Portugal	*66*
Costa Rica	*67*	Costa Rica	*67*	Trinidad and Tobago	*67*
Italy	*68*	Turkmenistan	*68*	Chile	*68*
Ireland	*69*	Luxembourg	*69*	France	*69*
Poland	*70*	Singapore	*70*	Barbados	*70*
Barbados	*71*	Slovakia	*71*	United States of America	*71*
Japan	*72*	Italy	*72*	Namibia	*72*
Austria	*73*	Barbados	*73*	Austria	*73*
Uruguay	*74*	Finland	*74*	Oman	*74*
France	*75*	New Zealand	*75*	Spain	*75*
Portugal	*76*	Malaysia	*76*	Saudi Arabia	*76*
Estonia	*77*	Spain	*77*	Australia	*77*
Lithuania	*78*	Paraguay	*78*	Estonia	*78*
Canada	*79*	Switzerland	*79*	United Kingdom	*79*
United States of America	*80*	United Arab Emirates	*80*	Canada	*80*
Netherlands	*81*	Iceland	*81*	United Arab Emirates	*81*
Australia	*82*	Belgium	*82*	Belgium	*82*
United Kingdom	*83*	Gabon	*83*	Hong Kong	*83*
Spain	*84*	Fiji	*84*	Germany	*84*
Belgium	*85*	Uruguay	*85*	Switzerland	*85*
Luxembourg	*86*	Australia	*86*	Finland	*86*
Iceland	*87*	Brazil	*87*	Netherlands	*87*
Finland	*88*	Austria	*88*	Iceland	*88*
Norway	*89*	Czech Republic	*89*	New Zealand	*89*
Switzerland	*90*	Jordan	*90*	Singapore	*90*
Singapore	*91*	Guyana	*91*	Uruguay	*91*
New Zealand	*92*	Slovenia	*92*	Norway	*92*
Germany	*93*	Iraq	*93*	Luxembourg	*93*
Denmark	*94*	Canada	*94*	Denmark	*94*
Sweden	*95*	Netherlands	*95*	Sweden	*95*

Low and Lower-Middle Income contries

Chad	*1*	Mozambique	*1*	Kyrgyzstan	*1*
Uzbekistan	*2*	Ghana	*2*	Papua New Guinea	*2*
Democratic Republic of Congo	*3*	Cameroon	*3*	Madagascar	*3*
Tajikistan	*4*	Ivory Coast	*4*	Chad	*4*
North Korea	*5*	Tanzania	*5*	Kenya	*5*
Nigeria	*6*	Moldova	*6*	Indonesia	*6*
Angola	*7*	Guinea-Bissau	*7*	Pakistan	*7*
Central African Republic	*8*	Solomon Islands	*8*	Republic of the Congo	*8*
Republic of the Congo	*9*	Madagascar	*9*	Syria	*9*
Guinea-Bissau	*10*	Democratic Republic of Congo	*10*	Philippines	*10*
Honduras	*11*	Uganda	*11*	Haiti	*11*
Burma/Myanmar	*12*	Burundi	*12*	Sierra Leone	*12*
Guinea	*13*	Liberia	*13*	Honduras	*13*
Togo	*14*	El Salvador	*14*	Nigeria	*14*
Egypt	*15*	Vanuatu	*15*	El Salvador	*15*
Syria	*16*	Uzbekistan	*16*	Mauritania	*16*
Kyrgyzstan	*17*	Afghanistan	*17*	Somalia	*17*
Haiti	*18*	Mali	*18*	Burma/Myanmar	*18*
Kenya	*19*	Georgia	*19*	Bangladesh	*19*
Cameroon	*20*	The Gambia	*20*	Egypt	*20*
Ivory Coast	*21*	Bangladesh	*21*	Comoros	*21*
Ukraine	*22*	Syria	*22*	Cameroon	*22*
Mali	*23*	Zimbabwe	*23*	Laos	*23*
Cambodia	*24*	Chad	*24*	Sudan	*24*
Nepal	*25*	Tajikistan	*25*	Nepal	*25*
Indonesia	*26*	Kenya	*26*	Ukraine	*26*
Somalia	*27*	Nigeria	*27*	Zimbabwe	*27*
Liberia	*28*	Benin	*28*	Uganda	*28*
Papua New Guinea	*29*	Niger	*29*	Mali	*29*
Sierra Leone	*30*	Morocco	*30*	Cambodia	*30*
Sudan	*31*	Sierra Leone	*31*	Moldova	*31*
Laos	*32*	Egypt	*32*	Nicaragua	*32*
Bangladesh	*33*	Republic of the Congo	*33*	Tunisia	*33*
El Salvador	*34*	Burkina Faso	*34*	Liberia	*34*
Ghana	*35*	Angola	*35*	Rwanda	*35*
Moldova	*36*	Mauritania	*36*	Bolivia	*36*
Djibouti	*37*	Laos	*37*	Democratic Republic of Congo	*37*
Swaziland	*38*	Somalia	*38*	Tajikistan	*38*
Afghanistan	*39*	Sudan	*39*	Djibouti	*39*
Yemen	*40*	Pakistan	*40*	Afghanistan	*40*
Philippines	*41*	Kyrgyzstan	*41*	Sri Lanka	*41*

Tunisia	*42*	Sri Lanka	*42*	Central African Republic	*42*
Nicaragua	*43*	Togo	*43*	Uzbekistan	*43*
Comoros	*44*	Bolivia	*44*	North Korea	*44*
Zimbabwe	*45*	Zambia	*45*	India	*45*
Eritrea	*46*	Tunisia	*46*	Angola	*46*
Pakistan	*47*	Burma/Myanmar	*47*	Solomon Islands	*47*
The Gambia	*48*	Mongolia	*48*	Togo	*48*
Bolivia	*49*	Swaziland	*49*	Georgia	*49*
Uganda	*50*	Palestine/West Bank	*50*	Yemen	*50*
Niger	*51*	Indonesia	*51*	Burundi	*51*
Benin	*52*	Guinea	*52*	Morocco	*52*
Lesotho	*53*	Malawi	*53*	Tanzania	*53*
Georgia	*54*	Lesotho	*54*	Guinea-Bissau	*54*
Madagascar	*55*	Honduras	*55*	Guinea	*55*
Sri Lanka	*56*	Yemen	*56*	Lesotho	*56*
Vanuatu	*57*	Haiti	*57*	Ghana	*57*
Mozambique	*58*	Rwanda	*58*	Ivory Coast	*58*
Palestine/West Bank	*59*	Democratic Republic of Vietnam	*59*	Vanuatu	*59*
Malawi	*60*	Cape Verde	*60*	Ethiopia	*60*
Timor-Leste	*61*	Cambodia	*61*	Niger	*61*
Ethiopia	*62*	Comoros	*62*	Palestine/West Bank	*62*
Burundi	*63*	Timor-Leste	*63*	Senegal	*63*
Mauritania	*64*	Philippines	*64*	Zambia	*64*
Democratic Republic of Vietnam	*65*	North Korea	*65*	The Gambia	*65*
India	*66*	São Tomé and Príncipe	*66*	Benin	*66*
Rwanda	*67*	Bhutan	*67*	Malawi	*67*
Solomon Islands	*68*	Ukraine	*68*	Swaziland	*68*
Morocco	*69*	Papua New Guinea	*69*	Democratic Republic of Vietnam	*69*
Tanzania	*70*	Eritrea	*70*	Timor-Leste	*70*
Zambia	*71*	Senegal	*71*	Mozambique	*71*
São Tomé and Príncipe	*72*	Ethiopia	*72*	Mongolia	*72*
Burkina Faso	*73*	India	*73*	Burkina Faso	*73*
Mongolia	*74*	Nicaragua	*74*	São Tomé and Príncipe	*74*
Senegal	*75*	Central African Republic	*75*	Bhutan	*75*
Cape Verde	*76*	Djibouti	*76*	Cape Verde	*76*
Bhutan	*77*	Nepal	*77*	Eritrea	*77*

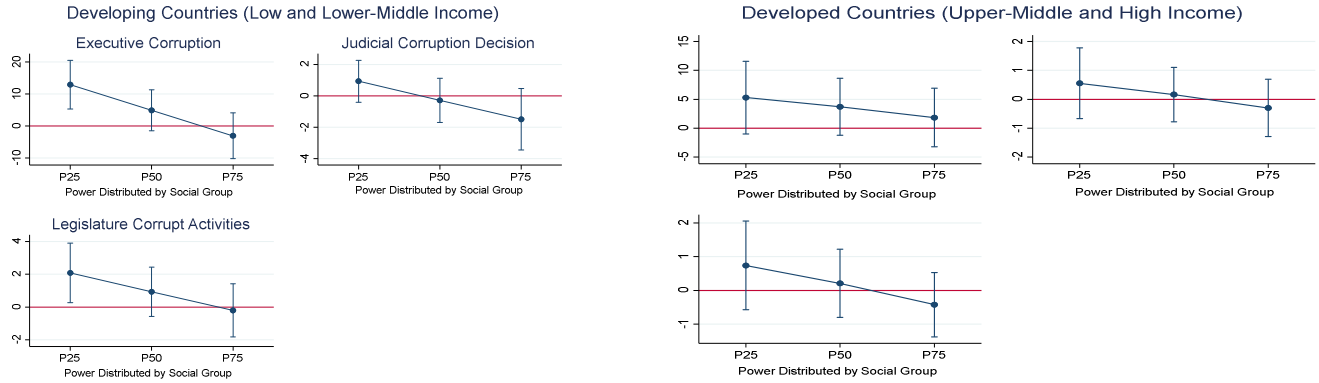
Table A1 – Sequential Linear Estimator with more control variables

	Developed Countries (Upper-Middle and High Income)			Developing Countries (Low and Lower-Middle Income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Time-Variant / First Stage						
Domestic credit provided by the financial sector (% of GDP)	-0.135***	-0.132***	-0.132***	0.059	0.009	0.009
	(0.042)	(0.040)	(0.040)	(0.094)	(0.091)	(0.091)
Educational inequality, Gini	0.074	0.059	0.059	0.075	0.076	0.076
	(0.075)	(0.074)	(0.074)	(0.066)	(0.073)	(0.073)
Urban population (% of total)	0.340***	0.332***	0.332***	0.266***	0.236***	0.236***
	(0.050)	(0.048)	(0.048)	(0.077)	(0.091)	(0.091)
Trade (% of GDP)	0.019	0.020	0.020	0.015	0.012	0.012
	(0.022)	(0.022)	(0.022)	(0.015)	(0.017)	(0.017)
Domestic credit to the private sector (% of GDP)	0.027	0.028	0.028	0.005	0.002	0.002
	(0.042)	(0.041)	(0.041)	(0.021)	(0.023)	(0.023)
Total natural resources rents (% of GDP)	-0.121**	-0.086*	-0.086*	0.008	0.002	0.002
	(0.055)	(0.052)	(0.052)	(0.072)	(0.085)	(0.085)
Inflation	0.713	1.103	1.103	0.167	0.322	0.322
	(1.129)	(1.167)	(1.167)	(2.344)	(2.342)	(2.342)
GDP Per capita, Log of	1.900	2.247	2.247	-3.994***	-4.232***	-4.232***
	(1.791)	(1.742)	(1.742)	(1.361)	(1.441)	(1.441)
Constant	6.909	4.846	4.846	49.684***	56.686***	56.686***
	(12.496)	(12.204)	(12.204)	(11.626)	(12.091)	(12.091)
Time-Invariant / Second Stage						
Power distributed by social group	0.429	0.600	-6.458***	0.267	0.278	-1.811**
	(0.816)	(0.657)	(1.791)	(0.575)	(0.645)	(0.906)
Legislature corrupt activities	1.244			0.755		
	(0.789)			(0.675)		
Judicial corruption decision		0.038			0.568	
		(0.676)			(0.631)	
Executive Corruption			7.078**			5.339*
			(3.332)			(3.240)
Power distributed by social group # Legislature corrupt activities	**-1.411*** **			**-0.663** **		
	(0.534)			**(0.338)**		
Power distributed by social group # Judicial corruption decision		**-1.500*** **			**0.489**	
		(0.577)			**(0.362)**	
Power distributed by social group # Executive			**-9.841*** **			**-1.978**

corruption index						
			(2.333)			**(1.733)**
Constant	1.144	0.158	5.339**	0.793	0.590**	3.242*
	(0.983)	(0.746)	(2.387)	(0.498)	(0.244)	(1.803)
Observations	1095	1222	1222	1495	1568	1568

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01 Kripfganz and Schwarz (2019) corrected standard errors in parentheses. Time dummies are included but not displayed. indexes for corruption range from least democratic to more democratic. Thus, a rise of these indexes means the reduction of corruption.

Figure A1 – Marginal Effects according to the types of Corruption



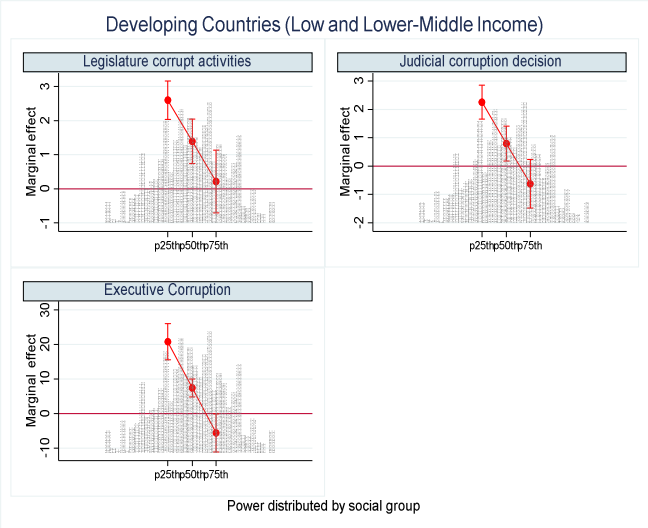
Note: Author's construction.

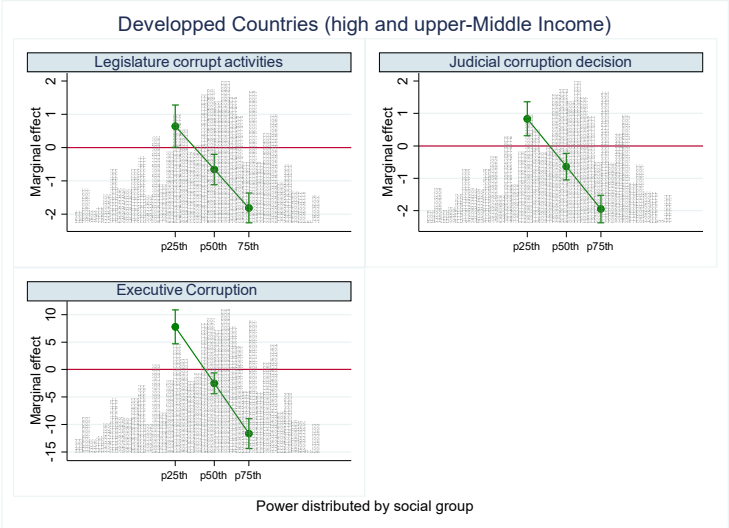
Table A2 – Dealing with endogeneity, Lewbel's Estimator

Variables	**Developed Countries (Upper-Middle and High Income)**			**Developing Countries (Low and Lower-Middle Income)**		
	(1)	(2)	(1)	(2)	(1)	(2)
Domestic credit provided by financial	-0.004	-0.007*	-0.003	0.003	0.002	0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.002)
Educational inequality, Gini	0.069**	0.002	-0.015	-0.175***	-0.193***	-0.198***
	(0.031)	(0.027)	(0.031)	(0.017)	(0.014)	(0.015)
Urban population (% of total)	0.034**	0.030**	0.010	0.130***	0.131***	0.139***
	(0.016)	(0.015)	(0.016)	(0.014)	(0.013)	(0.013)
Age dependency ratio	0.309***	0.254***	0.291***	0.323***	0.339***	0.351***
	(0.023)	(0.022)	(0.025)	(0.014)	(0.013)	(0.013)
Power distributed by social group	-1.772***	-1.359***	-6.678***	-0.943***	-0.993***	-11.054***
	(0.300)	(0.337)	(0.652)	(0.291)	(0.314)	(2.147)
Legislature corrupt activities	0.679**			1.723***		
	(0.327)			(0.309)		
Judicial corruption decision		0.874***			1.195***	
		(0.269)			(0.299)	
Executive Corruption			8.064***			11.094***
			(1.593)			(1.425)
Power distributed by social group # Legislature corrupt activities	-1.404***			-1.472***		
	(0.168)			(0.248)		
Power distributed by social group # Judicial corruption decision		-1.589***			-1.775***	
		(0.140)			(0.255)	
Power distributed by social group # Executive corruption index			-11.116***			-16.291***
			(1.268)			(2.957)
Constant	22.841***	28.263***	31.723***	22.880***	21.453***	27.855***
	(1.799)	(1.835)	(2.013)	(1.408)	(1.102)	(1.355)
Observations	1387	1491	1491	1387	1491	1491
R-square	0.40	0.38	0.32	0.40	0.38	0.32
Underidentification test [a]	405.99	348.85	303.17	405.99	348.85	303.17
Underidentification (p-value)	0.00	0.00	0.00	0.00	0.00	0.00
Weak identification test [b]	576.12	451.33	107.39	576.12	451.33	107.39

Note: Author's construction. p < 0.10, ** p < 0.05, *** p < 0.01. robust standard errors in parentheses. As the model is exactly identified, we report the Kleibergen-Paap rk LM and Cragg-Donald Wald F statistics.

Figure A2 – Marginal Effects according to the types of Corruption





Note: Author's construction.

Table A3 – Pooled OLS with regional and time dummy

	WHOLE SAMPLE		
	Legislative	**Judicial**	**Executive**
Legislature corrupt activities	-0.668***		
	(0.170)		
Judicial corruption decision		-0.643***	
		(0.156)	
Executive corruption index			2.603***
			(0.685)
Domestic credit provided by financial	0.008*	0.009*	0.008*
sector (% of GDP)	(0.004)	(0.005)	(0.004)
Educational inequality, Gini	0.025	0.003	0.006
	(0.015)	(0.015)	(0.015)
Urban population (% of total)	0.071***	0.080***	0.080***
	(0.010)	(0.009)	(0.009)
Age dependency ratio (% of working-age population)	0.061***	0.069***	0.068***
Domestic credit provided by financial	(0.014)	(0.014)	(0.015)
Intercept	24.295***	23.673***	21.648***
Legislature corrupt activities	(1.682)	(1.644)	(1.631)
Observations	2775	2951	2951
R-squared	0.570	0.558	0.557
F	128.03	132.39	130.56
Regional Dummies	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes

Note: p < 0.10, ** p < 0.05, *** p < 0.01 ; Huber-White robust standard errors in parentheses.

Table A4 – Pooled OLS with regional and time dummy

Variables	**Developed Countries (Upper-Middle and High Income)**			**Developing Countries (Low and Lower-Middle Income)**		
	Legislative	**Judicial**	**Executive**	**Legislative**	**Judicial**	**Executive**
Legislature corrupt activities	-0.987***			1.662***		
	(0.173)			(0.244)		
Judicial corruption decision		-0.650***			1.238***	
		(0.182)			(0.276)	
Executive corruption index			1.751**			-5.760***
			(0.782)			(1.032)
Domestic credit provided by financial	0.014***	0.016***	0.013***	0.002	0.003	0.003
sector (% of GDP)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Educational inequality, Gini	0.167***	0.145***	0.155***	-0.201***	-0.183***	-0.195***
	(0.024)	(0.024)	(0.023)	(0.014)	(0.012)	(0.013)

Urban population (% of total)	0.043***	0.035***	0.031***	0.127***	0.136***	0.134***
	(0.011)	(0.011)	(0.011)	(0.014)	(0.013)	(0.013)
Age dependency ratio (% of working-age population)	0.028	0.028	0.026	0.312***	0.346***	0.342***
Domestic credit provided by financial	(0.020)	(0.019)	(0.020)	(0.014)	(0.014)	(0.014)
Intercept	24.336***	26.404***	24.776***	26.669***	21.891***	26.375***
	(2.584)	(2.519)	(2.428)	(2.523)	(2.165)	(2.317)
Observations	1627	1693	1693	1293	1455	1455
R-squared	0.706	0.697	0.695	0.275	0.274	0.278
F	94.12	95.87	95.55	18.49	20.89	21.67
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Note: p < 0.10, ** p < 0.05, *** p < 0.01 ; Huber-White robust standard errors in parentheses.

Table A5 – OLS-FE

Variables	Low and Lower-Middle Income			Upper-Middle and High Income		
	Legislative	Judicial	Executive	Legislative	Judicial	Executive
Power distributed by social group	-0.373*	-0.484**	-6.031***	-0.967***	-0.541**	-3.650***
	(0.214)	(0.220)	(0.817)	(0.226)	(0.254)	(0.358)
Legislature corrupt activities	1.397***			0.601**		
	(0.231)			(0.293)		
Judicial corruption decision		0.949***			0.446*	
		(0.257)			(0.260)	
Executive corruption index			-7.835***			-2.983**
			(1.042)			(1.169)
Domestic credit provided by financial	0.003	0.002	0.002	-0.007*	-0.006*	-0.010***
sector (% of GDP)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Educational inequality, Gini	-0.193***	-0.202***	-0.206***	0.053**	0.002	0.019
	(0.014)	(0.013)	(0.013)	(0.025)	(0.023)	(0.023)
Urban population (% of total)	0.138***	0.129***	0.134***	0.017	0.017	0.004
	(0.014)	(0.013)	(0.013)	(0.014)	(0.014)	(0.014)
Age dependency ratio (% of working-age population)	0.320***	0.338***	0.353***	0.354***	0.304***	0.310***
	(0.014)	(0.013)	(0.013)	(0.025)	(0.024)	(0.025)
Power distributed by social group # Legislature corrupt activities	-1.525***			-1.277***		
	(0.171)			(0.146)		
Power distributed by social group # Judicial corruption decision		-1.661***			-1.341***	
		(0.186)			(0.126)	
Power distributed by social group # Executive corruption index			9.521***			5.482***
						(0.704)
Constant	25.444***	24.102***	28.242***	15.147***	21.022***	22.837***
	(2.407)	(2.138)	(2.155)	(2.826)	(2.992)	(2.786)
Observations	1293	1455	1455	1627	1693	1693
R-squared	0.308	0.309	0.321	0.397	0.377	0.350
F	22.88	26.96	27.11	31.37	33.95	27.75
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Note: p < 0.10, ** p < 0.05, *** p < 0.01 ; Huber-White robust standard errors in parentheses.

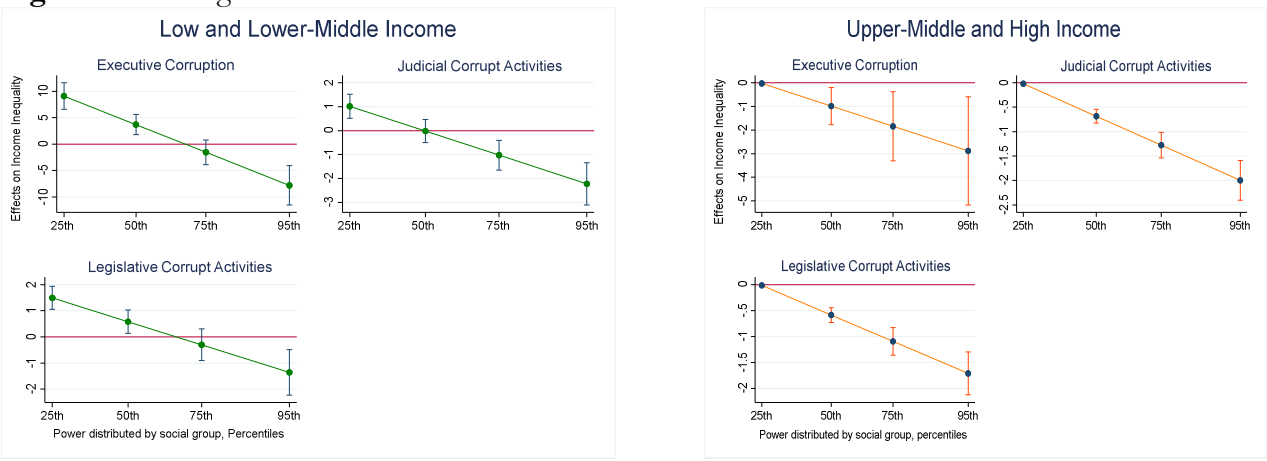
Table A6 – Robust OLS

Variables	Low and Lower-Middle Income			Upper-Middle and High Income		
	(1)	(2)	(3)	(4)	(5)	(6)
Domestic credit provided by financial	0.006	0.017	0.094	0.278	0.537*	0.145
	(0.139)	(0.167)	(0.191)	(0.316)	(0.315)	(0.328)
Educational inequality, Gini	-0.195***	-0.214***	-0.215***	0.101***	0.059***	0.103***
	(0.013)	(0.013)	(0.013)	(0.023)	(0.021)	(0.021)
Urban population (% of total)	-0.032*	0.023	-0.027*	0.007	0.008	-0.034***
	(0.017)	(0.015)	(0.015)	(0.012)	(0.012)	(0.011)
Age dependency ratio	0.074***	0.087***	0.091***	0.214***	0.181***	0.186***

	(0.017)	(0.016)	(0.016)	(0.020)	(0.020)	(0.021)
Power distributed by social group # Legislature corrupt activities	***-1.217****			***-0.616****		
	(0.173)			***(0.076)***		
Power distributed by social group # Judicial corruption decision		***-1.206****			***-0.720****	
		(0.162)			***(0.075)***	
Power distributed by social group # Executive corruption index			***-1.581****			***-1.038****
			(0.302)			***(0.420)***
Constant	40.959***	39.379***	39.651***	15.883***	20.217***	18.041***
	(2.232)	(2.075)	(2.063)	(2.054)	(1.971)	(2.039)
Regional Dummy	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Time Dummy	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Observations	1328	1510	1510	1689	1770	1770
R-squared	0.413	0.413	0.402	0.539	0.530	0.513
F	32.20	36.53	34.95	68.07	71.83	69.55

Note: p < 0.10, ** p < 0.05, *** p < 0.01 ; Huber-White robust standard errors in parentheses.

Figure A3 – Marginal Effects



Note: Authors' construction