What Drives Corruption? A Panel Analysis of Institutional and Economic Factors

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1 Introduction

Corruption remains one of the most persistent and complex challenges facing governments around the world. Its causes and effects vary widely depending on a country's political institutions, legal frameworks, and social structures. What first sparked my interest in this topic was the case of Argentina—a country that, despite relatively strong human development and democratic traditions, has struggled with repeated institutional crises and high-profile corruption scandals. One particularly striking example is the "Cuadernos de las Coimas" case in 2018, where a series of handwritten notebooks revealed years of systematic bribe payments between construction companies and public officials. This case made clear how corruption can thrive even in seemingly well-established democracies when institutional safeguards are weak or politicized. As such, Argentina serves as a central reference point in this study, representing both the institutional vulnerabilities and the structural factors that can sustain corruption over time.

More broadly, my interest in the subject of corruption has been shaped by the influential works of Daron Acemoglu and Esther Duflo. Acemoglu's institutional framework—particularly his distinction between extractive and inclusive institutions—provides powerful insights into how historical and political structures shape long-term development and governance outcomes. Meanwhile, Duflo's emphasis on empirical evidence and policy experimentation encourages a pragmatic, data-driven approach to addressing persistent social challenges, including corruption. Their complementary perspectives—one structural and historical, the other empirical and interventionist—deeply influenced the way I have approached this project.

This project examines how different institutional and economic variables relate to corruption levels across 68 countries between 2004 and 2023. Using data from the World Bank, it focuses on indicators like rule of law, voice and accountability, political stability, income inequality, and the share of tourism in the economy.

To capture the full diversity of the corruption phenomenon, countries with contrasting political and economic trajectories were intentionally selected. This variation helps uncover how these variables interact in different settings and offers a more complete picture of what drives corruption globally.

Methodologically, the study employs a panel data econometric approach, utilizing fixed effects models to control for unobserved, time-invariant heterogeneity across countries. This allows for isolating the impact of time-varying institutional and economic factors on corruption levels. The fixed effects model is specified as:

$$\text{Corruption}_{it} = \alpha_i + \beta X_{it} + \gamma_t + \varepsilon_{it}$$

where Corruption_{it} represents the corruption level for country i at time t, α_i captures country-specific effects, X_{it} is a vector of explanatory variables, γ_t accounts for time effects, and ε_{it} is the error term.

Rather than trying to find a one-size-fits-all explanation, the aim is to identify meaningful patterns that hold across contexts. By rigorously analyzing these relationships through econometric methodologies, the study aims to contribute to academic research and inform broader conversations about building trust and accountability in public institutions.

2 Background and Motivation

Understanding the roots of corruption requires a multidimensional approach that bridges both institutional and economic domains. In this study, I include variables reflecting political governance, legal institutions, participatory democracy, inequality, and economic structure. Each of these has been emphasized in different strands of the literature on corruption. Below, I discuss four key references that have guided the construction of my empirical framework.

First, Cieślik and Goczek (2018) offer a comprehensive conceptualization of corruption by distinguishing between macro-, meso-, and micro-level determinants. Their work argues that macro-level institutional quality, sector-specific dynamics, and individual behavioral incentives jointly explain corruption outcomes. This layered framework supports my decision to combine institutional indicators like political stability and rule of law with economic variables such as income inequality and tourism dependency.

Second, the methodological work by Kaufmann et al. (2011) validates the use of institutional governance indicators such as rule of law and voice and accountability. Their development of the Worldwide Governance Indicators (WGI) has been influential in corruption research. Their empirical findings demonstrate strong correlations between governance effectiveness and lower corruption levels.

Third, Dastan and Akbari (2021) explore the economic structure-corruption nexus within emerging markets. They find that countries with large informal sectors and high tourism dependence may experience higher levels of corruption due to lax regulation and opportunities for off-the-books transactions. Their findings support the inclusion of the share of travel services in commercial exports.

Finally, the foundational work by Acemoglu et al. (2001) provides historical and institutional depth to the understanding of corruption. They argue that the colonial origins of many national institutions explain contemporary development outcomes, including corruption. Their findings justify the inclusion of long-term institutional measures in econometric models, especially those capturing legal impartiality and citizen participation.

Taken together, these four works provide both theoretical justification and empirical support for the variable choices in this study.

3 Empirical Study

In this empirical analysis, I use a panel dataset from the World Bank covering 68 countries over the period 2004 to 2023. The dataset is strongly balanced, with 20 years of observations for each country, providing a solid foundation for fixed effects estimation. The dependent variable is "control of corruption," an institutional governance indicator ranging from approximately -2.5 (high corruption) to +2.5 (low corruption).

The independent variables were selected to capture both institutional and economic factors that may influence corruption. Political stability is included to reflect the idea that violence and instability weaken governance and open the door to corrupt practices. Rule of law captures the strength and impartiality of legal institutions, which are essential for enforcing anti-corruption measures. Voice and accountability represents the extent to which citizens can participate in governance and express themselves freely—elements that are often associated with greater transparency and reduced corruption. On the economic side, I include income share held by the top 10% as a proxy for inequality and elite capture, which can both foster and reflect systemic corruption. Finally, I include travel services as a share of commercial exports to account for economic structure, particularly the importance of tourism, which can be linked to more informal transactions and regulatory weaknesses in some contexts. Here are some basic descriptive statistics on my study variables (Figure 1) :

Descriptive Statistics

	(1)			
	mean	sd	min	max
control_of_corruption_estimate	.3749886	1.025046	-1.426463	2.459118
political_stability_and_absence_of_violence/terrorism_estimate	.168599	.832914	-2.810035	1.619806
rule_of_law_estimate	.415016	.9740286	-1.382914	2.124762
voice_and_accountability_estimate	.5312661	.8259519	-1.766817	1.800992
income_share_held_by_highest_10percent	27.79536	5.790311	18.4	46.1
travel_services_percent_of_commercial_service_exports	29.98611	18.98072	.6818846	87.66418
Observations	1340			

Figure 1: Control of Corruption in Selected Countries (2004–2023)

Corruption is a global problem, but countries follow very different trajectories in this regard, depending on their specific characteristics. We can see from these three countries that the starting points and developments in terms of corruption diverge greatly. It is therefore particularly interesting to introduce fixed effects that allow us to neutralize the specific characteristics of each country and better understand the relationships.

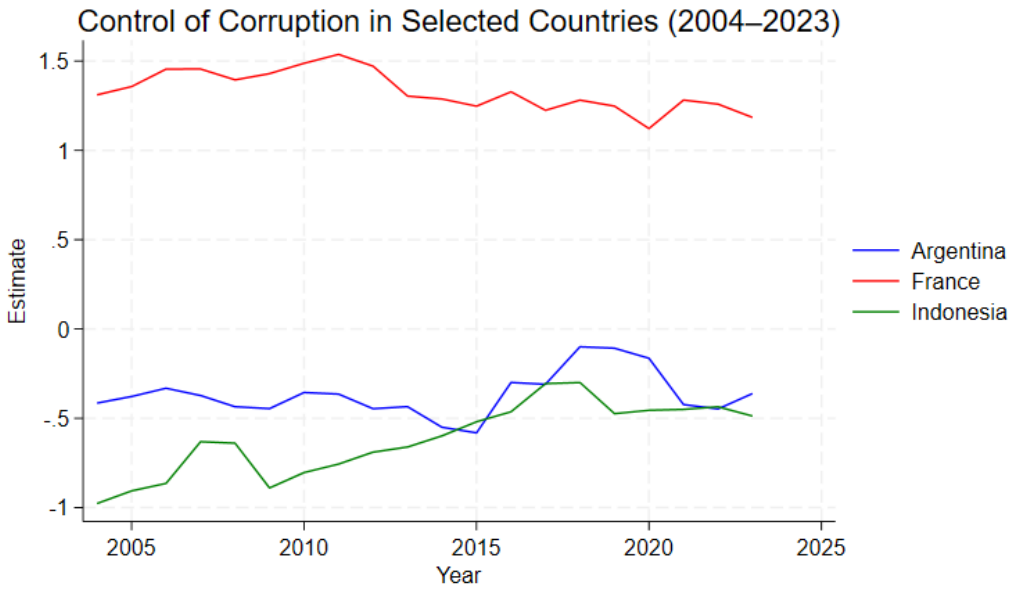

Figure 2: Control of Corruption in Argentina, France, and Indonesia (2004–2023)

4 Main Results

4.1 First Results

In this initial regression, I used a simple OLS model to examine how institutional and economic variables relate to the control of corruption. The model fits the data very well, with an R-squared of 0.916, suggesting that these variables explain most of the variation in corruption levels across countries.

The rule of law is by far the strongest predictor, with a coefficient close to 1 and high statistical significance. This confirms that stronger legal institutions are closely associated with lower corruption. Income inequality, measured by the top 10% income share, is also positively and significantly related to corruption control, which may reflect institutional differences in more developed countries.

Political stability shows a positive but only weakly significant effect, while voice and accountability has no significant impact in this model, possibly due to multicollinearity. The share of travel services in exports is negatively associated with corruption control and is marginally significant.

These results highlight the importance of institutional quality, especially the rule of law, and set the stage for deeper analysis using fixed effects to control for country-specific factors.

Table 1: OLS Regression Results

	Control of Corruption
Political Stability	0.0329
	(1.80)
Income Share Top 10%	0.0085***
	(4.39)
Rule of Law	0.996***
	(41.76)
Voice and Accountability	0.0038
	(0.14)
Tourism (Travel Services)	–0.0011
	(–1.96)
Constant	–0.245***
	(–4.37)
Observations	1,079

t-statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.2 Fixed Effects

Next, I estimated a fixed effects panel regression that includes time dummies and clusters standard errors by country. This approach allows me to control for all unobserved, time-invariant characteristics at the country level. The model explains a moderate share of within-country variation in corruption, with a within R-squared of 0.386. While this is lower than the R-squared from the OLS model, it is expected, as fixed effects absorb much of the cross-country variation.

In this specification, the rule of law remains a strong and highly significant predictor of corruption control, with a coefficient of 0.53. This confirms the robustness of its effect even after accounting for country-specific unobserved heterogeneity. Voice and accountability also becomes significant in this model, with a relatively large coefficient (0.38), suggesting that democratic mechanisms are important drivers of institutional integrity when country fixed effects are considered.

Interestingly, political stability now shows a significant negative relationship with corruption control. This unexpected sign may reflect the fact that in some contexts, highly stable regimes are not necessarily more transparent, particularly if that stability comes from authoritarian consolidation. Income inequality and tourism do not show statistically significant effects in this specification.

Finally, most time dummies are not significant, suggesting that global trends or shocks did not systematically shift corruption levels across all countries during the period. The high value of the intra-class correlation (rho = 0.90) confirms that a large share of the variation in corruption lies between countries, justifying the use of fixed effects.

Table 2: Fixed Effects Regression Results

	Control of Corruption
Political Stability	-0.0615*
	(–2.07)
Rule of Law	0.5318***
	(7.34)
Voice and Accountability	0.3786***
	(5.62)
Income Share Top 10%	0.0047
	(0.78)
Tourism (Travel Services)	0.0023
	(1.32)
Observations	1,079

t-statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Model Selection: Hausman Test I performed a Hausman test to compare the fixed effects and random effects estimators. The test strongly rejected the null hypothesis ($\chi^2 = 369.96$, $p < 0.001$), indicating that the random effects estimates are inconsistent. I therefore retain the fixed effects model as the most appropriate specification for analyzing the determinants of corruption in this panel.

4.3 Robustness Check: Lagged Institutional Variables

Then a good approach for the study is to test the fixed effects model by including lagged values of key institutional variables—rule of law, voice and accountability, and political stability—to account for delayed effects on corruption. This specification still controls for country fixed effects and includes time dummies.

The results show that both lagged rule of law (coefficient = 0.48, $p < 0.001$) and lagged voice and accountability (coefficient = 0.34, $p < 0.001$) remain strong and significant predictors of corruption control, even with a one-year delay. This confirms that improvements in legal institutions and democratic governance have a sustained and robust impact over time.

Interestingly, lagged political stability now shows a significant negative effect (coefficient = –0.066, $p = 0.037$), reinforcing earlier findings and suggesting that stability alone may not guarantee institutional integrity—especially in non-democratic regimes.

Economic variables like income inequality and tourism exposure remain statistically insignificant in this model, which suggests their effects are either weak or not immediate.

Table 3: Fixed Effects Regression with Lagged Variables

	Control of Corruption
Lagged Rule of Law	0.477***
	(6.14)
Lagged Voice and Accountability	0.342***
	(4.50)
Lagged Political Stability	–0.0663*
	(–2.13)
Income Share Top 10%	0.0072
	(1.21)
Tourism (Travel Services)	0.0023
	(1.40)
Observations	1,029

t-statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.4 Robustness Check: First Differences Estimation

As an additional robustness check, I estimated a first differences regression model, which removes country fixed effects by differencing consecutive observations. This approach provides an alternative way to control for unobserved, time-invariant heterogeneity, and focuses on explaining year-to-year changes in corruption.

The results are consistent with previous findings. Changes in rule of law and voice and accountability remain significant and positively associated with improvements in corruption control. Specifically, a one-unit increase in the rule of law index is associated with a 0.26 unit increase in corruption control, while a similar increase in voice and accountability corresponds to a 0.29 unit gain. These effects are statistically significant at the 1% level and reinforce the conclusion that institutional quality is a key driver of anti-corruption performance—even when considering short-term dynamics.

By contrast, changes in political stability, income inequality, and tourism exposure do not have a statistically significant effect on corruption control in the short run. This suggests that while institutional governance has immediate impacts, economic structure and inequality may exert their influence more slowly or under specific conditions.

Table 4: First Differences Regression Results

	Change in Corruption Control
Δ Rule of Law	0.261***
	(5.18)
Δ Voice and Accountability	0.287***
	(5.58)
Δ Political Stability	–0.0004
	(–0.02)
Δ Income Share Top 10%	0.0005
	(0.17)
Δ Tourism (Travel Services)	0.0014
	(1.35)
Observations	962

t-statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.5 Do Institutional Effects Differ in Emerging Countries?

To assess whether institutional variables affect corruption differently in emerging versus developed countries, I estimated a fixed-effects panel model with interaction terms between each institutional variable and a binary indicator for emerging economies. This specification allows the slopes of key governance indicators—*rule of law*, *voice and accountability*, and *political stability*—to vary between country types.

The core institutional variables remain highly significant: *rule of law* shows a strong positive relationship with control of corruption (coefficient = 0.559, $p < 0.001$), and *voice and accountability* is also significant (coefficient = 0.415, $p = 0.010$). However, none of the interaction terms are statistically significant. For instance, the interaction between rule of law and the emergent dummy is –0.053 ($p = 0.718$), and for voice and accountability it is –0.050 ($p = 0.786$). These values indicate that the institutional effects do not significantly differ between emerging and developed countries.

In short, while strong institutions consistently correlate with lower corruption levels, the analysis finds no statistically significant evidence that their impact varies across levels of development. Institutional quality appears to function as a universal driver of corruption control, regardless of whether a country is classified as emerging or developed.

Table 5: Fixed Effects Regression Results with Interaction Terms

Variable	**Coefficient**	**Std. Error**	***p*-value**
Rule of Law	0.559	0.115	0.000
Rule of Law × Emerging	-0.053	0.146	0.718
Voice and Accountability	0.415	0.157	0.010
Voice × Emerging	-0.050	0.182	0.786
Political Stability	-0.042	0.072	0.560
Political Stability × Emerging	-0.026	0.079	0.745
Income Share Top 10%	0.005	0.006	0.403
Tourism Share	0.0024	0.0017	0.179
Year Dummies	Yes		
Fixed Effects (Country)	Yes		
Observations		1,079	
Number of countries		67	
Within R^2		0.387	
Prob ¿ F		0.000	

Note: Dependent variable is control of corruption. Robust standard errors clustered at the country level. Interaction terms capture differential effects in emerging countries.

5 Conclusion and discussion

This paper set out to explore what drives the level of corruption across countries, focusing on both institutional and economic factors. The results are clear: stronger legal institutions and greater voice and accountability are consistently associated with lower levels of corruption. These effects hold across different model specifications, and importantly, they do not differ significantly between emerging and developed countries.

While fixed effects models help control for country-specific characteristics, they cannot capture all time-varying influences or potential reverse causality. Moreover, relying on perception-based corruption indicators may introduce bias. Still, the findings suggest that reinforcing the rule of law and promoting civic participation are key strategies for curbing corruption globally.

Returning to the case of Argentina—where this investigation began—the study's conclusions resonate strongly. The "Cuadernos" scandal highlighted how even democratic systems can be undermined when institutional safeguards are weak. This analysis confirms that lesson: institutional strength matters everywhere, and building accountable governance is essential for all countries.

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