CDC Journal, Year 31, No. 45, December 2023, DOI: https://doi.org/10.3126/cdj.v31i45.68985
Received Date: December 27, 2023 Accepted Date: April 30, 2024

Nexus of Inflation, Governance and Corruption Control of Nepal: A Quantile Autoregressive Distributed Lag Analysis

Ram Prasad Gajurel[1*], Arjun Rai[2], and Tanka Mani Poudel[3]

[1]Department of Economics, T.U. ***Orchid ID:*** *https://orcid.org/0000-0001-5693-1953*
[2]Department of Management, T.U. ***Orchid ID:*** *https://orcid.org/0000-0001-9578-6971*
[3]Department of Sociology, T.U. ***Orchid ID:*** *https://orcid.org/0000-0002-5510-7505*
****Corresponding Email:*** *ram.gajurel@mahmc.tu.edu.np,*

Abstract

Corruption is a stigma of democracy. In Nepal, corruption is typically attributed to inflation and poor governance. This paper intends to examine the nexus of inflation and governance on corruption control, using the time series data from 1996 to 2021. The paper has employed the ordinary least squares (OLS) and quantile autoregressive distributed lag (QARDL) models where the QARDL model adeptly handles structural breaks and non-normal data, offering subtle insights into the diverse impacts of inflation and governance on corruption. The OLS results revealed that increases in inflation were beneficial in combating corruption, with regulatory quality and political stability indicators having a similar impact. The findings of QARDL revealed that inflation's effect on corruption in the short run varies, shifting from exacerbation to mitigation across quantiles. Furthermore, the results indicated that the rule of law and political stability effectively combated corruption, while regulatory quality and voice and accountability yielded mixed results. The long-run QARDL result revealed that specific quantiles of inflation, political stability, and rule of law were effective in combating corruption, whereas higher-order quantiles of regulatory quality and voice and accountability could contribute to corruption, along with certain levels of employment, broad money supply, and GDP which improved corruption control in Nepal. Policymakers should prioritize moderate inflation, enhance governance, strengthen regulations, engage citizens, and accelerate employment and economic growth opportunities to control corruption in Nepal.

Keywords: *Inflation, corruption, rule of law, political stability, economic growth, QARDL, JEL Classification*: E31, D73, C21

Introduction

Corruption and its impact on economic development have been subjects of concern and interest for policymakers, researchers, and international organizations worldwide. Corruption has long been identified as a significant challenge to sustainable economic growth and development in Nepal. The history of corruption in Nepal can be traced back to different eras, including the autocratic Rana regime (1846-1951) and the Panchayat era (1960-1990), owing to a lack of transparency, accountability, and institutional mechanisms, which laid the foundation for corruption to thrive (Ghimire, 2022). Nepal's political departure from the Panchayat era to multiparty democracy in 1990 brought hopes for curbing corruption. However, challenges remained futile in combating rampant political, bureaucratic, and public corruption. The prevalence of corruption in the political, bureaucratic, and public sectors was proven by the arrest of high-profile government officials and ministers in accusation of their involvement in the Bhutanese refugee scam (Bajracharya, 2023).

The repercussions of corruption on Nepal's economic development have been extensive. First, it erodes public confidence in institutions and governance, which deters both local and foreign investment (Rubasundram & Rasiah, 2019). Similarly, inflation as a macroeconomic variable significantly shapes a country's economic landscape (Bittencourt et al., 2015). The history of inflation in Nepal has been marked by periods of varying levels of price instability and challenges in maintaining price stability. Several factors have contributed to inflationary pressures, including domestic and international factors, supply-side constraints, policy measures, and economic shocks. Since Nepal adopted a liberal economic policy in 1992 (Kharel et al., 2021), the country opened its economic borders to ease the flow of goods and services and investment across national boundaries.

Corruption is a multifaceted phenomenon that has garnered significant attention in academic and policy circles. Johnston (2005) stated that corruption can be understood as abusing entrusted power for private gain. The metaphorical formula of corruption (C) equals monopoly power (M) plus discretion by officials (D) minus accountability (A), i.e., C = M + D - A (Klitgaard et al., 2000). The study of Karlström (2015) revealed that in democracies, both fiscal and administrative decentralization are linked to decreased corruption levels, while in authoritarian nations, they are associated with higher corruption rates. Thus, "corruption is a social phenomenon that is seldom visible and is difficult to measure" (Philp, 2006, p. 50). Corruption is conceptualized as a transactional process involving the participants. Given that the agent is a member of a public administration, the items or services involved in these exchanges are typically non-negotiable through conventional market channels (Banfield, 1975).

Inflation and corruption are often interconnected. The governments may use inflation to gain seigniorage amidst tax evasion as an optimal tax principle. Corruption

drives businesses underground with increasing reliance on inflation tax; capital flight with which corruption further erodes taxable assets, contributing to larger fiscal deficits and potential inflationary pressures in less developed financial markets (Al-Marhubi, 2000). The relationship between corruption and inflation has also received considerable attention. Scholars have explored how corruption influences inflationary pressures within economies. Campos and Pradhan (2007) argued that corruption can fuel inflation by distorting public expenditure and fiscal policies. They suggest that corrupt practices, such as embezzlement of public funds or bribery, can lead to misallocation of resources and increase budget deficits, thus exacerbating inflationary pressures. A study by Ades and Di Tella (1999) found that countries with higher levels of corruption tend to experience higher inflation rates.

Inflation and corruption are two interrelated issues that have significant implications for the economic stability and development of nations worldwide, including Nepal. The debate on the relationship between corruption and inflation has gained momentum in academia. Some scholars view a positive relationship between corruption and inflation (Uroos et al., 2022) as an indirect contribution (Jarwana et al., 2020). Understanding the interplay among inflation, governance, and corruption is particularly relevant for Nepal. The country has been grappling with persistent inflationary pressures and struggles to maintain price stability (Nepal Rastra Bank [NRB], 2022). Additionally, governance challenges and corruption have been identified as significant obstacles to sustainable economic development in Nepal (Shrestha, 2019).

Kaufmann et al. (2009) described that governance encompasses the processes of government selection, monitoring, and replacement, the government's ability to formulate and implement effective policies, and the mutual respect between citizens and governing institutions, governing economic and social interactions. The six dimensions of governance thus include voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption, each capturing perception ranging from citizen participation and freedom of expression to the quality of public services, regulatory capabilities, adherence to the rule of law, and the prevalence of corruption (Kaufmann et al., 2009).

Empirical studies have shown that countries with weak governance structures are more prone to corruption (Mauro, 1995). Kaufmann et al. (2009) found a negative correlation between corruption and governance indicators such as voice and accountability, regulatory quality, and control of corruption. These findings highlight the importance of effective governance mechanisms in combating corruption and promoting accountability. The study revealed that weakly governed countries, such as Somalia, Myanmar, the Democratic Republic of Congo, Sudan, Zimbabwe, Afghanistan, and Iraq, often face rampant corruption due to a lack of political will to enforce anti-corruption laws, while Singapore's success demonstrates the possibility of effectively combating corruption and ensuring

good governance through determined enforcement of such laws and implementation of growth-oriented policies (Quah, 2009). Thus, the corruption situation can be a matter of the governance prevailing in the countries.

Figure 1

Governance and Corruption Nexus in Nepal

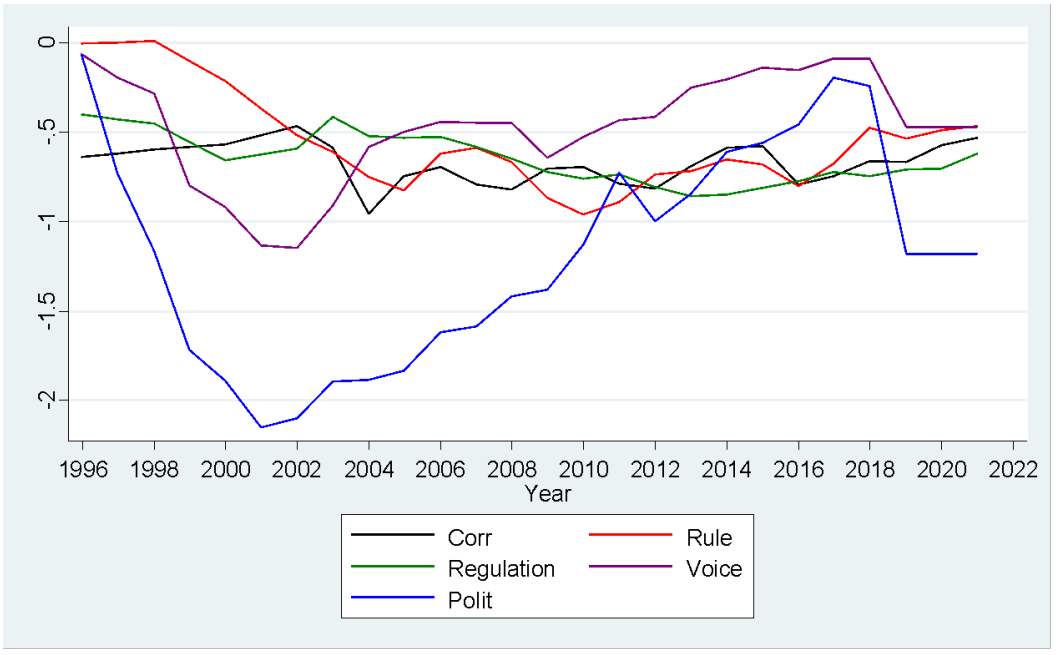
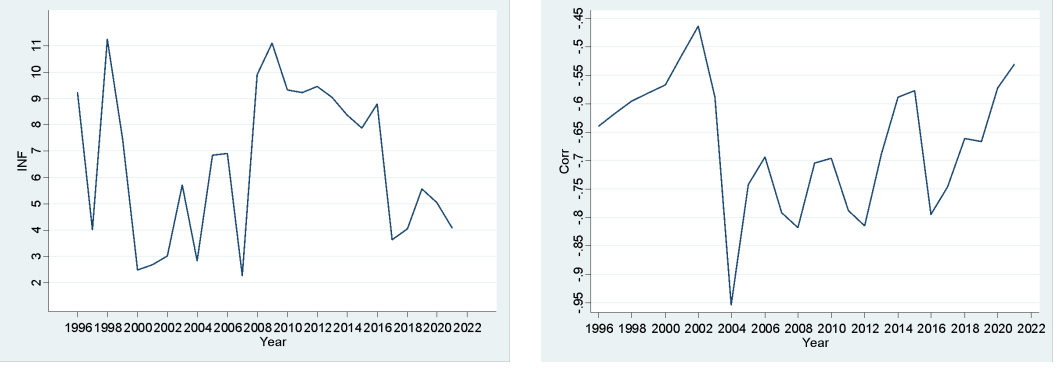


Figure 2

Nexus of Inflation and Corruption in Nepal



The result of the study, focusing on Nepal, thus may add to the body of knowledge on the dynamics of the inflation, governance, and corruption nexus in developing nations. Using a QARDL approach, it can estimate how changes in inflation and governance

affect corruption across different quantiles. Such information might help stakeholders and governments formulate targeted measures to reduce inflationary pressures, enhance governance procedures, and successfully combat corruption. Corruption and governance indices have significantly declined from the beginning, with occasional sideway movements in Nepal (Figure 1). However, they started showing signs of improvement from 2010 to 2018. Most of these indices declined in the aftermath of the tremendous Covid pandemic, as illustrated in Figure 1. Figure 2 also depicts fluctuating trends in inflation and corruption, with corruption indices showing a worse situation compared to inflation. Inflation peaked to some extent after the 2008 crisis. Consequently, corruption, inflation, and governance are intertwined in Nepal, impeding economic development.

This paper thus examined the nexus of inflation, governance, and corruption in the Nepalese context, applying a QARDL approach. Except introduction section, this paper is organized as follows: Section 2 provides a literature review on the conceptualization of corruption, the governance-corruption nexus, and the corruption-inflation nexus. Section 3 presents the data and methodology employed in the analysis. Section 4 discusses the empirical results and their implications. Finally, Section 5 concludes the paper with a summary of the findings and suggestions for future research.

Data and Method

Data and Its Sources

The purpose of this study is to examine the relationship between inflation, governance, and corruption control in Nepal. The research posits that inflation and governance significantly influence corruption levels in the country, hypothesizing that inflation may exacerbate corruption while effective governance mechanisms can mitigate it. To analyze this relationship, the study considered the corruption control index as the dependent variable, while considering inflation and governance indices as explanatory variables alongside other control variables to ensure the robustness of the estimations. Reviewing the empirical studies (Ades & Di Tella, 1999; Akça et al., 2012; Baig et al., 2022; Gajurel & Dangal, 2023; Khan & Naeem, 2020; Özşahin & Üçler, 2017; Sassi & Gasmi, 2016; Uddin & Rahman, 2023), the paper proxies many variables and the descriptions of all proxies' is illustrated in Table 1. Moreover, annual time series data from 1996 to 2021 were obtained from world development indicators (WDI) and world governance indicators (WGI) of open sources of the World Bank database and the database published on the website of Nepal Rastra Bank. The missing data was filled with mean value in the case of the last three years' data on voice accountability and political stability. The annual time series data were transferred into quarterly form, following Aziz et al. (2020), Arain et al. (2019), and Shahbaz et al. (2018) by electing the quadratic sum method.

Table 1

Description of Proxies Variables

Variables	Proxies	Unit	Descriptions	Source
Dependent variable				
Corruption	*Corr*	Index from -2.5 (maximum) to 2.5 (no corruption)	Perceptions of public power used for private gain and state capture by elites and private interests.	WGI
Independent Variables				
Inflation	*Inf*	% change	Annual percentage change in consumer price index	
Rule of law	*Rule*	Index from -2.5 (worse) to 2.5 (better)	Perceptions of societal rule adherence, including contract enforcement, property rights, law enforcement, courts, and crime likelihood.	WGI
Regulatory quality	*Regulation*	Index from -2.5 (worse) to 2.5 (better)	The government's competence in creating and executing effective policies and regulations that encourage private sector growth.	WGI
Political stability	*Polit*	Index from -2.5 (unstable) to 2.5 (stable)	Perceptions of potential political instability and occurrences of politically-driven violence, encompassing terrorism	WGI
Voice and accountability	*Voice*	Index from -2.5 (worse) to 2.5 (better)	Perceptions of citizen participation in government selection, along with freedoms of expression, association, and media	WGI
Control variables				
Economic growth	*GDP*	% change	Annual percentage growth rate of real GDP based on constant local currency.	NRB
Employment	*Emp*	%	The proportion of a country's ages 15 and older population that is employed	WDI
Broad money	*M2*	% of GDP	The aggregate of currency held outside banks, demand deposits, time, savings, and foreign currency deposits of resident sectors, bank, and traveler's checks, as well as other securities like certificates of deposit and commercial paper	NRB
Gross fixed capital formation	*GFCF*	% of GDP	covers spending on land improvements, machinery, infrastructure, and constructing various structures like schools, offices, hospitals, residences, and commercial buildings	WDI

Note. NRB = Nepal Rastra Bank (Central Bank of Nepal), WDI = World Development Indicators, WGI = World Governance Indicators

Data Analysis and Model Specification

This study aims to investigate the short-run and long-run dynamics of inflation, governance, and corruption in Nepal. The paper employed the quantile autoregressive distribution lag (QARDL) to analyze such relationships, allowing the non-stationarity and structural breaks in time series; and estimating the relationship across different quantiles. It is applied to study the cointegrating between inflation and governance and corruption. Before QARDL, unit root tests—augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979) and Phillips and Perron (PP) test (Phillips & Perron, 1988), and Zivot and Andrews (ZA) test (Zivot & Andrews, 1992)—were performed to inspect the stationarity property and structural breaks in the time series. To estimate the QARDL, the general model specification is anticipated as follows:

$$Corr = f(Inf, Emp, GDP, GFCF, M2, Polit, Regu, Voice, Rule)$$

The QARDL (p, q) is the extension of Pesaran and Shin's (1998) autoregressive distributed-lag approach initiated by Cho et al. (2015) to jointly examine the short and long-run relationship across a range of quantiles between variables of interest.

$$Q_{corr_t} = \alpha(\tau) + \sum_{i=0}^{p} \varphi_i(\tau) Corr_{t-1} + \sum_{i=0}^{q1} \omega_i(\tau) Inf_{t-1} + \sum_{i=0}^{q2} \lambda_i(\tau) Emp_{t-1} + \sum_{i=0}^{q3} \delta_i(\tau) GDP_{t-1} + \sum_{i=0}^{q4} \psi_i(\tau) GFCF_{t-1} + \sum_{i=0}^{q5} \theta_i(\tau) M2_{t-1} + \sum_{i=0}^{q6} \vartheta_i(\tau) Polit_{t-1} + \sum_{i=0}^{q7} \xi_i(\tau) Regu_{t-1} + \sum_{i=0}^{q8} \emptyset_i(\tau) Voice_{t-1} + \sum_{i=0}^{q9} \pi_i(\tau) Rule_{t-1} + \varepsilon_t(\tau) \quad \ldots(1)$$

Where $\sum_t(\ ) = Corr_t - Q_{corr_t}(|\sum_{t-1})$ are included to portray the quantiles, here the quantiles ranging from 0.05th to 0.95th are considered under analysis. This equation (1) estimates the long-run relationship between inflation, governance, and corruption. $\varphi_{\square}(\square)$ is the long-run coefficient of lagged *Corr*. Similarly, $\omega_{\square}(\square)$, …., $\pi_{\square}(\square)$ represents the long-run coefficients of regressors. Moreover, p and q of equation (1) indicate the lag lengths of dependent variables and regressors. The short-run dynamics of quantile ARDL are as follows:

$$Q_{Corr} = \alpha(\tau) + \sum_{i=1}^{q_1-1} \delta_{Inf_i}(\tau)\Delta Inf_{t-1} + \gamma_{Inf}(\tau) Inf_t + \sum_{i=1}^{q_2-1} \delta_{Emp_i}(\tau)\Delta Emp_{t-1} + \gamma_{\mathrm{Emp}}(\tau) Emp_t + \sum_{i=1}^{q_3-1} \delta_{GDP_i}(\tau)\Delta GDP_{t-1} + \gamma_{\mathrm{GDP}}(\tau) GDP_t + \sum_{i=1}^{q_4-1} \delta_{GFCF_i}(\tau)\Delta GFCF_{t-1} + \gamma_{GFCF}(\tau) GFCF_t + \sum_{i=1}^{q_5-1} \delta_{M2_i}(\tau)\Delta M2_{t-1} + \gamma_{M2}(\tau) M2_t + \sum_{i=1}^{q_6-1} \delta_{Polit_i}(\tau)\Delta Polit_{t-1} + \gamma_{Polit}(\tau) Polit_t + \sum_{i=1}^{q_7-1} \delta_{Regu_i}(\tau)\Delta Regu_{t-1} + \gamma_{Regu}(\tau) Regu_t + \sum_{i=1}^{q_8-1} \delta_{Voice_i}(\tau)\Delta Voice_{t-1} + \gamma_{Voice}(\tau) Voice_t + \sum_{i=1}^{q_9-1} \delta_{Rule_i}(\tau)\Delta Rule_{t-1} + \gamma_{Rule}(\tau) Rule_t + \varepsilon_t(\tau) \quad \ldots.(2)$$

Where, $\gamma_{Inf}(\tau)=\sum_{i=0}^{q1}\omega_i(\tau)$, $\delta_{Inf_t}(\tau)=-\sum_{j=i+1}^{q1}\omega_i(\tau)$, $\gamma_{Emp}(\tau)=\sum_{i=0}^{q2}\lambda_i(\tau)$, $\delta_{Emp_t}(\tau)=-\sum_{j=i+1}^{q2}\lambda_i(\tau)$, $\gamma_{GDP}(\tau)=\sum_{i=0}^{q3}\delta_i(\tau)$, $\delta_{GDP_t}(\tau)=-\sum_{j=i+1}^{q3}\delta_i(\tau)$, $\gamma_{GFCF}(\tau)=\sum_{i=0}^{q4}\psi_i(\tau)$, $\delta_{GFCF_t}(\tau)=-\sum_{j=i+1}^{q4}\psi_i(\tau)$, $\gamma_{M2}(\tau)=\sum_{i=0}^{q5}\theta_i(\tau)$, $\delta_{M2_t}(\tau)=-\sum_{j=i+1}^{q5}\theta_i(\tau)$, $\gamma_{Polit}(\tau)=\sum_{i=0}^{q6}\vartheta_i(\tau)$, $\delta_{Polit_t}(\tau)=-\sum_{j=i+1}^{q6}\vartheta_i(\tau)$, $\gamma_{Regu}(\tau)=\sum_{i=0}^{q7}\xi_i(\tau)$, $\delta_{Regu_t}(\tau)=-\sum_{j=i+1}^{q7}\Xi_i(\tau)$, $\gamma_{Voice}(\tau)=\sum_{i=0}^{q8}\emptyset_i(\tau)$, $\delta_{Voice_t}(\tau)=-\sum_{j=i+1}^{q8}\emptyset_i(\tau)$, $\gamma_{Rule}(\tau)=\sum_{i=0}^{q9}\pi_i(\tau)$, $\delta_{Rule_t}(\tau)=-\sum_{j=i+1}^{q8}\pi_i(\tau)$

The parameters, in equation (2), indicate the lagged and current dynamics (Aziz et al., 2020) and the long-run association between inflation, governance, and corruption. The error correction model of QARDL can be

$$Q_{\Delta Corr_t}=\alpha(\tau)+\rho(\tau)[Corr_{t-1}-\beta_{Inf}(\tau)Inf_{t-1}-\beta_{Emp}(\tau)Emp_{t-1}-\beta_{GDP}(\tau)GDP_{t-1}-\beta_{GFCF}(\tau)GFCF_{t-1}-\beta_{M2}(\tau)M2_{t-1}-\beta_{Polit}(\tau)Polit_{t-1}-\beta_{Regu}(\tau)Regu_{t-1}-\beta_{Voice}(\tau)Voice_{t-1}-\beta_{Rule}(\tau)Rule_{t-1}]+\sum_{i=1}^{p-1}\varphi_1(\tau)\Delta Corr_{t-1}+\sum_{i=0}^{q2-1}\lambda_1(\tau)\Delta Emp_{t-1}+\sum_{i=0}^{q3-1}\delta_1(\tau)\Delta GDP_{t-1}+\sum_{i=0}^{q4-1}\psi_1(\tau)\Delta GFCF_{t-1}+\sum_{i=0}^{q5-1}\theta_1(\tau)\Delta M2_{t-1}+\sum_{i=0}^{q6-1}\vartheta_1(\tau)\Delta Polit_{t-1}+\sum_{i=0}^{q7-1}\xi_1(\tau)\Delta Regu_{t-1}+\sum_{i=0}^{q8-1}\emptyset_1(\tau)\Delta Voice_{t-1}+\sum_{i=0}^{q9-1}\pi_1(\tau)\Delta Rule_{t-1}+\varepsilon_t(\tau) \quad \ldots(3)$$

In equation (3), ρ indicates the error correction terms, expecting significantly negative. β coefficients of all variables refer to the long-run parameters and coefficients with all first differencing variables, □,….,□, indicate the short-run parameters. Finally, after QARDL estimations, the Wald test was employed to assess the asymmetric and nonlinear impact of short and long-run parameters of inflation and governance on corruption. The overall QARDL model was estimated to evaluate the causal nexus between inflation, governance, and corruption in Nepal. The results were produced by using Eviews 10 econometric software. Finally, ChatGPT 3.5 was used to correct English.

Results and Discussion

Descriptive Summary of Data

Descriptive statistics provide the nature of the time series under study. Table 2 presents summary statistics, notably focusing on key governance measures such as *Corr*, *Polit*, *Rule*, and *Voice*. Their mean values, -0.669, -1.183, -0.644, and -0.547 respectively, revealed a concerning trend with strongly negative values; ranging between -2.5 and +2.5, indicating a severe governance status in Nepal. In addition, while the *Rule* showed a positive value, the other variables consistently displayed negative outcomes, highlighting

significant governance challenges in Nepal. Mean values for *Emp*, *GFCF*, and *M2* are 36.158%, 23.929%, and 17.453% respectively, offering intriguing insights into Nepal's economic indicators. Table 2 also reveals that inflation surpassed *GDP*, indicating higher price increases relative to economic expansion. Moreover, *M2* and *GFCF* exhibited considerable standard deviations, suggesting greater variations, while *Corr* showed a lower standard deviation, implying a more consistent trend in corruption control measures.

Table 2

Summary Statistics

	Corr	Inf	Emp	GDP	GFCF	M2	Polit	Regu	Rule	Voice
Mean	-0.669	6.545	36.158	4.068	23.919	17.453	-1.183	-0.644	-0.547	-0.469
Median	-0.664	6.878	36.140	4.081	22.043	17.243	-1.164	-0.651	-0.616	-0.441
Maximum	-0.464	11.244	36.971	8.589	33.815	28.032	-0.071	-0.402	0.009	-0.064
Minimum	-0.953	2.269	34.601	-2.423	19.082	4.446	-2.149	-0.858	-0.959	-1.147
Std. Dev.	0.114	2.890	0.667	2.276	4.497	5.641	0.651	0.136	0.281	0.327
Skewness	-0.432	-0.028	-0.508	-0.837	0.830	-0.167	0.148	0.244	0.762	-0.688
Kurtosis	2.775	1.623	2.567	4.480	2.381	2.810	1.730	1.984	2.614	2.499
Jarque-Bera	0.862	2.058	1.323	5.411	3.401	0.160	1.631	1.376	2.676	2.055
Probability	0.650	0.357	0.516	0.067	0.183	0.923	0.443	0.503	0.262	0.358
Observations	26	26	26	26	26	26	23	26	26	23

Note. Corr = corruption control index, Inf = Inflation, Emp = Employment, GDP = Real gross domestic product growth, M2 = Broad money supply, Polit = Political stability and absence of violence/terrorism index, Regu = Regulatory quality index, Voice = Voice and accountability index, Rule = Rule of law index

The results of Table 2 also indicate that the variables *Corr*, *Inf*, *Emp*, *GDP*, *M2*, and *Voice* displayed negative skewness. Conversely, *GFCF*, *Regu*, and *Rule* exhibited positive skewness. All the variables of interest exhibit a positive kurtosis value, indicating a more peaked distribution than the normal distribution. The Jarque-Bera statistics of all variables of interest except *GDP* was not statistically significant, indicating that the variables' distribution deviates from normality or was not normally distributed. The results from non-normal data confirm that nonlinear relationships exist, suggesting that quantile autoregressive distributed lag (ARDL) modeling may be appropriate. This is supported by the studies conducted by Sun et al. (2022), Aziz et al. (2020), Troster et al. (2018), and Tu et al. (2022).

Correlation Matrix

The correlation coefficient measures the association between two variables (Turner, 2021). Table 3 shows the correlation matrix of the quarterly transformed form of variables of interest.

Table 3

Correlation Matrix

	Corr	*Inf*	*Emp*	*GDP*	*GFCF*	*M2*	*Polit*	*Regu*	*Rule*	*Voice*
Corr	1.000									
Inf	-0.194**	1.000								
Emp	0.074	-0.110	1.000							
GDP	-0.146	-0.077	0.238**	1.000						
GFCF	-0.014	-0.031	-0.756***	0.087	1.000					
M2	-0.186*	0.502***	-0.347***	0.170*	0.217**	1.000				
Polit	-0.146	0.342***	-0.434***	0.250**	0.646***	0.294***	1.000			
Regu	0.123	-0.215**	0.692***	0.004	-0.509***	-0.416***	-0.357***	1.000		
Rule	0.521***	-0.199**	0.487***	0.125	-0.155	-0.074	0.008	0.584***	1.000	
Voice	-0.351***	0.350***	-0.408***	0.207**	0.572***	0.234**	0.889***	-0.232**	-0.029	1.000

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

The results of Table 3 suggest that *Corr* was negatively significantly correlated with *Inf*, *M2*, and *Voice*. However, it showed a positive and significant correlation with the rule. The relationships of *Corr* with other variables, such as *Emp*, *GDP*, *GFCF*, *Polit*, and *Regu*, were either weak or statistically insignificant. The result reveals that inflation (negatively), the rule of law (positively), and voice and accountability (negatively) were significantly associated with corruption in Nepal. Additionally, the findings show that *Inf* positively correlated with the *M2*. *Emp* was significant and negatively correlated with *Polit* and *Voice*. *GDP* had positive correlations with *Emp* and *Voice*. *GFCF* was negatively associated with *Emp*. *Polit* was positively correlated with *Inf*, *Emp*, and *GDP*. *Regu* was negatively correlated with *Emp* and *GFCF*. The *Rule* was positively correlated with *Voice*. The *Voice* was positively correlated with *Polit* and *M2*. The overall results of correlation indicate that the variables are free from multicollinearity.

Stationarity of the Series

Analyzing whether a series is stationary or not is essential, for the stationarity or otherwise of a series can strongly influence its behavior and properties (Brooks, 2008). The results of the unit root test are displayed in Table 4. ADF, PP, and ZA tests were performed to test the stationarity of the series with a maximum of 4 lags, and AIC criteria with both trend and intercept were considered. ZA test was taken into account to explore the structural breaks in the series.

Table 4

Unit Root Test

Variables	ADF		PP		ZA			
	Level	Δ	Level	Δ	Level	Break year	Δ	Break year
Corr	-2.127	-4.432***	-2.455	-5.384***	-4.973***	2003Q3	-5.029***	2004Q3
Inf	-2.068	-7.703***	-3.559**	-5.947***	-4.162***	2007Q3	-8.010	2001Q4
Emp	-3.514**	-5.872***	-3.267*	-4.567***	-4.538***	2017Q2	-5.823	2002Q3
GDP	-3.844**	-3.954**	-3.592**	-4.875***	-4.276	2017Q1	-5.385**	2017Q4
GFCF	-2.479	-3.421*	-2.523	-5.109***	-1.939	2004Q2	-5.712**	2014Q2
M2	-2.039	-4.825***	-3.028	-6.045***	-3.856***	2007Q2	-5.763**	2003Q3
Polit	-2.849	-3.179*	-3.445*	-4.591***	-4.499	2018Q1	-4.556**	2017Q4
Regu	-0.238	-5.080***	-0.848	-5.106***	-2.223	2011Q2	-4.472***	2003Q3
Rule	-1.287	-3.672**	-1.007	-4.514***	-3.129	2003Q2	-5.422*	2005Q2
Voice	-2.492	-4.637***	-2.429	-4.642***	-2.965	2016Q2	-5.700***	2001Q2

Note. *** p<0.01, ** p<0.05, * p<0.1

The ADF test shows that only level data of *Emp* and *GDP* were statistically significant at 5% level. The rest of the variables—*Corr*, *Inf, M2*, *Regu* (with lag 2), and *Voice* (with lag 2) were significant at 1%, whereas *GFCF* and *Polit* at 10% and *Rule* were significant at a 5% significance level after taking the first difference. ADF tests reveal that the variables had a mixed order of integration {$I(0)$ and $I(1)$}. Similarly, the PP test indicates that all the variables except *Inf* (at 5%), *Emp* (at 10%), and *GDP* (at 5%) were stationary at a 1% level of significance after differencing. Moreover, the ZA test showed mixed results. *Corr*, *Inf*, *EMP*, and *M2* were negatively significant at 1% with level data. The rest of the variables, *GDP* (with lag 2), *GFCF* (with lag 2), and *Polit* (with lag 1) are significant at 5%; other variables, including *Regu* and *Voice* (with lag 2), were stationary at 1%, and *Rule* (with lag 3) was stationary at 10% after taking the first difference. It is evident that there were structural breaks in all data series, which confirmed the QARDL was appropriate (Sun et al., 2022; Aziz et al., 2020; Shahbaz et al., 2018) for the analysis.

Ordinary Least Square Analysis

Before QARDL, the OLS regression was performed to estimate the linear effect on corruption and other variables of interest. Table 5 shows the results of different OLS regression models with a quarterly form of an annual series of variables of interest.

Table 5
Results of OLS

	Dependent variable		
	Corr	*Corr*	*Corr*
Independent Variables	Model 1	Model 2	Model 3
Inf	-0.00752** (.0037605)	-	0.0136*** (0.00315)
Rule	-	0.2702*** (0.0379)	0.401*** (0.0348)
Regu	-	-0.2360*** (0.0850)	-0.183** (0.08)
Polit	-	0.0917*** (0.0324)	0.0788*** (0.027)
Voice	-	-0.3110*** (0.0599)	-0.380*** (0.048)
Emp	-	-	-0.129*** (0.0237)
GDP	-	-	0.00667* (0.00351)
GFCF	-	-	-0.00297 (0.00297)
M2	-	-	-0.0106*** (0.00163)
Constant	-0.15497*** (0.0067486)	-0.1777*** (0.0139)	1.038*** (0.231)
R^2	0.0377	0.5273	0.729
Adj. R^2	0.0283	0.5082	0.703
F-statistics	4.00**	27.61***	28.14***

Note. Parenthesis indicates the standard error. *** p<0.01, ** p<0.05, * p<0.1

In the first model (Table 5), the *Corr* is negatively associated with the *Inf* at a 5% significance level, indicating that as the level of inflation increases, corruption control tends to decrease. It reveals that inflation is corruption, as Braun and Di Tella (2004) and Al-Marhubi (2000). It is evidence, as Shiller (1996) demonstrated that the general population was worried that inflation creates openings for deceit and negatively impacts ethical values. It might be caused because only inflation is taken into account. Thus, the full sample model has been applied to confirm it.

In the second model (Table 5), the corruption control index was positively influenced by the explanatory variables *Rule* and *Polit*. The coefficient for *Rule* was 0.2702, which was highly significant at the 0.01 level. This suggests that a stronger rule of law is associated with better corruption control, as identified by Mungiu-Pippidi (2018). The coefficient for *Polit* was 0.0917, also significant at the 0.01 level, indicating that perception of political stability and non-violence is associated with better corruption control (Asongu & Nwachukwu, 2015). In contrast, the parameters of *Regu* and *Voice* were negatively influenced by the Corr at a 1% level in contrast with Drebee et al. (2020). The findings highlight Nepal's unsatisfactory regulatory quality perception, impacting its ability to control corruption. Furthermore, reduced voice and accountability perceptions, stemming from limited citizen participation and constrained freedoms, also contribute to corruption issues.

The third fully sampled model (Table 5) showed contradictory results. One targeted relationship between *Corr* and *Inf* was positively significant at 1% with governance indicators and other control variables. This positive relation suggests that higher levels of inflation were associated with better corruption control. It was important to note that the effect size was small. It may happen due to the prevailing variations in inflation and the increasing corruption in Nepal. On the other hand, inflation might indirectly contribute to corruption control by discouraging hoarding and promoting investment, which can lead to improved economic conditions and opportunities for individuals. The impact of *Rule* on *Corr* was the same as Model 2. Countries with well-established legal systems, effective enforcement, and strong judicial institutions tend to have better corruption control (North et al., 2013; Mendonça & Fonseca, 2012).

In contrast, *Regu* and *Corr* were inversely associated as reported in Model 2 (Table 5), suggesting countries with excessive or ineffective regulations and policy logjams may face challenges for controlling corruption. However, the effect size is relatively small compared to other variables in the model. However, the positive and significant coefficient of *Polit* indicates that greater political stability was associated with better corruption control, as consistent with Asongu (2013), Nur-Tegin and Czap (2012), and Schumacher (2013). Countries with stable political environments thus tend to have stronger institutions, which can effectively combat corruption.

Conversely, the negative coefficient for *Voice* was highly significant at the 0.01 level. It reveals that the ability to express their *Voice*, participate in decision-making processes, and hold public officials accountable are not satisfactory in Nepal, which can help reduce opportunities for corruption, and it is consistent with Asongu (2013). Similarly, *Emp* was negatively influenced by *Corr* at 1% level, which indicated that as employment levels rise, corruption control tends to deteriorate, which is consistent with the findings of Goel and Nelson (1998). This may be because, with higher employment rates, there could be more economic activity and interactions between individuals and organizations, creating more opportunities for employed corruption to occur.

Moreover, *GPD* and *Corr* had a positive association, consistent with Glaeser and Saks (2006) but in contrast with Dong and Torgler (2013), at 10%, which suggests that higher GDP levels were associated with better corruption control, although the effect size is relatively small. Likewise, *GFCF* had no substantial impact on *Corr*. In contrast, negative and highly significant *M2* reveals that a larger money supply could be associated with poorer corruption control. The reasons behind this are that a rise in money supply leading to a spike in inflation may slow down investments and economic growth while also raising the level of corruption (Braun & Di Tella, 2004). Increasing money supply, on the other hand, increased liquidity in the economy can potentially create opportunities for corrupt practices.

Results of Quantile ARDL

The QARD is the nonlinear regression model to estimate the relationship of explanatory variables on the dependent variable in the short-run and long-run across the different quantiles. The time series of the estimated study are not normally distributed, and the presence of structural breaks in the dataset, the QARDL has been applied. The short-run dynamics are performed with SIC criteria for lag selection (Ivanov & Kilian, 2005), where 1-period lag is considered. Tables 6 and 7 report the short-run and long-run coefficient of variables of interest across eleven different quintiles. The coefficient of □(*ECT*) was negatively significant across all quantiles, revealing that there can be reversion or correct to long-run equilibrium when there was any disequilibrium in the short run on all explanatory variables. It implies a dynamic relationship in the model, where short-run deviations from equilibrium are corrected over time.

Short Run Dynamics

Short-run quantile ARDL error correction results ranging from the different eleven quantiles are presented in Table 6. The previous year of *Corr* (lagged *Corr*) was a positive association of present *Corr* across all quintiles at 1%. It indicates that the past year's higher corruption control itself is associated with better corruption control in the present in the short run. Current year inflation ranging from 0.05^{th} to 0.50^{th} quantile and 0.95^{th} quintiles positively influenced corruption control. Inflation therefore, promotes economic activities and boosts productivity, investment, and aggregate demand. Thus, it may help control corruption. In contrast, the previous year's inflation of 0.10^{th} to 0.70^{th} and the upper two quantiles were negatively significant with *Corr*. Previous year's hardship, cost of living, and results of inequalities (Paldam, 2002) surfaced in the current and then it is insisted to involved in irregularities and corruption. It is consistent with existing literature (Akça et al., 2012; Evrensel, 2010; Uroos et al., 2022). The reasons behind inflation can contribute to corruption by reducing purchasing power, creating economic uncertainty, distorting incentives, weakening governance, and fostering rent-seeking behavior, which can erode trust, promote unfairness, and incentivize individuals to engage in corrupt practices for personal gain.

Table 6

Short Run Dynamics

Quantile	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
□(ECT)	-0.148***	-0.159****	-0.165***	-0.147***	-0.139***	-0.117***	-0.129***	-0.131***	-0.149***	-0.114*	-0.206***
ϕ_1(Corr)	0.312**	0.430***	0.506***	0.579***	0.626***	0.670***	0.679***	0.670***	0.713***	0.677***	0.730***
□$_0$(Inf)	0.021***	0.017***	0.014***	0.011**	0.010**	0.010**	0.009	0.010	0.011	0.011	0.013***
□$_1$(Inf)	-0.008	-0.010***	-0.011***	-0.009**	-0.009***	-0.009***	-0.009**	-0.009**	-0.009	-0.009**	-0.009***
□$_0$(Emp)	0.058	0.004	-0.038	-0.064	-0.076	-0.111***	-0.095**	-0.126	-0.133	-0.123	-0.111
□$_1$(Emp)	0.228***	0.119*	0.108*	0.100	0.091	0.102*	0.079	0.083	0.061	0.001	-0.071
□$_0$(GDP)	-0.010**	-0.006**	-0.004*	-0.005	-0.004	-0.002	-0.002	-0.002	0.001	0.004	0.003
□$_1$(GDP)	-0.002	0.000	0.000	0.002	0.003*	0.003*	0.002	0.002	0.000	0.001	0.004
□$_0$(GFCF)	-0.019	-0.014	0.009	0.022	0.025	0.034**	0.036*	0.043	0.042	0.036	0.029
□$_1$(GFCF)	-0.065**	-0.020	-0.025	-0.029	-0.030	-0.036***	-0.033**	-0.033	-0.022	-0.007	0.018
□$_0$(M2)	-0.010***	-0.010***	-0.010***	-0.009**	-0.010**	-0.011***	-0.010***	-0.010**	-0.010	-0.010	-0.009***
□$_1$(M2)	0.005*	0.006***	0.007***	0.009**	0.010***	0.010***	0.010***	0.010***	0.009	0.009*	0.007***
ϑ_0(Polit)	0.389***	0.273***	0.336***	0.345***	0.346***	0.353***	0.357***	0.348***	0.349	0.358**	0.336***
ϑ_1(Polit)	-0.030	-0.114	-0.224**	-0.256***	-0.275***	-0.290***	-0.298***	-0.302**	-0.319	-0.335**	-0.315***
$_0$(Regu)	0.358***	0.490***	0.493**	0.565***	0.566***	0.546***	0.474*	0.477	0.329	0.130	0.133
$_1$(Regu)	-0.035	-0.026	-0.028	-0.194	-0.268*	d	-0.268*	-0.247	-0.180	-0.225	-0.238*
$_0$(Voice)	-0.585***	-0.587***	-0.673***	-0.662***	-0.624***	-0.661***	-0.650***	-0.675*	-0.563	-0.486*	-0.505***
$_1$(Voice)	0.377**	0.296**	0.382***	0.424***	0.426***	0.477***	0.469***	0.472**	0.377	0.321	0.272**
$_0$(Rule)	0.387***	0.445**	0.515***	0.482**	0.449**	0.534***	0.514	0.507	0.358	0.215	0.043
$_1$(Rule)	0.095	-0.063	-0.150	-0.236	-0.238	-0.351*	-0.357	-0.351	-0.212	-0.157	-0.065

Note. *** p<0.01, ** p<0.05, * p<0.1

Table 6 also demonstrates that the middle 0.50th and 0.60th quantiles *Emp* was negatively influenced by *Corr*. It indicates that the current level of employment doesn't effectively curb corruption. It is also revealed that employed people commit more corruption activities due to wage inefficiency and inequality (An & Kweon, 2017; Demirgüç-Kunt et al., 2023). In contrast, lower order and mean quantiles of *Emp* were positively significant that the higher employment in the previous year was associated with a higher corruption control in the current year. Moreover, the coefficient of lower quartiles of *GDP* was negatively significant, and the lagged *GDP* of middle quartiles was positively significant, as consistent with Uroos et al. (2022) and Lučić et al. (2016). It reveals that previous years' *GDP* had a stronger impact on reducing corruption compared to the current year's *GDP*. Higher current-year *GDP* can foster corruption through increased financial resources and illicit opportunities. Yet, when accompanied by effective governance, transparency, and accountability, sustained *GDP* growth can reduce corruption incentives and opportunities, fostering prosperity and equity.

The coefficient of median quantiles of *GFCF* was positively and lagged *GFCF* was negatively significant, according to Zheng and Xiao (2020). It reveals that the current year *GFCF* could help curb corruption as it signifies investments in infrastructure, technology, and productive assets, which can enhance efficiency, accountability, and transparency in public and private sectors. On the flip side, the previous year's *GFCF* could be associated with increased corruption if investments were misused or poorly managed, leading to a lack of oversight, misallocation of resources, and opportunities for rent-seeking behavior. The findings reveal that *M2* was negative, as prior study (Braun & Di Tella, 2004), and lagged *M2* was positively associated with *Corr* in the short run across all ranges of quantiles other than 0.70th and 0.80th quantiles. This variation might be due to factors like time lags in monetary policy or long-term economic stability's impact on corruption. The relationship also varies across quantiles, indicating differing effects of *M2* on corruption in specific data ranges.

The positive coefficients of *Polit* across the quantiles except the 80th quantile indicated that political stability and absence of violence lead to curbing corruption. In contrast, the middle and upper quantiles of lagged *Polit* implied that the previous year's political stability and absence of violence were not effective in controlling corruption. The positive coefficients of *Polit* across most quantiles suggest that these factors played a significant role in reducing corruption as evidenced by Türedi, and Altıner (2016) and Elbahnasawy and Revier (2012). However, the lack of effectiveness in the middle and upper quantiles of lagged *Polit* indicates that the impact of the previous year's political stability and absence of violence could not be as influential in controlling corruption. This could be due to other factors, such as changes in governance, institutional reforms, or evolving social and economic dynamics that affect corruption levels independently toward political stability.

Regu was positively associated with *Corr* up to middle quantiles but lagged *Regu* of middle quantiles were negatively associated with Corr. It reveals that the current year's regulatory quality was more crucial than the previous years to control corruption. The reasons behind this may be that effective policies and regulations implemented in the current year have a positive impact on curbing corruption (Mohd-Rashid et al., 2022). In contrast, regulatory measures implemented in the past may not have had a significant impact on curbing corruption. Possible reasons include a time lag for reforms to show effects, inadequate enforcement of regulations, and changing circumstances that require updated measures. The finding also suggests that *Voice* was negative across all quantiles except 0.80th and 0.90th quantiles while lagged *Voice* was positively influenced by the *Corr*. This lagged result is consistent with Kock and Gaskins (2014). Thus, immediate voices and accountability alone may not effectively control corruption. Greater citizen engagement in government selection, alongside freedom of expression, association, and media, tends to reduce corruption. This implies that sustained citizen participation and institutional changes can gradually decrease corruption.

The results also reveal that lower quantiles up to 0.40th quantiles of the *Rule* were positively significant with *Corr*. The lagged rule was not significant with *Corr*. It indicates that when there is a well-functioning legal framework, effective contract enforcement, property rights protection, and a reliable judiciary, it helps to curb corruption. The findings highlight the importance of promoting and strengthening the rule of law as a crucial measure in combating corruption and fostering a more transparent and accountable society (Mendonça & Fonseca, 2012; North et al., 2013; Ristei, 2010).

Long Run Dynamics

Table 7 reports the long-run coefficient of variables of interest across the different quantiles. The long-run coefficient of *Inf* above 0.20th quantiles was positively significant with *Corr* but its effect was very small. In the long run, in contrast with Akça et al. (2012), inflation can help control corruption by reducing the discretionary power of public officials and minimizing the opportunities for rent-seeking behavior, as higher inflation erodes the value of bribes and illicit gains. Conversely, *Emp* above 0.20th quantiles were inversely influenced on the *Corr*. It implies that expanding job opportunities without proper oversight can lead to opaque hiring processes, fostering bribery and nepotism. Concurrently, more people in positions of power can escalate opportunistic and abusive behavior, exacerbating corruption. High-level employee corruption in Nepal underscores how rising employment levels can foster such practices. However, some studies suggest that higher wages can reduce corruption in the country (Haque & Sahay, 1996; Van Rijckeghem & Weder, 2001). Simultaneously, research like the work by Besley and McLaren (1993), as well as Macchiavello (2008), proposed that employing increased government salaries as an anti-corruption strategy in less affluent nations might not be effective due to the substantial

associated expenses or the potential risk of dedicated personnel being overshadowed by self-interested, easily corruptible individuals (Dietzenbacher et al., 2013).

Table 7:
Long Run Dynamics

Quantile	ECT	R_{Inf}	R_{Emp}	R_{GDP}	R_{GFCF}	R_{M2}	R_{Polit}	R_{Regu}	R_{Rule}	R_{Voice}
0.05	0.234	-0.0008	-0.0456	-0.0035	0.0052	-0.009**	0.2009***	-0.3075	0.4341***	-0.583***
0.10	0.416	-0.0004	-0.0646	-0.0015	0.0038	-0.0091	0.2052***	-0.2917	0.4309***	-0.596***
0.20	0.921***	0.009***	-0.116***	0.0056	-0.0036	-0.012***	0.1121***	-0.1525	0.3415***	-0.461***
0.30	0.887***	0.009**	-0.112***	0.0051	-0.0036	-0.010***	0.1165***	-0.1514	0.3513***	-0.459***
0.40	0.811***	0.009**	-0.104***	0.0032	-0.0034	-0.010***	0.0894**	-0.1979*	0.3538***	-0.398***
0.50	0.959***	0.013***	-0.120***	0.0064	-0.0037	-0.009***	0.0605*	-0.1044	0.3746***	-0.364***
0.60	1.022***	0.015***	-0.126***	0.007*	-0.007**	-0.010***	0.0705*	-0.1541	0.3824***	-0.362***
0.70	0.995***	0.018***	-0.127***	0.011**	-0.0010	-0.011***	0.0533	-0.1789*	0.3865***	-0.381***
0.80	0.991***	0.018***	-0.128***	0.0100	0.0002	-0.012***	0.0093	-0.2351**	0.3800***	-0.300***
0.90	1.300*	0.018***	-0.160**	0.0100	-0.0011	-0.012***	-0.0013	-0.2411**	0.4122***	-0.289***
0.95	2.054***	0.020**	-0.236***	0.0091	-0.0100*	-0.016***	0.0267	-0.3660**	0.5032***	-0.310***

Note. *** p<0.01, ** p<0.05, * p<0.1

Only 0.60th and 0.70th quantiles of *GDP* were positively associated with *Corr*. It implies that only the middle and upper quantiles of *GDP* helped to control corruption in the long run. Some studies (Abed & Davoodi, 2002; Lučić et al., 2016) provided evidence that corruption can be reduced when *GDP* rises. As the economy develops, there's a heightened emphasis on governance and anti-corruption measures driven by resource availability, institutional progress, and international pressure to combat corruption. Likewise, *GFCF* did not significantly influence *Corr* in the long run. But, its 0.60th quantiles and 0.95th quantiles were negatively significant. It provides an insight that, to some extent, gross capital formation is not satisfactory, and there may be corruption practiced.

The coefficient of *M2*, except the 0.10th quantile, was negatively influenced by the *Corr*. This relationship could be explained by the fact that excessive money supply can lead to an environment where bribery and illicit transactions become more prevalent, undermining corruption control efforts. Up to the 0.60th quantiles, *Polit* is positively associated with *Corr*. Some studies, including Asongu (2013) and Nur-Tegin and Czap (2012) found that political stability can reduce corruption. It reveals that when there is better governance, transparency, absence of violence, and accountability in the political system, efforts to control corruption are enhanced. Effective political institutions and practices can create a strong anti-corruption environment. Moreover, higher-order quantiles of *Regu* were negatively influenced by the *Corr*. This results from various factors, such as regulatory capture by powerful interests, excessive bureaucracy, inadequate enforcement, regulatory overload, and potential enforcement agency capture. These elements collectively drive corruption despite a higher quality of regulation (Drebee et al., 2020).

The positive coefficient of the *Rule* across all ranges of quantiles with significantly high values suggested that as the rule of law strengthens, the corruption control index (Corr) inclined to increase, as evident with North et al. (2013) and Mendonça and Fonseca (2012); Ristei (2010). A robust rule of law discourages corruption by holding individuals and institutions accountable. Effective legal institutions and enforcement mechanisms bolster anti-corruption efforts. Similarly, the negative coefficient of *Voice* indicated that as *Voice* improved, the corruption control index (Corr) tended to decrease, which is opposed to the findings of Kock and Gaskins (2014). This implies that higher citizen participation, free expression, association, and media alone may not suffice to control Nepal's corruption. Their impact hinges on robust institutions, effective checks, tackling deep-rooted corruption networks, and addressing cultural factors.

Wald Test for Consistency of the Results

The F-statistics of the Wald test for both short-run and long-run parameter consistency are reported in Table 8. H_0 suggests that there is no parameter constancy for the speed of adjustment parameters, while H_1 suggests its existence. The results of the Wald test indicated the statistical significance of most of the parameters in the model. In the case of short-run parameters, except *GDP*, all others were statistically significant, implying that short-run parameters were constancy for the speed of adjustment parameters. It suggests that heterogeneity of inflation and governance factors with other control variables responds to corruption control and their asymmetries across the ranged quantiles. The significant *ECT* parameter implied being of a long-run asymmetric relationship for inflation and governance and other on corruption control index. Long-run parameters except $\square_{GDP}$, $\square_{GFCF}$, and $\square_{Regu}$ rejected the null hypothesis and concluded that there is a dynamic relationship of *Inf*, *Emp*, *M2*, *Polit, Rule,* and *Voice* are exited.

Table 8

Results of the Wald Test

Parameters	F-statistic (P value)	Parameters	F-statistic (P value)
$\varphi_1(Corr)$	75.84194*** (0.0000)	⟨(t)	14.14414*** (0.0003)
$\rceil_0(Inf)$	5.578397** (0.0206)	$®_{Inf}$	11.25202*** (0.0011)
$\rceil_1(Inf)$	11.68465*** (0.0010)	$®_{Emp}$	20.06219*** (0.0000)
$\lfloor_0(Emp)$	7.353137*** (0.0082)	$®_{GDP}$	2.440014 (0.1216)
$\lfloor_1(Emp)$	3.015877* (0.0862)	$®_{GFCF}$	1.605527 (0.2083)
$™_0(GDP)$	0.524055 (0.4712)	$®_{M2}$	29.94318*** (0.0000)
$™_1(GDP)$	3.132270* (0.0805)	$®_{Polit}$	2.805808* (0.0972)
$\rfloor_0(GFCF)$	4.224167** (0.0430)	$®_{Regu}$	1.201721 (0.2758)
$\rfloor_1(GFCF)$	7.033377*** (0.0096)	$®_{Rule}$	71.29627*** (0.0000)
$\lfloor_0(M2)$	15.72335*** (0.0002)	$®_{Voice}$	32.52643*** (0.0000)
$\lfloor_1(M2)$	32.17967*** (0.0000)		
$\vartheta_0(Polit)$	34.81700*** (0.0000)		

ϑ_1(*Polit*)	34.56956*** (0.0000)
$_0$(*Regu*)	8.027971*** (0.0058)
$_1$(*Regu*)	5.451164** (0.0220)
$_0$(*Voice*)	7.459658*** (0.0077)
$_1$(*Voice*)	3.388737* (0.0693)
$_0$(*Rule*)	14.38341*** (0.0003)
$_1$(*Rule*)	16.19404*** (0.0001)
$\rangle$(*ECT*)	17.44903*** (0.0001)

Note. The significance level is denoted by *, **, and *** representing the 1%, 5%, and 10% thresholds, while the P-value is presented within parentheses.

Conclusion and Implication

This study investigates the various channels of the corruption nexus. It examines the connection between inflation, governance, and corruption in the Nepali economy using time series data from 1996 to 2021. The ordinary least squares (OLS) and quantile autoregressive distributed lag (ARDL) models were utilized to estimate the expected relationships. The Quantile ARDL approach introduced by Cho et al. (2015) is useful for addressing structural breaks and non-normality of the data. It can estimate the effects of inflation and governance on corruption across different quantiles, from lower to higher values.

The correlation results reveal that *Corr* was negatively correlated with *Inf, M2*, and *Voice*. However, the results also show that *Corr* was positively correlated with Rule. The OLS estimation, when *Inf* was taken as the only regressor, finds that a rise in inflation increases corruption. On the other hand, when governance indicators were considered, *Rule* and *Polit* are effective in controlling corruption, while *Regu* and *Voice* are not sufficient to control or promote corruption in Nepal. In the full sampled model, OLS results are quite different. The results report that rises in Inf are helpful to combat corruption. Moreover, the governance indicators *Regu* and *Polit* had the same effect in corruption. However, *Regu* and *Voice* are not sufficient to control corruption in Nepal. Similarly, some other control regressors have mixed results. The findings suggest that increases in Emp result in more corruption, and a rise in *GDP* can be fruitful in reducing corruption in Nepal.

The results of the short-run QARDL model show that corruption in the previous year can lead to corruption in the present. Similarly, an increase in inflation from the lower to middle quantile range reduces corruption. However, an increase in inflation from the lower middle to upper quantile range of lagged inflation can increase corruption. There are mixed results regarding the governance and corruption nexus. Polit enhances the corruption control index, but middle and higher quantiles of lagged *Polit* are not effective

in controlling corruption. Lower to middle quantiles of *Regu* are helpful in controlling corruption, but the middle quantile of *Regu* promotes corruption. The results also suggest that lagged *Voice* is more crucial for controlling corruption than present *Voice*. On the other hand, lower quantiles of *Rule* can enhance corruption control. In contrast, middle quantiles of current *Emp* increase corruption. However, an increase in the lower quantile of lagged *Emp* can combat corruption. Moreover, lower quantile *GDP* promotes corruption, but the previous year's GDP growth can be helpful in controlling corruption. In contrast, a rise in *M2* promotes corruption but lagged *M2* can improve corruption control. Likewise, the median *GFCF* has an inverse influence on corruption control. In contrast, the lagged *GFCF* promotes corruption in the country.

The negative and significant error correction term (ECT) confirms that there is a long-run association between inflation and governance regarding corruption control. The long-run QARDL estimation reveals that the lower middle to upper quantiles of inflation helps control corruption. The results also confirm that lower and middle quantiles of *Polit* and all quantiles of *Rule* are significantly fruitful in combating corruption. However, other governance indicators—any increase in higher-order quantiles of *Regu* and *Voice* across all quantiles—are statistically negative and can contribute to an increase in corruption. On the other hand, some regressors—lower middle to upper quantile *Emp*, and *M2* except the 0.10th quantile—negatively influence corruption control. This implies that any rise in *Emp* and *M2* leads to corruption in Nepal. However, the 0.60th and 0.70th quantiles of GDP can improve the corruption control index in Nepal.

The Implication of the Study

The study's findings suggest several key policy implications for combating corruption in Nepal. Policymakers should focus on maintaining moderate levels of inflation and prioritize strengthening governance indicators like the rule of law and political stability to effectively curb corruption. However, a nuanced approach is required, as the impact of certain variables may vary across different quantiles. Enhancing regulatory controls and citizen participation should be accompanied by a focus on the quality and effectiveness of regulations and meaningful engagement in governance processes. Policies aimed at improving employment opportunities and fostering economic growth can play a vital role in reducing corruption, but careful management is essential. Additionally, considering lagged effects and adopting a long-term perspective are crucial aspects of effective anti-corruption strategies. Regular monitoring and data-driven adjustments to policies are vital to ensuring their success in combating corruption in Nepal.

Authors' contribution: All authors parallelly contributed to the paper conceptualization, data collection/analysis, reviewing, and writing.

Conflicts of interest: There are no conflicts of interest reported.

References

Abed, G. T., & Davoodi, H. R. (2002). Corruption, structural reforms, and economic performance in the transition economies. In G. T. Abed, & S. Gupta (Eds.), *Governance, corruption, & economic performance* (pp. 489–537). International Monetary Fund.

Ades, A., & Di Tella, R. (1999). Rents, competition, and corruption. *American Economic Review*, *89*(4), 982-993. https://doi.org/10.1257/aer.89.4.982

Akça, H., Ata, A. Y., & Karaca, C. (2012). Inflation and corruption relationship: Evidence from panel data in developed and developing countries. *International Journal of Economics and Financial Issues*, *2*(3), 281-295.

Al-Marhubi, F. A. (2000). Corruption and inflation. *Economics Letters*, *66*(2), 199-202. https://doi.org/10.1016/S0165-1765(99)00230-X

An, W., & Kweon, Y. (2017). Do higher government wages induce less corruption? Cross-country panel evidence. *Journal of Policy Modeling*, *39*(5), 809-826. https://doi.org/10.1016/j.jpolmod.2017.03.001

Arain, H., Han, L., Sharif, A., & Meo, M. S. (2019). Investigating the effect of inbound tourism on FDI: The importance of quantile estimations. *Tourism Economics*, *26*(4), 682-703. https://doi.org/10.1177/1354816619859695

Asongu, S. A. (2013). Fighting corruption in Africa: Do existing corruption-control levels matter? *International Journal of Development Issues*, *12*(1), 36-52. https://doi.org/10.1108/14468951311322109

Asongu, S., & Nwachukwu, J. (2015). A good turn deserves another: Political stability, corruption and corruption-control. *Economics Bulletin*, *35*(4), 2037-2048. https://doi.org/10.2139/ssrn.2662731

Aziz, N., Sharif, A., Raza, A., & Rong, K. (2020). Revisiting the role of forestry, agriculture, and renewable energy in testing environment Kuznets curve in Pakistan: Evidence from quantile ARDL approach. *Environmental Science and Pollution Research*, *27*, 10115-10128. https://doi.org/10.1007/s11356-020-07798-1

Baig, S., Yenigun, C., & Alam, K. M. (2022). Political capacity and corruption nexus: Re-examining evidence for developing countries. *Economies*, *10*(6), 127. https://doi.org/10.3390/economies10060127

Bajracharya, A. (2023, May 4). 106 file complaints against fraud of over Rs. 230 millions. *My Republica*, *VX*(121), 4. https://myrepublica.nagariknetwork.com/news/police-make-high-profile-arrests/ [date access June 25, 2023]

Banfield, E. C. (1975). Corruption as a feature of governmental organization. *The Journal of Law and Economics*, *18*(3), 587-605. https://doi.org/10.1086/466826

Besley, T., & McLaren, J. (1993). Taxes and bribery: The role of wage incentives. *The Economic Journal*, *103*(416), 119-141. https://doi.org/10.2307/2234340

Bittencourt, M., Van Eyden, R., & Seleteng, M. (2015). Inflation and economic growth: Evidence from the Southern African development community. *South African Journal of Economics, 83*(3), 411-424. https://doi.org/10.1111/saje.12075

Braun, M., & Di Tella, R. (2004). Inflation, inflation variability, and corruption. *Economics & Politics*, *16*(1), 77-100. https://doi.org/10.1111/j.1468-0343.2004.00132.x

Brooks, C. (2008). Introductory econometrics for finance. Press. Cambridge University Press

Campos, J. E., & Pradhan, S. (2007) (Eds.). *The many faces of corruption: Tracking vulnerabilities at the sector level.* World Bank.

Cho, J. S., Kim, T. H., & Shin, Y. (2015). Quantile cointegration in the autoregressive distributed-lag modeling framework. *Journal of Economics 188*, 281–300. https://doi.org/10.1016/j.jeconom.2015.05.003

Demirgüç-Kunt, A., Lokshin, M., & Kolchin, V. (2023). *Effects of public sector wages on corruption: Wage inequality matters* (Policy Research Working Paper Series 9643). The World Bank. https://doi.org/10.1016/j.jce.2023.03.005

Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, *74*(366a), 427-431. https://doi.org/10.1080/01621459.1979.10482531

Dietzenbacher, E., Le, V. H., & Haan, J. D. (16 Jun 2013) Higher government wages may reduce corruption. *VoxEU.* https://cepr.org/voxeu/columns/higher-government-wages-may-reduce-corruption

Dong, B., & Torgler, B. (2013). Causes of corruption: Evidence from China. *China Economic Review*, *26*, 152-169. https://doi.org/10.1016/j.chieco.2012.09.005

Drebee, H. A., Abdul-Razak, N. A., & Shaybth, R. T. (2020). The impact of governance indicators on corruption in Arab countries. *Contemporary Economics*, 354-365. https://doi.org/10.5709/ce.1897-9254.409

Elbahnasawy, N. G., & Revier, C. F. (2012). The determinants of corruption: Cross-country-panel-data analysis. *The Developing Economies*, *50*(4), 311-333. https://doi.org/10.1111/j.1746-1049.2012.00177.x

Evrensel, A. Y. (2010). Institutional and economic determinants of corruption: A cross-section analysis. *Applied Economics Letters, 17*(6), 551–554. https://doi.org/10.1080/13504850802297814

Gajurel, R. P., & Dangal, D. N. (2023). Does Fiscal Deficit Cause Economic Growth? Evidence from Nepal. *Gyanjyoti*, *3*(1), 40-57. https://doi.org/10.3126/gyanjyoti.v3i1.53034

Ghimire, D. K. (2022). Corruption and underdevelopment in Nepal: A content analysis. *Dhaulagiri Journal of Sociology and Anthropology*, *16*(01), 98-108. https://doi.org/10.3126/dsaj.v16i01.50979

Glaeser, E. L., & Saks, R. E. (2006). Corruption in America. *Journal of Public Economics*, *90*(6-7), 1053-1072. https://doi.org/10.1016/j.jpubeco.2005.08.007

Goel, R. K., & Nelson, M. A. (1998). Corruption and government size: A disaggregated analysis. *Public Choice*, *97*(1-2), 107-120. https://doi.org/10.1023/A:1004900603583

Haque, N. U., & Sahay, R. (1996). Do government wage cuts close budget deficits? Costs of corruption. *Staff Papers*, *43*(4), 754-778. https://doi.org/10.2307/3867368

Ivanov, V., & Kilian, L. (2005). A practitioner's guide to lag order selection for VAR impulse Response Analysis. *Studies in Nonlinear Dynamics & Econometrics, 9(1).* https://doi.org/ 10.2202/1558-3708.1219

Jarwana, S. A., Fawazb, N. A., & Hammadc, S. A. (2020). Estimating the impact of corruption on the currency's value: A case study of Iraq using the ARDL model. *International Journal of Innovation, Creativity and Change*, *13*(9), 404-415.

Johnston, M. (2005). *Syndromes of corruption: Wealth, power, and democracy*. Cambridge University Press.

Karlström, K. (2015). Decentralization, corruption, and the role of democracy (Working paper series No. 14). The Quality of Government Institute, Department of Political Science, University of Gothenburg

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009*). Governance matters VIII: Aggregate and individual governance indicators for 1996–2008.* The World Bank.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). *Governance matters VIII : aggregate and individual governance indicators 1996-2008* (Policy research working paper no. WPS 4978). World Bank Group. https://doi.org/10.1596/1813-9450-4978

Khan, R. E. A., & Naeem, H. M. (2020). Corruption, income inequality and human resource development in developing economies. *Asian Journal of Economic Modelling*, *8*(4), 248-259. https://doi.org/10.18488/journal.8.2020.84.248.259

Kharel, K. R., Upadhyay, Y. M., & Adhikari, D. B. (2021). Trade liberalization in Nepal: Analysis of its impact. *Butwal Campus Journal*, *4*(1-2), 25-36. https://doi.org/10.3126/bcj.v4i1-2.44983

Klitgaard, P., Maclean-Abaroa, R., & Parris, H. L. (2000). *Corrupt cities: A practical guide to cure and prevention.* Institute for Contemporary Studies/World Bank Institute

Kock, N., & Gaskins, L. (2014). The mediating role of voice and accountability in the relationship between internet diffusion and government corruption in Latin America and Sub-Saharan Africa. *Information Technology for Development*, *20*(1), 23-43. https://doi.org/10.1080/02681102.2013.832129

Lučić, D., Radišić, M., & Dobromirov, D. (2016). Causality between corruption and the level of GDP. *Economic Research-Ekonomska Istraživanja*, *29*(1), 360-379. https://doi.org/10.1080/1331677X.2016.1169701

Macchiavello, R. (2008). Public sector motivation and development failures. *Journal of DevelopmentEconomics*,*86*(1),201-213.https://doi.org/10.1016/j.jdeveco.2007.06.003

Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics, 110*(3), 681-712. https://doi.org/10.2307/2946696

Mendonça, H. F. D., & Fonseca, A. O. D. (2012). Corruption, income, and rule of law: empirical evidence from developing and developed economies. *Brazilian Journal of Political Economy*, *32*, 305-314. https://doi.org/10.1590/S0101-31572012000200009

Mohd-Rashid, R., Mehmood, W., Ooi, C. A., Che Man, S. Z., & Ong, C. Z. (2022). Strengthened rule of law to reduce corruption: evidence from Asia-Pacific countries. *Journal of Money Laundering Control*. https://doi.org/10.1108/JMLC-06-2022-0076

Mungiu-Pippidi, A. (2018). Seven steps to control of corruption: The road map. *Daedalus*, *147*(3), 20-34. https://doi.org/10.1162/daed_a_00500

North, C. M., Orman, W. H., & Gwin, C. R. (2013). Religion, corruption, and the rule of law. *Journal of Money, Credit and Banking*, *45*(5), 757-779. https://doi.org/10.1111/jmcb.12024

Nepal Rastra Bank. (2022). *Central bank digital currency (CBDC): Identifying appropriate policy goals and design for Nepal a concept report.* Available at: http://bankingsamachar.com/uploads/news/files/A-Concept-Report-on-CBDC-for-Nepal-Public-Consultation-Document(1).pdf

Nur-Tegin, K., & Czap, H. J. (2012). Corruption: Democracy, autocracy, and political stability. *Economic Analysis and Policy*, *42*(1), 51-66. https://doi.org/10.1016/S0313-5926(12)50004-4

Özşahin, Ş., & Üçler, G. (2017). The consequences of corruption on inflation in developing countries: Evidence from panel cointegration and causality tests. *Economies*, *5*(4), 49. https://doi.org/10.3390/economies5040049

Paldam, M. (2002). The cross-country pattern of corruption: Economics, culture and the seesaw dynamics. European Journal of Political Economy, 18, 215–240. https://doi.org/10.1016/S0176-2680(02)00078-2

Pesaran, M. H., & Shin, Y. (1998). An autoregressive distributed lag modelling approach to cointegration analysis. In Strøm, S. (Ed.), *Econometrics and economic theory in the twentieth century: The Ragnar Frisch centennial symposium* (pp. 371–413). Cambridge University Press.

Phillips, P. C., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, *75*(2), 335-346. https://doi.org/10.1093/biomet/75.2.335

Philp, M. (2006) Corruption definition and measurement. In C. Sampford, A. Shacklock, C. Connors, & F. Galtung (Eds.), *Measuring corruption* (pp. 45–56). Ashgate.

Quah, J. S. (2009). Governance and corruption: Exploring the connection. *American Journal of Chinese Studies*, 119-135.

Ristei, M. (2010). The politics of corruption: Political will and the rule of law in post-communist Romania. *Journal of Communist Studies and Transition Politics*, *26*(3), 341-362. https://doi.org/10.1080/13523279.2010.496324

Rubasundram, G. A., & Rasiah, R. (2019). Corruption and good governance. *Journal of Southeast Asian Economies*, *36*(1), 57-70. https://doi.org/10.1355/ae36-1f

Sassi, S., & Gasmi, A. (2017). The dynamic relationship between corruption—inflation: Evidence from panel vector autoregression. *The Japanese Economic Review*, *68*, 458-469. https://doi.org/10.1111/jere.12134

Schumacher, I. (2013). Political stability, corruption and trust in politicians. *Economic Modelling*, *31*, 359-369. https://doi.org/10.1016/j.econmod.2012.11.047

Shahbaz, M., Lahiani, A., Abosedra, S., & Hammoudeh, S. (2018). The role of globalization in energy consumption: A quantile cointegrating regression approach. *Energy Economics*, *71*, 161-170. https://doi.org/10.1016/j.eneco.2018.02.009

Shiller, R. (1996) Why do people dislike inflation? In C. Romer, & D. Romer (Eds.), *Reducing inflation: Motivation and strategy.* National Bureau of Economic Research and University of Chicago Press.

Shrestha, R. (2019). *Governance and institutional risks and challenges in Nepal.* Asian Development Bank. https://doi.org/10.22617/TCS190551

Sun, Y., Li, H., Zhang, K., & Kamran, H. W. (2022). Dynamic and casual association between green investment, clean energy and environmental sustainability using advance quantile ARDL framework. *Economic Research-Ekonomska Istraživanja*, *35*(1), 3609-3628. https://doi.org/10.1080/1331677X.2021.1997627

Tiwari, A. K., Kocoglu, M., Banday, U. J., & Awan, A. (2022). Hydropower, human capital, urbanization and ecological footprints nexus in China and Brazil: Evidence from quantile ARDL. *Environmental Science and Pollution Research*, *29*(45), 68923-68940. https://doi.org/10.1007/s11356-022-20320-z

Troster, V., Shahbaz, M., & Uddin, G. S. (2018). Renewable energy, oil prices, and economic activity: A Granger-causality in quantiles analysis. *Energy Economics*, *70*, 440-452. https://doi.org/10.1016/j.eneco.2018.01.029

Türedi, S., & Altıner, A. (2016). Economic and political factors affecting corruption in developing countries. *International Journal of Economics and Research*, *7*(1), 104-120.

Turner, P. (2021). *Econometrics in practice*. Mercury Learning and Information.

Uddin, I., & Rahman, K. U. (2023). Impact of corruption, unemployment and inflation on economic growth evidence from developing countries. *Quality & Quantity*, *57*(3), 2759-2779. https://doi.org/10.1007/s11135-022-01481-y

Uroos, A., Shabbir, M. S., Zahid, M. U., Yahya, G., & Abbasi, B. A. (2022). Economic analysis of corruption: evidence from Pakistan. *Transnational Corporations Review*, *14*(1), 46-61. https://doi.org/10.1080/19186444.2021.1917331

Van Rijckeghem, C., & Weder, B. (2001). Bureaucratic corruption and the rate of temptation: Do wages in the civil service affect corruption, and by how much?. *Journal of Development Economics*, *65*(2), 307-331. https://doi.org/10.1016/S0304-3878(01)00139-0

Zheng, B., & Xiao, J. (2020). Corruption and investment: Theory and evidence from China. *Journal of Economic Behavior & Organization*, *175*, 40-54. https://doi.org/10.1016/j.jebo.2020.03.018

Zivot, E., & Andrews, D. (1992). Further evidence on the great crash, the oil-price shock, and the unit-root hypothesis. *Journal of Business & Economic Statistics, 20*(1), 25–44. https://www. tandfonline.com/doi/abs/10.1080/07350015.1992.10509904