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Corruption, public debt, political years, and economic growth in democratic developing countries

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Abstract: This study investigates the impacts of political corruption and public debt on the economic progress of 43 democratic developing countries that have experienced varying election cycle frequencies from 2002 to 2021. The research utilizes a PMG-ARDL method and relies on data from the World Bank and International Monetary Fund (IMF). The results show that although corruption can generate 'temporary' benefits, it ultimately hinders long-term economic development. Our analysis also compares the impact by grouping countries based on different frequencies of election years, referred to as 'political years'. In the group of countries with a 'high' frequency of political years, the impact of corruption is more detrimental than in the group of countries with a 'low' frequency. To anticipate the negative effects of corruption and ensure that the allocation of development funds is on target, we recommend: (1) improving the governance system to minimize corruption; (2) measuring corruption with new, more concrete indicators, not just the perception index; (3) implementing changes to the tax payment mechanism, as direct public control over budget allocations are often inefficient and leaky; and (4) improving the effectiveness of the campaign mechanism to prevent corruption by electoral candidates.
Keywords: Impact of Corruption; Economic Development; Public Debt; Political Year; Public Control

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Introduction

Corruption and public debt are significant barriers to realizing the goals of the 2030 Sustainable Development Goals (SDGs), which aim to achieve equal rights to development, advance business and employment prospects, promote transparent and accountable governance, and uphold supremacy of law (UNDESA, 2023). Compared with developed countries, corruption is more often found in developing countries (Beyaert et al., 2023; Ibrahim, 2021; Yanto and Adrison, 2020). As per the World Bank, these countries struggle with controlling corruption and often face budget deficits, leading to the accumulation of domestic and foreign debt (Musa et al., 2023). Restricted savings, investments, and tax revenues have led developing nations to rely on debt financing for their deficits (Rahman et al., 2019; Yusuf and Mohd, 2021).

Corruption is believed to either speed up or slow down the wheels of rigid bureaucracy in developing countries during the early stages of development. According to political scientist Samuel P. Huntington, corruption can act as a 'lubricant' in countries with weak institutions, helping to streamline administrative processes, even if it involves illegal means. Huntington viewed corruption as a common occurrence in societies moving from traditional to modern phases. Economist Paul Mauro disputes this by arguing that corruption hinders bureaucratic processes, deters investment, and reduces productivity. In 1999, Hall and Jones supported Mauro's stance that corruption indicates poor institutional quality, and they employed the Solow growth model to analyze its impact on economic growth. Within this framework, it is believed that strong institutional quality is essential in enhancing total factor productivity (TFP) and ultimately driving economic development.

Researchers have studied how corruption affects the economy from various perspectives. The majority of researchers have indicated that corruption may be able to lower economic development (Al Qudah et al., 2020; Alfada, 2019; Olamide and Maredza, 2023), both in the short

term (Olamide and Maredza, 2023) and also over the long term (Antoni et al., 2019; Gründler and Potrafke, 2019; Ibrahim, 2021; Khan et al., 2020), either directly (Al Qudah et al., 2020) or indirectly (Antoni et al., 2019). Earlier studies have demonstrated its significant beneficial impact on the economy (Huang, 2016; Khan et al., 2020; Trabelsi and Trabelsi, 2021).

2024 is a political year for 49% (almost half) of the world's population, with as many as 64 countries holding national elections (Time Magazine, 2024). 30 of these are developing countries holding democratic elections to elect presidents and legislatures. However, the issue of increasing corruption during the campaign period and election years appears inevitable, and empirical studies also support this. In Russia, from 1999-2004, a study found that companies were offering bribes to win procurement contracts, as politicians were resorting to more corrupt tactics before elections to raise funds (Mironov and Zhuravskaya, 2016). A study of 100 democratic countries found that sitting politicians manipulated macroeconomic indicators by increasing current spending, reducing public investments, boosting healthcare and social spending, and temporarily boosting GDP before elections (Potrafke, 2019). Additionally, government officials and politicians frequently engage in advantageous transactions before elections by enforcing or avoiding strategic regulations (Finan and Mazzocco, 2021), while incumbents provide subsidy money, resources, and assistance in exchange for votes (Mironov and Zhuravskaya, 2016). Politicians frequently deploy tactics such as 'clientelism' and 'patronage politics' to secure electoral support by exchanging goods and services for votes (Fazekas and Hellmann, 2023). Political corruption in Indonesia appears in various forms, such as nepotism, pork-barrel spending, and manipulation of voting data (Umam, 2024).

Despite some research being conducted, there remains a lack of comprehension of how political corruption and public debt impact the economic development of democratic emerging countries experiencing political years (i.e., election years). This research seeks to close this gap of understanding by analyzing these impacts in democratic developing countries. As a novel contribution, we also investigate the differences in the impacts depending on the frequency of political years on two sub-groups.

To accomplish these objectives, the research utilized the PMG-ARDL model by cointegration method, which will capture the long-term balance between variables and their adjustments from short-run fluctuations, which are dynamic rather than permanent. The scope of the study includes 43 democratic developing countries, which are divided into two groups: 18 countries with a 'high' frequency of election years and 25 countries with a 'low' frequency of election years. The observation period is 20 years, from 2002 to 2021. This study aims to offer guidance to policymakers on addressing the issues of corruption and public debt to reach the 2030 Sustainable Development Goals (SDGs).

Method

This research employs the PMG-ARDL quantitative method with panel data (cross-country and time series) from 43 developing nations collected from the World Bank and IMF over a span of 20 years (2002-2021). The sample is split into two sub-groups (see Figure 1): one includes 18 countries with a 'high' frequency of election years (on the left side of the average), while the other group includes 25 countries with 'low' frequency of election years (on the right side of the average).

In actual calculations, a political year consists of an election year plus the preceding campaign period. This is because corruption is indicated to increase in the election cycle, which is not only during the election year but also in the year leading up to the election, namely the campaign period (Amick et al., 2022; Mironov and Zhuravskaya, 2016; Potrafke, 2019). Thus, during the observation period of 2002-2021, among the 43 countries, the total occurrences of an election year plus the campaign period was 253 times (years). Thus, the 43 developing countries experienced an average of 5.88 political years (253 election cycles divided by 43), over the 20-year period. This average is used as a cut-off for dividing the sample into two sub-samples, namely: (a) 18 'high' countries (high frequency of political years, above the average for developing countries, ≥ 6 years); and (b) 25 'low' countries (low frequency of political years, below the

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average for developing countries, <6 years). This country sample grouping technique has been applied in the research of Erum & Hussain (2019), in different research contexts and scopes.

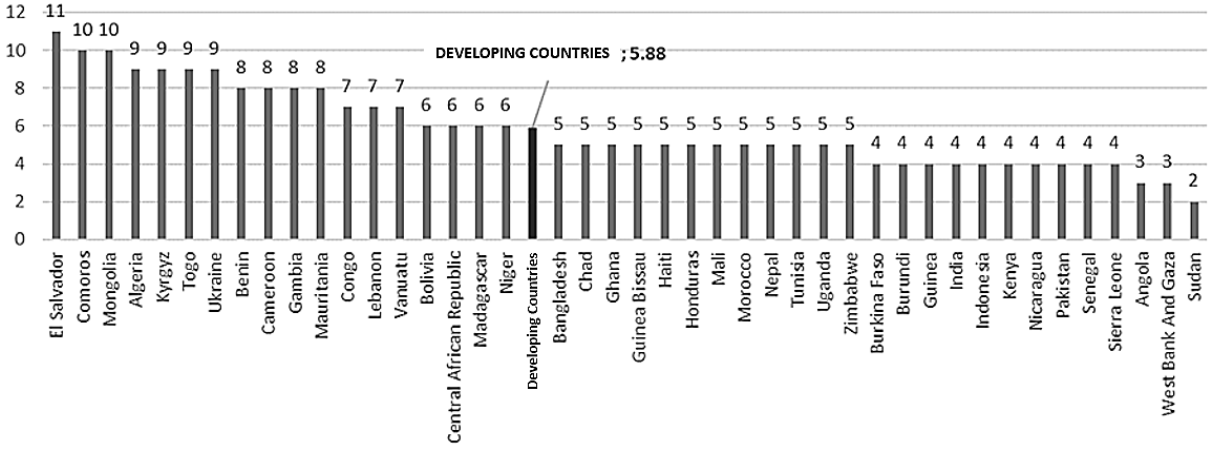

Figure 1. Number of Election Years in 43 Developing Countries (2002-2021)
(Sources: processed from data from various sources)

The explained variable in this study is per capita GDP. There are two interest variables: corruption level (Corruption Index) and public debt. Four control variables are important factors determining economic growth: government expenditure, investment, population growth, and trade openness. Data for the control variables are sourced from the World Bank.

Per capita GDP (constant 2015 US$), sourced from the World Bank's World Development Indicators (WDI), is converted into natural logarithm form (LGDPC). The Corruption Index (CORR) is derived from the Control of Corruption Index data, namely the corruption control score of a country/government (-2.5 is very corrupt, +2.5 is not corrupt), which is then converted into a score of 0 (low corruption) to 100 (high corruption). Public debt, as defined by the IMF, is the debt of the state or government debt. We use the percentage of central government debt to GDP (DEBT)as the indicator, sourced from the IMF. Government expenditure (GEXP) is the general expenditure of the government as a percentage of GDP. Investment (INVT) uses gross fixed capital formation (GFCF) data as a percentage of GDP. Growth of population (POPG) indicates the yearly population change percentage. Trade openness (TOP) assesses a country's total trade as a percentage of GDP.

In this study, political corruption is defined as "government officials utilizing their positions for personal benefit" (IMF, 2018; Kaufmann et al., 2011). This term highlights the misconduct within a nation's institutions. Political corruption can manifest in different ways through the participation of public officials, politicians, or government entities, such as: (1) Public officials or politicians receiving compensation for giving government procurement work or contracts to private parties, sponsors, friends, or their families (TI, 2020) ahead of elections (Mironov and Zhuravskaya, 2016). Yanto and Adrison (2020) claim that major corruption generally occurs in public procurement; (2) Civil servants asking for money or improper rewards (gratuity) in exchange for services (Andvig et al., 2001; TI, 2020); (3) fficials obtaining lucrative deals with companies or special interest groups that provide bribes (TI, 2020); (4) Public officials committing embezzlement, theft of public resources/funds from the institution where they work, even though no individual property is stolen so that citizens are not considered victims with legal rights (Andvig et al., 2001); (5) State institutions/representatives committing fraud and being involved in illegal trade networks, counterfeiting, and extortion. These crimes include situations where ministers and high bureaucrats not only hide these acts but are also actively involved in them (Andvig et al., 2001); (6) Customs officials modifying import papers for both local and global companies to avoid paying tariffs and duties. This commonly results in the illicit transfer of products or other illegal commercial activities (Ekananda, 2018); (7) Public officials/politicians obtaining favorable deals by implementing or not implementing certain policies in the run-up to elections (Finan and Mazzocco, 2021); (8) Incumbent politicians providing voters with financial subsidies, goods, and deeds during election campaigns (Mironov and Zhuravskaya, 2016); (9) The

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practice of 'clientelism', or vote-buying, which involves politicians (incumbents) exchanging goods and services for support from their constituents (Fazekas and Hellmann, 2023); and (10) Other examples of political corruption include nepotism, abuse of state authority, 'pork-barrel' spending, and electoral fraud (Umam, 2024).

Economic growth is a long-term process, but short-term economic fluctuations certainly occur within it. The cointegration method is used to understand these dynamics. Pesaran's PMG-ARDL model is considered the most suitable for this analysis because it can effectively estimate relationships by including time delays for explanatory and response variables, addressing endogeneity concerns such as the correlation between explanatory variables and residual terms. Sinaga et al. (2023) suggest conducting two preliminary tests before using the PMG-ARDL method: (1) a stationarity test using the IPS and ADF-Fisher test; and (2) a cross-sectional dependence test to avoid biased results. This study requires testing of cross-sectoral dependence because developing countries are connected through globalization and produce spillover effects.

Once the initial tests are completed, the PMG-ARDL estimation process can commence. To verify the findings, a Chow test is conducted using the technique outlined by Binkley et al. (2020) to ascertain the significance of the disparities in the influences between the two sub-samples. The layout of the empirical model is outlined as follows:

$$GDPC_{it} = f(CORR, DEBT, macroeconomic\ variables)_{it} \quad \text{.....1]}$$

The model is analyzed using the econometric software EViews 10.0. The proposed econometric model is presented as:

$$lnGDPC_{it} = \beta_o + \beta_1 CORR_{it} + \beta_2 DEBT_{it} + \beta_3 GEXP_{it} + \beta_4 INVT_{it} + \beta_5 POPG_{it} + \beta_6 TOP_{it} + \varepsilon_{it} \quad \text{.....2]}$$

Theoretical frameworks elucidate how the dependent variable is impacted by multiple independent factors. Examining the relationship between CORR and LGDPC suggests that corruption negatively influences economic development.

$$\frac{\partial lnGDPC_{it}}{\partial CORR_{it}} = \beta_1 < 0 \quad \text{.....3]}$$

Studying the link between public debt and GDP per capita, we anticipate a detrimental effect on economic development. Using calculus can illustrate this.

$$\frac{\partial lnGDPC_{it}}{\partial DEBT_{it}} = \beta_2 < 0 \quad \text{.....4]}$$

To prove the important factors determining economic growth, GEXP, INVT, POPG, and TOP are expected to be positive, namely β_3, β_4, β_5, and $\beta_6 > 0$. This study utilized the empirical model as:

$$\Delta LGDPC_{it} = \emptyset_i EC_{it} + \sum_{j=1}^{p-1} \lambda_{1j} \Delta LGDPC_{t-j} + \sum_{j=1}^{q-1} \theta \Delta X'_{i,t-j} + \varepsilon_{it} \quad \text{.....5]}$$

ΔX consists of a collection of separate variables expressed as vectors:

$$\Delta X = \begin{bmatrix} \Delta CORR \\ \Delta DEBT \\ \Delta GEXP \\ \Delta INVT \\ \Delta POPG \\ \Delta TOP \end{bmatrix} \quad \text{..... 6]}$$

The first-order operator is indicated by the Δ symbol, with i representing the country (cross-section) and t representing the time dimension, with j standing for the time lag. The variable *LGDPC* represents the natural logarithm of per capita GDP; *CORR* and *DEBT* serve as the independent variables. *GEXP, INVT, POPG,* and *TOP* are the control variables. The error correction term EC_{it} is linked to the coefficient ϕ_i, which reflects the degree of the long-term relationship and the speed of adjustment to equilibrium. To observe the ϕ_i coefficients, it is necessary for variables to show a strong inverse association with coefficients ranging from 0 to -1. Since there is no longer any residual connection in the provided one-equation model, endogeneity is not a problem.

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Results and Discussion

Results

From 2002 to 2021, the average GDP per capita for the 43 developing nations studied was $1,566.52, equivalent to a logarithmic number 7.18. The average corruption index score was 65.61 out of 100, indicating a high level of corruption in these countries. The percentage of public debt averaged 51.74%. Government spending made up an average 13.38% of the GDP. The investment as a proportion of GDP was 22.05%. The annual population growth rate averaged 2.14%. On average, trade openness was calculated at 65.03% every year. Table 1 presents the descriptive statistics.

Table 1. Summary Statistics of 43 Developing Countries (2002-2021)

Variables	Average	Std. Dev.	Max	Min	Obs.
GDP per capita ($US)	1566.516	1024.341	4385.112	263.3610	860
Ln GDP per Capita	7.184510	0.731773	9.109100	5.573500	860
Corruption Index	65.61043	8.357125	81.94230	40.47180	860
Public Debt	51.73630	33.44000	275.0356	7.093500	860
Government Expenditure	13.38285	4.718655	31.34430	2.047100	860
Investment	22.04898	8.466928	78.00090	2.000400	860
Population growth	2.136391	1.087537	9.971970	-2.87987	860
Trade Openness	65.02620	27.19934	156.8618	4.127500	860

(Source: author's processing with Eviews 10.0)

Algeria, categorized as a lower-middle-income nation, has the highest average GDP per capita ($3,926) among all countries examined in the study. Meanwhile, Burundi, a low-income country, ranks lowest with a GDP per capita of $292 and is also the poorest country in the world today. Fifteen countries have an average GDP per capita above the sample average, and 28 countries are below that average. See Figure 2.

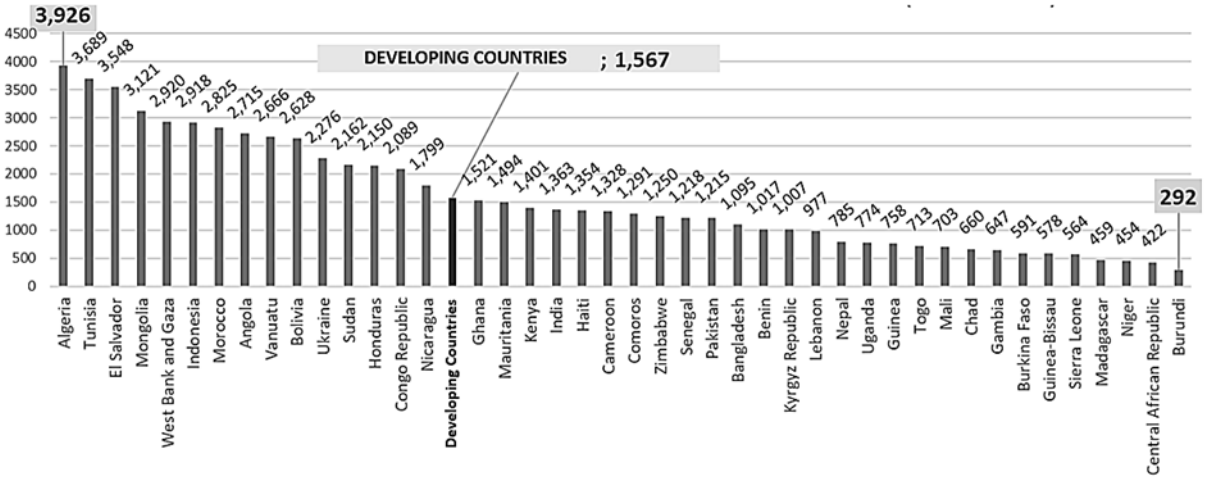

Figure 2. Average GDP Per Capita in 43 Developing Countries (2002-2021)
(Sources: WDI, World Bank)

Chad stands out as the most corrupt nation in the entire dataset, displaying a low GDP per capita of $660 and an average corruption index of 78.13 points. There are 22 additional countries where the level of corruption exceeds the sample average. Nonetheless, the other 20 countries have corruption levels below the overall average. Vanuatu, with a GDP per capita of $2,666, is ranked as the least corrupt nation in this study, scoring an average corruption index of 47.29 points. See Figure 3.

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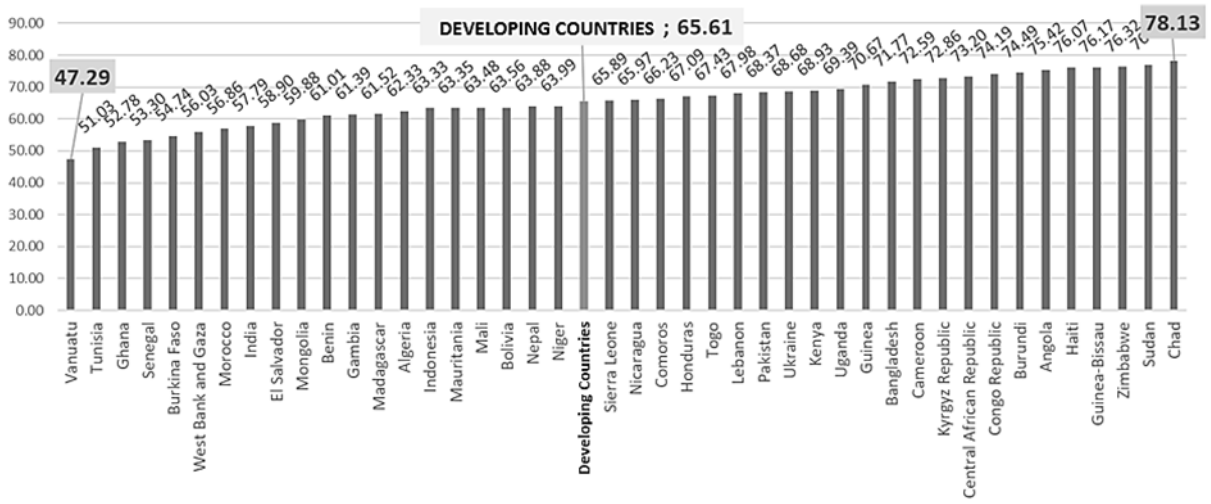

Figure 3. Average Corruption Level in 43 Developing Countries (2002-2021)
(Sources: WGI, World Bank)

Lebanon, a low-income country with a GDP per capita of $977, stands out for having the highest average public debt percentage (153% of GDP) among all countries sampled and also ranked as the second most indebted country after Japan (167.21%) worldwide. A total of 16 countries have an average percentage of public debt above the overall average. Meanwhile, the remaining 27 countries have an average percentage of public debt below the overall average. Algeria, with the largest average GDP per capita in this study, holds the lowest debt percentage among the countries sampled, averaging only 25.43% of GDP (Figure 4).

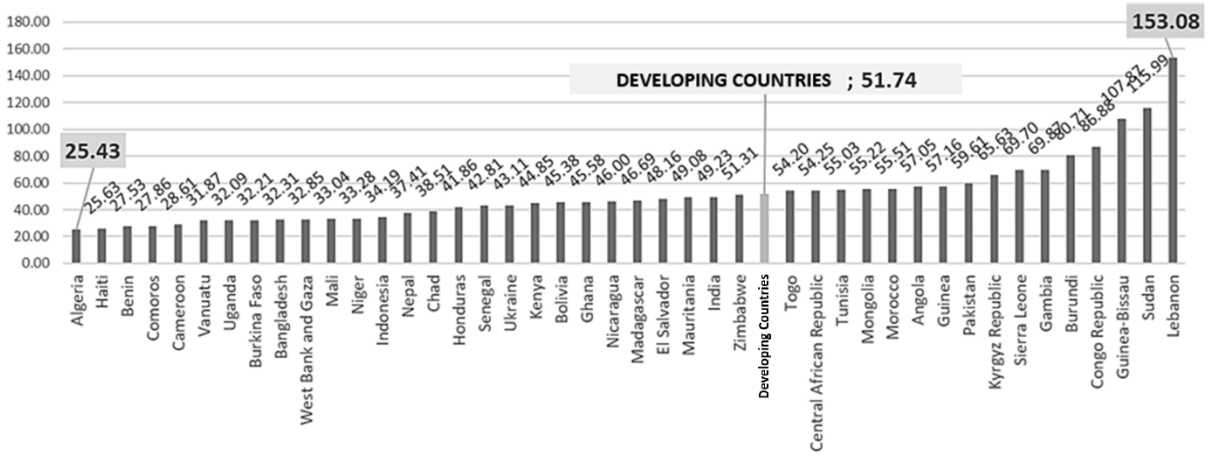

Figure 4. Average Percentage of Public Debt in 43 Developing Countries (2002-2021)
(Source: IMF WEO)

Prior to employing the PMG-ARDL technique, it is crucial to conduct a Panel Stationarity Test to verify the absence of I (2) stationary variables in the regression analysis. The results support that the variables are appropriate for the regression model.

Table 2. Results of Panel Stationarity Test

Variables	IPS W-Stat		ADF Fisher	
	Level	1st Order	Level	1st Order
LGDPC	0.83441	-6.97349***	91.7953	197.204***
CORR	-1.73298**	-12.1420***	118.436**	311.858***
DEBT	-0.64121	-6.04353***	113.372**	179.273***
GEXP	-0.68485	-12.0716***	102.365	309.927***
INVT	-2.18356**	-12.0081***	130.457***	306.281***
POPG	0.71207	-7.34596***	101.574	225.623***
TOP	-2.68381***	-12.8286***	118.794**	326.435***

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Note: Exogenous variables: Individual effects-non trend; User-specified lags: 1; ***p<0.01, **p<0.05;

From Table 3 below, we can see there is interdependence among the 43 developing nations. The finding is backed by the probability values of the statistical tests, which demonstrate significance levels below 1% and refute the null hypothesis of cross-sectional independence.

Tabel 3. Result of CSD Test

Test	*Statistic*	*d.f.*	*Prob.*
Breusch & pagan LM	4125.409	903	0.0000

H0: Cross-section independence (there is no correlation between countries); HA: Cross-section dependence (there is a correlation between countries)

The PMG-ARDL cointegration technique is utilized to examine short-term shifts towards long-term equilibrium. Below are the results of the estimation.

Table 4. PMG-ARDL Estimation Results

Dependent: LGDPC	43 Countries	18 Countries (*High*)	25 Countries (*Low*)
(1)	(2)	(3)	(4)
Long Run Equation			
CORR	-0.016478*** (0.005693)	-0.017830*** (0.005405)	-0.011284** (0.005302)
DEBT	0.010983*** (0.001960)	-0.000375 (0.001226)	0.009125*** (0.001883)
GEXP	0.070489*** (0.012700)	0.095167*** (0.010895)	0.054101*** (0.010461)
INVT	0.066535*** (0.008881)	0.056443*** (0.012197)	0.056085*** (0.008435)
POPG	0.655485*** (0.127924)	-0.271252*** (0.086895)	0.583586*** (0.152584)
TOP	0.003191 (0.001966)	0.005073* (0.002580)	0.004637** (0.001924)
Short Run Equation			
$ECT_{(-1)}$	-0.013408* (0.007404)	-0.042229*** (0.015073)	-0.021873* (0.012624)
ΔCORR	0.001098* (0.000611)	0.001300 (0.001083)	0.000774 (0.000653)
ΔDEBT	-0.001934*** (0.000393)	-0.001169*** (0.000281)	-0.002483*** (0.000601)
ΔGEXP	-0.003566* (0.001870)	-0.007235** (0.003295)	-0.004279* (0.002586)
ΔINVT	0.003089*** (0.000946)	0.003300*** (0.001078)	0.001906 (0.001172)
ΔPOPG	0.020081 (0.032245)	-0.010338 (0.035442)	0.046296 (0.050946)
ΔTOP	6.71E-05 (0.000490)	-0.000956 (0.001172)	0.000694** (0.000331)
C	0.063358** (0.030355)	0.278273*** (0.097412)	0.101878* (0.052265)

Note: ***p<0.01, **p<0.05; * p<0.1. ARDL models were selected based on AIC, 43-Country Model: 1,1,1,1,1,1,1; 18-Country Model High: 1,1,1,1,1,1,1; Low 25 Country Model: 1,1,1,1,1,1,1; Observations: 817 (43 Countries); 342 (18 Countries); 475 (25 Countries).

The Chow test aims to validate if there are significant disparities in how corruption and government debt affect economic growth based on different election year frequencies. This involves comparing the F-stat data with the critical value in the F-distribution table. A significant difference is observed if the F-stat surpasses the critical value in the F-table. These findings were the outcome of the comparison:

Table 5. Residual Sum Square Values of Samples and Subsamples

	43 Countries	18 Countries (*High*)	25 Countries (*Low*)
Sum squared resid (SSR)	0.526160	0.254528	0.243024

The calculated F-value of 6.795 is bigger than the critical F-value of 2.020 needed to reject the H0. We accept the alternative hypothesis because the calculated Fvalue surpasses the critical value. This study shows that countries with 'high' versus 'low' election year frequencies have significant differences in how corruption and government debt affect their economic growth. This discovery suggests that the frequency of election cycles could influence how corruption and government debt affect growth.

Discussion

Based on the findings from the PMG-ARDL analysis, corruption, as an indicator of poor institutional quality, has a long-term adverse influence on economic growth in the overall sample group and both subgroups. Nonetheless, corruption may boost economic growth temporarily. A

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statistically significant, positive impact is observed in the short term across all 43 developing nations. This short-term impact does not follow its long-term impact.

As corroborated by previous research, corruption reduces total factor productivity and hinders economic growth in accordance with Solow's theory. This is proven in an extended period. An increase of just one point in the corruption index corresponds with a drop of -1.65% in long-term GDP per capita across all 43 developing countries, -1.78% in 18 countries that experience a high frequency of political years, and -1.13% in countries with a low frequency of political years. With the indication that corruption is more widespread during political years (Mironov and Zhuravskaya, 2016), namely the period before and during an election year, it is likely that the impact will indeed be stronger in the 'high' sub-group.

Developing countries are often in a transitional stage of postcolonial progress (Huntington and Fukuyama, 1968), so their bureaucratic systems are still in the process of transformation and are not as robust as those in developed countries. Developing nations have struggled to fully facilitate the needs of candidates (head of state or parliament) to promote themselves to constituents, i.e., voters. So, candidates will seek funding for their campaigns from other actors or private parties (interest groups) who see an opportunity to facilitate their business interests. These actors will lobby politicians (candidates) who are interested (Finan and Mazzocco, 2021), and as a result, corruption will be more widespread during 'political years'.

The brief analysis, which observed the transitional phase rather than a long-lasting period, discovered that in the 43 developing nations examined, economic growth rose by 0.11% with each 1-point increase in the corruption index. This discovery aligns with the study by Gründler and Potrafke (2019), politicians increased spending and stimulated short-term GDP growth before an election, driven by political motives to be elected. In this case, the form of political corruption involves the incumbent government manipulating the image of 'momentary' economic performance in order to be re-elected. Nonetheless, it is crucial to recognize the potential long-term negative trap of corruption, even in the face of any short-term economic gains driven by political motives.

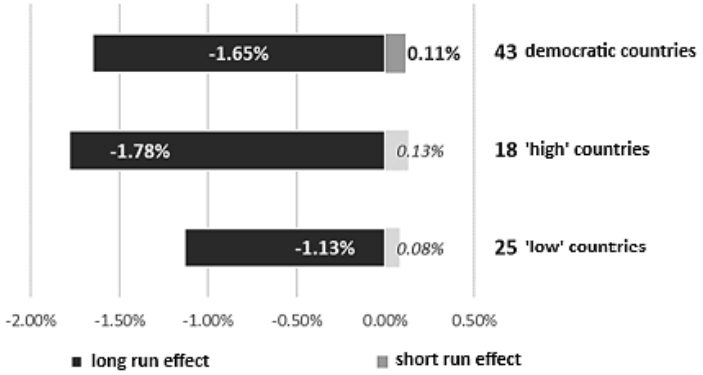

Figure 5. Comparison of Long-Run and Short-Run Corruption Impact Estimation Results

Elections are a way for a developing country that claims to be democratic to change its fate and become more advanced by elevating the quality of its institutions, highlighting the idea that "power lies with the people". This approach is in line with the goals of the 2030 Sustainable Development Agenda, which focuses on creating inclusive societies that promote the right to development and has the potential to enhance the country by reinforcing its institutional capacity. If politicians or current officeholders resort to deceitful methods to manipulate the economy in the short run via unethical behaviour, the electoral period may lead to adverse outcomes that impede long-term economic prosperity. After achieving independence, developing nations have encountered the task of maneuvering through administrative transitions, political unrest, and financial limitations across multiple sectors. Due to this, preventing corruption is challenging, and the electoral process could worsen the issue.

These nations face major obstacles due to insufficient funds for development, resulting in a dependence on public debt to address budget shortfalls. Therefore, the inclusion of public debt is

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crucial in their growth strategies, because developing countries face difficulty in increasing taxes on middle to lower-income groups. Developing countries also cannot reduce spending on their development, as the initial stages of the development period require significant costs. Therefore, the government's policy of taking public debt from both internal and external sources is expected to have a positive impact on development.

Another result showed that debt positively boosted growth over the extended period in the 43 developing countries by 1.10%, and the sub-sample of 25 countries by 0.92%. Public debt significantly hindered growth in the short run, leading to a -0.19% GDP per capita for every 1% increase in public debt. Although this effect is not permanent, as it is still being adjusted to the long-term balance, this negative impact must still be watched out for by developing countries.

These countries need to acknowledge the long-term benefits of public debt. Developing countries decision to take on public debt is appropriate, as they require a certain amount of public debt to fulfill their needs. However, there is a notable risk that if this debt is not handled correctly, it could become unpayable in the future. Given the high risk of financial mismanagement caused by corruption, it is important to closely observe the management of debt in these nations in order to achieve the desired economic advancement. The main goal is to transition from a low or lower-middle-income status to a high-income status, signifying progress towards becoming developed countries.

Control variables affecting economic growth underscore the significance of government investment and spending as crucial factors for sustained growth. Population increase can bring both advantages and disadvantages, while increased trade can result in a slight or barely discernible positive influence in some cases. Therefore, it is important for government strategies to focus on boosting public spending and promoting investment-friendly policies. Investing is the sole method to boost economic growth, especially in the short run. Key sectors, especially in developing countries, rely heavily on funding, especially from foreign direct investment (UN, 2018). Government spending may temporarily inhibit economic growth, but the long-term benefits are expected to outweigh this.

The PMG-ARDL estimation results also suggest that short-term disparities are rectified over time to reach a long-term balance among all variables, confirming 'cointegration' through the error correction term (ECT), which represents the speed of adjustment. The results are 1.34% (sample group), 4.22% ('low' sub-sample), and 2.19% ('high' sub-sample) per year, where the fastest adjustment is 4.22% for the sub-sample of 18 developing countries that experienced high political year frequencies. It shows that when there is a temporary shock on growth, changes in the level of corruption, public debt, government spending, investment, population growth, and trade openness have contributed to correcting the deviation of the results each year by 1.34%, 4.22%, and 2.19% respectively to become balanced again. The values indicate a slow adjustment in addressing growth imbalances in democratic emerging countries from 2002 to 2021, considering the range of ECT values from 0 to -1 (0% to 100%).

Conclusion

This research has shown that corruption hinders development in democratic emerging countries, especially during 'political years', highlighting a detrimental long-lasting link between corruption and economic progress. This finding supports previous studies indicating that corruption hinders economic growth (Al Qudah et al., 2020; Alfada, 2019; Antoni et al., 2019; Erum and Hussain, 2019; Gründler and Potrafke, 2019; Ibrahim, 2021; Olamide and Maredza, 2023). Rising governmental corruption is increasingly complicating the challenge of sustaining GDP per capita growth in developing countries.

Corruption has much worse influences on growth in nations with a 'high' frequency of election cycles (election year plus campaign period). However, the impact is less pronounced and is significantly reduced in countries with a 'low' frequency of election cycles. The finding that corruption can boost instant economic growth is significant. Yet, it must be recognized that this benefit is short-lived, which becomes evident only after the growth reaches a prolonged equilibrium, uncovering the actual adverse outcomes. In the context of developing nations that hold elections,

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where there is an increase in corruption during the campaign period, this explains why GDP per capita may increase briefly due to corruption but falter or decrease in the long term. The increase in GDP per capita in the short run is a momentary manipulative strategy based on political motives, so it does not support sustainable economic growth.

Holding elections, and thus having 'political years', is a way for a developing country to declare itself democratic, recognizing that sovereignty is in the hands of the people to be able to change the fate of their country to become more advanced. This is in accordance with the targets of the 2030 Agenda for SDGs, which guarantees the realization of an inclusive society and the right to development. However, political years can also backfire when state officials who are incumbents or politicians intend to manipulate the economic situation in the short run with underhanded behaviours and transactions, impacting growth negatively in the long run. Emerging countries are indeed undergoing bureaucratic transformation after independence, still in an unstable political situation and facing financial difficulties in all sectors. Due to this, the corruption phenomenon is difficult to avoid and is exacerbated by general elections.

The effects of government debt go against expectations and indicate that instead of hindering economic growth, it could actually stimulate it in the long run, even though it may temporarily decrease per capita GDP. This indicates that governments in developing countries are taking the right steps in terms of incurring public debt to finance budget deficits that cannot be met through other financial sources. Moreover, it is essential to encourage sustainable economic growth. Government spending is crucial for extended growth due to the limited contributions from the private sector (Mankiw, 2007). Investment still plays a crucial role in growth and continues to be advantageous, even for countries facing high levels of corruption and public debt. As Barro (1991) stated, "Investment is important in both extended-term growth and the brief business cycle." Population growth boosts growth in the extended term, supporting an optimistic view. Trade openness, however, has no significant impact in any time period; it can be interpreted that trade openness is not an important factor in driving growth. This contrasts with Barro's (1991) argument that trade openness can contribute to economic growth through spillover effects in the long run.

Recommendations

The current level of corruption is generally expressed as a perception score by various independent institutions, rather than in nominal terms or as a percentage of GDP. This makes the impact of corruption difficult to observe in its entirety. The problem of corruption is also a matter of subjective perception (Fazekas and Hellmann, 2023), which is greatly influenced by cultural factors, norms, or habits in each country, which, of course, vary. Public officials and politicians in developing countries who face limited funding carry out corrupt acts for various reasons, not ruling out the possibility of being coerced rather than acting out of choice. Considering corruption as commonplace cannot be justified because, in fact, this corrupt behaviour is detrimental to the country's sustainable development. Improving corruption control in an institution through repressive measures has been proven to reduce corrupt practices (Ekananda, 2018). Preventive measures also need to be taken, starting with aligning the overall perception of public officials (who are often also politicians) that these underhand or behind-the-scenes practices are actually detrimental to everyone, including themselves as 'entities' (parts) of a country (Srihadiastuti and Ekananda, 2024). Corruption may be optimal from an individual perspective but not from an economic development perspective (Hall and Jones, 1999).

So far, based on the findings, the government policy in developing countries of taking on public debt to finance the budget deficit is appropriate. However, the threat remains when a government cannot manage it well. There are many examples of developing countries that have been declared bankrupt because they could not repay and settle their debts: Sri Lanka (2023), Venezuela (2017), Ecuador (2014), Argentina (2014), and Zimbabwe (2008). We offer the following policy recommendations: (1) Improving the government system to minimize corruption without ignoring the underlying causes of corruption, as corruption can occur due to coercion when basic rights are not fulfilled; (2) Creating new, more concrete indicators to measure the level of corruption in nominal terms or as a percentage of GDP; (3) Establishing a highly transparent direct tax payment

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mechanism as a form of public control, where taxpayers can determine which sectors must be financed. This will reduce the power of parliament to determining the allocation of the state budget and prompt the executive branch to be more professional and diligent in managing it; (4) Having the state fully facilitate each candidate's campaign events so that candidates do not need to spend unreasonable amounts of personal funds to mobilize political areas and 'buy votes'.

We make these recommendations because there is no absoluteness for a country to use one system forever without adapting to different issues and evolving needs in each era. There is no justification for a country to adhere rigidly to a single system. In general, developing countries are countries that were founded after being colonized and built their countries with a mixture of remaining colonial practices. These practices may be very incompatible with the customs, norms, and native culture of their people.

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