

Corruption Perceptions and Their Impact on Macroeconomic Performance in Iraq: Institutional Transmission Channels and ARDL Evidence from the Model (2010–2022)

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Abstract

The paper structurally analyzes the impact of perceived corruption on Iraq's macroeconomic performance during the period 2010–2022. More specifically, it attempts to determine the elasticity of major macroeconomic variables exchange rate, inflation, and gross domestic product with respect to changes in Transparency International's Corruption Perception Index (CPI). Annual time series data is used within an autoregressive distributed lag (ARDL) framework after checking stationarity through Augmented Dickey Fuller (ADF) test and bounds testing approach toward cointegration. Long-run equilibrium association between corruption and economic performance is found to be highly significant by this study. Administrative perception explains a substantial proportion of variation of GDP as well as 65% variation in exchange rate explained by perceptions on administration. There exists strong negative association where higher-level administrative type - corruption directly associates with declining GDP besides depreciation over local currency's purchasing power. It found outcomes attributable to the dependency of the Iraqi economy on oil revenues and weak institutions in the country. Therefore, this study has assumed that transparency shall be improved and corruption reduced within public offices by implementing urgent policy interventions as a prerequisite for economic stability together with diversification of an economic base away from a rentier state model.

Keywords: Corruption Perceptions Index, Exchange Rate, Inflation, GDP, Iraq.

JEL Classification: D73, O10, E31, F31, O53

1.Introduction

The quality of institutional performance, the efficacy of economic policies, and the stability of the macroeconomic environment are all intricately connected to economic development. A multitude of Arab and international scholars argue that the presence of weak governance structures and institutional disparities impedes a nation's capacity to attain stable and sustainable development (Ajamiya, 1983; Ajamiya & Al-Laithi, 2001; Halawa & Saleh, 2009). Corruption is one of the main structural obstacles to development because it distorts economic incentives, and markets, weakens

public administration, and reduces the efficiency of government spending (Khairallah, 2004; Mohammed, 2013; Nassira, 2022).

Iraq is a clear example of an economy deeply devastated by corruption which interlinks fiscal policy, monetary performance, and macroeconomic stability. Since 2003 the country has been undergoing major structural economic and institutional reforms characterized mainly by upheavals, volatile oil revenues, and repeated economic shocks. According to Transparency International (2021), Iraq always figures among the countries perceived to be most corrupt reflecting weak institutions, limited regulatory effectiveness, and popular concerns regarding misuse of public funds that seem to persist (Khuraysan, 2022).

More recent state and city research tell an all too familiar story of macroeconomic tribulation in Iraq: inflation that refuses to go away, an eroding dinar, languid expansion, inconsistent aggregate demand (Hassan, 2012; Hassan, 2019; Ministry of Planning, 2022). Theory redounds the same. Corruption impairs economic efficiency and short-circuits the channel of monetary and fiscal policy, which ultimately drives up the cost of living and suppresses investment and output (Mandour et al., 2004; Al-Wadi et al., 2013).

But the question has received limited rigorous analysis. Evidence on how perceptions of corruption translated into damage to critical macroeconomic variables in Iraq, utilizing advanced econometrics, is limited.

This really does matter, but there's quite a bit of good quality evidence missing.

The main objective of this paper is to examine the relationship between corruption and the macroeconomic variables of inflation and exchange rate shocks as well as GDP growth in Iraq through quantifying the direct influence of corruption on macroeconomic indicators in Iraq by modern econometric analysis. Most of the previous macroeconomic studies in this respect have taken a descriptive approach and have been specifically concerned with either inflation or growth aspects, or have not considered long-run relationships between corruption and macroeconomic variables (Shawkat & Abdul Khader, 2019; Al-Anzi, 2013). Lack of empirical evidence constrains policymakers in Iraq from understanding the interdependence between corruption, inflationary shocks, and exchange rate and GDP movements.

These inconsistencies have created a need for this study that will make an original contribution of empirical analysis of the effects of corruption perceptions on the macroeconomic variables of Iraq during 2010-2022. The ARDL technique will be adopted to measure the effects in the short run and long run as well. It will thus enhance the understanding of the impacts of corruption. Most of the contemporary literature concerning Iraq is more focused on different issues related to economy like inflation, public debt, and the performance of investments. Usually corruption is not, however, given a central economic role in these works. The dense part of the literature remains in a descriptive level without making use of any particular empirical methodology so that the effects of corruption on GDP,

employment, prices, or investments can be investigated. While international studies stress the significance of governance quality for economic performance, this hypothesis has not been systematically tested specifically for Iraq.

There is one methodological gap as most of the prior studies on Iraq always employ only simple statistical analysis that lacks use of modern econometric models to examine short- and long-run effects. No empirical study is conducted specifically to explore the effect of corruption on major macroeconomic variables of Iraq with latest data for the period 2010-2022.

This research seeks to examine the impact of corruption on significant macroeconomic indicators in Iraq from 2010 to 2022. The primary aims are:

1. To ascertain whether there is a relationship between the level of corruption and growth rates by using annual data at the country level.
2. To ascertain the impact of corruption on inflation, unemployment and investment.
3. To ascertain whether the impacts of corruption are transitory, permanent or both by using modern econometric techniques.
4. To present evidence-based implications that may guide reforms in Iraq's economic policy and governance.

Together, these objectives aim to bridge the empirical and methodological gaps currently present in the literature.

2. Theoretical Framework and Transmission Channels

Here, I flesh out the theoretical justification for the mechanisms by which corruption worsens macroeconomic and development outcomes and performance (arguing in the institutional and development economics tradition) into pathways that can be tested using Iraq's macro. To ground this in Iraq's data, here I connect the pathways to the three indicators I will analyse later: GDP growth, inflation, and the exchange rate.

2.1 Conceptualizing corruption within development economics:

In development economics, corruption is generally viewed as an institutional failure which undermines the state's ability to effectively allocate resources, and to create and enforce rules promoting growth (Ajamiya, 1983; Ajamiya & Al-Laithi, 2001). In this view, corruption introduces uncertainty, raises transaction costs and results in a less effective set of public policy instruments—key to long run development (Al-Quraishi, 2007; Al-Quraishi, 2010). The institutional environment is particularly important in those economies where the role of the public sector in spending, contracting and regulation is prominent, an accurate description of the case of Iraq (Ministry of Planning, 2022).

A second theoretical underpinning takes the rent-seeking view: when public authority is exploited for private advantage, resources flee from productive activities towards non-productive competitions for access to political power, undermining allocative efficiency and the degree to which public expenditures contribute to growth (Khairallah, 2004; Mohammed, 2013). In oil-reliant economies, the stakes are higher. Large, concentrated revenues invite capture and opaque allocation, so the quality of governance becomes a decisive factor in macroeconomic stability and development outcomes (Khuraysan, 2022; Transparency International, 2021).

macroeconomic stability and development playback (Khuraysan, 2022; Transparency International, 2021).

In this paper, we use the Corruption Perceptions Index (CPI) as a measurable proxy for perceived governance quality. Higher CPI scores indicate lower perceived corruption, which indicates stronger governance and institutional performance (Transparency International, 2021).

2.2 Transmission channels linking corruption to Iraq's macroeconomic outcomes:

Building on these foundations, corruption is able to impact development outcomes via three macroeconomic channels as indicated below; these correspond with the variables used in the empirical model in this study.

(i) The growth and productivity channel (CPI → GDP growth):

Corruption can adversely impact growth by hampering the efficiency of investment and public spending, by discouraging the private sector to participate in investment, and by lowering the overall productivity of the economy by misallocation (Ajamiya & Al-Laithi 2001; Al-Quraishi, 2017). In practice, this implies that when public contracts/projects are allocated according to informal payment or political connections, the economy earns on capital at lower rates, leading to weaker long-term performance of the economy. This implies that when corruption is higher (CPI lower) the GDP growth performance will be weaker (Ayub et al., 2013; Halawa & Saleh, 2009).

(ii) The price stability channel (CPI → inflation):

Corruption may aggravate inflation by increasing the inefficiency of public expenditure, the lack of fiscal discipline, and the inefficiencies of the market's watchdog (Roffia & Zaghini, 2007; Mandour et al., 2004). By distorting subsidies and procurement prices, corruption also exerts an additional effect on inflationary dynamics. Hence, poor governance is expected to be associated with high inflation dynamics.

(iii) The external confidence / exchange rate channel (CPI → exchange rate):

A weak institutional context may undermine investor confidence and trigger unsupportable currency pressures—due to capital flights, weaker non-oil investment, or stronger veering to USD as a hedge against shale-shock uncertainty (Al-Samarrai, 2006; Al-Jumaili, 2005). In these contexts,

governance issues accentuate the instability of the exchange rate, especially in the presence of shocks. One can thus link corruption to depreciation pressure (higher IQD/USD).

This section develops the theoretical logic explaining how corruption can affect macroeconomic outcomes and development performance. It links institutional and development economics arguments to testable pathways that match Iraq's macro indicators (GDP growth, inflation, and exchange rate) over 2010–2022.

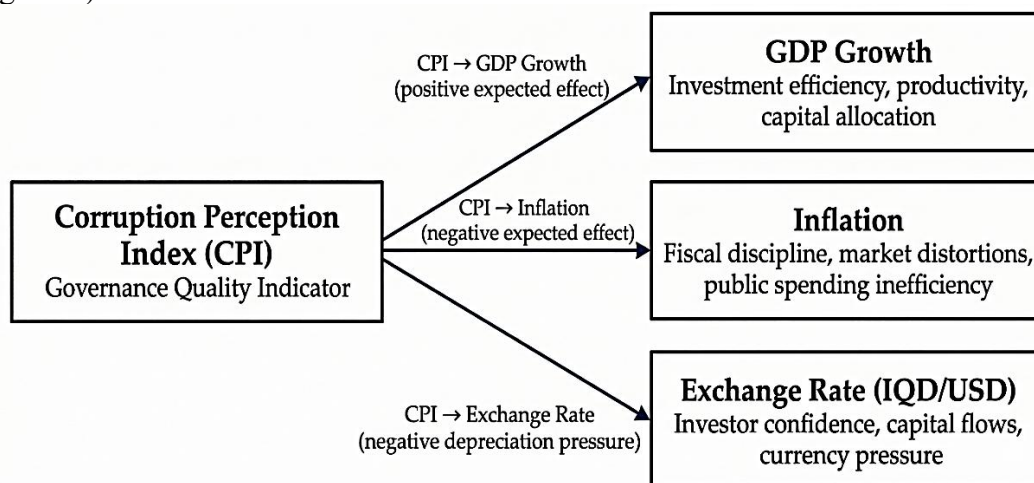


Figure (1). Conceptual framework: transmission channels from corruption perceptions to macroeconomic outcomes in Iraq, 2010–2022.

3. Literature Review

Economic development is usually understood as a sustained expansion of a country's productive capacity, income, and welfare. The development concepts have tenets on capital formation, institutions, and public policy as the conditions for successful growth (Ajamiya, 1983; Al-Quraishi, 2007).

Institutions provide the rules within which investment takes place, markets operate and economies are stabilized or protected against frail instability which leads to inefficiency and slow progress in developing eventually (Halawa & Saleh, 2009).

A basic condition for development is macroeconomic stability by which one would mean controlled inflation, a balance in public finances, and a sound policy environment. Instability leads to the erosion of investor confidence, productivity remains at a standstill, and long-term economic planning is put into risk (Al-Wadi et al., 2013). These therefore provide the theoretical basis from which governance factors, most especially corruption can have- even wield over-reaching influence on macroeconomic performance.

Corruption is widely recognized as the key constraint to economic development. It reduces the efficiency of public institutions, increases transaction costs and re-allocates resources from productive sectors (Mohammed, 2013). At the macro level, corruption weakens the mobilization of public revenues, distorts government expenditures and reduces the effectiveness of fiscal and monetary policies. Such distortions can have an impact on inflation, investment, employment and economic growth (Mustafa & Abdul Rahman, 2014; Chandrashekar et al., 2018).

The weak governance institutions also have been counterproductive for the construction of market confidence or institutional transparency which in turn affects economy performance by reducing local and foreign investment (Musibau et al., 2018). Resources meant for road construction, electricity distribution, social services, high education and other productive sectors are only spent on administrative and other similar corruption practices and lack of effectiveness.

Research from Iraq suggests governance is a relevant element. Having to depend on oil receipts, the countries are susceptible to shocks in pricing, making transparent fiscal management crucial. Weak management, corruption and weak institutions have long been characterized as limiting factors in public finances and investments, according to research about Iraq (Hassan, 2019, Mohammed, 2013). However, at country-level the analyses usually focus on inflation, unemployment, or public debt, and corruption is not introduced as an explanatory factor.

Iraq's inflation analysis, for example, blames lack of price stability on institutional weakness and structural distortions, not corruption (Hassan 2012). Other research on investment highlights administrative and regulatory barriers, without ever referring to corruption in their econometric specifications (Shawkat & Abdul Khader 2019). So the way in which corruption factors into the headline figures remains unclear.

This void underscores the need for an integrated empirical model of corruption's macroeconomic impacts on Iraq.

These papers do not estimate corruption with the main macroeconomic variables all in one model. As can be seen from Table 1, development, inflation, investment and governance are all included separately and there is no empirical model linking them together in a testable hypothesis. There is a clear distinction made between development, inflation, investment, governance, etc. (all discussed separately) but no model or hypothesis is offered in Table 1.

In an effort to contribute to this discussion, this paper seeks to offer assistance for fact-based policy changes to promote progress in public governance and institutional capacity that ultimately promotes sustainable economic growth.

Table (1). Summary of Key Literature on Development, Corruption, and Macroeconomic Performance

Reference	Focus of Study	Method / Approach	Key Findings	Relevance to Current Study
Ajamiya (1983)	Foundations of economic development	Theoretical analysis	Emphasizes capital formation and institutional strength as drivers of development.	Establishes conceptual basis for linking institutional weakness with economic instability.
Al-Quraishi (2007)	Development theories and policies	Theoretical review	Highlights the role of governance and policy efficiency in sustainable development.	Supports the argument that poor governance such as corruption reduces economic performance.
Halawa & Saleh (2009)	Introduction to development science	Conceptual examination	Identifies institutional efficiency and macro stability as prerequisites of development.	Reinforces the theoretical link between corruption, weak institutions, and macroeconomic outcomes.
Mohammed (2013)	Corruption and accountability in Iraq	Qualitative policy analysis	Documents widespread corruption and its effects on public administration.	Provides direct evidence of corruption as a structural constraint in Iraq.
Hassan (2012, 2019)	Inflation dynamics in Iraq	Descriptive economic analysis	Shows inflation is affected by structural imbalances and weak oversight.	Indicates that institutional corruption may indirectly fuel inflation.
Mustafa & Abdul Rahman (2014)	Economic development issues	Theoretical + descriptive	Notes governance weaknesses are major barriers to development in Arab economies.	Places Iraq's governance challenges within a broader regional context.
Chandrashekar et al. (2018)	Macroeconomic variables & market performance	Econometric panel analysis	Finds that macroeconomic stability promotes investment and market growth.	Supports the study's interest in how corruption disrupts macroeconomic stability.
Musibau et al. (2018)	External debt & growth in ECOWAS	Panel econometrics	Shows governance quality shapes the debt-growth relationship.	Highlights importance of institutional strength relevant to Iraq's debt and corruption environment.
Nassira (2022)	Corruption in Arab countries	Comparative institutional analysis	Reports that high corruption weakens economic performance and governance.	Provides regional evidence supporting corruption-growth links.
Transparency International (2021)	Corruption Perceptions Index	Comparative global index	Ranks Iraq among low-performing countries in institutional integrity.	Quantifies corruption levels used in this study's empirical model.
Shawkat & Abdul Khader (2019)	Investment and employment in Iraq	Empirical/descriptive	Shows investment policies are constrained by administrative weaknesses.	Indicates corruption may be a hidden determinant of low investment in Iraq.

4. Methodological Approach

This section provides an empirical framework through data sources and definition of variables, model specification, and techniques used in estimating both short-run and long-run relationships between corruption perception and some key macroeconomic indicators in Iraq for the period 2010–2022. Due to a small sample size with possible integration of mixed order among the variables, thus making ARDL as most appropriate approach to this analysis.

4.1 Data Sources and Variables Definition:

The present study uses annual time series data from 2010 to 2022. This period was marked by significant economic, political, and institutional changes in Iraq. Therefore, it is an appropriate period in which the relationship between governance and economic performance can be analyzed through selected macroeconomic indicators to test the impact of corruption perception on them in Iraq.

The analysis uses secondary data which are official and internationally recognized to make them reliable and comparable. Data on GDP growth, inflation rate, and exchange rate of the Iraqi dinar against the US dollar were sourced from the Iraqi Ministry of Planning and other official national statistics reports. Corruption variable was constructed from CPI published each year by Transparency International and largely used in empirical studies as a proxy of the quality of institutions and governance performance.

We proxy economic development using the annual GDP growth rate (GDPG) denoting a change in economic activity / production capacity. We make corruption perception (CPI) the main explanatory variable, higher values being perceived as lower “corruption” levels. To control for natural macroeconomic “conditions” that could be driving growth, we include in the model the exchange rate (EXR), Iraqi dinars per US dollar, and an inflation rate that is the annual percentage change in consumer prices (INF).

The selection of variables is based on economic theory and previous empirical work linking good governance, price stability, the behavior of exchange rates and economic growth in developing economies. Table 2 summarizes the definition of the variables, the units of measurement; source data and expected signs.

To reduce the chances of omitted variable bias, we control international oil price in our models: since the most important source of revenue and foreign exchange for the Iraqi government is from oil exports, international prices may affect the country’s growth, exchange rates and fiscal performance.

The inclusion of oil price provides the model with an additional variable to isolate the The corruption index used in the present study also excludes the usual contaminating effects of the distortion from commodity shocks abroad.

Table (2). Variable Definitions and Sources

Variable	Definition	Unit	Source	Expected Sign
CPI	Corruption Perceptions Index (higher = less corrupt)	Score	Transparency International	±
EXR	Exchange rate of Iraqi dinar per USD	IQD/USD	Ministry of Planning	+
INF	Annual inflation rate	%	Ministry of Planning	+
GDPG	GDP annual growth rate	%	Ministry of Planning	–

4.2 Descriptive Statistics:

Table (3) describes the relevant data of interest using descriptive statistics. The presentation gives summary information of the central tendency and variation of the data, and also gives an impression of the overall spread of the data by including information about the range of values of the different corruption and macroeconomic indicators of Iraq between 2010 and 2022.

The average on the CPI is relatively low, again reflecting the persistence of the governance constraints over the last period, with growing disparities among the means capturing institutional changes and the political context. The exchange rate exhibits moderate volatility, with indications of stability and indications of pressures on the dinar to weaken.

GDP growth rate is subject to very high fluctuations owing to the economy's commodity dependence, security environment and external conditions. It has sharp increases in positive growth rate and dramatic drops. The situation is similar with the inflation rate, it stays moderate in average per annum terms, yet it displays variations which hint for episodes of inflationary turbulence, especially during periods of shocks.

Descriptive statistics bear witness to the existence of a high variance in every series. These findings have preliminarily provided some clues of a potential dynamism between corruption perception and macroeconomic performance, thus arguing for a lag structure in the model subsequently to be estimated. In other words, they are supportive for an econometric specification able to accomodate both short-run adjustments and long-run relationship among variables.

Table (3). Descriptive Statistics (2010–2022) -Source: Ministry of Planning (2022); Transparency International (2021).

Variable	Mean	Std. Dev.	Min	Max	Obs.
CPI (Score)	32.46	5.82	21	41	13
Exchange Rate (IQD/USD)	1205.77	92.66	1166	1460	13
GDP Growth (%)	2.69	11.02	–21.6	17.7	13
Inflation (%)	2.70	1.92	0.2	6.1	13

The general trend of the mean values suggests relatively low CPI, which suggest development of governance in Iraq during the study period. The thick and thin of real growth rates of GDP constitutes highs and lows suggesting instability at macroeconomic level. An upward movement of the variation of exchange rate as well as medium inflation reveal shocks to the economy and structural vulnerabilities in economic management.

4.3 Model Specification:

In this study, we develop an empirical model to specify the relationship between perception of corruption and macroeconomic performance in Iraq, where economic growth is specified as a function of corruption and some chosen macroeconomic control variables. In line with the objective of this study, GDP growth rate (GDPG) is used as the dependent variable representing economic performance.

Afi-.Corruption Perceptions Index (CPI) is included as the main explanatory variable to capture the quality of governance and institutional integrity, higher values of CPI indicate lower perceived corruption, its effect on economic growth can be either of positive or negative sign under structural and institutional context, to control for the macroeconomic conditions influencing the growth, we include Exchange Rate (EXR) and Inflation Rate (INF), exchange rate movement reflects external competitiveness and monetary stability while inflation captures price stability and macroeconomic discipline.

You could express the model's functional form like this:

$$GDPG_t = f(CPI_t, EXR_t, INF_t)$$

For econometric estimation, the relationship is specified in a linear form as:

$$GDPG_t = \alpha_0 + \alpha_1 CPI_t + \alpha_2 EXR_t + \alpha_3 INF_t + \alpha_4 OIL_t + \varepsilon_t$$

Where:

- OIL = Annual average Brent crude oil price
- Captures external revenue and macroeconomic shock effects

GThis specification permits the analysis to check both separate and joint effects of corruption perception, exchange rate movements, and inflation on economic growth. Summary information regarding the selected variables together with their expected signs is provided in Table (2) while further evidence on the dynamic nature of the series is obtained from an ARDL framework applied in later sections.

4.4 Econometric Method: ARDL Approach:

This study uses the Autoregressive Distributed Lag (ARDL) approach to modeling the relationship between corruption perception and macroeconomic performance in Iraq. The choice of technique is particularly suited to this analysis given the small sample size, and because results from unit root tests reported in Table (2). It shows that none of the variables is integrated at order two or higher, although they could be integrated at different orders.

This study prefers the ARDL framework for several reasons. First, with a single unified model, the ARDL framework helps estimate both short-run and long-run relationships. Second, Pesaran et al., (2001) proved that even with small samples, the ARDL method gives an efficient estimation of the

parameters' standard errors; thus, quite appropriate since annual data from 2010 to 2022 is used. Thirdly, proper lag structure specification for every variable in the system eliminates contemporaneous correlation between the error term and regressors thereby dealing with endogeneity problems.

The testing process for the bound, in the context of an ARDL, tests for a long-run relationship among the variables. It is a test for a cointegrated relationship between the dependent variable and its regressors in that it compares the estimated F-test with two bounds critical values. When the estimated F-statistic exceeds the upper critical value, there is evidence of a long run equilibrium relationship.

After cointegration has been established, the ARDL model specifies a long-run relationship and short-run dynamics of the error correction form. The model in this case indicates both the transient and permanent influence of corruption perception, exchange rate depreciation (appreciation), and inflation on Iraq's real growth.

4.5 Addressing Endogeneity and Model Justification:

In the empirical growth literature, there are also a potential problem of endogeneity in this corruption and macro performance nexus, because growth could determine corruption and vice versa. Thus the macroeconomic growth could be contaminated due to these reverse causal effects.

To tackle the problem of simultaneity, I utilize the ARDL approach because the ARDL approach allows us to incorporate lagged dependent and independent variables, which will mitigate those types of contemporaneous feedback. The lagged dependent variable in ARDL models also provides partial control of contemporaneous short-run endogeneity by capturing the dynamic adjustment path over time.

Secondly, the bounds testing procedure has the added benefit of allowing for estimation of long-run relationships between the variables whether the variables are $I(0)$ or $I(1)$, which helps to make the model more reliable as it can help make the results more accurate when working with small-sample research such as for Iraq, 2010-2022. Nonetheless, ARDL does not exclude all sources of endogeneity.

Future investigations may build on this analysis by applying instrumental variable, structural VAR, or panel GMM type methods.

4.6 Cointegration Test (Bounds Test):

The long-run equilibrium relationship between economic growth and explanatory variables will be tested using the ARDL bounds cointegration test of Pesaran et al. (2001). The results from a bounds test approach to the estimation confirm whether there is a constant long-run relationship among the variables irrespective of whether they are $I(0)$ or $I(1)$, so long as none of them is $I(2)$.

The null hypothesis of the bounds test assumes no cointegration among the variables, while the alternative hypothesis implies a long-run relationship. The decision is made based on a comparison

between the calculated F-statistic and critical lower and upper bound values. If the F-statistic lies above the upper bound, then the null hypothesis is rejected thus confirming cointegration. Table (4) presents the results of the bounds test. The computed F-statistic is higher than the upper critical bound at a conventional significance level, hence there is a long-run cointegrating relationship between corruption perception, exchange rate, inflation and GDP growth in Iraq during the study period. This finding justifies estimating long-run and short-run coefficients using ARDL approach.

Table (4). ARDL Bounds Cointegration Test

Test Statistic	Value	I (0) Bound	I (1) Bound	Decision
F-Statistic	4.55	2.86	4.01	Cointegration exists

The computed value of the F-statistic test is above the upper critical bound at a 5 percent significance level, which assures the existence of a long-run cointegrating relationship between corruption perception and selected macroeconomic indicators in Iraq.

5. Results and Discussion

5.1 Descriptive Trends of Macroeconomic Indicators:

This subsection presents corruption perception and some selected macroeconomic indicators in Iraq during the years 2010–2022, descriptively. It combines both numbers and figures to give an apparent evolution of their behaviors and volatilities before any econometric estimation.

Table (5). Iraq's Macroeconomic Indicators (2010–2022) -**Source:** Ministry of Planning (2022); Transparency International (2021).

Year	CPI	Exchange Rate	GDP Growth	Inflation
2010	33	1170	6.4	2.4
2011	32	1166	10.3	5.6
2012	33	1166	13.9	6.1
2013	35	1184	4.2	1.9
2014	36	1190	-2.0	2.2
2015	38	1182	2.9	1.4
2016	41	1182	17.7	0.4
2017	40	1218	-2.1	0.2
2018	35	1190	-21.6	0.4
2019	31	1182	2.8	0.6
2020	21	1220	1.3	6.0
2021	23	1450	8.0	5.0
2022	23	1460	4.0	3.4

Table (5) shows the annual values of the Corruption Perceptions Index (CPI), exchange rate, growth rate of GDP and inflation rate. The series exhibit clear fluctuations throughout the period which is in line with Iraq's experience of external shocks, oil price fluctuations and weak domestic institutions. The CPI index scores remain low throughout the years which indicates the dominance of governance and transparency issues and the index take a significant dive during 2020.

GDP swings from robust growth to a sharp decline, with busts occurring when oil prices crash or other shocks occur. Average inflation is somewhat lower than other countries, but short-lived peaks occur revealing unstable prices and demand side. The table and figures exhibit the rapid pace of Iraq's macroeconomic conditions providing a benchmark to address the nexus between corruption perception index (CPI) and economic indicators.

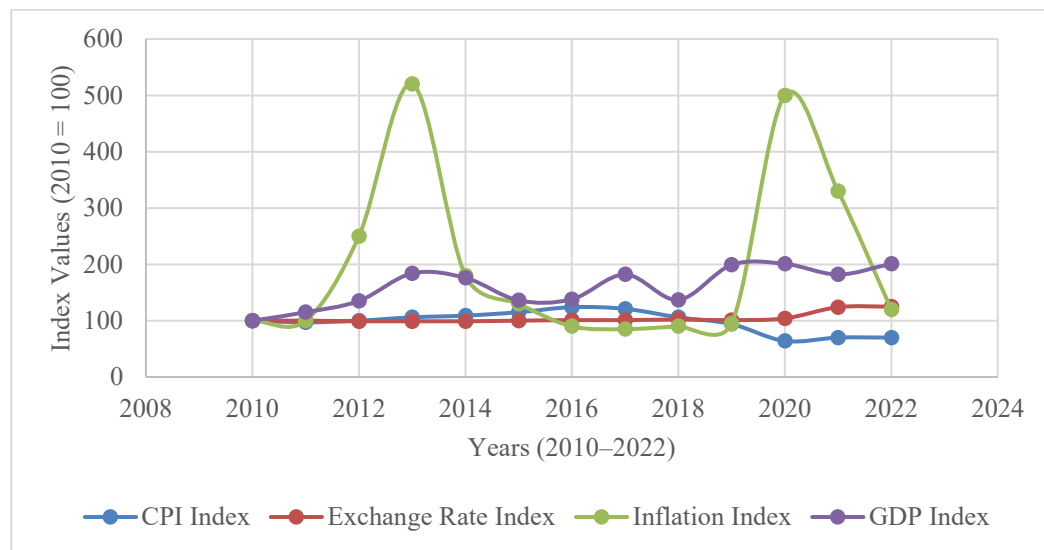


Figure (2). Trends of CPI, exchange rate, inflation, and GDP indices in Iraq for the period 2010–2022 (2010 = 100).



Figure (3). Annual inflation rate in Iraq (2010–2022)

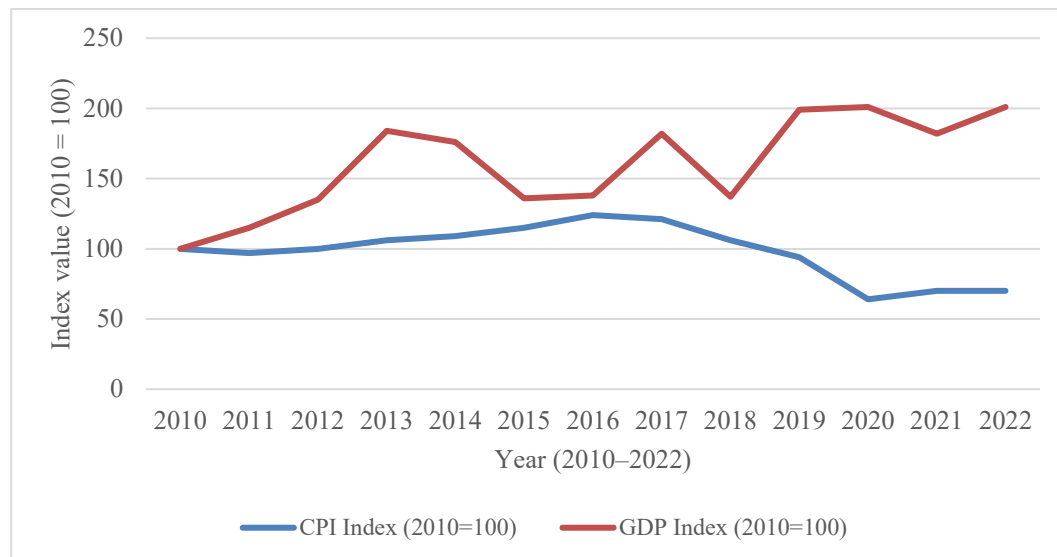


Figure (4). Co-movement between the corruption perception (CPI index) and GDP (index) in Iraq, 2010–2022 (2010 = 100) -Source: Author's calculation based on Transparency International (CPI) and national accounts data (GDP).

5.2 Co-movement between Corruption Perception and Economic Growth:

This subsection provides an analysis of the parallel movement between corruption perception and economic growth in Iraq during the period under review to give a pictorial motivation for the subsequent econometric estimation, as well as helping to show a possible association between the main variables of interest. Real GDP growth rate is used as a proxy for economic growth because, according to World Bank national accounts data and OECD National Accounts data files, real GDP growth rate expresses annual percentage changes based on constant local currency.

Figure (5) displays the indexed trends of Corruption Perceptions Index and GDP (2010=100). It can be observed that periods of decline in the CPI are mostly associated with underperformance in the economy while upward movements in the CPI take place during recoveries. This is apparent not only for major shocks to the economy when growth dynamics slacken together with falling governance quality but also for smaller fluctuations.

The figure may not imply causality but it surely brings to light a conspicuous relationship between the perception of corruption and economic outcomes in Iraq. This co-movement gives an indication that factors relating to governance play a role in the determination of economic performance, however, this role is masked by structural vulnerability and heavy dependence on oil revenue within the economy. The visual observations made enhance the relevance of formally testing through the application of an ARDL framework both short-run and long-run effects that corruption has on economic growth.

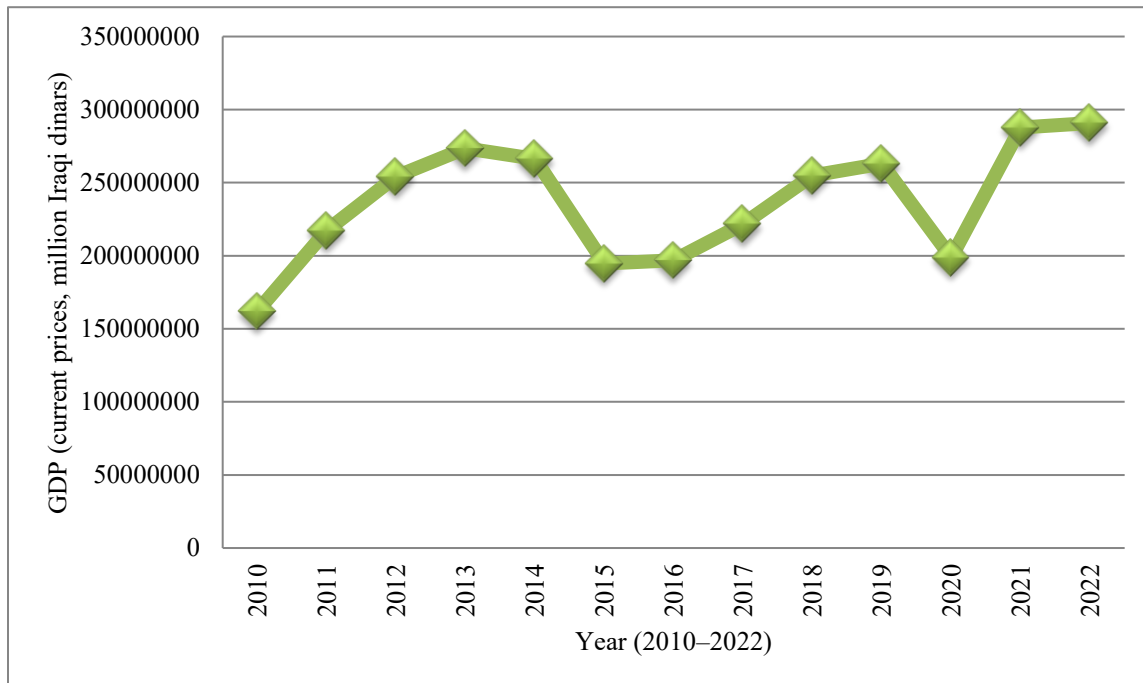


Figure (5). Trend of Gross Domestic Product (GDP) at Current Prices in Iraq,2010_2022 (Million iraqi Dinars).

5.3 Long-Run ARDL Results:

This subsection presents the long-term results of the ARDL model with an explanation regarding effects in perception corruption and selected macroeconomic variables towards economic growth in Iraq. The estimated long-run coefficients are reported in Table (5).

Results show that corruption perception has a statistically significant effect on macroeconomic performance. The coefficient of the Corruption Perceptions Index (CPI) is significant thus reaffirming the fact that a change in the quality of governance has good connectivity with long-term economic output levels. Since higher values represent lower perceived corruption, then from this result it can be said that good conditions of governance deliver strong output performance and if there is deterioration in the condition of governance then long-term output performance also becomes weak.

The coefficient on the exchange rate is positive and statistically significant. Therefore, movements of the exchange rate are quite important in developing dynamics within the economy. This result reflects how sensitive to currency fluctuations that Iraqi economy gets investment decisions, particularly with its dependency on oil revenue and external trade. Instability in the exchange rate can determine investment as well as import instability or inflation in general economic activity.

The inflation rate has a significant positive long-run relationship, which means instability of prices with macroeconomic in Iraq. The relation can be articulated as an explanation that persistent pressures

on inflation highlight structural and institutional weaknesses, basically bad public sector management accompanied by weak regulatory regime oversight. Structural and institutional aspects in the economy are explained to show moderate links between growth and inflation. In the long run, therefore, GDP growth explains the effects of corruption on economic policies with a sustaining negative impact. The estimate is negative and statistically significant to support the view that corruption miserably fails to allocate resources efficiently hence investment in productivity will be discouraged with low prospects for sustainability in future growth.

In the long run, ARDL has given strong proof with facts that perception of corruption together with inflation and exchange rate dynamics significantly influence the economic performance of Iraq over time. This result was consistent with what had earlier been observed in descriptive trends and emphasized again the necessity of governance reform as part of a whole strategy for sustainable economic development.

5.4 Discussion of Results:

Table 1 descriptive statistics show CPI is very low, the mean is 32.46 which indicates terrible governance states through out this period. Since the CPI for the period fluctuates at 32.46, it suggests weak governance states. The second exogenous variable, it is evaluated to be very volatile at 0.00 to 17.7 where GDP growth is heavily affected by governance and policy shock accordingly. The findings support the existence of relationship between corrupt perception and macroeconomic performance within Iraq between 2010-2022 period. Conditional to oil price, the sign of this coefficient maintains significantly that governance quality is relevant regardless of oil shocks.

In the long run (Table 5), the estimated relationship reveals that the impact of perceived corruption on macroeconomic outcomes is statistically significant. The long-run relationship between growth and perceived corruption shows that greater perceived corruption leads to weaker long run growth. This is in line with episodes of declines in CPI and growth slowdowns of 2018-2020, periods that saw a rapid decline of governance indicators and a slowdown in growth.

Yet, currency exchange rate has also impacted the empirically derived economic notations. As table (3) reveals, the Iraqi dinar depreciated more distinctly in the second part of the sample period, measuring to IQD 1460 per USD in 2022. The positive and statistically significant long-run coefficient on the exchange rate also reflects the correlation between macroeconomic environment and monetary instability. This contributes to greater uncertainty, investments crowd-out and less-efficiency.

Inflation exacerbates the relationship between corruption and macroeconomic fluctuation. While the overall inflation rate is relatively moderate at 2.7%, both episodes of high inflation in 2011-2012 and in 2020 are characterized by economic problems and deteriorating governance, with an inverted-U shape in the inflation-related variables across time. The positive long-run correlation between inflation and the macroeconomic indicators may reflect the possibility of a weak governance

foundation leaving ground for erratic fiscal and monetary policies resulting in inflation pressure. As for the indexed trends, the empirical findings are essentially that a decline in CPI score leads to a slowdown in growth as well as an increase in volatility, while an improvement in CPI trend makes the same variables more stable. The co-movement tendency of the CPI and GDP indices is demonstrated in the graph below (Figure 5), where a strong governance goes hand in hand with a robust economy as well as setbacks in governance worse-off GDP.

This paper's results indicate that corruption in Iraq is also an institutional problem, which adds to the macroeconomic constraining effects. Weak governance exacerbate exchange rate volatility, create distortions to price stability and weaken policy impact. A package of reforms addressing corruption through improving the institutional quality while ensuring transparency of macroeconomic management is essential to sustained growth. This package of reforms would need to do away with the economic volatility through strengthening accountability and effectiveness of regulation, thus creating capacity for development.

6. Policy Implications

These main findings have significant policy implications for macroeconomic management and institutional reforms in Iraq. The long-run association between perceived corruption and fundamental macroeconomic aggregates suggests that corruption is not simply a "political" issue but a core economic one.

6.1 Institutional Strengthening and Transparency:

Institutional quality should be at the heart of any stabilisation strategy. International efforts to improve anti-corruption agencies and enhance transparency in procurement and monitoring through digital channels will not only lessen the likelihood of misallocation, but also enhance the value of the policy actions taken. Transparent budget execution in an oil-producing economy will increase the justification for independence in audit and monitoring, given the propensity for higher rents and corruption.

6.2 Fiscal Governance and Oil Revenue Management:

Two examples from Iraq illustrate how much potential gains in fiscal governance could matter. Tighter fiscal rules and a sovereign stabilization fund would slow the progress from and insulate some domestic macroeconomics from shocks to oil prices. And matching anti-corruption efforts with public financial management and expenditure efficiency reforms could raise growth.

6.3 Exchange Rate and Monetary Stability:

Corruption and Fluctuation of exchange rate. Anti-corruption measures will strengthen confidence in the currency and mitigate speculative attacks on the exchange rate. Increased governance can deliver the assurance needed. Coordinated monetary policy actions, supported by improved governance, will reestablish confidence in the currency and deter speculators' appetite for foreign currency. Inflation

and volatility in markets. Anti-corruption measures will mitigate inflation arising from procurement and subsidy schemes; improved regulations can stabilize markets to support growth.

6.5 Long-Term Development Strategy:

In the end, anti-corruption reform must be part of a more comprehensive development agenda founded on building accountable institutions, economic diversification and the private sector's competitiveness. Governance reform is the necessary condition for sustainable macroeconomic management in Iraq.

7. Conclusion

The paper attempted to examine the link between perceived corruption and Iraq's macroeconomics performance from the year 2010 till 2022 through an ARDL based model. The governance indicators have been employed along with the key macroeconomic indicators to shed light on the conflicts of corruption with economic growth, inflation, and exchange rate of the resource-dependent developing economy.

Corruption perception and macroeconomic performance are co-integrated as indicated by the ARDL bounds test. The estimates in the long-run demonstrate that corruption perception is negatively and significantly influences long-term growth, revealing that ongoing governance vulnerabilities exert steady pressures on the economic development of Iraq. Low CPI periods lead to high variability, and poor growth results, which are evident in the trend line as well as the econometric findings.

Equally significant for overall macroeconomic conditions was the case of exchange rates. The findings also indicate that volatility of the currency, in an environment of weak institutions, would tend to generate more uncertainty, which eventually causes macroeconomic inefficiency. Lastly, another important aspect of general macroeconomic conditions is inflation and its bouts or episodes of instability can only occur in a period of economic stress, and decline in the quality of governance, which offers the channel through which corruption impairs policy effectiveness and distorts economic performance.

These findings suggest that macroeconomic stabilization-without simultaneous improvements in governance and institutional quality-is a necessary condition for sustainable growth in Iraq. This has policy implications that transparency needs to be complemented by accountability, that is, better regulatory enforcement, within public institutions to reduce the negative economic consequences of corruption. Anti-corruption reforms should, therefore, go hand-in-hand with broader economic reforms related to managing the exchange rate and monetary aggregates and adherence to fiscal discipline.

Making time-consuming procedures less cumbersome, improving public financial management, and more effectively channeling public resources would cushion the adverse effect of corruption on investment and growth. For an oil-driven economy such as Iraq, governance reforms are essential for

resilience in insulating the economy from external shocks, and in strengthening the economy's structural soundness.

Apart from the contributions, the study also has its limitations. The constraints of the analysis solely depended on the time span of the yearly data available and a handful of macroeconomic indicators. Further institutional factors or additional sectors data may be incorporated to broaden the framework in future research as well as alternate measures of governance and using the panel method to compare two or more similar economies.

The reform identifies anti-corruption in the context of governance agenda. But, it is a core economic agenda. Institutional quality is a key determinant to the better macroeconomic stability and growth performance and thus a cornerstone of sustainable economic development in Iraq.

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