



## The Role of Good Governance in Economic Growth: Evidence from Income Groups

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### Abstract

This study explores the impact of governance indicators, such as rule of law, political stability, and control of corruption, on economic growth across different income groups. Using dynamic panel data estimation with the one-step system GMM method, we analyze data from low-income (15 country), lower-middle-income (40 country), upper-middle-income (40 country), and high-income economies (52 country) in 2007-2022. The findings suggest that governance indicators have varying effects on economic growth depending on the income group. The analysis reveals that the impact of governance indicators on economic growth varies significantly across income groups. In low-income economies, "Control of Corruption" and "Regulatory Quality" have the strongest positive effects, emphasizing the critical role of governance improvements in fostering growth in these settings. For lower-middle-income economies, the "Rule of Law" and "Government Effectiveness" are key drivers, reflecting the importance of legal frameworks and efficient public services during economic transitions. In upper-middle-income economies, "Government Effectiveness" and "Voice and Accountability" are significant, though the moderate coefficients suggest structural and external constraints limit governance's role in driving growth. For high-income economies, "Regulatory Quality," "Rule of Law," and "Political Stability" are essential for sustaining growth, highlighting the role of efficient, stable, and innovation-friendly institutions. These findings underscore the evolving importance of governance indicators across development stages and the need for tailored institutional priorities to maximize growth potential. Interestingly, COVID-19 had a significant negative impact on economic growth across all groups, though its magnitude varied. The results show that the negative impact of the Corona shock on economic growth has increased as countries' income levels have decreased. In other words, economic growth in low-income countries has experienced the greatest negative impact from the Corona shock, while in high-income countries it has experienced the least negative impact. Overall, this research underscores the importance of good governance in driving economic growth, especially in middle-income and low-income countries, and calls for policies that improve institutional quality to leverage trade and capital for sustainable development.

### Highlights

- Governance and Economic Growth: Governance indicators, such as "Rule of Law," "Control of Corruption," and "Government Effectiveness," significantly influence economic growth, with varying effects across income groups.
- COVID-19 Impact: The pandemic had a universally negative impact on growth, with low-income countries suffering the most and high-income countries the least.
- Policy Implications: Improving governance is crucial for fostering economic growth, particularly in low- and middle-income countries, by enhancing institutional quality and resilience.

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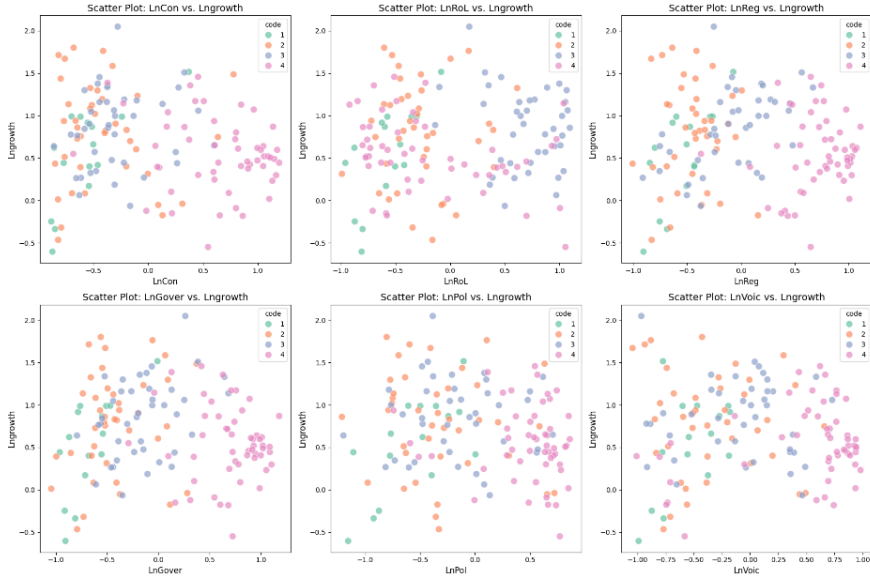
## 1. Introduction

The relationship between governance and economic growth has long been a central theme in economic research, with institutions widely recognized as critical determinants of economic performance. Governance, often defined as the mechanisms, institutions, and traditions through which authority is exercised, encompasses dimensions such as the rule of law, control of corruption, regulatory quality, government effectiveness, political stability, and voice and accountability. These elements of "good governance" are fundamental in shaping incentives, reducing uncertainties, and fostering an environment conducive to sustainable economic development (World Bank, 1992; Kaufmann et al., 1999). Statistical evidence highlights significant disparities in governance quality and its impact on economic outcomes across income groups. For instance, according to the World Governance Indicators (WGI, 2023), low-income countries consistently score below the global average on all six dimensions of governance, particularly on control of corruption and government effectiveness. In contrast, high-income countries generally exhibit robust governance frameworks, with higher scores in regulatory quality and political stability, factors that underpin their ability to sustain innovation-driven growth. Moreover, the World Bank (2022) estimates that improving governance by one standard deviation in low-income countries could boost annual GDP growth by 1 to 2 percentage points, underscoring its transformative potential.

The figure 1 presented depict the relationship between good governance indicators (horizontal axis) and economic growth (vertical axis) across four income groups, represented by codes 1 to 4, where: Code 1: Low-income countries, Code 2: Lower-middle-income countries, Code 3: Upper-middle-income countries, Code 4: High-income countries.

A review of statistical data also indicates that there should probably be a significant relationship between governance indicators and economic growth across countries in the world. According to Figure 1, this relationship between income groups and different governance indicators could possibly show different results. The scatter plots illustrate the relationship between governance indicators and economic growth across four income groups, showing a clear positive correlation for high-income countries, where stronger governance aligns with higher growth. Low- and lower-middle-income countries exhibit greater variability in growth outcomes despite weaker governance, suggesting that other factors, such as structural conditions or external influences, play a role. Among the governance indicators, control of corruption, rule of law, and government effectiveness show the strongest associations with growth, particularly in middle- and high-income countries. In contrast, political stability and voice/accountability have weaker links to growth, highlighting the need for targeted governance reforms. Although, these Figure provide evidence that good governance is a key determinant of economic growth. However, they also highlight that the impact of governance varies significantly across income groups, necessitating tailored policy interventions to maximize growth outcomes. However, to examine and

confirm the relationship between governance indicators and economic growth in countries around the world, more precise estimates will be needed.



**Figure 1. Relationship between good governance and GDP growth in income group**

*Note:* All data have been logarithmically transformed / **RoL:** Rule of Law, **CoC:** Control of Corruption, **RQ:** Regulatory Quality, **GE:** Government Effectiveness, **PSNV:** Political Stability No Violence, **VaA:** Voice and Accountability/data is average per country for 2007-2022.

*Source:* Calculated by the author

Despite extensive research, the governance-growth nexus remains a topic of ongoing debate, particularly regarding the differential impact of governance across income groups. Existing studies largely emphasize the role of governance in driving economic outcomes but often overlook how these effects vary with structural and institutional differences among economies. For example, while governance improvements might have transformative effects in low-income countries by addressing basic institutional voids, their impact in high-income economies may be more incremental, focused on fostering innovation and addressing advanced challenges such as inequality and environmental sustainability (Durlauf & Johnson, 1995; Acemoglu & Robinson, 2012). This paper aims to contribute to the literature by empirically investigating the differential impact of good governance on economic growth across income groups. Using dynamic panel data and a sample of low-, middle-, and high-income countries, this study examines how governance indicators influence economic outcomes at varying stages of development. Specifically, it analyzes how institutional quality interacts with the structural characteristics of economies, drawing insights from stage-dependent theories of development (Kuznets, 1971;

Rostow, 1960) and institutional economics (North, 1990). The primary objectives of this research are threefold: 1- To analyze the role of governance indicators in driving economic growth across low-, middle-, and high-income countries. 2- To assess how structural characteristics and income group heterogeneity mediate the impact of governance on growth. 3- To evaluate the short-term effects of the COVID-19 pandemic on economic growth and its interplay with governance indicators. The findings of this research have significant implications for policy and practice. A one-size-fits-all approach to governance reforms is unlikely to yield optimal results, given the diverse challenges faced by countries at different income levels. Instead, the evidence suggests that tailored governance strategies, aligned with a country's developmental needs, are essential to unlocking its growth potential. By addressing this critical gap in the literature, this paper provides both theoretical insights and practical recommendations for fostering growth through improved governance. The study's key contributions lie in its methodological rigor, use of up-to-date data spanning 2007–2022, and its innovative approach to addressing the interplay between governance, income groups, and external shocks. By bridging the gap in existing literature, this paper offers valuable insights for policymakers seeking tailored governance reforms to enhance economic performance in diverse contexts. This research contributes to the growing literature on governance and growth by emphasizing the importance of context-specific approaches. It advocates that a one-size-fits-all strategy is inadequate, and instead, governance reforms must align with a country's developmental stage and institutional priorities to maximize their growth potential.

## **2. Theoretical Foundations and Literature Review**

Institutions are the foundational structures that shape economic, political, and social interactions within a society, encompassing both formal rules, such as laws and regulations, and informal norms, such as cultural practices. These frameworks determine the incentives and constraints faced by economic agents, and their quality is widely recognized as a decisive factor in economic growth. Institutions reduce transaction costs by establishing clear and enforceable rules that govern economic interactions (North, 1990). Good governance creates a stable and predictable environment that encourages long-term investments in education, infrastructure, and technology, essential drivers of sustainable economic growth. Institutions also ensure market efficiency by addressing information asymmetries and market failures. Regulatory frameworks that promote competition, protect consumer rights, and maintain financial stability enhance resource allocation and productivity. Similarly, institutions that support innovation-through mechanisms such as intellectual property rights-are vital for technological advancement, a key determinant of long-term growth (Nelson & Winter, 1982). By combating corruption through transparency, accountability, and the rule of law, institutions prevent distortions in resource allocation and reduce the cost of doing business (Mauro, 1995). The role of institutions in

economic growth is stage-dependent, evolving as economies progress. For low-income economies, the establishment of basic governance structures, such as property rights and corruption control, is a priority to create foundational conditions for economic activity. In middle-income economies, regulatory quality and government effectiveness become critical for supporting industrialization and diversification. High-income economies, in contrast, focus on maintaining institutional maturity to address advanced challenges like inequality and environmental sustainability. This stage-dependent impact aligns with theories of development that emphasize the dynamic role of institutions in facilitating growth at different phases of economic advancement (Durlauf & Johnson, 1995). As economies grow more complex, institutions must adapt to meet the needs of financial markets, innovation systems, and global competition (Rodrik, Subramanian, & Trebbi, 2004).

The theoretical underpinnings of the governance-growth nexus are rooted in institutional economics, which emphasizes the role of formal and informal institutions in shaping economic performance. North (1990) highlights that institutions reduce transaction costs and uncertainty, thereby fostering investment and economic activity. Similarly, Acemoglu and Robinson (2012) argue that inclusive political and economic institutions create incentives for innovation and productivity growth. Governance quality directly influences these institutions, ensuring rule enforcement, policy stability, and resource allocation efficiency. Good governance has been an integral part of the institutions that affect economic growth in economic literature. Good governance, typically measured through dimensions such as rule of law, control of corruption, regulatory quality, and government effectiveness, is often considered a fundamental driver of economic growth. However, the magnitude and mechanisms of this relationship vary significantly across income groups, reflecting differences in institutional capacity, structural constraints, and economic priorities.

Stage-dependent theories of development provide a theoretical lens to understand the differentiated impacts of governance on economic growth across income groups (Durlauf & Johnson, 1995; North, 1990). For instance, the marginal benefits of governance improvements diminish as countries progress along the development ladder. In low-income countries, incremental reforms in governance dimensions like rule of law or corruption control can significantly boost growth by addressing fundamental institutional voids. However, in high-income economies, additional governance reforms may only yield marginal gains, as these institutions are already well-established and the focus shifts to addressing complex systemic issues (Rodrik, 2008). This stage-dependency is reflected in empirical findings that show varying coefficients for governance indicators across income groups. For example, Aisen and Veiga (2013) highlight that political stability has a stronger impact on growth in low- and middle-income economies, while its influence wanes in high-income countries where political systems are typically stable. Similarly, Kaufmann et al. (1999) observe that regulatory quality

is more impactful in middle-income countries undergoing industrial transformation compared to low- or high-income nations.

The relationship between good governance and economic growth has been a focal point of extensive research. [Acemoglu et al. \(2001\)](#) argue that institutional quality, which forms the backbone of good governance, is critical for economic growth. Their seminal work demonstrates that countries with inclusive institutions experience sustained growth, while extractive institutions hinder economic progress. Similarly, [North \(1990\)](#) highlights the role of institutions in reducing transaction costs and fostering market efficiency, which are prerequisites for long-term economic growth. [Rodrik \(2004\)](#) provides further evidence that governance quality—manifested through effective policy frameworks, property rights protection, and rule of law—promotes macroeconomic stability and investment. He emphasizes the importance of aligning governance with local needs to ensure that institutional reforms lead to growth. These findings resonate with the work of [Kaufmann et al. \(2010\)](#), who establish a direct link between governance indicators such as regulatory quality and economic performance across countries. In the context of income groups, [Haggard and Tiede \(2011\)](#) explore how governance impacts economic outcomes differently in low- and high-income countries. They find that while governance improvements yield immediate benefits in high-income nations, the effects in low-income countries are often mediated by structural challenges such as corruption and weak institutional capacity. Similarly, [Dollar and Kraay \(2003\)](#) show that governance reforms in low-income countries tend to produce slower growth effects compared to middle- and high-income nations, where the institutional frameworks are relatively robust. In terms of governance components, studies like those of [Hall and Jones \(1999\)](#) demonstrate the critical role of rule of law and control of corruption in enhancing productivity and fostering growth. The World Governance Indicators (WGI) project ([2023](#)) also provides empirical evidence that governance measures, such as political stability and government effectiveness, are positively correlated with GDP growth rates across different income levels. Recent studies, such as those by [Gisselquist \(2012\)](#), delve into the nuanced aspects of governance, suggesting that governance quality is not uniformly effective across all contexts. For instance, while regulatory quality drives growth in upper-middle and high-income economies, political stability and voice and accountability tend to have greater significance in low-income nations. These findings underscore the importance of adopting a context-sensitive approach to governance reforms. As noted by [Mauro \(1995\)](#), corruption severely undermines economic efficiency by distorting resource allocation and deterring investment. Improving control of corruption and regulatory quality in these contexts can significantly enhance economic performance. Similarly, [Aisen and Veiga \(2013\)](#) find that political stability is crucial for growth in fragile economies, as instability exacerbates uncertainty and reduces investor confidence. In middle-income economies, the relationship between governance and growth becomes more nuanced. Studies by [Rodrik \(2008\)](#) and [Durlauf and Johnson \(1995\)](#) suggest that regulatory quality and



government effectiveness play a pivotal role in supporting industrial diversification and economic modernization. These reforms enable middle-income countries to transition from factor-driven to efficiency-driven growth, fostering competitiveness and productivity.

Arusha (2009) emphasizes the importance of government quality, while Huynh and Jacho-Chávez (2009) find political stability, government effectiveness, and rule of law positively influence growth. Gani (2011) reports that political stability and government effectiveness positively correlate with growth, whereas voice and accountability and control of corruption show negative correlations in developing countries. Fayissa and Nsiah (2013) conclude that governance's role in economic growth varies depending on income levels among Sub-Saharan African countries. Liu and Zhang (2024) examines the relationship between governance quality (AGI) and green growth (GRG) in BRICS countries from 1998 to 2022, revealing that stronger governance significantly fosters green growth. Kormendi and Meguire (1985) and Helliwell (1994) found that democracy significantly improves economic growth by promoting stability and protecting property rights. Barro (1991, 1996) demonstrated that civil and economic freedoms foster creativity and innovation, contributing to growth, Rodrik (1998) and Aron (2000) highlighted the role of transparency and public accountability in enhancing economic performance. Mauro (1995, 1998) demonstrated that corruption undermines economic growth and investment by fostering inefficiency and misallocation of public resources. Jain and Mukand (2004) further confirmed the detrimental relationship between corruption and growth, emphasizing the importance of good governance and a strong judicial system in promoting private investment. Hadiffaraj et al., (2018) explores the interaction between governance quality and exchange rate regimes in shaping economic growth, finding that their effects vary between developed and emerging markets. Houang and Ho (2017) examines the Granger causality between governance and economic growth in 12 Asian countries from 1996 to 2014, finding that governance dimensions, particularly government effectiveness and rule of law, significantly influence growth in "Not Free" countries but show limited impact in "Free" and "Partly Free" countries. Abdelbary and Benhin (2019) examines the factors influencing economic growth in Arab countries (ACs) from 1995 to 2014, emphasizing the role of governance alongside human capital and investment. The results show that while human capital and investment positively impact growth, governance negatively affects growth in ACs, highlighting its importance in improving economic stability and reducing political instability, such as that seen during the 'Arab Spring.' Mehran (2022) examines the impact of governance on economic growth, incorporating spatial dependence between countries. The study finds that a 1% increase in governance leads to a 1% increase in economic growth, and that economic growth in one country positively influences the growth of neighboring countries. Singh (2022) found that governance and growth are complementary in BRICS nations, while Ogbuabor et al. (2020) identified corruption, government ineffectiveness, and

political instability as growth inhibitors in West Africa. [Beyene \(2022\)](#) noted that a composite governance index positively impacts growth in African countries despite negative effects from corruption and government effectiveness. Additionally, studies by [Kesar and Jena \(2022\)](#), [Hamid et al. \(2022\)](#), and others show that good governance, especially political stability and corruption control, is crucial for fostering economic growth in various regions. [Fayissa \(2013\)](#) Using fixed and random effects and Arellano-Bond models, finds that good governance significantly influences growth differences across African nations, with the impact varying by income level. The results suggest that without strong governance, achieving the goals of the New Partnership for Africa's Development (NEPAD) will be hindered.

While existing studies have extensively examined the relationship between governance and economic growth, several theoretical gaps remain unaddressed. First, many prior works focus on aggregate or global trends without adequately distinguishing the differential impacts of governance indicators across income groups. This oversight limits the understanding of how institutional priorities vary between low-, middle-, and high-income economies. Second, the role of external shocks, such as the COVID-19 pandemic, in moderating the governance-growth nexus has been largely neglected in the literature. By incorporating the pandemic as a shock variable, this study provides novel insights into the resilience of governance frameworks under crisis conditions. Moreover, unlike much of the existing research that treats governance as a composite indicator, this study evaluates six governance sub-indicators—rule of law, control of corruption, regulatory quality, government effectiveness, political stability, and voice and accountability—separately. This allows for a more nuanced analysis of how these dimensions of governance exert distinct and varying effects on economic growth at different stages of development. By addressing these gaps, this study not only contributes to a more detailed theoretical understanding of governance's role in economic growth but also highlights the importance of tailored policy interventions based on the developmental needs and institutional capacities of countries at different income levels.

### **3. Data**

The table 1 highlights the differences in key economic and governance indicators across income groups. Growth rates are highest in low-income countries (4.154) but decrease as income levels rise, with high-income countries exhibiting more stable growth (standard deviation of 0.133). FDI inflows show similar means across groups but are more volatile in high-income countries (standard deviation of 1.421). Trade openness increases with income levels, reflecting higher integration into global markets in wealthier countries, as seen in the highest mean for high-income countries (4.610). Trade openness, measured by the trade indicator, increases steadily with income, from a mean of 3.926 in low-income countries to 4.610 in high-income countries, reflecting greater participation in international markets. Similarly, capital levels are higher in



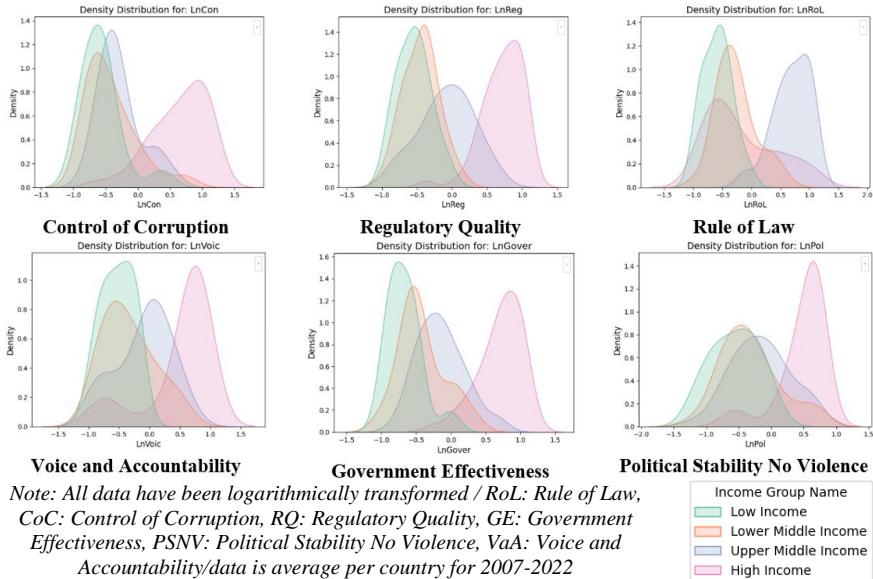
middle- and high-income countries, with a slight decline in variability, suggesting more robust and stable capital accumulation as countries develop.

**Table 1. Descriptive statistics for each variable in income group**

	Low-Income		LowerMiddle		Upper-Middle		High-Income	
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
Economic Growth	4.154	0.182	4.013	0.233	3.989	0.191	4.076	0.133
FDI	1.377	0.859	1.187	0.881	1.359	0.799	1.359	1.421
Tread	3.926	0.433	4.264	0.426	4.307	0.402	4.610	0.560
Capital Formation	3.061	0.373	3.247	0.384	3.217	0.286	3.192	0.221
Employment	4.154	0.182	4.013	0.233	3.989	0.191	4.076	0.133
Rule of Law	-0.59	0.255	-0.41	0.391	-0.27	0.361	0.673	0.365
Control of Corruption	-0.57	0.323	-0.42	0.401	-0.29	0.355	0.646	0.443
Regulatory Quality	-0.55	0.242	-0.45	0.271	-0.08	0.400	0.720	0.299
Government Effectiveness	-0.67	0.250	-0.42	0.346	-0.15	0.369	0.705	0.327
Political Stability No Violence	-0.56	0.425	-0.32	0.481	-0.16	0.480	0.481	0.379
Voice and Accountability	-0.53	0.296	-0.34	0.447	-0.09	0.462	0.500	0.549
Total observation	240	240	640	640	640	640	832	832
Number of countries	15	15	40	40	40	40	52	52

**Note:** 1- All data have been logarithmically transformed. 2- The data is defined as follows: **Economic Growth:** GDP per capita growth (2015), **FDI:** Foreign direct investment, net inflows (% of GDP), **Total Tread:** Trade (% of GDP), **Capital Formation:** Gross capital formation (% of GDP), **Employment:** Employment to population ratio%.

**Source:** Calculated by the author



**Note:** All data have been logarithmically transformed / RoL: Rule of Law, CoC: Control of Corruption, RQ: Regulatory Quality, GE: Government Effectiveness, PSNV: Political Stability No Violence, VaA: Voice and Accountability/data is average per country for 2007-2022

**Figure 2. Density distribution for good governance index in income group**

. *Source: Calculated by the author*

Employment levels remain relatively stable across income groups, with only minor variations in means and standard deviations, indicating that employment structures may not change significantly with income levels. Overall, the data suggest that higher-income countries benefit from stronger trade integration, more stable capital accumulation, and steady employment levels, which contribute to their economic resilience and growth. Governance indicators improve significantly with income. Low-income countries exhibit negative averages for Rule of Law, Control of Corruption, and Government Effectiveness, while high-income countries show positive averages, indicating stronger institutional quality. Variability in these indicators is generally higher in lower-income groups, suggesting uneven governance capacities. The density plots (Figure 2) illustrate the distribution of governance indicators across four income groups, revealing clear distinctions. High-income countries (pink) consistently exhibit stronger governance scores across all indicators, with sharp peaks indicating lower variability. In contrast, low-income countries (green) display weaker governance and broader distributions, suggesting greater heterogeneity. Middle-income countries (orange and blue) show intermediate governance levels, often overlapping, reflecting closer alignment in institutional quality. Notably, indicators like Control of Corruption, Rule of Law, and Government Effectiveness highlight substantial gaps between low- and high-income groups, emphasizing the importance of governance in economic advancement. Meanwhile, Voice and Accountability and Political Stability show broader overlap, indicating less differentiation across income groups. These patterns underscore governance disparities as key determinants of economic development. Overall, the data underscore a clear association between income levels, economic stability, and institutional development.

#### 4. Research Methodology

This study employs a dynamic panel data model to examine the determinants of economic growth using the following empirical specification:

$$G_{it} = f(x_{it}, gg_{it}, Covid) \quad (1)$$

Here,  $G_{it}$  represents the natural logarithm of economic growth for country  $i$  at time  $t$ ,  $x_{it}$  represent the explanatory variables of the model that is:  $\ln FDI_{it}$ ,  $\ln Trade_{it}$ ,  $\ln Capital_{it}$ , and  $\ln Employment_{it}$  are the natural logarithms of foreign direct investment, trade openness, capital formation, and employment, respectively.  $gg_{it}$  captures governance indicators (Rule of Law, Control of Corruption, Regulatory Quality, Government Effectiveness, Political Stability No Violence, Voice and Accountability), and  $CovidPeriod_{it}$  is a dummy variable accounting for the COVID-19 pandemic period<sup>1</sup>. The dynamic nature of the

<sup>1</sup> The COVID-19 dummy variable has been employed as an intervening variable in the model to analyze the effects of an unexpected external shock that has significantly impacted the global economy. The COVID-19 pandemic created a multidimensional shock that negatively affected key economic variables,

model necessitates the use of the Generalized Method of Moments (GMM) estimator, as ordinary least squares (OLS) would yield biased and inconsistent estimates due to the correlation between the lagged dependent variable and the error term. Specifically, this study employs the Arellano-Bond System GMM estimator. The Arellano-Bond GMM estimator is designed for dynamic panel data models where the number of time periods (T) is small relative to the number of cross-sectional units (N). The estimation process addresses three key challenges: 1-Endogeneity: Several independent variables, including the lagged dependent variable and potentially governance indicators, are likely endogenous. The GMM framework handles this by employing lagged levels and differences of the endogenous variables as instruments. 2- Unobserved Heterogeneity: The inclusion of country-specific effects ( $\mu_i$ ) introduces potential omitted variable bias. First-differencing eliminates these fixed effects, allowing the model to focus on within-country variation. 3- Autocorrelation and Heteroskedasticity: Robust standard errors are used to address potential heteroskedasticity and serial correlation in the error term. The system GMM estimator combines equations in levels and first differences to improve efficiency and reduce the finite-sample bias often present in the difference GMM approach. By incorporating instruments from both the level and difference equations, the estimator effectively handles weak instruments and improves the precision of parameter estimates, particularly in the presence of persistent explanatory variables. Overall, this methodology ensures consistent and unbiased estimation of the dynamic relationships among economic growth, governance indicators, and other covariates, accounting for endogeneity and unobserved heterogeneity in the panel dataset.

## 5. Model Estimation and Results

The Fisher Stationarity Test results in Table 2 indicate the stationarity properties of various economic variables across income groups (low, lower-middle, upper-middle, and high income). Economic growth demonstrates stationarity at the level for all income groups, with highly significant results. For other variables, such as trade, capital, and employment, stationarity is also

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such as investment, trade, employment, and productivity. The role of this variable in analyzing governance and economic growth is outlined as follows: a. Revealing Institutional Vulnerabilities: COVID-19 highlighted weaknesses in governance, especially in countries with low-quality governance, such as inefficiencies in public service delivery, lack of transparency in policymaking, and corruption. This variable enables us to examine how the quality of governance in different countries has influenced the severity of the negative impacts of this shock. b. Disparity of Effects across Income Groups: This variable helps analyze the differences in the pandemic's impact among low-, middle-, and high-income countries. For example, findings indicate that countries with stronger governance and higher income levels experienced less severe effects due to institutional stability and their ability to implement supportive policies. c. Analyzing the Interaction between Governance and Economic Growth: The inclusion of the COVID-19 variable allows for an investigation into whether stronger governance can mitigate the adverse effects of external shocks on economic growth. For instance, countries with higher scores in indicators such as control of corruption and government effectiveness may possess greater capacity to manage crises and recover more quickly to a growth trajectory. d. Providing Evidence for Policymaking: Analyzing the effects of COVID-19 and its interaction with governance can assist policymakers in designing governance reform programs to enhance economic resilience against future shocks.

significant at the level for most income groups. Institutional variables (e.g., rule of law, control of corruption, regulatory quality) show mixed results: stationarity is achieved at the level for low-income groups in some cases, while others require first-differencing to achieve stationarity, especially in higher-income groups. Overall, the results highlight that economic growth and key economic variables are stationary across income groups, whereas institutional variables may exhibit differing stationarity patterns depending on income level. Given the differing levels of stationarity for governance indicators, to ensure that the estimated coefficients are comparable across these variables for different income group and different indicator, all governance indicators are utilized in their first-differenced form.

**Table 2. Fisher Stationary test**

Variable	Low-Income		Lower-Middle		Upper-Middle		High-Income	
	level	Diff.1	level	Diff.1	level	Diff.1	level	Diff.1
Growth	198***	-	395***	-	500***	-	593***	-
FDI	98.5	-	157.2	-	334.6	-	438.6	-
Tread	161***	-	99.1*	-	114***	-	533***	-
Capital	85***	-	125***	-	167***	-	204***	-
Employment	52***	-	111***	-	125***	-	397.7***	-
RoL	45.7*	207***	69.7	476***	97.2*	549	123.7*	856***
CoC	37.9	150***	61.7	559***	76.4	500***	99.9	735***
RQ	26.8	195***	64.5	466***	120**	-	138.1*	-
GE	65***	-	109**	-	100.9*	-	150***	-
PSNV	65***	-	109**	-	92.5	622***	146***	-
VaA	13.7	164***	69.2	383***	51.6	331***	88.6	616***

*Note:* 1- All data have been logarithmically transformed. 2- The data is defined as follows: **Economic Growth:** GDP per capita growth (2015), **FDI:** Foreign direct investment, net inflows (% of GDP), **Total Tread:** Trade (% of GDP), **Capital Formation:** Gross capital formation (% of GDP), **Employment:** Employment to population ratio%/ **RoL:** Rule of Law, **CoC:** Control of Corruption, **RQ:** Regulatory Quality, **GE:** Government Effectiveness, **PSNV:** Political Stability No Violence, **VaA:** Voice and Accountability

*Source:* Calculated by the author

Tables 3-6 show the results of the model estimation in four income groups of countries. The econometric estimation of the dynamic panel model using the Generalized Method of Moments (GMM) demonstrates statistical validity and robustness. The Wald chi-squared statistic is highly significant across all income groups and all models, confirming the joint significance of the explanatory variables in explaining variations in economic growth. The Arellano-Bond test for AR(1) indicates the expected first-order serial correlation in the differenced residuals, which aligns with the dynamic structure of the model. The more robust Hansen test of over-identifying restrictions shows no evidence of invalid instruments, mitigating concerns about instrument proliferation. Additionally, the Difference-in-Hansen test, which tests the exogeneity of instrument subsets, supports the exogeneity assumption. These results suggest that the instruments are appropriate and valid for identifying the model. Overall, the diagnostic tests

confirm the reliability of the GMM estimation, and the results can be interpreted with confidence.

**Table 3. Panel data model estimation results for Low-Income Economies**

LOW-INCOME ECONOMIES						
Constant	-0.972	-1.1906	-1.000	-0.659	-1.072	-1.127
FDI	-0.141	-0.1489	-0.141	-0.157	-0.157	-.150
Tread	0.414	0.3985	0.431	0.401	0.392	0.396
Capital	0.824***	0.856***	0.85***	0.872***	0.906***	0.847***
Employment	-0.561	-0.5156	-0.591	-0.655	-0.567	-0.518
RoL	2.077	-	-	-	-	-
CoC	-	2.7786*	-	-	-	-
RQ	-	-	3.814***	-	-	-
GE	-	-	-	0.396	-	-
PSNV	-	-	-	-	1.178***	-
VaA	-	-	-	-	-	2.445***
COVID 19	-1.055***	-1.065***	-1.02***	-1.05***	-1.04***	-1.089***
Post Estimation Test						
Wald chi2	169.62***	222.56***	180.7***	192.3***	234.9***	262.41***
A-B AR(1)	-3.16***	-3.18***	-3.22***	-3.23***	-3.31***	-3.23***
A- AR(2)	0.21	0.31	0.22	0.12	0.25	0.19
Hansen O.R	12.31	12.91	12.44	12.36	9.85	11.36
Hansen E.G	12.23	12.91	12.44	12.36	10.79	11.36

Source: Calculated by the author

**Table 4. Panel data model estimation results for Lower-Middle-Income Economies**

LOWER-MIDDLE-INCOME ECONOMIES						
Constant	-0.389	-0.5199	-0.399	-0.387	-0.612	-0.520
FDI	0.232***	0.224***	0.229***	0.223***	0.223***	0.225**
Tread	-0.436**	-0.443**	-0.441**	-0.436**	-0.433**	-0.445**
Capital	0.442**	0.4529**	0.438**	0.435**	0.454**	0.453**
Employment	0.358	0.3937	0.372	0.368	0.403	0.396
RoL	2.596***	-	-	-	-	-
CoC	-	0.0731	-	-	-	-
RQ	-	-	1.221	-	-	-
GE	-	-	-	1.263**	-	-
PSNV	-	-	-	-	1.136**	-
VaA	-	-	-	-	-	0.110
COVID 19	-1.004***	-1.05***	-1.05***	-1.07***	-1.05***	-1.048***
Post Estimation Test						
Wald chi2	324.48***	284.4***	288.6***	326.5***	301.93***	286.37***
A-B AR(1)	-4.68***	-4.68***	-4.71***	-4.77***	-4.69***	-4.69***
A- AR(2)	1.10	0.87	0.74	1.19	1.03	0.86
Hansen O.R	39.03	39.45	39.04	39.51	38.05	39.46
Hansen E.G	38.43	38.37	38.71	37.81	36.81	38.32

Source: Calculated by the author

Low-Income Economies: In low-income economies (in table 3), the results indicate that capital accumulation is the most significant driver of growth, with

consistently large and highly significant coefficients. This aligns with the Solow Growth Model, which emphasizes that capital investment is pivotal for economies in the initial stages of development, where capital is scarce, and its marginal productivity is high. The weak and negative effect of FDI suggests that these economies face challenges in effectively utilizing foreign investments, likely due to inadequate absorptive capacity, weak infrastructure, and institutional inefficiencies. The number of employed people and the degree of openness of the economy also do not have a significant impact on economic growth in these countries. Governance indicators such as Regulatory Quality and Control of Corruption show significant positive effects, underscoring the foundational role of institutional quality in facilitating economic activities and reducing inefficiencies. However, the insignificant impact of variables like Rule of Law reflects the underdeveloped nature of legal and institutional frameworks, where enforcement remains weak, limiting its immediate contribution to growth. The strong and negative impact of COVID-19 further illustrates the vulnerability of low-income economies to external shocks, stemming from limited fiscal and healthcare capacities, as well as reliance on sectors like agriculture and tourism, which were disproportionately affected during the pandemic.

**Lower-Middle-Income Economies:** As countries transition into the lower-middle-income group (in table 4), the role of FDI becomes significantly positive, reflecting an improved ability to leverage foreign investments due to better infrastructure, education, and institutional frameworks. However, trade has a negative coefficient, which could be attributed to reliance on low-value exports or an inability to compete in global markets due to tariff and non-tariff barriers. Here too, capital is an important and determining factor for economic growth. The governance indicators, particularly Rule of Law, Government Effectiveness, and Political Stability, exhibit significant positive effects. This indicates that as economies progress, the institutional environment becomes a critical determinant of growth. Improved governance enhances investor confidence, ensures policy stability, and facilitates efficient allocation of resources, which are essential for sustaining growth in this stage of development. The continued negative impact of COVID-19 highlights the greater exposure of these economies to global value chains and the significant disruptions caused by the pandemic in manufacturing and trade-dependent sectors.

**Upper-middle-income economies (in table 5):** the growth dynamics shift further. FDI remains positive but with reduced significance compared to lower-middle-income economies, reflecting diminishing returns to foreign investments as domestic industries mature. Similarly, the positive effect of trade highlights the importance of global market integration and technology transfer at this stage. Here too, capital is an important and determining factor for economic growth. The labor force in this group of countries has an important and significant effect on economic growth. This effect can be attributed to the accumulation of human capital and the quality of the labor force in this group of countries. Governance indicators such as Government Effectiveness, Political Stability, and Voice and



Accountability play a more pronounced role in driving growth. These findings align with the New Institutional Economics, which posits that strong institutions become increasingly important as economies grow more complex. Effective governance ensures the efficient functioning of markets, reduces uncertainty, and facilitates high-value economic activities like innovation and advanced manufacturing. The pandemic's negative impact remains evident but less severe than in lower-income groups, reflecting stronger healthcare systems, policy responses, and diversified economic structures.

**Table 5. Panel data model estimation results for Upper-Middle-Income Economies**

UPPER-MIDDLE-INCOME ECONOMIES						
Constant	-7.21***	-7.19***	-7.12***	-6.992***	-7.251***	-7.077***
FDI	0.178*	0.179*	0.184 **	0.179*	0.183***	0.185**
Tread	0.262*	0.257*	0.249 *	0.255*	0.268**	0.253*
Capital	1.002***	1.005***	1.00 ***	0.975***	0.995***	1.006***
Employment	0.884**	0.883*	0.873 **	0.855**	0.892**	0.854**
RoL	0.700	-	-	-	-	-
CoC	-	0.409	-	-	-	-
RQ	-	-	1.087	-	-	-
GE	-	-	-	1.451***	-	-
PSNV	-	-	-	-	1.099**	-
VaA	-	-	-	-	-	1.309*
COVID 19	-0.81***	-0.81***	-0.79***	-0.78***	-0.810***	-0.804***
Post Estimation Test						
Wald chi2	309.9***	270.2***	383.0***	318.0***	282.07***	286.37***
A-B AR(1)	-4.96 ***	-4.95***	-4.95***	-4.97 ***	-4.99 ***	-4.69***
A- AR(2)	-1.60	-1.69*	-1.65*	-1.57	-1.61	0.86
Hansen O.R	39.46	39.00	39.65	39.05	39.82	39.46
Hansen E.G	39.04	39.00	39.16	39.01	39.59	38.32

Source: Calculated by the author

**Table 6. Panel data model estimation results for High-Income Economies**

HIGH-INCOME ECONOMIES						
Constant	-0.247	-0.448	-0.050	-0.420	-0.469	-5.612***
FDI	0.114**	0.114***	0.112**	0.115***	0.109**	-0.100
Tread	0.200*	0.206*	0.200*	0.202*	0.209*	0.301**
Capital	0.702**	0.725**	-0.658**	0.709**	0.725**	0.701 ***
Employment	-0.615*	-0.590*	-	-0.581*	-0.586*	0.212
RoL	1.877**	-	-	-	-	-
CoC	-	.849	-	-	-	-
RQ	-	-	2.656***	-	-	-
GE	-	-	-	0.797	-	-
PSNV	-	-	-	-	1.398***	-
VaA	-	-	-	-	-	0.905**
COVID 19	-0.411***	-0.42***	-0.41***	-0.41 ***	-0.425***	-1.220***
Post Estimation Test						
Wald chi2	119.94***	105.5***	119.9***	111.2***	112.82***	107.79***

A-B AR(1)	-6.23 ***	-6.18***	-6.17***	-6.19***	-6.12 ***	-6.19***
A- AR(2)	-2.51**	-2.37*	-2.50**	-2.44**	-2.44**	-2.35*
Hansen O.R	51.39	51.57	51.65	51.56	51.80	51.61
Hansen E.G	51.28	51.49	51.42	51.69	51.67	51.52

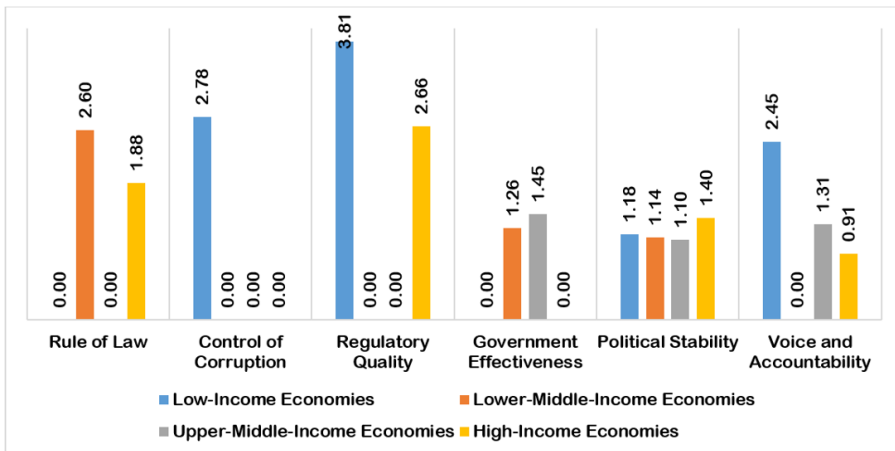
*Source:* Calculated by the author

**High-Income Economies:** In high-income economies (in table 6), the role of governance becomes paramount, with Regulatory Quality and Voice and Accountability exhibiting strong positive effects. This aligns with theories suggesting that advanced economies require robust regulatory frameworks to manage complex economic systems and ensure innovation, competition, and inclusivity. The significant positive impact of Voice and Accountability highlights the importance of democratic institutions in fostering transparency, accountability, and social stability, which are critical for maintaining sustained growth. The diminishing effect of FDI and the smaller coefficients for capital suggest that these economies have reached a stage where growth is less dependent on physical investment and more on factors like innovation, knowledge, and institutional excellence. The relatively moderate negative impact of COVID-19 reflects the resilience of high-income economies, supported by diversified industries, advanced healthcare, and fiscal capacities to mitigate shocks.

Figure 3 shows the coefficients of the effect of each governance indicator on economic growth in different income groups (coefficients that were not significant were considered to have no effect). For low-income economies, "Control of Corruption" (2.78) and "Regulatory Quality" (3.81) have the highest positive coefficients, indicating that these factors are critical for fostering growth in these countries. Weak institutions and pervasive corruption in these economies likely mean that even marginal improvements in governance can yield substantial growth dividends. The significant impact of "Voice and Accountability" (2.45) underscores the importance of political inclusivity and citizen engagement in such settings. In contrast, for lower-middle-income economies, the "Rule of Law" (2.60) emerges as a key driver of growth, suggesting that as economies transition, legal frameworks and the enforcement of property rights gain prominence. Similarly, "Government Effectiveness" (1.26) plays a vital role, reflecting the increasing importance of efficient public service delivery in supporting growth during this stage. For upper-middle-income economies, "Government Effectiveness" (1.45) and "Voice and Accountability" (1.31) show the most significant impacts, reflecting the growing need for efficient governance and participatory political systems to sustain growth. The relatively moderate coefficients across indicators suggest that governance improvements alone may not suffice for higher growth rates, as these economies often face structural and external constraints. Finally, in high-income economies, "Regulatory Quality" (2.66) and the "Rule of Law" (1.88) exhibit the highest impacts, highlighting the critical role of regulatory efficiency and legal stability in sustaining growth in advanced economies. "Political Stability" (1.40) is also significant, reflecting the necessity of maintaining a stable political environment to preserve economic

momentum. Theoretical explanations for these differences stem from variations in institutional maturity, economic structures, and governance challenges at different income levels. In low-income countries, where institutions are weaker, basic improvements in governance can have outsized effects. As countries progress to middle-income status, more advanced institutional frameworks—such as legal systems and bureaucratic efficiency—become vital for supporting increasingly complex economic activities. In high-income countries, the focus shifts to maintaining regulatory efficiency, stability, and innovation-friendly governance to sustain growth in highly developed and competitive markets.

The differences in the impact of governance indicators across income groups align closely with stage-dependent theories of development, which propose that economic growth and development occur in sequential stages characterized by distinct structural, institutional, and policy requirements. Each stage necessitates tailored governance reforms to address unique challenges and facilitate transitions to higher levels of development. Stage-dependent theories of development propose that economic growth and development occur in sequential stages, where each stage is characterized by distinct structural, institutional, and policy requirements. These theories emphasize that economies must meet specific conditions and overcome unique challenges at each stage to transition to higher levels of development. Stage-dependent theories are rooted in classical, neoclassical, structuralist, and institutionalist perspectives, emphasizing the evolving needs of economies as they progress. Rostow's "Stages of Economic Growth" (1960) outlines five distinct stages—from traditional society to high mass consumption—each requiring specific investments in technology, infrastructure, and human capital.



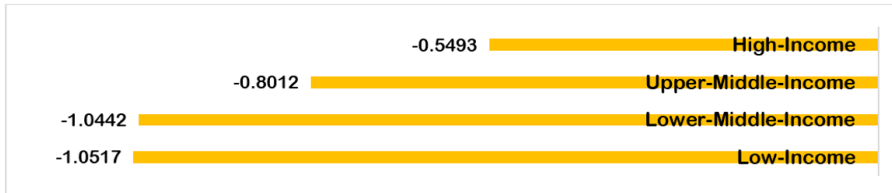
**Figure 3. Comparing the impact coefficient of good governance indicators on economic growth**

*Source: Calculated by the author*

For instance, rapid industrialization and technological innovation define the "take-off" stage, while the "drive to maturity" focuses on productivity enhancement and economic diversification. Structuralist approaches, such as Lewis's dual-sector model (1954), highlight the reallocation of surplus labor from traditional agricultural sectors to higher-productivity industrial sectors as essential for sustained growth. Gerschenkron (1962) further underscores the role of historical, institutional, and technological contexts in shaping development trajectories, allowing late industrializers to leapfrog certain stages by adopting alternative strategies. Contemporary theories integrate institutional and endogenous growth perspectives. Effective governance, property rights, and rule of law are prerequisites for early-stage development (North, 1990). At more advanced stages, innovation systems and financial markets gain prominence, requiring sophisticated governance frameworks to sustain growth (Acemoglu & Robinson, 2012). In the early stages, governance reforms focus on foundational institutional building blocks. Indicators such as control of corruption and regulatory quality address structural inefficiencies, including weak contract enforcement and high transaction costs (Kaufmann et al., 1999). These reforms attract investment, reduce inefficiencies, and unlock growth potential. For instance, improvements in control of corruption and regulatory quality in low-income economies directly reduce institutional barriers, creating an environment conducive to resource allocation and economic activity (Like what happens in low-income economies). As economies transition to lower-middle-income stages, governance priorities shift toward institutional consolidation. Regulatory quality and government effectiveness gain prominence, facilitating diversification and enabling countries to move up the value chain. However, diminishing returns to governance improvements, such as rule of law, may emerge as institutions mature, necessitating a transition from basic reforms to strategies focused on industrial sophistication and innovation (Rodrik, 2008). (Like what happens in Lower-Middle-Income Economies). At this stage, economies face complex governance needs. Advanced indicators, such as government effectiveness and accountability, are critical for managing the challenges of economic complexity and ensuring equitable growth. Governance reforms focus on fostering innovation, integrating into global markets, and addressing inequality. Regulatory quality and sophisticated institutional capabilities play an increasingly pivotal role in driving growth (Like what happens in Upper-Middle-Income Economies). In mature economies, governance supports advanced innovation systems, resilience, and equitable resource distribution. The focus shifts from growth facilitation to sustaining innovation-driven economies and addressing challenges such as aging populations, inequality, and environmental sustainability. Good governance ensures adaptability and stability, fostering resilience in the face of global economic fluctuations. (Like what happens in High-Income Economies).

Another important result of the paper is the assessment of the impact of the coronavirus pandemic on economic growth in different income groups. Figure 4 shows the average coefficient of the impact of the dummy variable of the

coronavirus shock on economic growth in each of the income groups. Comparing these coefficients reveals interesting results: The impact of the COVID-19 variable on economic growth decreases in magnitude as income levels increase. In low-income economies, the coefficient is highest in absolute terms (-1.0517), indicating that these economies experienced the most significant negative impact of the pandemic on growth.



**Figure 4. Average Effect of COVID 19 on economic growth in income group**

*Source: Calculated by the author*

Conversely, high-income economies show the smallest negative impact (-0.5493). Low-Income Economies likely faced severe disruptions due to weaker healthcare systems, less fiscal capacity to implement economic support measures, and greater vulnerability to global trade and supply chain disruptions. The effects in lower- and upper-middle-income economies are less severe than in low-income economies but still substantial. These economies may have had some capacity to buffer the pandemic's effects through fiscal or monetary interventions but were still constrained by structural weaknesses. High-income economies were better equipped to mitigate the pandemic's economic impact due to stronger healthcare systems, larger fiscal stimulus packages, and the ability to leverage advanced technological infrastructure to sustain productivity. Therefore, it can be seen that as income levels increase, the impact of the Corona shock on the decline in economic growth of countries becomes smaller. In other words, poorer economies have experienced greater losses from the Corona shock. Perhaps policies need to be adopted to prevent such huge inequality from occurring among countries in the world in the future. For low-income economies, targeted interventions to build resilience against external shocks, including pandemics, are essential. In middle-income economies, enhancing social protection systems and increasing healthcare capacity are critical. High-income economies should focus on strengthening global cooperation to mitigate the spillover effects of global crises.

## 6. Conclusion

This study underscores the critical role of governance quality in fostering economic growth, particularly across different income groups. The empirical findings reveal a nuanced relationship between governance indicators and economic growth, highlighting the stage-dependent nature of their impact. Specifically, governance dimensions such as control of corruption and regulatory quality exhibit strong positive effects in low-income economies, while regulatory

quality and voice and accountability play a more prominent role in high-income economies. The findings emphasize a strong relationship between governance and growth, wherein economic benefits become more pronounced after reaching specific institutional quality thresholds. This insight carries profound implications for policymakers, particularly in developing and emerging economies, where targeted investments in governance reforms can yield substantial returns in growth outcomes. Moreover, the study identifies governance as a crucial mediating factor, amplifying the effectiveness of other growth determinants such as investment and human capital. In general, the main results of the present study can be categorized into the following two sections:

**A. Stage-Dependent Impact of Governance Indicators:** The results support the hypothesis that governance reforms have varying impacts depending on a country's level of economic development. For instance: In low-income economies, improvements in control of corruption and regulatory quality significantly enhance growth. This aligns with the findings of [Mauro \(1995\)](#) and [Kaufmann et al. \(1999\)](#), which emphasize that addressing institutional voids is critical in early stages of development. In middle-income economies, governance indicators such as rule of law and government effectiveness become pivotal. This finding is consistent with studies like [Rodrik \(2008\)](#) and [Aisen & Veiga \(2013\)](#), which highlight the importance of institutional stability and policy effectiveness during economic transitions. In high-income economies, the role of governance shifts towards sustaining innovation and managing complexity, with regulatory quality and voice and accountability playing key roles. This observation aligns with [Acemoglu and Robinson \(2012\)](#), who argue that advanced institutions are essential for long-term economic resilience. The findings corroborate the work of [North \(1990\)](#) and [Kaufmann et al. \(1999\)](#), who emphasized the transformative potential of good governance in fostering economic development. However, this study adds nuance by demonstrating how the relative importance of governance dimensions shifts across income groups. Unlike generic cross-country analyses (e.g., [Mauro, 1995](#); [Rodrik, Subramanian, & Trebbi, 2004](#)), this study explicitly examines the differential effects of governance indicators, filling a critical gap in the literature. The inclusion of COVID-19 as a shock variable provides new insights into how external crises interact with governance frameworks, extending the findings of recent works such as [Singh \(2022\)](#) and [Mahran \(2023\)](#).

**B. Impact of COVID-19 as a Shock Variable:** The negative impact of COVID-19 on economic growth, which was more severe in low-income economies, highlights the importance of governance in mitigating external shocks. This finding is consistent with [Mahran \(2023\)](#), who demonstrated that countries with stronger governance frameworks exhibited greater resilience during the pandemic. The results further emphasize the necessity for targeted governance reforms to strengthen institutional capacities, particularly in vulnerable economies.

The political implications based on the findings of this research can be categorized as follows: 1- Low-Income Economies: Governance reforms should



prioritize reducing corruption and improving regulatory quality to establish a foundation for economic activity. These reforms can attract investments and reduce inefficiencies, providing a critical boost to growth. 2- Middle-Income Economies: Policymakers should focus on strengthening rule of law and government effectiveness to support industrialization and diversification. Enhancing public service delivery and creating a stable institutional environment are essential during this stage. 3- High-Income Economies: Advanced economies should prioritize maintaining regulatory efficiency, fostering innovation, and ensuring inclusive governance. Strengthening democratic institutions and transparency can further sustain economic resilience and stability. Overall, this research highlights the evolving role of governance in economic development and the necessity for tailored reforms based on income levels and structural characteristics. By integrating governance with broader developmental policies, countries can better navigate challenges, enhance resilience, and unlock their growth potential.

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The authors declare no conflict of interest.

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