

Governance Indicators and Their Impact on Economic Growth: A Comparison between Developed and Developing European Countries

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Abstract

Purpose – This study examines the impact of governance indicators on economic growth in developed and developing European countries from 2005 to 2023. It focuses on GDP per capita as the dependent variable and governance indicators, alongside FDI, inflation, and population growth as explanatory variables.

Design/methodology/approach – The study applies pooled OLS, fixed effects, random effects, and the Hausman-Taylor IV model to address endogeneity concerns and ensure robust estimates.

Findings – Governance indicators significantly influence GDP per capita growth. Developed countries experience more stable growth trajectories, while developing economies benefit more from stable governance improvements. Control of corruption and political stability being key in developing economies, while government effectiveness and regulatory quality are more

influential in developed nations. Inflation negatively impacts growth, while FDI fosters economic expansion, particularly where institutions are strong.

Practical implications – The findings highlight the need for governance reforms: developed countries should focus on regulatory efficiency, while developing economies should prioritize political stability and anti-corruption measures.

Originality/value – This study provides empirical insights into how governance indicators affect economic growth across different development stages, informing policy strategies for institutional improvement.

Keywords: Governance indicators, economic growth, GDP per capita, foreign direct investment, inflation, European economies

JEL: O43, H11, C23, O57

1. Introduction

An increasing number of empirical studies examines the connection between economic growth and governance

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indicators. It is widely recognized that a key factor influencing economic growth is the quality governance, which includes political stability, the ability to control corruption and the regulatory effectiveness (Acemoglu & Robinson, 2012; Kaufmann, Kraay and Mastruzzi, 2010; North, 1990). Yet the effect of governance varies in developed and developing countries, with the latter's institutional flaws frequently preventing economic growth (Rodrik, 2000; Djankov et al., 2002).

This study aims to address the following research question: How do different governance indicators influence economic growth in developed and developing European countries. By fostering investment, reducing corruption, and strengthening legal institutions, many studies indicate that better governance improves economic growth (Hall & Jones, 1999; Knack & Keefer, 1995). Because of their inferior starting conditions, developing countries gain more from governance changes than do developed economies, even while developed economies benefit from institutional stability (Persson & Tabellini, 2006; Mahran, 2022). There remains a gap in comparative evidence between developed and developing European countries regarding the effects of governance on economic growth (Cieřlik & Goczek, 2018; Kaufmann & Kraay, 2021).

The main objective of this study is to analyze how governance indicators – Governance Effectiveness (GE), Political Stability (PS), Regulatory Quality (RQ), Rule of Law (RL), Control of Corruption (CC), and Voice and Accountability (VA) – affect GDP per capita in both developed and developing European countries. The study uses the Hausman – Taylor instrumental variables (IV) estimate approach (Hausman & Taylor, 1981) to address any endogeneity concerns.

Unlike previous studies, this research provides a comparative analysis of governance's impact on economic growth across different stages of economic development. Additionally, it applies multiple econometric techniques, including Pooled OLS, Fixed Effects (FE), and Random Effects (RE), ensuring a robust empirical evaluation. Furthermore, this study leverages comprehensive data from World Bank and IMF to provide an updated perspective on governance and economic performance in European countries.

The findings show that while the impacts are more nuanced in developed countries, governance changes significantly increase GDP per capita in developing countries. These findings are consistent with earlier studies that highlighted the context-dependent nature of the relationships between governance and economic growth (Rodrik et al., 2004; Acemoglu & Robinson, 2012).

The remainder of this paper is structured as follows: Section 2 reviews the literature; Section 3 discusses the research methodology; Section 4 presents the empirical results; and Section 5 provides the conclusion.

2. Review of literature

The economic literature has examined the link between economic growth and the quality of governance in details, but the empirical results are still inconclusive. It is well acknowledged that governance institutions such as the regulatory quality, control of corruption, and government effectiveness, are widely recognized as crucial determinants of economic performance (Acemoglu et al., 2001; North, 1990). However, developed and developing countries differ in how the quality of institutions/governance affect growth.

Several studies focusing on developed economies argue that governance improvements primarily act as stabilizing forces rather than direct growth accelerators. Kaufmann et al. (2010) suggest that in high-income countries, where well-established institutions already ensure market efficiency, additional governance reforms yield marginal improvements in economic performance. Similarly, Rodrik et al. (2004) find that governance changes in advanced economies enhance market confidence and reduce uncertainty but do not significantly boost long-term growth rates. These findings indicate that in developed economies, governance plays a crucial role in maintaining stability rather than driving rapid economic expansion.

In contrast, governance reforms in developing countries tend to have a more pronounced impact on economic growth. Maahran (2022) examined data from 116 countries using spatial regression models and found that a 1% increase in governance quality corresponds to a 1% rise in economic growth. Kaplan and Akçoraoglu (2017) further demonstrated that political stability and corruption control are especially critical for growth in developing nations, where institutional weaknesses frequently hinder progress. These studies suggest that governance reforms in developing economies directly enhance investment, market efficiency, and overall economic performance.

In their 2018 study, Cieřlik and Goczek examined the function of the six World Governance Indicators in developing countries and discovered that voice and accountability, regulatory quality, and political stability all significantly contribute to economic growth. Their research emphasizes how governance frameworks, especially in lower-income

countries, affect institutional effectiveness, market trust, and investment decisions.

Comparative studies that examine governance's role across different economic contexts suggest that while governance indicators matter globally, their relative impact depends on a country's development level. Kaufmann and Kraay (2021) argue that governance reforms yield stronger economic gains in lower-income nations, while in developed economies, improvements serve a more regulatory function rather than directly accelerating growth.

There has also been research on the relationship between governance and economic growth at the regional level. Mahran (2022) showed that there are governance spillover effects across neighboring countries, which means that advancements in one nation's governance can have a favorable impact on the economic development of surrounding countries. This result is especially relevant to the European context, where national economic outcomes are shaped by common governance policies and economic integration.

The efficiency of government expenditure is another important component in the relationship between governance and growth. Abri and Bulushi (2023) found that in countries with strong governance, public spending has a direct and positive effect on GDP growth. Conversely, in nations with weaker institutions, government expenditures often lead to inefficiencies and corruption, limiting their economic impact. These findings align with broader research showing that institutional frameworks shape fiscal policy effectiveness and long-term economic stability.

Although prior research generally supports the claim that better governance promotes economic growth, the direction of causality

remains debated. Some scholars argue that stronger governance drives economic growth, while others contend that higher incomes improve governance quality by increasing transparency, strengthening institutions, and improving public services (Knack & Keefer, 1995; Olson, 1996).

Despite extensive research on governance and growth, there is a gap in comparative evidence focusing specifically on developed and developing European countries. Most studies either examine a global sample or conduct single-country analyses, leaving a lack of region-specific examinations. To address this gap, this study investigates the differential impact of governance indicators on economic growth in developed and developing European countries. Unlike previous research, it applies Pooled OLS, Fixed Effects (FE), Random Effects (RE), and the Hausman-Taylor IV model to examine how governance quality influences GDP per capita across different development levels. By distinguishing between developed and developing European economies, this study contributes a more nuanced understanding of governance's role in economic performance.

3. Research methodology and data

The study uses an econometric model to examine how governance indicators affect the growth of real GDP per capita in both developed and developing European countries between 2005 and 2023. We use pooled OLS, fixed effects, random effects, and the Hausman-Taylor IV estimator to ensure robust analysis. To address endogeneity problems with governance indicators, instrumental variables are used (Hausman & Taylor, 1981; Wooldridge, 2010). We do a Hausman test to evaluate if the fixed effects model is better than the random effects model to identify the

best estimate strategy. The results indicate that the Hausman-Taylor IV estimator provides more consistent and efficient estimates by accounting for unobserved heterogeneity (Table AII). The dataset is compiled from the World Bank, IMF, and Eurostat, ensuring a comprehensive and reliable data source for empirical analysis.

3.1. Empirical model

We use the Hausman-Taylor instrumental IV estimator in the growth empirical model to evaluate the relationship and the causal link between governance indicators and economic growth in developed and developing European countries from 2005 to 2023. This method is preferred as it effectively addresses endogeneity concerns while retaining the advantages of both Fixed Effects (FE) and Random Effects (RE) models. Our test results yield a statistic of 8.93, rejecting the null hypothesis in favor of the Fixed Effects model, confirming that unobserved heterogeneity is correlated with the explanatory variables. While the Fixed Effects estimator is preferred over Random Effects, it eliminates time-invariant variables, potentially omitting key determinants of economic growth. To mitigate these issues, we use the Hausman-Taylor IV model, which reintroduces time-invariant variables as instruments while effectively correcting for endogeneity (Hausman & Taylor, 1981).

Additionally, we present the results from pooled OLS, Fixed Effects, and Random Effects models for comparison. Addressing endogeneity is a crucial econometric consideration, as some explanatory variables may be endogenous meaning that economic growth itself might influence governance indicators, leading to simultaneity bias. When explanatory variables are endogenous,

regression coefficients may be biased and inconsistent. To correct for this, we apply a one-equation IV approach through the Hausman-Taylor IV estimator, which utilizes a subset of exogenous variables as instruments for endogenous regressors, enhancing estimation efficiency.

Based on Hausman test and the assumptions of endogeneity, the Hausman-Taylor IV model is considered a more appropriate model than the fixed and random effects models (Table All).

The specification of the Hausman-Taylor empirical model is as follows:

$$y_{it} = c + \beta_1 y_{it-1} + \beta_2 (CC_{it}) + \beta_3 (GE_{it}) + \beta_4 (PS_{it}) + \beta_5 (RQ_{it}) + \beta_6 (RL_{it}) + \beta_7 (VA_{it}) + \beta_8 (FDI_{it}) + \beta_9 (INF_{it}) + \beta_{10} (POP_{it}) + u_{it} \quad (1)$$

Where y_{it} represents real GDP per capita for country i in year t , y_{it-1} is the first lag of GDP per capita, included to account for economic persistence, CC_{it} is Control of Corruption, reflecting the extent to which public power is exercised for private gain, GE_{it} is Government Effectiveness, measuring the quality of public services and policy implementation, PS_{it} is Political Stability, indicating the likelihood of political instability, RQ_{it} is Regulatory Quality, assessing the ability of governments to formulate and implement sound policies, RL_{it} is Rule of Law, evaluating the enforcement of contracts and legal integrity, VA_{it} is Voice and Accountability, capturing the extent of citizen participation in governance, FDI_{it} is Foreign Direct investment, included as a measure of external economic influence, INF_{it} is Inflation Rate, capturing macroeconomic stability, POP_{it} is Population Growth Rate, accounting for demographic effects, u_{it} is the error term.

3.2 Descriptive statistics

The study uses a panel dataset covering 27 European countries over the period 2005 to 2023. The period selection is based on the availability of time series data for all variables included in the model. The dataset sources include the World Bank (WB), the International Monetary Fund (IMF), and the European Bank for Reconstruction and Development (EBRD). Choosing the right variables for measuring economic growth and governance quality is one of the dataset's most important features. Regarding the study from Acemoglu, Johnson, and Robinson (2001), we use the dependent variable GDP per capita growth. Since GDP per capita represents a country's economic growth and living standards, it is often used in empirical economic research. GDP per capita allows for meaningful cross-country comparisons, unlike aggregate GDP, which ignores population differences (Easterly & Levine, 2003). To analyze the role of governance in economic growth, we include six World Governance Indicators (WGIs), also incorporated are Foreign Direct Investment (FDI), Inflation, and Population Growth as control variables. FDI is essential for economic growth because it promotes capital formation, job creation, and technology transfer (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004). Inflation, a macroeconomic stability indicator, given its negative impact on real incomes and investment (Fischer, 1993). Population growth influences economic dynamics through its effect on labor supply and consumption patterns (Galor & Weil, 2000).

The summary statistics for the dataset are presented in Table I.

Table 1. Descriptive Statistics

Variable	Observations	Mean	SD	Minimum	Maximum
GDP per capita	432	15.23	8.12	1.10	60.45
Control of Corruption (CC)	432	0.45	0.18	-0.20	1.00
Government Effectiveness (GE)	432	0.50	0.15	-0.15	1.10
Political Stability (PS)	432	0.47	0.14	-0.12	1.05
Regulatory Quality (RQ)	432	0.52	0.16	-0.18	1.12
Rule of Law (RL)	432	0.48	0.13	-0.14	0.08
Voice and Accountability (VA)	432	0.46	0.14	-0.10	1.02
Foreign Direct Investment (FDI) (\$)	432	0.07	0.03	0.001	0.15
Inflation	432	2.1	1.5	-1.0	5.2
Population Growth	432	0.5	0.3	0.1	1.0

Source: Author's calculation

4. Empirical results

This section presents the findings from the pooled OLS, fixed effects, random effects, and the Hausman-Taylor IV estimator. The pooled OLS estimator is likely to be biased due to unobserved country-specific heterogeneity, prompting us to estimate fixed and random effects models (Table II). The Hausman test, which determines the preferred estimator, yields a statistic of 8.93, rejecting the null hypothesis in favor of the fixed effects model. To address endogeneity concerns, we estimate the Hausman-Taylor IV model, which produces more consistent estimates by instrumenting endogenous explanatory variables with their individual means and deviations.

The results indicate significant differences in the impact of governance indicators, inflation, foreign direct investment (FDI), and population growth on economic growth between developed and developing European countries.

The first lag of GDP per capita is positive and highly significant in all specifications, confirming the presence of conditional convergence across developing European countries. The Hausman-Taylor IV estimator

reports a coefficient of 0.673 (s.e. = 0.029) for developing countries, indicating a tendency for lower-income countries to grow at a faster rate and catch up with wealthier counterparts. This result aligns with Barro and Sala-i-Martin (2019), who argue that economies tend to converge toward their steady-growth path. The effect is particularly strong in developing nations, where institutional improvements, capital accumulation, and policy reforms drive accelerated growth. However, this convergence dynamic is less pronounced in developed economies, where growth trajectories tend to be more stable due to already well-established institutions and economic maturity.

Governance quality emerges as a key determinant of growth, with notable differences between developed and developing countries. Control of Corruption (CC) is positively associated with GDP per capita growth in both groups, but its effect is stronger in developing countries (0.291, s.e. = 0.089) than in developed ones (0.134, s.e. = 0.076). This suggests that reducing corruption plays a more critical role in fostering economic development in transition economies, aligning with findings from Kaufmann et al. (2021). Similarly, government

effectiveness (GE) has a larger and highly significant impact in developed economies (0.278, s.e. = 0.061) than in developing ones (0.02, s.e. = 0.073). Regulatory Quality (RQ) is positively correlated with GDP per capita in both groups, but the effect is more substantial in developed countries (0.278, s.e. = 0.059) than in developing ones (0.198, s.e. = 0.071), indicating that well-established regulatory frameworks support market efficiency and economic growth (Djankov et al., 2002). Political Stability (PS) is a significant predictor of economic growth in developing countries (0.251, s.e. = 0.081) but shows a weaker impact in developed ones (0.163, s.e. = 0.068). Voice and Accountability (VA) has a positive and significant impact in both developed and developing economies, though its influence is stronger in high income countries (0.238, s.e. = 0.063) than in transition economies (0.177, s.e. = 0.075), highlighting the importance of democratic institutions for sustainable growth (North, Wallis, & Weingast, 2009).

An interesting divergence is observed in the effect of Rule of Law (RL), which has a positive and significant effect in developed countries (0.192, s.e. = 0.054) but a negative effect in developing ones (-0.114, s.e. = 0.067). This suggests that in less developed European countries, formal legal institutions may not yet function effectively enough to foster growth, as

suggested by Acemoglu and Robinson (2019). In contrast, developed economies benefit from strong legal enforcement and property rights protection.

Inflation negatively impacts economic growth across all models. The Hausman-Taylor IV estimator yields a coefficient of -0.081 (s.e. = 0.025), confirming that price instability deters investment and reduces real income. However, the negative effect is stronger in developing countries (-0.102, s.e. = 0.031) than in developed ones (-0.057, s.e. = 0.026), consistent with Fischer (1993), who argues that inflation disrupts economic stability, particularly in low-income countries.

FDI inflows contribute positively to GDP per capita growth, with a coefficient of 0.056 (s.e. = 0.018) in the Hausman-Taylor IV model. The effect is stronger in developed countries (0.062, s.e. = 0.017) compared to developing ones (0.041, s.e. = 0.022). This supports the findings of Alfaro et al. (2004), who show that the benefits of FDI are maximized in countries with strong institutions.

Lastly, population growth is found to have a small and statistically insignificant effect on growth in developed countries (-0.016, s.e. = 0.015). This result suggests that rapid population expansion may strain resources and slow economic progress in developing countries.

Table 2. Regression Results (Full Sample)

Variables	OLS	Fixed Effects	Random Effect	Hausman-Taylor IV	Developed (HT-IV)	Developing (HT-IV)
GDP per capita (Lag)				0.749***	0.812***	0.0673***
s.e.				(0.026)	(0.021)	(0.029)
Control of Control (CC)	0.018**	0.005	0.011**	0.014**	0.134**	0.291**
s.e.	(0.007)	(0.011)	(0.005)	(0.006)	(0.076)	(0.089)
Government Effectiveness (GE)	0.026***	0.015**	0.021***	0.019**	0.278***	0.020*
s.e.	(0.009)	(0.007)	(0.008)	(0.007)	(0.061)	(0.073)
Political Stability (PS)	0.024**	0.013*	0.019**	0.021**	0.163**	0.251***
s.e.	(0.010)	(0.008)	(0.009)	(0.08)	(0.068)	(0.081)

Variables	OLS	Fixed Effects	Random Effect	Hausman-Taylor IV	Developed (HT-IV)	Developing (HT-IV)
Regulatory Quality (RQ)	0.030***	0.018**	0.025***	0.028***	0.278***	0.198**
s.e.	(0.012)	(0.009)	(0.011)	(0.010)	(0.059)	(0.071)
Rule of Law (RL)	0.027***	0.017**	0.023***	0.021**	0.192***	-0.114**
s.e.	(0.010)	(0.008)	(0.009)	(0.008)	(0.054)	(0.067)
Voice and Accountability (VA)	0.021**	0.012*	0.017**	0.019**	0.238***	0.177**
s.e.	(0.009)	(0.007)	(0.008)	(0.007)	(0.063)	(0.075)
Foreign Direct Investment Inflows	0.048***	0.041**	0.044***	0.056***	0.062***	0.041**
s.e.	(0.017)	(0.014)	(0.016)	(0.018)	(0.017)	(0.022)
Inflation (%)	-0.071**	-0.061	-0.069**	-0.081***	-0.057**	-0.102***
s.e.	(0.030)	(0.027)	(0.029)	(0.025)	(0.026)	(0.031)
Population Growth (%)	-0.014	-0.012	-0.013	-0.016	-0.016	-0.034*
Nr.Obs	432	432	432	432	208	224
R-squared	0.758	0.642				
F	12.54	14.78				
Chi-squared			102.34	117.65	110.78	99.84

Notes: Standard errors are in parentheses. ***p < 0.01, **p < 0.05, *p < 0.10

Source: Author's calculation

5. Limitations

Despite the robust methodology, several limitations must be acknowledged. Although the dataset uses standardized indicators from reputable sources, differences in data collection methods and reporting standards across countries could introduce measurement error. The use of pooled panel estimations with annual data between 2005 and 2023 provides valuable insights but captures governance and growth relationships at a macro level without fully accounting for country-specific historical, social, or cultural factors. The static nature of panel analysis also limits the ability to analyze deep dynamic institutional changes over time. While the Hausman-Taylor estimator addresses endogeneity concerns related to

observable governance indicators, there may still be unobserved factors, such as education systems, technological capabilities, or social cohesion, that jointly influence governance and growth but are not included in the model.

6. Conclusion

This study examined the impact of governance indicators on economic growth in developed and developing European countries from 2005 to 2023 using an econometric growth model and various estimation techniques. Using GDP per capita as the dependent variable, and the governance indicators - Control of Corruption, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Voice

and Accountability-alongside foreign direct investment (FDI), inflation, and population growth as explanatory variables, we explored their impact across different economic contexts. The Hausman-Taylor IV model confirms that governance quality plays a crucial role in driving economic growth particularly in developing economies.

The results indicate conditional convergence among European economies, with developed countries exhibiting more stable growth trajectories. Governance indicators significantly impact GDP per capita, though the effects differ between economic groups. In developing countries, stronger control of corruption and political stability yield higher growth returns, while in developed nations, government effectiveness and regulatory quality play more substantial roles. The findings align with prior studies about highlighting the importance of governance reforms in fostering long-term economic performance.

Inflation negatively impacts economic growth across all models, with a stronger effect in developing economies. FDI boosts economic growth when supported by strong institution, while population growth has little impact in developed countries and a slight negative effect in developing economies.

These findings support policies that strengthen governance for economic growth. Developed countries should enhance regulatory efficiency, while developing economies must focus on political stability and anti-corruption measures. Future research could extend this analysis by incorporating broader measures of institutional quality, financial integration, or the role of digital governance. Expanding the sample beyond Europe could further test the generalizability

of these findings to other regions undergoing economic and institutional transitions.

7. Practical Implications and Future Research Directions

This study's findings offer important implications for theory, management, and policymaking. By empirically confirming that governance indicators such as control of corruption, regulatory quality, and political stability have differential effects across developed and developing European countries, this research advances the governance-growth literature with new comparative insights. These results underscore the importance of context in institutional economics and contribute to the debate on whether governance improvements uniformly foster growth or depend on development stages. For managers and institutional reformers, the findings highlight which governance levers are most effective for spurring growth: improving regulatory quality and government effectiveness in developed countries and focusing on reducing corruption and enhancing political stability in developing countries. Managers operating in these environments should adapt their investment and risk strategies accordingly. Policymakers in developing European economies should prioritize anti-corruption frameworks and measures to bolster political stability in order to create an investment-friendly environment. Meanwhile, governments in developed European countries should streamline regulations and improve bureaucratic efficiency to sustain growth. Development agencies should align aid and technical assistance with these priorities, recognizing the distinct institutional challenges faced by each group of countries.

Future studies could enrich the understanding of governance and economic growth by employing longitudinal case studies or dynamic panel methods to better capture the temporal evolution of governance reforms and their lagged effects on economic outcomes. Expanding the scope to other regions such as Latin America, Sub-Saharan Africa, or Southeast Asia could help test whether the findings generalize beyond Europe. Incorporating broader institutional variables like judicial independence, media freedom, or digital governance could capture new dimensions of modern governance quality. Researchers could also investigate potential non-linear effects or threshold relationships, such as whether governance improvements only yield growth benefits above certain institutional quality levels. Additionally, exploring interaction effects between governance indicators and external shocks, including financial crises or pandemics, could provide insights into the resilience of economic growth in different governance contexts.

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Appendix

Table AI. Developed and Developing European countries

N0	Developed	Developing
1	Austria	Albania
2	Belgium	Bosnia & Herzegovina
3	Denmark	Bulgaria
4	Finland	Croatia
5	France	Czech Republic
6	Germany	Estonia
7	Ireland	Hungary
8	Italy	Latvia
9	Netherlands	Lithuania
10	Norway	North Macedonia
11	Spain	Poland
12	Sweden	Romania
13	United Kingdom	Serbia
14		Slovenia

Sources: WB; IMF; and EBRD

Table AII. Hausman Test

Test	Chi2	Prob > Chi2	Result
Fixed Effects vs Random Effects	8.93	0.0157	Reject H_0
Fixed Effects vs Hausman – Taylor IV	6.42	0.2656.421	Does not reject H_0

Source: Author's calculation