An Empirical Investigation of the Interactions between Governance and Economic Growth in the Case of Greece

George Petrakos[1,2], George Sfakianakis[3,4]*, Chara Vavoura[1,4,5], Ioannis Vavouras[1,4]

[1]Department of Public Administration, Panteion University of Social and Political Sciences, Athens, Greece
[2]Research Institute for Tourism, Athens, Greece
[3]Department of Business Administration, National and Kapodistrian University of Athens, Athens, Greece
[4]Hellenic Scientific Institute on the Economics of Education & Life-Long Learning, Research and Innovation, Athens, Greece
[5]Department of Economics, National and Kapodistrian University of Athens, Athens, Greece
Email: *gsfak@ba.uoa.gr

Abstract

The issue of the relationship between the quality of governance and economic growth lies at the heart of institutional economics. Several empirical studies at the country level have shown that there is a high correlation between governance quality and economic growth. In particular, it seems that there is a strong causal relationship between them, directed mainly from the quality of governance to economic growth (the quality of governance significantly affects economic growth), but also a weak one in the opposite direction (economic growth affects the quality of governance). If it is proved that the quality of governance significantly affects the economic growth rates, then governance could be considered as a "quasi" factor of production, as advocated in the framework of institutional economics. However, there are some empirical studies that question this relationship between governance and economic growth. The findings, of this study, resulting from an updated version of Granger causality type tests provide strong evidence of Granger causality from the quality of governance to economic growth in the case of Greece, during the period 1995-2021. Moreover, it is confirmed that in the case of Greece, there is also a strong causality from economic growth to governance. That is, these variables are significantly correlated and a two-way causal relationship exists. The main implication of our study is that improving the quality of governance in Greece is a very challenging issue, since it significantly affects its economic growth rates. Moreover, economic growth is a critical means of improving the quality of the country's governance.

1. Introduction

One of the basic postulates of institutional economics is that the quality of governance significantly affects the economic growth of countries. Our basic objective is to test this hypothesis in the case of Greece. More specifically, the aim of this paper is to investigate the interconnections and interactions between governance quality and economic growth in the case of Greece, as they are both measured by specific generally accepted indicators. Given that economic growth is a key component of economic development, we also explore to some extent the concept of economic development and the effects of the quality of governance on economic development. We start by defining the basic concepts of governance, economic growth and economic development. Having defined them, we go on to investigate the causal linkages between the quality of governance and economic growth rates in the case of Greece during the period 1995-2021 by using the appropriate indicators.

We must note that the concept of governance is not a new one. It has been explored for some decades by many disciplines, especially political science, public administration and economics. Regarding the economic dimension of the concept, governance became a major concern on the development agenda of the World Bank in the late 1980s and it was then defined as "the exercise of political power to manage a nation's affairs" (World Bank, 1989). The above definition of the World Bank, the role of which in promoting good governance was very important in the 1990s, attached great significance to the ability of the state to provide basic services to its citizens. In other words, to serve its economic role.

Since then, the quality of governance has become instrumental in theoretical and empirical research. However, due to the elusive and multidimensional nature of the notion of governance, to date, there is no consensus on the precise definition of the concept (Vavoura, Manolopoulos, & Vavouras, 2022). It can be conceptualized in various ways emphasizing different perspectives with the main focus on its economic and political aspects (Bevir, 2011). The next section of the paper presents the most important definitions of governance formulated by international organizations.

It should be pointed out that it is now well established that the quality of governance significantly affects the economic growth and economic development of nations. More specifically, governance, key elements of which are the political and economic institutions of a society, affects the level of economic activity mainly through the quality of the political system and the level of corruption, which in turn affect the sustainability of economic development. But, also, the economic activity via the same route affects the quality of governance. Generally speaking,

it seems that governance and economic activity are highly and positively correlated. Good governance is usually associated with economic growth, while economically developed economies are usually associated with good governance (Vavoura, Manolopoulos, & Vavouras, 2022).

Therefore, if a country seeks to achieve high levels of economic development and more importantly to maintain the sustainability of its economic development in the long run, in addition to the factors proposed by the traditional theory of economic growth, such as physical capital accumulation, human capital accumulation, technological innovation and other productivity-augmenting mechanisms, special emphasis should be placed on improving the quality of its institutions. In this context, governance could be considered as a "quasi" factor of production, as we have already argued[1]. Referring to this issue, Acemoglu and Robinson conclude that the deviations regarding the relevant economic institutions between individual economies are the single most important factor that determines the differences in their levels of well-being (Acemoglu & Robinson, 2010).

In Section 2 of the paper, we present a literature review, while in Section 3, we present the data, the methodology used as well as our empirical results. Finally, in Section 4, we present a summary of our analysis and we draw some conclusions and policy proposals.

2. Literature Review

2.1. The Concepts of Governance, Economic Growth and Economic Development

"Governance" is defined as the processes and systems of making and implementing (or not implementing for that matter) the decisions of a society or an organization. In other words, it is the processes and systems regulating its operation (UNESCAP, 2006). It was first included in the agenda of international organizations in the early 1990s, when it became a general consensus that the failure of the development strategies implemented in many countries during the previous two decades was largely due to the system of their governance (Boța-Avram et al., 2018). In 1992, the World Bank defined governance as "the manner in which authority is exercised over the management of a country's economic and social resources for development" (World Bank, 1992), thus directly combining the concepts of governance and development. In this context, the concept of "good governance" was introduced for the first time by the World Bank in its report in 1989 (World Bank, 1989). In 1994, the concept of good governance was broadened by the same international organization to include, along with good governance practices, a broader approach of accountability, transparency and a strong civil society (World Bank, 1994).

---

[1]We must note that the role of institutions in long-term economic performance of nations is explored by a field of economic literature known as "institutional economics". For an analysis of this field of economic literature, see mainly in North (1989, 1990) who was the first to recognize the direct and indirect influences of the institutional environment on economic growth.

Despite the fact that governance constitutes a particularly important subject of theoretical and empirical analysis, there is no commonly accepted definition of its concept. As we have already noted, the different definitions are due to the multidimensional nature of the notion of governance, since it can be conceptualized in various ways emphasizing its different perspectives with the main focus on its economic and political aspects (Bevir, 2011). Differences in definitions, albeit small, raise questions about the exact content of the concept and especially about the characteristics of governance and its metrics. According to the European Union, governance pertains to the state's ability to serve its citizens and "refers to the rules, processes, and behavior by which interests are articulated, resources are managed, and power is exercised in society" (Commission of the European Communities, 2003). The White Paper on European Governance (Commission of the European Communities, 2001) which states that European Governance is adopted to mean "any rules, processes and practices that affect the quality of how powers are exercised at European level", is moving in the same conceptual direction.

According to the United Nations Development Program (UNDP), governance is "the exercise of economic, political and administrative power to manage a country's affairs at all levels" (United Nations Development Programme, 1997), while "good governance" is characterized as "participatory, transparent, accountable, effective, equitable and promoting the rule of law" (UNDP, 1997). The same organization recognizes governance as "the system of values, policies, and institutions by which a society manages its economic, political, and social affairs through interactions within and among the state, civil society and private sector" (UNDP, 2007) and accepts that the values and principles of democratic governance are important means for achieving and maintaining development goals (UNDP, 2011).

The World Bank Institute (WBI) considers that governance is "the traditions and institutions by which authority in a country is exercised" (Kaufmann, Kraay, & Mastruzzi, 2009). This includes: 1) the process of selecting, controlling and replacing those in positions of power, 2) the capacity of governments to effectively formulate and implement sound policies, and 3) the respect by citizens and the state of the institutions that govern the economic and social interactions between them. Moreover, according to the International Monetary Fund (IMF), "governance is a broad concept covering all aspects of how a country is governed, including its economic policies, regulatory framework, and adherence to the rule of law" (IMF, 2002), while the Organization for Economic Co-operation and Development (OECD), linking good or bad governance to participatory development, human rights and democratization, defines governance as "the use of political authority and the exercise of control in a society in relation to the management of its resources for social and economic development" (OECD, 1995)[2].

At the country level, governance is accepted to have three main dimensions

---

[2]For an extended analysis of the notion of governance, see among others in Rontos et al. (2015).

(Kaufmann, 2005):

1) The **political dimension**, which refers to the process of selection, evaluation and replacement of those in authority/power.

2) The **economic dimension**, which refers to the government's capacity to effectively manage its resources and implement sound policies.

3) The **institutional dimension**, which refers to the respect by the state and citizens of the country's institutions.

The quality of governance is measured using various indicators. The most generally accepted and widely used governance indicators in terms of empirical research are estimated by the World Bank and in particular by the World Bank Institute, within the framework of the "Worldwide Governance Indicators" project. Since 1996 (and annually since 2002), six Worldwide Governance Indicators have been compiled, according to the definition of governance accepted by the World Bank and cited above. The governance indicators that have been developed in this context try to capture six key aspects of institutional quality or governance, and measure, the political, economic and institutional dimensions of governance. The six broad indicators of governance that correspond to its three dimensions are the following (Kaufmann, Kraay, & Mastruzzi, 2010):

1) **Voice and accountability**, which expresses perceptions of the extent to which citizens of a country are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media.

2) **Political stability and absence of violence/terrorism**, which expresses perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

3) **Government effectiveness**, which expresses perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

4) **Regulatory quality**, which expresses perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

5) **Rule of law**, which expresses perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

6) **Control of corruption**, which expresses perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests.

The first two indicators try to capture the political dimension of governance, the second two the economic dimension and the last two refer to the institutional dimension of governance. As supported by those who constructed the above indicators, these aggregate governance indicators "can be meaningfully used to

compare countries' relative positions in a given year, and their relative positions over time" (Kaufmann, Kraay, & Mastruzzi, 2010). It should be pointed out, however, that these indicators do not constitute a *first best* measure of governance, and strong criticism has been made regarding their construction methodology (Arndt & Oman, 2006). Despite their shortcomings and the criticism addressed to these specific indicators, they are generally recognized to this day to be the most satisfactory measures of the quality governance at the country level (Rodrik, 2008).

The second concept on which this paper is focused is "economic growth". The content of it has traditionally been defined as the long-term expansion of production or the long-term increase in the total or per capita real output of an economy. Since real Gross Domestic Product (GDP) is the measure of total output, the term economic growth can be defined as the rate of increase in total or per capita real GDP. The term "economic development" has a broader meaning. It does not just involve the simple expansion of production. This expansion is a prerequisite for development. However, it must be combined with significant changes in terms of the structure of the economy and the distribution of the real product in the economy, i.e. changes in the institutional and technological framework in which the real product of the economy is produced and distributed. Thus, while economic growth means reproduction or expansion of total output, economic development means economic and social transformation.

So, in contrast to economic growth which is a one-dimensional process, in the sense that it is investigated only on the basis of one criterion, namely the increase of the real GDP, economic development is a multi-dimensional process, which is associated with significant changes in the structure of the economy, in the social structure, in the quality of the factors of production, in the institutions and in the distribution of income. It should be mentioned that economic development is basically a problem for countries that are characterized as low- and middle-income countries, that is, those that are more widely known as "developing" countries. On the contrary, economic growth is a problem of economically developed countries. We must note that economic development is among the most important long-run or structural economic policy objectives, especially for developing countries. Incorrectly, the concept of economic development is often identified with that of economic growth. Given that in the economic literature there is generally an agreement as to the content of the terms of economic growth and economic development and especially as regards the indicators for measuring economic growth, there is no need to further analyze them.

2.2. The Interactions between Governance Quality and the Economy

The simple overview of the above definitions of governance highlights the relationship between governance and the economy. Governance and economic growth are interconnected. The quality of governance is expected to affect the process of

economic growth, but also economic growth is expected to affect the quality of governance. So, the causal relationship between governance and the economy seems to be a two-way process.

Several empirical studies have shown that there is a high correlation between governance quality and economic growth (Kaufmann & Kraay, 2002). In particular, it seems that there is a strong causal relationship between them directed mainly from the quality of governance to economic growth (the quality of governance significantly affects economic growth), but also a weak one in the opposite direction (economic growth affects the quality of governance). However, as it has already been pointed out there are empirical studies that question this relationship (Rodrik, 2008)[3].

The interactions between governance and the economy are usually investigated through the effects that exert on both of them two key factors, namely the political system and corruption. In general, corruption is considered both a symptom and a cause of the malfunctioning of democratic institutions (Vavoura, Manolopoulos, & Vavouras, 2022). Most researchers agree that corruption has a significant negative impact on the economy, through its effects on the various components that determine the total output, namely the Gross Domestic Product (GDP) of the specific economy. In particular, corruption has negative effects on investment due to the higher costs it imposes (e.g. Administrative Burden—to say the least) and to the uncertainty it creates. Empirical analysis has shown that corruption negatively affects investment and in particular foreign direct investment. Very often, the decline in investment is due to higher costs and the uncertainty caused by corruption. The prevailing view is that corruption operates as a "tax" negatively affecting foreign investors. The effects of corruption on public investment have also been a subject of empirical investigation. It has been argued that corruption actually increases public investment. This result is explained by the fact that public sector creates conditions for corruption regarding the people who have decisive roles on investment programs in the country.

Moreover, corruption affects the "official" economy of a country through its relations with the "informal" or "underground" economy. It is accepted that countries with high levels of corruption are also associated with a large informal economy. First, illegal economic activities lead to corruption and corruption drives many businesses to the informal sector. In addition, it has been shown empirically that countries with high levels of corruption tend to have lower tax revenues as a percentage of their total output (Tanzi & Davoodi, 2000).

Another consequence of the close relationship between governance and economy is the hypothesis that the quality of governance and more specifically the quality of institutions affects the duration of economic crises in various countries, if and when they occur. Strong institutions shorten the period of economic

---

[3]For a detailed presentation of the theoretical and empirical investigation of the relationships between governance and economic growth, see Manolas et al. (2010).

recovery while weak institutions prolong it (Bluhm, De Crombrugghe, & Szirmai, 2013). Rapanos and Kaplanoglou (2014), accepting that institutions and governance affect the long-term performance of the economy and its international competitiveness, investigate this hypothesis in the cases of Greece and Cyprus up to the recent economic crises these countries faced. Examining why the recession in the case of Greece was deeper and more extensive than in Cyprus, they argue that a basic explanation is that institutions in Greece are relatively weaker and governance mechanisms are poorer, and point out with particular emphasis that Greece "must improve its institutional framework, and set up new governance mechanisms that will help the government to effectively implement macroeconomic and structural policies" (Rapanos & Kaplanoglou, 2014).

The main direction of causality between governance, democracy, corruption and economy, as it has been discussed above, could be summarized as follows. Good governance affects the level of democracy and the degree of corruption, which in turn affect the level of economic development of the country under consideration. At the same time, of course, there is "feedback" (or an inverse causality) between economy and governance that cannot be ignored. The economy, and more specifically the level of economic development, affects the level of democracy and the degree of corruption, which in turn affect the quality of governance. At the same time, corruption affects the quality of democracy, as it affects the way the government operates, the political culture of the specific country and the status of individual freedoms and rights enjoyed by its citizens.

The links between governance and growth have been empirically examined in various studies[4]. However, the existing empirical research based on Granger causality tests is limited, since the bulk of the relevant research relies on regression analysis. Law, Lim, and Ismail (2013) provide a summary of the existing empirical research on causality between institutions and economic growth. Moreover, by using a sample of 60 countries they find that the causality patterns between both variables are highly heterogeneous whereas there is a bi-directional causality effect between both variables (Law, Lim, & Ismail, 2013). We refer especially to the study by Huang and Ho who test the existence of a Granger causality between governance and growth in twelve Asian countries which they distinguish into "free", "partly free" and "not free", according to the Freedom House classification[5]. They find that the "free" countries examined exhibited no significant causality running from most of the six dimensions of governance to economic growth, while for "not free" countries, there is a significant causality running from most dimensions of governance to economic growth (Huang & Ho, 2017). As to the causality running from growth to governance, they find that there is a Granger causality only to very limited dimensions of governance in some countries (Huang & Ho, 2017).

---

[4]For a review of the research on the interactions between governance and growth and development, see mainly Acemoglu and Robinson (2010) and AlBassam (2013).
[5]See, for example, Freedom House (2023).

As for the case of Greece, we refer to the empirical research of Manolas et al. (2010) and Vavouras et al. (2011) who examine the possible effects of the quality of governance on economic growth, both globally and in Greece, by using single regression analysis where the dependent variable is real GDP per capita, while the quality of governance is amongst the explanatory variables and it is measured by the average of the above six governance indicators of the World Bank Institute.

The main objective of the present paper is to investigate the hypothesis if there exists some form of causality between the institutional framework and the economic growth rates in the case of Greece, an economically developed country. The main direction of this causality is very important for the formulation and implementation of the appropriate and more effective economic policy. It has been pointed out already that with regard to developed economies, the results of the investigation of the existence of causal relationships between institutional framework and economic growth are rather contradictory, as outlined above. To investigate the causal relationship under consideration we apply the method of Toda and Yamamoto (1995) as elaborated by Dolado and Lutkepohl (1996), as it is described below. Our analysis has shown that there is a two-way causality in the case of Greece during the 1995-2021 period. That is one, running from the institutional framework to economic growth and vice versa. Such a causal relationship usually occurs in developing economies and not in developed ones. Therefore, from this specific point of view, Greece has the characteristics of a developing rather than a developed economy.

3. Data, Methodology and Results

In this section, we proceed to check whether causality exists (and its direction) between economic growth and the Institutional Framework in Greece for the 1995-2021 period[6]. The method chosen is that of Toda and Yamamoto (1995) as elaborated by Dolado and Lutkepohl (1996). The main advantage of this method is that the results are valid irrespective of whether variables are stationary or not; in addition, the existence of cointegration is also immaterial. The sources of our data regarding the Institutional Framework of Greece are the Worldwide Governance Indicators provided by the World Bank (World Bank databank).

The fact that we can draw conclusions about causality regardless of stationarity issues is very important, given that when using alternative tests/specifications for stationarity one can often have contradictory results. The only preliminary test that must be conducted is the one concerning the number of lags to be included in the autoregressive scheme: more specifically, the methodology is based on the estimation of a VAR[7] with a number of lags exceeding the one that criteria such Schwarz, Akaike or a log-likelihood test (LR test) would dictate.

[6]For which data were available at the time of writing the paper.
[7]VAR models in economics were introduced and made popular by Sims (1980). The definitive technical reference for VAR models is Lutkepohl (1991), and updated surveys of VAR techniques are given in Watson (1994) and Waggoner and Zha (1999).

More specifically, if dmax is the maximum degree of integration of variables and k, the number of lags that we would normally choose (on the basis of Schwarz, Akaike or LR tests), the VAR system must be estimated with a dmax+k number of lags using the Seemingly Unrelated Regressions (SUR) method. The causality test consists of testing the statistical significance of the k lags using the Modified Wald test. As is shown in the relevant literature, in this case, the tests and conclusions of the asymptotic theory are valid.

As mentioned above, in the specific case at hand, we aimed at identifying the existence and direction of (potential) causality between economic growth (the growth rate of real GDP) and the Institutional Framework (the average of the 6 governance indicators described in Section 2.1). As is customary in the literature, the model should also include some control variables. In order to complete the model, we included the Net capital stock per person employed and a productivity variable. The source of our data regarding the growth rate of real GDP (in chain linked volumes, percentage change on previous period) is Eurostat (annual national accounts, nama_10_gdp), while regarding the control variables Net capital stock per person employed (in 1000 euro) and the productivity variable GDP per person employed (at constant prices, 1000 euro) is the AMECO Database of the European Commission (European Commission, Economy and Finance, AMECO databank). In this paper, we use annual data, since most variables and especially those that measure the institutional framework are estimated on an annual basis. Moreover, in the variables expressing the institutional framework there are some missing values. More specifically, there are no estimates of them for the years 1995, 1997, 1999 and 2001[8]. As a result, the total number of annual observations is 23.

The minimization of the Information criteria mentioned above would dictate the estimation of a VAR with two lags (see Table 1 below). Having performed relevant tests, we concluded that dmax is 1 and, consequently, we proceeded to estimate a VAR with 3 lags for the endogenous variables of the model (see next section). The test consists of testing whether the coefficients for the two lags of the institutional variable are statistically significant (to test causality from Institutions to the growth rate) and then again whether the coefficients for the two lags of the growth rate are statistically significant (to test causality from the growth rate to the Institutional Framework).

Regarding the existence of causality, implementing the methodology explained above, we found that there is a two-way causality—i.e. running both from the Institutional Framework to Economic Growth (Chi-squared statistic = 12.127825 with Significance Level 0.00695787) and vice versa (Chi-squared statistic = 17.539278 with Significance Level 0.00015538)[9] (Table 2 and Table 3).

[8]See data set in Kaufmann and Kraay (2023).

[9]Alternative specifications have been tried to check for robustness and the results we opted to present were chosen based on the usual statistical and econometric criteria. Other results are available upon request.

Table 1. Statistics for the variables used (27 observations).

	Growth Rate of GDP	GDP per Person Employed	Quality of Governance	Net Capital Stock, per Person Employed
Mean	0.85%	42.33	0.49	153.53
Standard Deviation	4.63	4.16	0.23	11.33
Min	−10.10%	35.80	0.15	135.50
Max	8.40%	50.00	0.80	175.60

Table 2. Information criteria for the choice of lags.

Criteria	2 Lags	3 Lags
AIC	7.996	6.837
SBC	10.272	9.875
Hannan-Quinn	8.310	7.139

Table 3. Empirical results.

Direction of Causality	Institutions → Growth	Growth → Institutions
Chi-squared Statistic	12.127825	17.539278
Significance Level	0.00695787	0.00015538

4. Summary and Conclusion

As noted in the Introduction of this paper, one of the basic postulates of institutional economics is that the quality of governance significantly affects the economic growth potential of countries. Moreover, it is also accepted that economic growth affects the quality of governance. The first direction of causality is accepted as the strong one, while the second is the weak one. However, there are some empirical studies that question this relationship between governance and economic growth. The basic objective of this paper was to test this hypothesis in the case of Greece during the 1995-2021 period.

Our analysis has shown that there is a two-way causality in the case of Greece during the above period. That is one, running both from the Institutional Framework to economic growth and vice versa. More specifically, in the case of Greece, the Institutional Framework significantly affects economic growth, but economic growth significantly affects the institutional quality of the country. This result of inverse causality is in accordance with the outcome of a panel data analysis that economic development tends to improve the institutional quality in lower middle-income and low-income countries (Law, Lim, & Ismail, 2013)[10]. So, from this point of view, Greece has the characteristics of a developing rather than a

[10]According to the World Bank, countries are divided into three categories based on Gross National Income (GNI) per capita using the World Bank Atlas method, namely in low-income countries, middle-income countries and high-income countries. Moreover, middle-income countries are further distinguished into lower-middle-income economies and upper-middle-income economies. See World Bank, World Bank Country and Lending Groups.

developed economy.

It seems, therefore, that in the case of Greece, the improvement of institutional framework (quality of its governance) and the strengthening of economic growth significantly affect each other. These two economic policy objectives are complementary and should be considered as the main pillars of its long-run economic policy/strategy. In other words, improving the quality of institutions in Greece should not be seen simply as a matter of administrative reform, but mainly as a matter of economic transformation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Acemoglu, D., & Robinson, J. (2010). The Role of Institutions in Growth and Development. *Review of Economics and Institutions, 1,* 1-44.

AlBassam, B. A. (2013). The Relationship between Governance and Economic Growth during Times of Crisis. *European Journal of Sustainable Development, 2,* 1-18. https://doi.org/10.14207/ejsd.2013.v2n2p1

Arndt, C., & Oman, C. (2006). *Uses and Abuses of Governance Indicators*. OECD.

Bevir, M. (2011). Governance as Theory, Practice, and Dilemma. In M. Bevir (Ed.), *The SAGE Handbook of Governance* (pp. 1-16). SAGE. https://doi.org/10.4135/9781446200964.n1

Bluhm, R., De Crombrugghe, D., & Szirmai, A. (2013). *Do Weak Institutions Prolong Crises? On the Identification, Characteristics, and Duration of Declines during Economic Slumps*. CESifo Working Paper Series No. 4594. https://doi.org/10.2139/ssrn.2393931

Boța-Avram, C., Groșanu, A., Răchișan, P. R., & Gavriletea, M. D. (2018). The Bidirectional Causality between Country-Level Governance, Economic Growth and Sustainable Development: A Cross-Country Data Analysis. *Sustainability, 10,* Article 502. https://doi.org/10.3390/su10020502

Commission of the European Communities (2001). *European Governance: A White Paper, COM (2001) 428 Final.* https://ec.europa.eu/commission/presscorner/detail/en/DOC_01_10

Commission of the European Communities (2003). *Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee: Governance and Development, COM (2003) 615 Final.* https://aei.pitt.edu/37737/1/COM_(2003)_615_final.pdf

Dolado, J. J., & Lutekepohl, H. (1996). Making Wald Test Work for Cointegrated VAR Systems. *Econometrics Reviews, 15,* 369-386. https://doi.org/10.1080/07474939608800362

Freedom House (2023). *Freedom in the World 2023*. Freedom.

Huang, C. J., & Ho, Y. H. (2017). Governance and Economic Growth. *North American Journal of Economics and Finance, 39,* 260-272. https://doi.org/10.1016/j.najef.2016.10.010

IMF (International Monetary Fund) (2002). *The IMF and Good Governance, Factsheet.* IMF.

Kaufmann, D. (2005). *Myths and Realities of Governance and Corruption.* World Economic

Forum, Global Competitiveness Report 2005-06, 81-98.
https://doi.org/10.2139/ssrn.829244

Kaufmann, D., & Kraay, A. (2002). *Growth without Governance*. The World Bank.
https://doi.org/10.1353/eco.2002.0016

Kaufmann, D., & Kraay, A. (2023). *Worldwide Governance Indicators.* The World Bank.
https://www.govindicators.org/

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). *Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008.* World Bank Institute.
https://doi.org/10.1596/1813-9450-4978

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). *The Worldwide Governance Indicators: Methodology and Analytical Issues.* Policy Research Working Paper 5430, The World Bank.

Law, S. H., Lim, T. C., & Ismail, N. W. (2013). Institutions and Economic Development: A Granger Causality Analysis of Panel Data Evidence. *Economic Systems, 37,* 610-624.
https://doi.org/10.1016/j.ecosys.2013.05.005

Lutkepohl, H. (1991). *Introduction to Multiple Time Series Analysis.* Springer-Verlag.
https://doi.org/10.1007/978-3-662-02691-5

Manolas, G., Sfakianakis, G., Syrmali, M. E., & Vavouras, I. (2010). Institutions, Quality of Governance and Economic Growth. *Statistical Review, 6,* 15-34.

North, D. C. (1989). Institutions and Economic Growth: An Historical Introduction. *World Development, 17,* 1319-1332. https://doi.org/10.1016/0305-750X(89)90075-2

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance.* Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

OECD (1995). *Participatory Development and Good Governance.* Development Co-Operation Guidelines Series, Development Assistance Committee.

Rapanos, V. T., & Kaplanoglou, G. (2014). Governance, Growth and the Recent Economic Crisis: The Case of Greece and Cyprus. *Cyprus Economic Policy Review, 8,* 3-34

Rodrik, D. (2008). Thinking about Governance. In D. Rodrik (Ed.), *Governance, Growth, and Development Decision-Making* (pp. 17-24). The World Bank.

Rontos, K., Syrmali, M. E., Tsapala, F., & Vavouras, I. (2015). Governance Quality: Theory, Determinants and Policy Issues. In J. A. Filipe, N. Nagopoulos, K. Rontos, & I. Vavouras (Eds.), *Towards a Society with a More Fair Economy or an Economy with a More Social Face* (pp. 1-37). Nova Science Publishers.

Sims, C. A. (1980). Macroeconomics and Reality. *Econometrica, 48,* 1-48.
https://doi.org/10.2307/1912017

Tanzi, V., & Davoodi, H. (2000). *Corruption, Growth and Public Finances*. IMF Working Paper Series WP/00/182. https://doi.org/10.5089/9781451859256.001

Toda, H. Y., & Yamamoto, T. (1995). Statistical Inference in Vector Autoregression with Possibly Integrated Processes. *Journal of Econometrics, 66,* 225-250.
https://doi.org/10.1016/0304-4076(94)01616-8

UNESCAP (2006). *What Is Good Governance?*
https://www.unescap.org/sites/default/files/good-governance.pdf

United Nations Development Programme (UNDP) (1997). *Governance for Sustainable Human Development*. UNDP.

United Nations Development Programme (UNDP) (2007). *Governance Indicators: A User's Guide* (2nd ed.). United Nations Development Programme.

United Nations Development Programme (UNDP) (2011). *Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty.* Bureau for Development Policy.

Vavoura, C., Manolopoulos, D., & Vavouras, I. (2022). The Interactions between Governance Quality and Economic Development. In V. A. Vlachos, A. Bitzenis, & B. Sergi (Eds.), *Modeling Economic Growth in Contemporary Greece* (pp. 105-118). Emerald. https://doi.org/10.1108/978-1-80071-122-820211007

Vavouras, I., Manolas, G., Syrmali, M. E., & Sfakianakis, G. (2011). The Effect of Governance on Economic Development: The Case of Greece. In Sklias, P. G., & I. Sideris (Eds.), *Development, Leadership, Society: Texts of Comparative Political Analysis* (pp. 41-51). I. Sideris Publishers.

Waggoner, D. F., & Zha, T. (1999). Conditional Forecasts in Dynamic Multivariate Models. *Review of Economics and Statistics, 81,* 639-651. https://doi.org/10.1162/003465399558508

Watson, M. (1994). Vector Autoregressions and Cointegration. *Handbook of Econometrics, 4,* 2843-2915. https://doi.org/10.1016/S1573-4412(05)80016-9

World Bank (1989). *Sub-Saharan Africa: From Crisis to Sustainable Growth.* World Bank.

World Bank (1992). *Governance and Development.* World Bank.

World Bank (1994). *Governance: The World Bank Experience.* World Bank.