

Article

The Relationship between Democracy and Economic Growth in the Path of Sustainable Development

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Abstract: Democracy has both a direct and an indirect relationship with sustainable development. Democracy is related to the movement toward long-term economic development directly, and indirectly, democracy can provide the means to create the institutional structures needed to create links between the political systems, the culture of participation, and the social values of a society. Since economic development is a multidimensional concept and one of its primary requirements is to achieve a high level of income and appropriate economic growth, knowing the relationship between democracy and economic growth is especially important for policymakers. Many important questions are raised about the relationship between democracy and economic performance. What is the relationship between democracy and economic growth? Is this relationship different in developed countries and developing countries? Considering the effects of democracy and economic growth on the welfare of communities, the main purpose of this study was to investigate the causal relationship between democracy and economic growth from 1990–2020 for the OECD and selected developing countries. The results showed that the conflict and skeptical hypotheses had been established in OECD and developing countries, respectively. It was concluded that the pattern of economic growth and development in OECD countries differed from that in developing countries. For OECD countries, real per capita GDP growth was mainly affected by previous per capita GDP growth, and the effect of democracy on per capita economic growth was negative. Moreover, the results indicated that in developing countries, democracy alone had not triggered economic growth and that real per capita GDP growth depended on other important structural variables such as social and physical infrastructure.

Keywords: democracy; economic growth; sustainable development; causality test; panel VAR



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1. Introduction

In recent years, several researchers have studied the theoretical and empirical relationship between democracy and economic growth [1–3]. However, there is no clear consensus on the relationship between these two variables. Some researchers believe that economic growth leads to a movement towards democracy [4]. This thought leads them to believe that economic growth and industrialization create new social classes and layers, leading to social change [5]. Thus, economic growth causes structural change in the relative strength of various classes in society, thereby increasing the probability of the spread of democracy [6]. Other scholars believe that democracy is a factor that explains economic growth [7]. Democracy influences economic growth through the accumulation of physical, human, social, and political capital, and democratic countries feature better-educated populations, higher investment shares, and lower fertility rates, but not necessarily higher levels of redistribution [2]. If democracy has an effect on economic growth, it depends on the histories and the economic, social, and political conditions of countries. The identification of this effect is an empirical issue [8].

Democracy creates favorable conditions for civil society to meet challenges related to the idea of the 2030 Agenda for Sustainable Development. Democracy is based on the right of citizens to express their economic and environmental needs and desires. Without freedom of expression and political freedoms, sustainable development goals will be difficult to achieve. However, the achievement of sustainable development goals appears to be an impossible task for countries struggling with poverty and deprivation [9]. Compared to the number of studies conducted regarding the relationship between democracy and economic growth, the relationship between democracy and sustainable development has been less investigated in various studies. The experiences of different countries show that democracy provides a better platform and guarantees for difficult negotiations and discussions that are necessary in order to achieve sustainable development [9–11]. Since economic development is a multidimensional concept and depends on economic, social, political, and cultural conditions, the recognition of the relationship between democracy and economic growth is important, especially for policymakers. Thus, many important questions are raised about the relationship between democracy and economic performance. Is there a causal relationship between democracy and economic growth? How does economic growth in democratic societies (or an increase in the level of a country's income) bring about changes in political situations? In the event of shocks (economic or political), are the effects absorbed over time? Does the relationship between democracy and economic growth differ in advanced and developing countries?

To shed light on the answers to these questions, we used Vector Autoregressive (VAR) Panel Data or the Panel VAR method, which distinguished this study from earlier ones. In theoretical discussions, the relationship between democracy and economic growth has not been clearly identified. Lipset's hypothesis explains the existence of a positive relationship between them [6]. This hypothesis states that economic growth first requires investments in the production of basic goods and services that society needs. Money is then spent on more refined needs such as higher education, increasing the demand for civil and political rights in society and thus triggering a quest for democracy. According to Lipset's hypothesis, a causal relationship moves from economic growth to democracy, and the level of democracy improves with increasing economic growth [12]. In addition to the effect of economic growth on democracy, it is also likely that the level of democracy impacts economic growth. The effect of democracy on economic growth is more complicated, and this relationship has also been discussed in the literature. We investigated the effects of democracy on economic growth within the four hypotheses of 'conflict', 'compatibility', 'skeptical', and 'curvilinear' relationships.

The conflict hypothesis says that democracy and economic growth are incompatible and emphasizes a negative causal relationship between democracy and economic growth [4]. Some scholars see the favorable effects of the relationship between democracy and economic development as unidirectional wherein economic development fosters democracy, but democracy retards economic development. Therefore, democracy would be directly related to the economic level but inversely related to economic growth. Since wealthy countries might have attained a high economic level for other reasons, economic growth would slow down following the establishment of democracy. Yet, in poor countries, economic development does not create a favorable environment for democracy, and hence, these countries continue to enjoy economic growth not retarded by democracy. This view can be stretched as far as to state that dictatorships are needed in order to generate development [13].

In contrast to the conflict hypothesis, in which the process of economic development is led by dictators, stands the compatibility approach [12]. An independent judiciary and respect for law and individual rights are necessary for a stable democratic system and for securing property and legal contracts [14]. Democracy instills discipline and brings out improved economic performance through secure property rights and has an essential role in ensuring economic liberty, which in turn stimulates economic growth [5]. Accordingly,

the compatibility hypothesis states that the direction of causality is from democracy to economic growth and that the effect of democracy on economic growth is positive.

The skeptical hypothesis suggests there is no clear relationship between democracy and economic growth. According to this view, in the presence or absence of democracy, factors such as the effectiveness of government policies, institutional maturity, and coordination of governmental organizations play important roles in economic performance. Therefore, the skeptical hypothesis explains that there is no causal relationship between democracy and economic growth. Although most of the rich countries in the world are democratic, they reached their wealth through effective government institutions, not democracy [15].

If the causal relationship between democracy and economic growth is a two-way relationship, then the cycle hypothesis is established. This hypothesis explains that there is a reciprocal relationship between democracy and economic growth and that these two variables have a positive effect on each other. The cycle hypothesis comprises the simultaneous existence of Lipset's hypothesis and the compatibility hypothesis [12]. Friedman argued that the greater presence of democratic political rights reinforces economic rights and, therefore, is beneficial to economic growth and development, while the assurance of an individual's economic freedom results in the maintenance of a free-enterprise exchange economy and constitutes an ideal economic arrangement for a free society [16].

The fourth hypothesis is quite close to the second one, but according to it, the relationship between democracy and economic growth is non-linear or curvilinear. This means that at lower economic levels, democracy will be unfavorable to economic development, while at higher levels, democracy will result in more economic development than will the existence of a non-democratic regime. As Barro concluded, the middle level of democracy is most favorable to growth, the lowest level is the second most favorable, and the highest level is the least favorable [17].

Contradictory results have been found in studies that have considered democracy as an exogenous variable. Some scholars believe that there is a positive relationship [18,19] between democracy and economic growth, while others have shown that democracy has a negative effect on economic growth [20–22]. The author of [23], using data from 130 countries during 1948–1977, concluded that the relationship between economic growth and democracy was different in each of those countries. The authors of [24], using data from 70 countries from 1960–2000, concluded that the effect of democracy on economic growth in African countries was positive, while it was found to be negative in Latin American and Asian countries.

In [25], it was shown that democratic accountability had had no significant effect on economic growth for OECD countries during 1984–2012 while, according to [26], democracy plays a significant and positive role in economic growth, and in [27], democracy was found to have a positive effect on economic growth.

A few studies have focused on the causal relationship between democracy and economic growth. The author of [5] investigated the causal relationship between democracy and economic growth in 32 developing countries during 1950–1982. Their results, derived by using the Granger causality test, showed a bilateral relationship between democracy and economic growth. The causal relationship between democracy and economic growth in China was studied by [28] during 1972–1999. The results of this study showed that in the long term, the causal relationship was directed from democracy to economic growth, but in the short term, there was a two-way causal relationship between these two variables. The causality direction between democracy and economic growth in 25 transitional economies from 1990–2008 was studied by [29] using Granger causality tests. The study indicated that the causality direction was from economic growth to democracy. The authors of [6] showed that the causal relationship was from economic growth to democracy, while ref. [4] concluded that for most countries, there was no causal relationship between democracy and economic growth. The authors of [12] showed that the causality was from economic growth to democracy in the short term but was bidirectional in the long term. In a study,

the authors of [30] provided evidence that democracy had a positive effect on GDP per capita, and their results showed that democratization had increased GDP per capita by about 20 percent in the long run. The findings of [31] also suggested that democracy had a positive effect on economic growth, and the heterogeneity in the reported results was mainly due to the spatial and temporal differences between the samples, indicating that the democracy–growth nexus is not similar across world regions and decades. The authors of [32] showed that democracy in Africa had had no effect on per capita GDP growth or total GDP, and that without improvements in health, democracy in Africa was pushing these countries into the Malthusian trap.

Generally, empirical studies have yielded contradictory results without any consensus on the relation—and direction of relation—between economic growth and democracy. This has been partly due to the differences in the models and methods used. It is obvious that the effects of democracy and economic growth on each other will be evident after a certain period of time, and the theoretical implications make the use of traditional statistical techniques difficult. In this study, we used a Panel VAR approach and divided countries into two groups according to their levels of economic development.

2. Materials and Methods

The Panel VAR method was used in this study to investigate the causality between democracy and economic growth. The research area consisted of two groups of countries: (1) the member countries of the Organization for Economic Cooperation and Development (OECD) and (2) selected developing countries (Appendix A, Table A1). The categorization of countries in the two groups was intended to determine whether the causal relationships between democracy and economic growth were different between the two groups of countries or not. According to the available data, and considering the homogeneity of countries, 32 OECD and 27 developing countries were studied. Annual data for real per capita GDP growth (y) and democratic accountability (da) were used for the period 1990–2020. ‘Democracy’ refers to a regime where the people or “demos” govern public affairs. The traditional notion of democratic accountability refers to ways that citizens can control their governments and the mechanisms for doing this [33]. Democratic accountability is a measure of the government’s responsibility to the public, and it is based on the active participation of political parties; checks and balances within the executive, legislative, and judicial systems; independence of the judiciary; and the protection of individual freedom [33]. Therefore, democratic accountability is a good proxy for democracy. The data for this index were collected from the International Country Risk Guide (ICRG) database. Data for real per capita GDP growth were collected from the World Bank. The STATA16 software was used for model estimation and analysis.

In earlier studies, time series methods were mainly used to investigate the causal relationship between democracy and economic growth. However, these studies usually ignored the heterogeneity between countries and, hence, did not provide accurate estimations. In the current study, the flexible Panel VAR method was used to solve this problem and the countries were divided into two homogenous groups. It was considered possible that the effects of democracy and economic growth on each other differed between developed and developing countries. Therefore, considering the heterogeneity between the two groups of countries yielded better results. Statistical tests were performed to ensure the correctness of the estimated results. The next section describes the Panel VAR methodology and corresponding tests.

Panel VAR Method

Vector Autoregressive or VAR analysis is one of the procedures used in empirical studies to determine the direction of causality among variables. VAR methods are especially used for time series data with large numbers of observations, but this method can also be used in panel data analysis with some added steps. First, the causality test in the context of time series data is scrutinized to find out when the question of whether

there is a causal relationship between the variables x and y is resolved. To answer this question, we estimated the following equation. In Equation (1), x and y are both potentially endogenous variables.

$$y_t = \alpha_0 + \sum_{i=1}^m \alpha_i y_{t-i} + \sum_{k=1}^n \delta_k x_{t-k} + u_t \quad (1)$$

Here, α and δ are parameter values and m and n represent the numbers of lags to ensure that the error term in Equation (1) has appropriate statistical properties. Using the common assumptions of $\delta_1 = \delta_2 = \dots = \delta_m = 0$ it can be determined whether x causes y or not, and this is done using the F test. In order to conduct the test, it is necessary to have enough observations on x and y to provide a consistent estimation of the parameters in Equation (1). Generally, in panel data, the cross sections are large and the number of years is small. Scholars investigating causality combine data related to different cross sections to increase degrees of freedom. This implies the assumption of cross-sectional homogeneity, which ignores the possibility of individual effects in each cross-sectional unit. Individual effects reflect the influence of unobservable variables that have a constant effect on the dependent variable. Therefore, within the framework of panel data, it is assumed that there are N cross sections and T time periods. Another assumption is the existence of an individual effect (f_i) for the i^{th} cross-sectional unit [34]. The individual effects are considered to increase the VAR's flexibility in modelling panel data [35]. Therefore, the model is specified as follows:

$$\begin{aligned} y_{it} &= \alpha_0 + \sum_{i=1}^m \alpha_i y_{it-1} + \sum_{k=1}^n \delta_k x_{it-1} + f_i + u_{it} \\ i &= 1, \dots, N \\ t &= m + 1, \dots, T \end{aligned} \quad (2)$$

The use of the first-order difference and ordinary or generalized least-square methods is a standard procedure for estimating the above equation that leads to the elimination of individual effects.

$$y_{it} - y_{it-1} = \sum_{i=1}^m \alpha_i (y_{it-1} - y_{it-2}) + \sum_{i=1}^m \delta_i (x_{it-1} - x_{it-2}) + (u_{it} - u_{it-1}) \quad (3)$$

However, since y_{it-1} is a function of u_{it-1} and the error term ($u_{it} - u_{it-1}$) correlates with the estimator ($y_{it-1} - y_{it-2}$), the above procedure is not appropriate. In fact, differencing can cause simultaneity problems. The use of an instrumental variable estimator is a proper solution to deal with this problem. When examining the causal effect of one variable, researchers face the need to isolate the particular variable of interest from other important variables that are correlated with it, but it is necessary to employ a procedure to allow the instrumental variables to change over time because they constitute a substitute or proxy for the initial variable and should move with it [36]. The existence of a sufficient number of instrumental variables for the estimation of Equation (3) is considered as a benchmark for identifying the relevant equations [34].

The use of a single-equation GMM estimator (for each equation) is a common approach to estimating the system of Equation (1) [37]. Many econometric models, such as the dynamic models in Equation (1), are specified with the unobservable individual effects through momentum conditions, and their estimation is done by using the GMM method. The stability and asymptotic normality of this method depend on the correct model specification and momentum conditions. Therefore, some criteria are used for selecting the specification of the model and the moment (asymptomatic) conditions.

The Moment Model Selection Criteria (MMSC) from [38] were used to select the appropriate number of lags in the Panel VAR model. Similar to the information criteria in the maximum likelihood approach, it was preferred that the model would use smaller amounts

of MMSC statistics. In other words, the optimum lag in the Panel VAR model would be achieved when MMSC statistics were minimum. The validation of the instrumental variables (or, exogenously, of the instruments) in a GMM estimation is important. The Hansen test, a standard test to check the exogeneity of instrumental variables, was used to test the null hypothesis that the instrumental variables and error terms were not correlated.

The stability of the Panel VAR model was an important issue. Stability would confirm that the Panel VAR model was invertible and had a vector moving average process with infinity order. The impulse response functions and variance decompositions of the prediction errors were obtained and analyzed. The stability of the Panel VAR model was investigated by capturing the Eigen values from the estimated model. If all Eigen values in the corresponding matrix were equal to less than one, the random process was considered well-defined and the Panel VAR model was considered stable [39].

3. Results and Discussion

In this study, the relationship between democracy and economic growth was investigated for two groups comprising OECD and selected developing countries during 1990–2020. The list of countries and the means of variables for these countries are reported in Appendix A, Table A1. Descriptive statistics of the variables are reported in Table 1.

Table 1. Descriptive statistics of variables for OECD and selected developing countries during 1990–2020.

Variable	Stat.	OECD Countries				Selected Developing Countries			
		Mean	Max	Min	Standard Deviation	Mean	Max	Min	Standard Deviation
Growth in real per capita GDP		1.76	4.44	0.3	1.13	2.13	8.3	−0.62	1.7
Democratic Accountability		5.57	6	4.1	0.46	3.66	5.23	1.86	0.95

According to Table 1, although the average growth of real per capita GDP in the selected developing countries was higher than in the selected OECD countries, the standard deviation of this variable was lower for the group of OECD countries. Moreover, the average index of democratic accountability was higher in the OECD countries compared to the developing countries.

The Levin, Lin, and Chu (LLC) test was used to check the stationary properties of variables. The LLC unit root test results are reported for both groups of countries in Table 2.

Table 2. Results of LLC unit root test.

Variable	OECD Countries		Developing Countries	
	Test Stat.	<i>p</i> -Value	Test Stat.	<i>p</i> -Value
Growth in real per capita GDP	−7.591	0	−8.97	0
Democracy	−2.051	0.02	−2.09	0.018

Table 2 shows that the null hypothesis of the unit root was rejected for both groups of countries. Therefore, growth in real per capita GDP and democracy were both stationary at their levels. The Akaike information criterion MMSC (or MAIC) was used to determine the optimal number of lags [36]. Based on the log likelihood function, the AIC is defined as bellow:

$$AIC(p) = -2\frac{LL}{T} + 2\frac{t_p}{T}$$

where LL stands for the log likelihood for a VAR (p), T is the number of observations, and p is the number of lags. The results of the MAIC statistics to determine the optimal lags for both surveyed countries are reported in Table 3.

Table 3. MAIC statistics for the optimal lag.

Lag	MAIC Statistic	
	OECD Countries	Developing Countries
1	1.3279	6.6524
2	−3.4063	−5.8675
3	−2.8844	−4.8792

The MAIC statistic values for the second lag in both country groups had the least values. Therefore, the Panel VAR model with second lags was the appropriate specification for the investigation of the causal relationship between democracy and economic growth with this data set. The estimation results for the VAR (2) model are reported in Table 4.

Table 4. The estimation results from using the Panel VAR method.

Economic Growth Equation				
Variable	OECD countries		Developing countries	
	Coefficient	p-value	Coefficient	p-value
The first lag of real per capita GDP	0.494	0	0.167	0.276
The second lag of real per capita GDP	−0.115	0.106	0.039	0.619
The first lag of democracy	−3.903	0.033	1.455	0.365
The second lag of democracy	−0.667	0.435	0.38	0.5
Democracy equation				
Variable	OECD countries		Developing countries	
	Coefficient	p-value	Coefficient	p-value
The first lag of democracy	1.159	0	1.09	0
The second lag of democracy	−0.144	0.007	−0.23	0
The first lag of real per capita GDP	0.029	0.336	0.01	0.063
The second lag of real per capita GDP	0.026	0.459	−0.005	0.107
Test of exogeneity of instruments (Hansen test)	J stat.	p-value	J stat.	p-value
	12.59	0.13	12.3	0.14

The J statistic was not statistically significant, and so, the validity of the instruments was verified and the specification of the VAR (2) was confirmed.

The economic growth equation for the OECD countries had a positive and significant sign for the first lag of economic growth on the current value of per capita economic growth. On the other hand, the coefficients for the first and second lags of democracy had negative effects on real per capita GDP growth, but only the first lag was significant. Therefore, for the OECD countries, real per capita GDP growth was mainly affected by previous per capita GDP growth and the effect of democracy on per capita economic growth was negative. In the equation for democracy, the first democracy lag had a positive and significant effect on current values of democracy. Meanwhile, real per capita GDP growth in the first and second lags had positive but insignificant effects on democracy in the OECD countries.

The economic growth equation for the developing countries had positive signs for the coefficients on the first and second lags of per capita GDP, but those effects were not statistically significant. The first and second lags of democracy also had insignificant coefficients for economic growth, although these variables had positive effects on economic growth. In the democracy equation, the first lag of democracy had a positive effect on democracy while the second lag had a negative effect on democracy. This finding indicates that the democratic trend in developing countries is not a continuous forward process and faces several difficulties that should be investigated more fully. Moreover, the effects of the

first lag of per capita GDP on democratic states in developing countries were positive at the 10% significant level but not at the 5% level.

It was necessary to check the stability condition of the estimated Panel VAR model. The stability condition of the Panel VAR model states that the model is invertible and represents the infinite-order vector moving average [40]. If all the Eigen values lie inside the unit circle, then the Panel VAR model satisfies the stability condition [41].

The results of this test are shown in Figure 1 for both groups of countries.

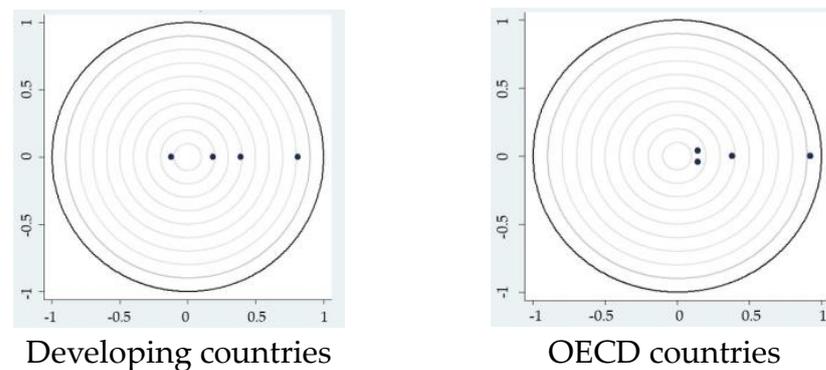


Figure 1. The Eigen values for both groups of countries.

According to Figure 1, because all Eigen values of the matrix, along with the modules, were equal to less than one, the Panel VAR model results were stable for both groups of countries.

The Granger causality test was applied to consider the direction of causality between economic growth and democracy in the Panel VAR model. The results of this test are shown in Table 5.

Table 5. Granger causality test for the Panel VAR model.

OECD Countries		
Null hypothesis	$\chi^2_{stat.}$	<i>p</i> -value
Democracy is not cause of economic growth	10.69	0.005
Economic growth is not cause of democracy	1.62	0.445
Developing countries		
Null hypothesis	$\chi^2_{stat.}$	<i>p</i> -value
Democracy is not cause of economic growth	1.665	0.437
Economic growth is not cause of democracy	4.24	0.12

One-way causality existed from democracy to economic growth for the OECD countries (Table 5). The effects of democracy on economic growth in the OECD countries were negative and significant (Table 4). Therefore, the conflict hypothesis was confirmed for the OECD countries. Some previous empirical studies had concluded that the relationship between these two variables was negative [1,14]. A majority-vote system has increased the human capital of the OECD member countries, and the governments of these countries attempt to obtain their societies' majority votes by implementing short-term policies. Many government expenditures (such as those on health care, education, and security) are favored by voters in democratic societies. Consequently, elected politicians are faced with greater expenses that are difficult to cover by increasing taxes proportionally. A growing budget deficit in countries with strong democratic institutions leads to higher taxes and greater financial pressure on the economy, both of which negatively impact economic growth [42].

The question arises about how political shocks affect economic growth in these countries. The impulse response function (IRF) provides insight. Figure 2 shows the response of economic growth to a one-standard-deviation shock in democracy for the OECD countries

over a 10-year period. Such a shock leads to reduced economic growth until the third year, and then, economic growth becomes relatively stable.

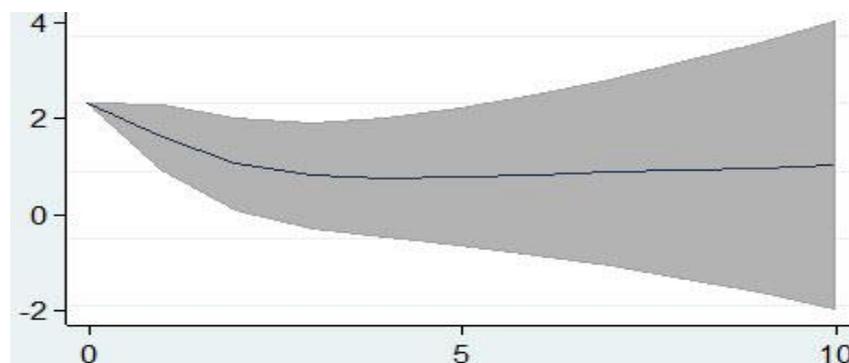


Figure 2. Response of economic growth to a one-standard-deviation shock in democracy for OECD countries.

Because there was no causal relationship between democracy and economic growth in the selected developing countries (Table 5), there was support for the skeptical hypothesis for this group of countries. The skeptical hypothesis for developing countries emphasizes that variables such as the rule of law, economic liberty, property rights, and stable macroeconomic conditions play a more important role in economic growth than democracy. The skeptical view states that democracy is not a prerequisite for economic growth and contradicts this notion with examples of economic growth achieved in totalitarian regimes [29]. The absence of a causal relationship between democracy and economic growth was consistent with the results of [5] for the selected developing countries.

4. Conclusions

The relationship between democracy and economic growth has received considerable attention in previous studies and empirical analysis has been performed using various methods. There are four major theories on the relationship between democracy and economic growth: conflict, compatibility, skeptical, and curvilinear. There is no consensus on the nature of this relationship.

For policymakers, it is important to realize the relationship between economic growth and democracy because the political, social, and economic future of a country depends largely on the kind of attitude with which the country is governed. Since democracy and economic growth greatly affect the sustainable development and welfare of societies, the main purpose of this study was to investigate the causal relationship between democracy and economic growth during 1990–2020. In the current study, a Panel VAR approach was used to determine the relationship between democracy and economic growth for two groups comprising OECD and developing countries. The Granger causality test was also applied in the analysis. This study has contributed to the literature by allowing heterogeneity between country groups by level of development and by using the Panel VAR approach. According to the results, the conflict and skeptical hypotheses were established for the OECD and developing countries, respectively.

The results of the study indicate that in OECD countries, the causal relationship is from democracy to economic growth, and as democracy increases, the economic growth of these countries decreases (i.e., the conflict hypothesis). There is some evidence that countries with strong democratic institutions incur more public expenditures, which have detrimental effects on economic growth, to satisfy voters. OECD member countries should implement policies with long-term horizons to manage public expenditures and achieve sustainable economic growth.

Moreover, democracy is not a necessary prerequisite for economic growth in developing countries. In other words, democracy alone does not trigger economic growth in

developing countries, and real per capita GDP growth in developing countries mainly depends on other important structural variables such as social, human, and physical infrastructures [42]. However, a well-designed and functioning government could be the key rather than democracy. It should be noted that this causal relationship between democracy and economic growth does not mean that policymakers should curb democracy to obtain higher levels of economic growth. We prefer democracy to non-democracy because it is the only feasible form of government that ensures basic freedom and equality, rights, and opportunities, and freedom and equality have their own rights. Policymakers, therefore, should adopt long-term policies to obtain and maintain stable economic growth. For developing countries, our results showed that there was no causal relationship between democracy and economic growth, and thus, policymakers there should pay more attention to improving macroeconomic conditions and the protection of political and economic liberty for the betterment of economic conditions and growth.

The relationship between democracy and economic growth may be influenced by a country's performance in achieving sustainable development goals. Therefore, it is suggested that future studies classify countries according to their achievements for sustainable development goals and then examine the relationship between democracy and economic growth.

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Appendix A

Table A1. List of countries under study.

OECD Countries	Average Democratic Accountability	Average GDP per Capita Growth	Developing Countries	Average Democratic Accountability	Average GDP per Capita Growth
Australia	6	1.55	Albania	4.26	3.27
Austria	5.50	1.20	Algeria	3.14	0.64
Belgium	5.67	1.15	Angola	2.56	0.22
Canada	5.97	0.99	Botswana	3.68	1.52
Chile	4.13	2.93	Brazil	4.19	0.81
Czech Republic	5.33	1.73	Bulgaria	4.99	1.81
Denmark	6	1.20	China	2.03	8.30
Estonia	5.27	4.39	Colombia	3.95	1.61
Finland	6	1.25	Costa Rica	5.23	2.35
France	5.70	0.82	Dominican Republic	4.43	3.08
Germany	5.64	1.28	Ecuador	3.87	0.88
Greece	5.15	0.40	Gabon	2.77	−0.62
Hungary	5.33	2.28	Iran	3.20	1.74
Iceland	6	1.84	Iraq	2.30	4.79
Ireland	5.87	4.44	Jordan	3.40	0.29

Table A1. Cont.

OECD Countries	Average Democratic Accountability	Average GDP per Capita Growth	Developing Countries	Average Democratic Accountability	Average GDP per Capita Growth
Israel	5.58	1.59	Malaysia	4.05	3.17
Italy	4.99	0.30	Mexico	4.86	0.73
Japan	5.40	0.80	Mongolia	3.52	2.75
Korea	4.72	4.31	Panama	4.52	3.13
Luxembourg	5.90	1.65	Paraguay	2.17	1.43
Netherlands	6	1.42	Peru	3.68	2.33
New Zealand	5.94	1.28	Romania	4.81	2.77
Norway	6	1.40	South Africa	4.68	0.60
Poland	4.81	3.64	Thailand	3.65	3.12
Portugal	5.43	1.17	Tonga	1.86	1.79
Slovak Republic	5.52	3.59	Tunisia	2.55	2.09
Slovenia	5.03	2.27	Turkey	4.37	3.01
Spain	5.62	1.04			
Sweden	6	1.35			
Switzerland	6	0.70			
United Kingdom	5.86	0.98			
United States	5.93	1.33			

Note: On a scale of 0 to 6, democratic accountability measures the responsiveness of the government to the people. An increase in the index score indicates an improvement in democratic accountability.

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