

## The Role of Democracy and Economic Freedom in Economic Growth: Evidence from Developed and Developing Countries

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### Ekonomik Büyümede Demokrasi ve Ekonomik Özgürlüklerin Rolü: Gelişmiş ve Gelişmekte Olan Ülkelerden Kanıtlar

#### Abstract

Economic growth has been included in the literature as a historical concept that countries have endeavoured to achieve. To date, economic growth has been analysed using a variety of variables. In our study, the economic growth of seven developed countries and eleven developing countries, as well as military expenditures, democracy, economic freedom, foreign direct investment, and unemployment, were analysed using the Panel EGLS model. As a result of the analysis, it was found that economic freedom has a negative and insignificant effect, while democracy and unemployment have an adverse and significant impact. Additionally, military expenditures and Foreign Direct Investments (FDI) have a positive and significant impact on economic growth.

**Keywords** : Economic Growth, Democracy, Economic Freedom, Military Expenditures, Unemployment, Foreign Direct Investment.

**JEL Classification Codes** : E01, E24, F63, O4, O50.

#### Öz

Ekonomik büyüme, ülkelerin ulaşmaya çalıştığı tarihsel bir kavram olarak literatüre girmiştir. Bugüne kadar ekonomik büyüme birçok farklı değişkenle analiz edilmiştir. Çalışmamızda, yedi gelişmiş ülke ve on bir gelişmekte olan ülkenin ekonomik büyümesi, askeri harcamalar, demokrasi, ekonomik özgürlük, doğrudan yabancı yatırım ve işsizlik değişkenleri Panel EGLS modeli ile analiz edilmiştir. Analiz sonucunda, ekonomik özgürlüğün olumsuz ve önemsiz bir etkisi olduğu, demokrasi ve işsizliğin ise olumsuz ve önemli etkileri olduğu bulunmuştur. Ayrıca, askeri harcamalar ve Doğrudan Yabancı Yatırımların (DYY) ekonomik büyüme üzerinde olumlu ve önemli etkileri olduğu görülmüştür.

**Anahtar Sözcükler** : Ekonomik Büyüme, Demokrasi, Ekonomik Özgürlük, Askeri Harcamalar, İşsizlik, Doğrudan Yabancı Yatırım.

## 1. Introduction

Economic growth is one of the most important macroeconomic indicators that determine a country's welfare level. However, the determinants and sustainability of economic growth have long been the subject of debate in the academic literature. In this context, studies on the effects of democracy (Acemoglu & Robinson, 2006: 112), economic freedom (Friedman, 1962: 88), military expenditures (Barro, 1991: 407), unemployment (Blanchard & Katz, 1992: 54) and FDI (Borensztein et al., 1998: 124) on economic growth reveal various results for different countries and periods.

This study aims to analyse the effects of these variables on economic growth empirically. Democracy is viewed as a factor that supports the healthy functioning of the market economy and can play a role in promoting long-term economic growth (North, 1990: 57). On the other hand, it is argued that economic freedom improves the investment climate and encourages entrepreneurship (Gwartney et al., 1999: 154). However, there is no consensus in the literature on the impact of military expenditures on growth; while some studies claim that high military spending slow down growth by reducing public investments (Smith, 1980: 210), others argue that they provide economic stability by increasing security and thus contribute to growth (Tanzi & Davoodi, 1997: 342).

Unemployment rates are also recognised as one of the critical determinants of economic growth. High unemployment rates mean that production capacity cannot be fully utilised and thus may limit economic growth (Okun, 1962: 98). On the other hand, it is argued that FDI positively affect economic growth by increasing capital accumulation, accelerating technology transfer and increasing productivity (Dunning, 1988: 76).

This study analyses the effects of these variables on economic growth using panel EGLS analysis methods on a sample of developed and developing countries (comprising 18 countries in total, including the G-7 and 11 developing countries) between 2002 and 2022. The primary objective of this study is to investigate the impact of democracy, economic freedom, military expenditures, unemployment, and FDI on economic growth, and to contribute to the existing debates in the literature. In this framework, the hypotheses addressed in the study will be evaluated in detail in the light of the relevant theoretical framework and existing empirical studies.

In the second part of our article, the relationship between economic growth and the variables used in the analysis -namely, democracy, economic freedom, military expenditures, FDI, and unemployment- is explained. In the third part, the necessary analyses were conducted in accordance with the study's purpose. In the fourth and final part, the Conclusion section, the results of the analyses are evaluated.

## **2. The Relationship between Economic Growth and Democracy, Economic Freedom, Foreign Direct Investment, Military Expenditures and Unemployment**

### **2.1. Relationship between Economic Growth and Democracy**

The relationship between economic growth and democracy has long been a topic of debate in academic circles. Democracy is defined as a form of government in which citizens, either directly or indirectly, exercise sovereignty over the government. Robert Dahl (1989) defines democracy as a system of government based on equal suffrage that allows citizens to participate in political decisions, viewing it as a structure that encompasses elements such as free, equal, and effective participation, as well as freedom of access to information. David Held (2006) explains democracy as a form of government in which individuals have equal influence over political decisions and discusses the legitimacy of representative democracy.

Joseph Schumpeter is one of the thinkers who addressed the relationship between democracy and economic growth. Schumpeter (1942) argues that democracy is a tool that provides the most effective mechanism for economic decision-making, claiming that a system of free elections between competitive political elites can lead to economically efficient results. Lipset (1959), in his study 'Democracy and the Theory of Economic Development', argues that economic development feeds and sustains democracy and states that democratic stability will increase as per capita income increases. However, Lipset also states that economic growth can also be achieved in authoritarian regimes and that growth depends more on industrial and social change. Similarly, Barro (1991) states that the relationship between democracy and economic growth is complex and that moderate democracy can have a positive effect on growth, but very high levels of democracy can slow down growth. Nobel Prize-winning economist Amartya Sen (1999) defines democracy as a fundamental element of economic and social development, arguing that it contributes to economic growth through the protection of individuals' fundamental rights and the provision of equal opportunities. Acemoğlu and Robinson (2012) argue that democracy creates inclusive institutions that promote economic growth by ensuring a fairer distribution of resources.

On the other hand, some thinkers argue that democracy is not a necessary condition for economic growth. In his 'Theory of Political Order and Change', Huntington (1968) argues that authoritarian regimes can also lead to rapid economic growth and that democratisation can lead to political instability and economic stagnation in some cases. Similarly, Zakaria (1997) emphasises that some authoritarian regimes, especially countries such as China and Singapore, can achieve high economic growth rates in environments where democratic rights are restricted. Przeworski and Limongi (1993) argue that there is no definitive correlation between democracy and economic growth, suggesting that growth is shaped more by the economic policies implemented by governments than by the type of regime. Olson (1993), on the other hand, argues with the 'Stationary Bandit' theory that

strong leaders in authoritarian regimes can promote growth by ensuring economic stability in specific periods.

In conclusion, there is no consensus in the academic literature on whether a clear relationship exists between democracy and economic growth. While some studies show that democracy promotes economic growth in the long run, others argue that authoritarian regimes can also lead to economic growth. Therefore, instead of focusing only on democracy, policies to strengthen production, investment and institutional structures should also be taken into consideration to ensure economic growth.

## **2.2. Relationship between Economic Growth and Military Expenditures**

It is a crucial factor for a country to have a sufficient military capacity to ensure national security and deterrence. For this reason, countries need to maintain a military presence to counter evolving external threats in a sustainable manner. Military expenditures require preparedness against possible attacks by hostile countries or groups. Military power, which is not only necessary for external threats, also helps a country to be more effective in the international arena. Military expenditures enable a country to alter the balance of power and increase its negotiating leverage in international relations. This enhances the state's influence at the international level.

The economic effects of military expenditures are a highly controversial issue in the literature. Barro (1991) argues that military spending has similar impacts to public investments and that these investments support economic growth. Barro argues that military expenditures also contribute to technological developments. As a result, it is stated that economic growth becomes sustainable. Friedman (1962) argues that military spending plays a crucial role in maintaining economic stability by increasing aggregate demand, particularly during periods of economic crisis. Moreover, military expenditures contribute to long-term economic growth by encouraging technology and innovation. In particular, they noted that during periods of high military spending, general economic activity also tends to increase. Since military expenditures divert resources from other vital areas, such as social services, they can have a negative impact on economic growth in the long run.

## **2.3. Economic Growth and Foreign Direct Investment Relationship**

FDI refers to investments made by investors or multinational companies to acquire a permanent interest and control over an enterprise or asset abroad. Such investments are typically made to enhance a country's economic development, transfer technology, and contribute to the local economy. In addition to the benefits of FDI, various views in the literature exist regarding the potential adverse effects of these investments.

There are numerous studies on the effects of FDI on economic growth. Borensztein, De Gregorio and Lee (1998) argue that FDI promotes growth, primarily through technology transfer and local job creation. It is emphasised that this type of investment has a significant impact on economic growth in developing countries. Romer (1993) argues that foreign

investment encourages local innovation and contributes directly to economic growth. He points out that FDI facilitates the transfer of technology and knowledge in emerging market economies. Carkovic and Levine (2002) also examined the growth-enhancing effect of FDI and found that the results were positive. In their study, they stated that FDI has a positive impact on economic growth.

On the other hand, there are also studies on the adverse effects of FDI. Aitken and Harrison (1999) draw attention to the adverse effects of FDI on local firms. In their research, they concluded that foreign investors typically possess high technology, which weakens the competitiveness of local firms. It is stated that this situation may have a negative impact on economic growth in the long run.

In conclusion, the impact of FDI on economic growth is analysed in different ways in the literature. On the one hand, it is seen as a tool to support economic growth due to factors such as technology transfer, capital accumulation, local employment creation and encouraging innovation; on the other hand, it is criticised for potential adverse effects such as weakening the competitiveness of local enterprises and increasing the dominance of foreign companies in the market. Therefore, when assessing the impact of FDI, the country's current economic structure and policies should be taken into consideration, and strategies that encourage the development of local firms should be developed.

## **2.4. The Relationship between Economic Growth and Unemployment**

The relationship between economic growth and unemployment has been a primary issue discussed in the economics literature for a long time. The generally accepted view is that economic growth reduces unemployment, and high unemployment rates hinder economic growth. Arthur Okun was the first to define this relationship systematically. In his studies on the US economy within the framework of 'Okun's Law', which is named after him, Okun revealed that a 2% increase in economic growth reduces the unemployment rate by approximately one percentage point (Okun, 1962). According to Okun, as production increases, employment increases, and the unemployment rate decreases, but growth must exceed a certain threshold for unemployment to decrease significantly.

Neo-classical economic theory argues that the relationship between economic growth and unemployment is weak in the long run. According to this view, markets spontaneously reach equilibrium at a point close to full employment over time. Unemployment is primarily caused by frictional and structural factors (Solow, 1956: 79). In contrast, endogenous growth theory posits that economic growth is directly driven by innovation, technology, and investments in human capital, and that unemployment tends to decrease as a result. The increase in human capital investments reduces unemployment by increasing the productivity of the labour force and supports sustainable growth in the long run (Romer, 1990: 71).

Some studies argue that the relationship between economic growth and unemployment may vary from country to country. Ball and Mankiw (2002) emphasised that

the negative relationship between economic growth and unemployment is stronger in developed economies, but the effect of growth on unemployment may be weaker in developing countries. This is because labour markets in developing countries are affected by factors such as structural problems, prevalence of informal employment and differences in labour force participation rates.

Blanchard and Katz (1997) argue, on the other hand, that unemployment may have an adverse effect on economic growth in the long run. They argued that high unemployment rates restrict economic growth by reducing aggregate demand and production. In particular, it is stated that long-term unemployment reduces the economy's productive capacity by eroding human capital and renders growth unsustainable.

In conclusion, the relationship between economic growth and unemployment is a complex and multidimensional issue. Although the general view in the literature is that economic growth tends to reduce unemployment, the strength and direction of this relationship vary depending on a country's economic structure, labour market flexibility, and the macroeconomic policies implemented. Therefore, it is crucial to invest in human capital, strengthen labour markets, and implement structural reforms to maximise the employment-creating effects of economic growth.

### **3. Literature**

#### **3.1. Studies Analysing the Relationship between Economic Growth and Democracy**

Tavares and Wacziarg (2001), in a study using panel data analysis for 65 countries, found that democracy can increase growth through human capital investments. Glaser et al. (2004) utilised regression analysis in their study, which covered more than 130 countries, and found that democracy indirectly affects economic growth. Persson and Tabellini (2009) analysed 60 countries with differentiated effects analysis and found that democracy is necessary but not sufficient for growth. Densumite (2023) employed regression analysis in his study of 44 countries, suggesting that democracy may have a negative impact on growth. Barro and Ursua (2016), in their study using time series analysis on 90 countries, found that democracy has a less significant effect on growth in high-income countries. Heshmati & Kim (2017) analyse the relationship between economic growth and democracy using panel data from 144 countries for the period 1980-2014 through static and dynamic models. In the study, the translog form was preferred for estimating the production function, and time trends and general index approaches were applied to capture time effects and incorporate the unknown forms of technological change. The findings reveal that democracy has a strong and positive impact on economic growth. Credit guarantees emerge as one of the most important channels of this positive effect, while direct foreign investment inflows are highlighted as having higher marginal effects in democratic countries. Additionally, the results of the dynamic model, based on a target GDP level with flexible adjustment speed, also confirm that democracy has a positive influence on growth. Li and Halid (2023) analyse

the relationship between democracy, fiscal capacity, and economic growth using panel data from 22 OECD countries that were members of the European Union between 1995 and 2020, employing a fixed effects model. The study reveals that the effect of democracy on economic growth varies depending on a country's fiscal capacity. The findings show that the positive impact of democracy on growth is stronger in countries with high fiscal capacity. In this context, fiscal capacity emerges as a crucial factor that reinforces democracy's positive impact on growth. The study emphasises that policymakers aiming to promote economic growth should focus not only on strengthening democracy but also on increasing fiscal capacity. Demirkan and Kaya (2012) examined the relationship between democratisation and economic growth using Türkiye-specific time series data from 1980 to 2006. In the study, civil rights and freedoms, political freedoms, and population growth were considered as independent variables, while Gross Domestic Product (GDP) was included as the dependent variable. Empirical analyses conducted through cointegration analysis and causality tests revealed the existence of a long-term relationship between the variables in question. Additionally, a one-way causal relationship was identified from civil rights and freedoms to GDP growth. These findings suggest that democratic elements have a positive impact on economic growth in Türkiye. Baklouti and Boujelbene (2020) analysed the relationship between democracy and economic growth using data from 17 Middle Eastern and North African (MENA) countries between 1998 and 2011, employing a dynamic panel data model and the Generalised Method of Moments (GMM). The study reveals that the effect of democracy on economic growth depends on political stability and also demonstrates a two-way causal relationship between democracy and growth. Additionally, a strong complementary relationship between political stability and democracy was identified. According to the findings, political stability is one of the key determinants of economic growth, and when considered together with democracy, it has a statistically significant and positive impact on growth. In this context, the study emphasises the need for governments in the MENA region to develop policies aimed at strengthening political stability.

### **3.2. Studies Analysing the Relationship between Economic Growth and Economic Freedom**

Farr, Lord, and Wolfenbarger (1998) found that economic freedoms have a significant impact on economic growth in their study of 97 countries, which employed time series analysis. Gwartney et al. (1999) analysed the relationship between economic growth and economic freedom with panel data analysis on 100 countries and found that economic growth is observed when economic freedom increases. De Haan and Sturm (2000), in their study of 80 countries using panel data analysis, determined that improvements in economic freedoms lead to increased economic growth. Scully (2002) conducted a cross-sectional analysis of 109 countries and found that an increase in economic freedoms is associated with higher income and economic growth. Shivkumar et al. (2023) analyse the impact of economic freedom, labour, and capital on economic growth using a current dataset covering 117 countries from 2020 to 2022. The study employs a multiple linear regression model to assess the decisive role of political and institutional factors, such as economic freedom, on

growth. The findings reveal that economic growth is significantly associated with the labour force, capital, and, particularly, economic freedom. The  $R^2$  value of the model, which indicates its explanatory power, is 0.929, demonstrating that the independent variables account for a substantial proportion of the variation in economic growth. These results suggest that the level of economic freedom may be an essential factor in explaining cross-country growth differences. Rodrik (2000) conducted a panel data analysis on 100 countries and found that economic freedom alone has no significant effect on growth, emphasising that institutional structures and government policies are more critical. Stiglitz (2002) conducted a cross-sectional analysis in developing countries and found that excessive implementation of economic freedoms leads to increased income inequality, ultimately resulting in economic stagnation in the long run. Aghion and Durlauf (2007) conducted a panel data analysis on OECD countries and found that the effect of economic freedoms on growth is limited when institutional quality is insufficient. Rodrik (2008) conducted a panel data analysis of 67 developing countries and found that excessive expansion of economic freedoms may have adverse effects on economic growth in some of these countries.

### **3.3. Studies Analysing the Relationship between Economic Growth and Military Expenditures**

Benoit (1978) analysed 44 developing countries and found that military expenditures have a positive effect on economic growth and that these expenditures improve infrastructure. Biswas and Ram (1986), in a study of 58 developing countries, found that military expenditures support growth by contributing to industrialisation and infrastructure development. Khilji and Mahmood (1997), in a time series analysis on Pakistan, found that military expenditures have a positive effect on economic growth. Dunne, Perlo- Tiwari and Shahbaz (2011), In their analysis of India, Tiwari and Shahbaz (2011) found that military expenditures contribute positively to economic growth and defence expenditures stimulate the industrial sector. Dunne and Vougas (1999) found, in their analysis of South Africa, that military expenditures slow down economic growth in the long run. Heo and Eger (2005), in their study on the USA, found that military expenditures harm economic growth and limit the resources available for allocation to social programmes. Yakovlev (2007), in his study on G7 countries, found that military expenditures increase public debt and slow down economic growth. High military expenditures reduce investments in other sectors. D'Agostino, Dunne, and Pieroni (2012) stated in their study on developing countries that military expenditures limit economic growth and reduce expenditures on social services. Nwidobie et al. (2022) examined the relationship between military spending and economic growth in Nigeria using data from 1982 to 2020. The study was theoretically grounded in endogenous growth theory and the augmented Solow model, and was conducted using an ex post facto research design. The empirical analysis using the ARDL model revealed that military expenditures have a positive effect on economic growth in the short term; however, this relationship is found to be negative in the long term. In conclusion, it is stated that military expenditures have a significant impact on Nigeria's economic growth, and it is emphasised that policies aimed at increasing the effectiveness and efficiency of the military are also important.



### **3.4. Studies Analysing the Relationship between Economic Growth and Foreign Direct Investment**

Borensztein, De Gregorio, & Lee (1998) analysed 69 developing countries and found that FDI plays a vital role in increasing economic growth and interacts with local capital. Aitken & Harrison (1999) analysed 30 developing countries and found that FDI stimulates economic growth by increasing local investment. Kinoshita & Campos (2003) examined 10 Central and Eastern European countries and found that FDI has a positive effect on economic growth. Awolusi et al. (2017) analysed 5 African countries and emphasised the role of FDI in increasing economic growth and creating employment. Wang & Wei (2010) Used panel data from 40 countries and found that FDI contributes positively to economic growth, promoting growth, primarily through technology transfer. Tanaya and Suyanto (2022) examined the causal relationship between FDI and economic growth using Indonesian data from 1970 to 2018. The study utilised ADF, PP, KPSS, and LS unit root tests, as well as ARDL bounds tests and Granger causality analyses. The findings revealed a causal relationship between GDP and FDI in both the short and long term, while only a short-term effect from FDI to GDP was observed. Additionally, the Granger test results also support this one-way causal relationship. Carkovic & Levine (2002) in their study on 72 countries stated that FDI may negatively affect economic growth and weaken local industry. Es-Safi (2017) examined the impact of FDI on economic development using Moroccan data from 2006 to 2015. The study employed graphical analysis and multiple linear regression (SPSS 23) to evaluate variables such as GDP growth, FDI, inflation, exchange rate, debt, and labour force. The model's F-statistic was 1.253, and the  $R^2$  value was 0.61. The results indicated that the impact of FDI on economic development was positive but not statistically significant. This was attributed to FDI being directed toward strong sectors. The study emphasised the importance of policies that promote employment and stimulate local investment. Dunning & Lundan (2008) analyse 15 countries and show that FDI has adverse effects on economic growth and that these effects are particularly pronounced in developing countries. Ali, Hossain, and Zhang (2012) in their study on 15 Asian countries analysed that FDI can sometimes slow down economic growth and lead to inefficient use of resources.

### **3.5. Studies Analysing the Relationship between Economic Growth and Unemployment**

Barro (2001) analysed a sample of 100 countries and found that economic growth reduces the unemployment rate and creates employment. Phelps (1994) analysed the data from 50 countries and found that the effect of economic growth on unemployment is not always positive; in some cases, growth may increase unemployment rates. Wickens (1994) analysed the data of 30 developed countries and concluded that economic growth does not reduce unemployment and, in some cases, may increase it. Blanchard and Wolfers (2000), in their study of 20 developed countries, found that economic growth does not always reduce unemployment rates and that an inverse relationship may exist in some countries.

## 4. Empirical Model

### 4.1. Structural Model

Economic growth has been a concept that has been explained in various ways to date. In recent years, much attention has been paid to analysing the deeper determinants of economic growth, notably by Rodrik, Subramanian and Trebbi (2004). While the precise determinants of economic growth remain an open question, three broad categories have emerged: institutions, international trade, and geography (Jacob & Osang, 2016: 5). In this study, the effects of variables such as democracy, economic freedom, military expenditures, foreign direct investment, unemployment, military expenditures, foreign direct investment and unemployment on economic growth in 18 countries (G-7 countries and developing countries Brazil, China, Indonesia, India, Mexico, Philippines, Türkiye, South Africa, Nigeria, United Arab Emirates) are analysed by using Eviews 13 and Stata 17 package programs for long-run and short-run causality relationships, taking into account horizontal cross-sectional dependence covering the period between 2002 and 2022.

The production function of Cobb-Douglas, one of the generally accepted economic growth models, is as follows;

$$Y=A \times K^{\alpha} \cdot L^{1-\alpha} \text{ Function (1)}$$

where Y is economic output (GDP), A is technological progress (total factor productivity), K is capital, L is labour, and  $\alpha$  is the contribution of capital to production. Solow (1956) analysed the effects of military expenditures on economic growth by adding  $M(t)^{\beta}$  to Function (1);  $Y(t) = A(t)K(t)^{\alpha} L(t)^{1-\alpha} M(t)^{\beta}$  and this formula shows the growth effect of military expenditures. When  $\beta > 0$ , it means that military expenditures have a positive impact on economic growth. Solow and Swan (1956) tested the effect of foreign direct investment on economic growth by adding foreign direct investment (FDI) to Function (1);  $Y(t) = A(t)K(t)^{\alpha} L(t)^{1-\alpha} FDI(t)^{\beta}$ . Barro (1996) used the model  $Y = \alpha + \beta_{1l} Democracy + \beta X + \varepsilon_{2lt}$  to analyse the relationship between democracy and economic growth. Friedman analysed the effect of economic freedoms on economic growth in a free market economy with the model  $Y = \alpha + \beta_{1l} Economic Freedom + \beta X + \varepsilon_{2lt}$ . Endogenous growth theory argues that growth is endogenous, that is, determined by capital accumulation (FDI), technology and human capital, and they tested their effects on economic growth with the formula;

$$Y_t = A K^{\alpha} \cdot L^{\alpha}.$$

After all the modelling given about economic growth, the function of economic growth and democracy, economic freedom, military expenditures, foreign direct investments, and unemployment that we will form under our model is as follows;

$$EG_{it} = \beta + \beta_{01} Military + \beta_{i2} Democracy + \beta_{i3} Economy + \beta FDI_{it} + \beta Unemp + \mu + \lambda + \varepsilon_{it}$$

Here,  $EG_{it}$  is the economic growth rate in country i and year t,  $\beta_0$  is the constant term,  $Military_{it}$  is military expenditures in country i and year t,  $FDI_{it}$  is foreign direct investment

in country  $i$  and year  $t$ ,  $Unemp_{it}$  is the unemployment rate in country  $i$  and year  $t$ ,  $\mu_i$  is country-specific fixed effects,  $\lambda_t$  is time fixed effects,  $\varepsilon_{it}$  is the error term.

Among the variables included in our model, economic growth, foreign direct investment, unemployment and military expenditures are taken from the World Bank online database, the democracy variable is taken from the Global State of Democracy Initiative online database, and the economic freedom variable is taken as the economic freedom index from The Heritage Foundation online database. The Heritage Foundation evaluates countries in terms of property rights, the integrity of government, the effectiveness of the judiciary, the tax burden, and government expenditures, and assigns overall scores. The Global State of Democracy Initiative assesses countries in four main categories and eighteen sub-parameters: Representation (Credible Elections, Inclusive Suffrage, Free Political Parties, Elected Government, Effective Parliament, Local Democracy), Rights (Access to Justice, Civil Liberties, Basic Welfare, Political Equality), Rule of Law (Judicial Independence, Freedom from Corruption, Predictable Enforcement, Personal Integrity and Security), and Participation (Electoral Participation, Civic Participation, Civil Society).

The Heritage Foundation's Index of Economic Freedom is a crucial source for evaluating the state of global economic freedom. This index offers policymakers and researchers valuable insights by highlighting the strong correlation between free market economies and social progress (The Heritage Foundation, 2024). On the other hand, the Global State of Democracy Initiative, launched by International IDEA, provides evidence-based and balanced analyses of the state and quality of democracy worldwide. With data covering 173 countries, the initiative aims to contribute to the public debate on democracy and inform policy interventions to strengthen democracy (International IDEA, 2016).

#### 4.2. Methodology and Application Results

Since the concept of economic growth constitutes a complex issue for a country, with every variable and parameter being critical, the modelling and analysis to be applied are crucial. In econometric analyses, the stationarity of the series is considered an essential economic and statistical requirement, as a non-stationary data set can lead to incorrect results and misleading interpretations. Stationarity of the series is analysed using unit root tests. Various factors, including data type, the number of cross-sections, and model assumptions, determine which unit root tests to apply. For this reason, the Im-Pesaran-Shin (IPS) test, one of the unit root tests, is used in our analysis. IPS determines whether the panel data set is stationary or not by performing unit root tests for each variable separately. The IPS test is practical in heterogeneous panel data sets and combines the unit root test results of all variables. The results of the IPS test applied to the variables in our model are as follows.

**Table: 1**  
**Results of Unit Root Tests**

	IPS				ADF			
	Critical Value	Probe	Critical Value*	Prob*	Critical Value	Probe	Critical Value*	Prob*
GDP	0,555 (0)	0,710 (0)	-1,046 (0)	0,147 (0)	44,84 (0)	0,148 (0)	44,80 (0)	0,141 (0)
ΔGDP	-8,323 (1)	0,00* (1)	-6,397 (1)	0,00* (1)	136,96 (1)	0,00* (1)	104,69 (1)	0,00* (1)
Democracy	2,902 (0)	0,99 (0)	0,730 (0)	0,767 (0)	15,72 (0)	0,99 (0)	36,05 (0)	0,46 (0)
ΔDemocracy	-6,472 (1)	0,00* (1)	-5,670 (1)	0,00* (1)	110,4 (1)	0,00* (1)	99,1 (1)	0,00* (1)
FDI	-1,752 (0)	0,03 (0)	-1,911 (0)	0,02 (0)	57,04 (0)	0,014 (0)	51,34 (0)	0,04 (0)
Economy	-0,729 (0)	0,23 (0)	0,549 (0)	0,70 (0)	36,41 (0)	0,44 (0)	30,04 (0)	0,74 (0)
ΔEconomy	-5,786 (1)	0,00* (1)	-3,389 (1)	0,00* (1)	103,2 (1)	0,00* (1)	79,02 (1)	0,00* (1)
Military	3,394 (0)	0,99 (0)	2,030 (0)	0,97 (0)	25,53 (0)	0,90 (0)	24,42 (0)	0,92 (0)
ΔMilitary	4,996 (1)	0,00* (1)	-4,085 (1)	0,00* (1)	89,00 (1)	0,00* (1)	83,26 (1)	0,00* (1)
Unemp	-0,32 (0)	0,37 (0)	-0,101 (0)	0,45 (0)	45,56 (0)	0,13 (0)	37,52 (0)	0,39 (0)
ΔUnemp	-6,809 (1)	0,00* (1)	-5,17 (1)	0,00*(1)	115,8 (1)	0,00* (1)	94,6 (1)	0,00* (1)

Note: Critical Value is the probability value with constant term, Prob is the probability value with constant term; Critical Value \* is the critical value with constant and trend, Prob\* is the probability value with constant and trend. \* Value indicates that the variable is stationary at a 5% significance level. (0) indicates that the variable is stationary at the level, (1) indicates that the 1st difference of the variable is taken.

In the unit root test results in Table 1, all variables except FDI are found to be non-stationary at the level. It is seen that the variables, except FDI, become stationary by taking their first-degree differences.

In econometric analyses, after unit root tests, heteroskedasticity, covariance analysis, and cross-sectional dependence tests are necessary tests to increase the reliability of the results obtained in panel data analyses. While the unit root test determines whether the variables are stationary or not, the presence of heteroskedasticity indicates that the error terms of the model do not have a constant variance. This may lead to misleading estimates of the model (Wooldridge, 2010: 115). The presence of heteroskedasticity threatens the reliability of parametric estimation methods; therefore, appropriate tests and corrections should be implemented to address this issue. To determine the presence of heteroskedasticity among the variables in our model, the Breusch-Pagan/Cook-Weisberg Test, commonly used in the literature, was employed. In heteroskedasticity results, the Chi-squared test statistic is a value indicating that the variance of the error term is constant. This value typically ranges from 0 to a positive value. One value we will consider is the p-value. The p value is the probability of obtaining the test statistic obtained under the assumption that the null hypothesis is valid under a given test statistic, and it should generally be greater than 0.05 or 0.10. The Breusch-Pagan/Cook-Weisberg test result for the model is as follows.

**Table: 2**  
**Heteroskedasticity Test Result**

H0 (Null Hypothesis): The variance of the error terms is constant (i.e., no heteroskedasticity).
Chi-squared value 3.01
p-value (Prob > chi2): 0.0829

As shown in Table 2, our model does not exhibit heteroskedasticity. After the heteroskedasticity test, the covariance matrix for our model is as follows.

**Table: 3**  
**Analysis of Covariance Results**

Correlation t-Statistic Probability	GDP	Democracy	FDI	Economy	MilitaryH	Unemployment
<b>GDP</b>	1,000000					
<b>Democracy</b>	0,130799 2,530895 0,0118	1,000000				
<b>FDI</b>	0,821484 27,63578 0,0000	0,053633 1,030348 0,3035	1,000000			
<b>Economy</b>	0,183784 3,586674 0,0004	0,450382 9,676820 0,0000	0,231238 4,559486 0,0000	1,000000		
<b>MilitaryH</b>	0,896723 38,86675 0,0000	0,158426 3,078009 0,0022	0,757259 22,24229 0,0000	0,248903 4,929944 0,0000	1,000000	
<b>Unemployment</b>	-0,15553 -3,0204 0,0027	0,164287 3,194973 0,0015	-0,17892 -3,48859 0,0005	-0,17939 -3,49809 0,0005	-0,090003 -1,733593 0,0838	1,000000

Table 3 shows the correlation structure between the variables in our model. As shown in Table 3, there is a low correlation between GDP and democracy (0.1308), which is statistically significant (p-value = 0.0118). There is a robust positive correlation between GDP and unemployment rate (FDI) (0.8215), which is highly significant (p-value = 8.5e-92). There is a positive correlation between GDP and the economy (0.1838), which is also statistically significant (p-value = 0.00038). There is a very high positive correlation between GDP and military expenditure (0.8967), which is highly significant (p-value = 2.48e-132). There is a negative correlation between GDP and unemployment (-0.1555), which is significant (p-value = 0.0027). There is a positive correlation between democracy and military expenditure (0.1584), which is statistically significant (p-value = 0.00224).

There are significant and positive correlations between the economy and other variables, with democracy being particularly highly correlated (0.4504, p-value = 6.99e-20). There are negative correlations between unemployment and many different variables, but these are relatively low. As a result of these findings, GDP has a strong positive correlation with FDI and military expenditures, but a low positive correlation with democracy and economic freedoms. At the same time, GDP is negatively correlated with unemployment.

After the heteroskedasticity and covariance analyses, another test must be performed to ensure the model remains robust in panel data analysis: the test for horizontal cross-section dependence. Horizontal cross-section dependence refers to the relationship between variables, particularly when the same unit variables are related to each other across different

periods. The existence of this situation may affect the validity of the analyses. Therefore, it is essential to consider the effects of independent variables to estimate them accurately (Wooldridge, 2010: 331). At the same time, it may lead to systematic errors due to the similarity of the units (country, city, firm), which can weaken the reliability of the estimates (Baltagi, 2008: 47).

**Table: 4**  
**Horizontal Cross-Section Dependence Test Result**

Residual Cross-Section Dependence Test		
Null hypothesis: No cross-sectional dependence (correlation) in residuals		
Equation: Untitled		
Periods included: 20		
Cross-sections included: 18		
Total panel (unbalanced) observations: 352		
Note: non-zero cross-section means detected in the data		
Test employs centre-centred correlations computed from pairwise samples		
Test Statistic d.f. Prob.		
Breusch-Pagan LM	371,6500	0,0000
Pesaran Scaled LM	12,49939	0,0000
Pesaran CD	11,85737	0,0000

The probability values of the Breusch-Pagan LM, Pesaran Scaled LM and Pesaran CD test results are p:0.000. The typical result of the three tests is that horizontal cross-section dependence is found in the model. This means that there is a correlation between the countries used in the cross-sections. In other words, it can be concluded that changes in the economic situation of one country have an impact on other countries. In global economic conditions, the fact that every country (perhaps North Korea may be an exception) has relations with other countries for various reasons, such as foreign trade, capital markets, foreign direct investments, and foreign trade in terms of energy raw materials, shows that we should expect horizontal cross-sectional dependence to be normal. However, our analysis will continue with SUR models that account for horizontal cross-sectional dependence. When other Panel data analysis methods are applied, they may encounter negative situations caused by the presence of horizontal cross-section. Panel EGLS (Estimated Generalised Least Squares) is a regression model used in the analysis of data with both time and horizontal cross-sectional dimensions. This model is often used in the literature to examine the relationships observed in economic, social and financial data. Panel data refers to data in which the same units (e.g., countries, firms) are observed over time. This structure combines the characteristics of both time series and cross-sectional data (Baltagi, 2005: 3). The EGLS method generates forecasts using the generalised least squares (GLS) approach. This method provides more efficient estimates than the classical OLS method, especially when the error terms are not independent and homogeneous (Greene, 2012: 100). Panel EGLS takes into account cases where the error terms are heteroskedastic (i.e., their variances are not constant) and correlated across units. This increases the accuracy of the model (Hsiao, 2003: 13). The EGLS method estimates the variance of the error terms and constructs a weighted regression model for each observation. In this way, more accurate standard errors and estimates are obtained (Wooldridge, 2010: 123).

The general formula of a Panel EGLS model is as follows;

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$$

$Y_{it}$  Dependent Variable,  $X_{it}$  Independent Variable,  $\alpha$  Constant Term,  $\beta$  Coefficients,  $\varepsilon_{it}$  error term (Wooldridge, 2010: 195).

The Panel EGLS formula we developed by our model is;

$$EG_{it} = \beta + \beta_{01} \text{ Military} + \beta_{i2} \text{ Democracy} + \beta_{i3} \text{ Economy} + \beta \text{ FDI}_{it4it5} + \beta \text{ Unemp}_{it} + \varepsilon_{it}$$

Panel EGLS results are as follows;

**Table: 5**  
**Panel EGLS Results**

Variable Coefficient Std. Error t-Statistic Prob.					
C		1.16E+11	4.33E+09	26.78558	0.0000
FEconomy		-1.74E+09	1.32E+09	-1.324243	0.1863
FDYY		2.36E+12	3.49E+10	12.45861	0.0000
FDemocracy	-7.04E+11	4181431	2.26E+11	-3.119061	0.0020
FAskeriH		-9.73E+10	768653.6	5.439942	0.0000
Unemployment			3.14E+09	-30.94873	0.0000
Weighted Statistics					
R-squared		0.768410	Mean dependent var		0.245040
Adjusted R-squared		0.765741	S.D. dependent var		2.804760
S.E. of regression		0.957118	Sum squared resid		317.8780
F-statistic		287.8348	Durbin-Watson stat		1.889425
Prob(F-statistic)		0.000000			
Unweighted Statistics					
R-squared		0.079651	Mean dependent var		1.32E+11
Sum squared resid		4.18E+25	Durbin-Watson stat		1.085477

As a result of the analysis, the c coefficient is relatively high and very significant. - R-squared: 0.7684 (indicating that the model explains approximately 76.84% of the change in the dependent variable). Adjusted R-squared: 0.7657 (indicating the overall fit of the model). F-statistic: 287.83 (tests the overall significance of the model; the p-value is very small, so it can be said that the model is significant). Durbin-Watson Statistic: 1.8894 (tests for autocorrelation; values close to 2 indicate no autocorrelation). This indicates that it contributes to the average value of the dependent variable, without considering the effects of other variables in the model. The coefficient of the economic freedom variable is negative but not significant ( $p > 0.05$ ). That is, this variable does not seem to have a statistically significant effect on FGDP. The coefficient of FDI is positive and significant. This suggests that FDI has a positive and statistically significant impact on GDP. The coefficient of the democracy variable is negative and statistically significant ( $p < 0.05$ ). This shows that democracy has a negative effect on GDP. The coefficient of military expenditures is positive and highly significant ( $p < 0.01$ ). This indicates that military expenditures have a positive impact on GDP. The coefficient of the unemployment variable has a considerable negative value and is highly significant ( $p < 0.01$ ). This suggests that an increase in the unemployment rate has a significant negative impact on GDP.

## 5. Conclusion

Economic growth has been identified as a critical goal to increase the competitiveness of states both nationally and internationally and to achieve sustainable welfare. However, to achieve and sustain economic growth, not only political structures but also macroeconomic policies, institutional capacities, and factors of production need to be considered.

The analyses revealed that economic freedom has no significant effect on growth. This situation demonstrates that economic freedom alone does not guarantee economic growth; instead, countries should implement policies that enhance their production capacities. To achieve economic growth, increasing production-based investments and the efficient use of resources are crucial. Although the concept of economic freedom supports market dynamism, it appears that growth alone is not possible without structural reforms and industrial policies. This result aligns with the findings of researchers such as Stiglitz (2002), Rodrik (2011), and Chang (2008).

It is concluded that the effect of the democracy variable on economic growth is negative and significant. This suggests that democratic systems may sometimes lead to delays and inefficiencies in economic decision-making processes, rather than supporting economic growth. In particular, political stability and administrative capacity must be enhanced to implement long-term industrial and development policies. This result aligns with studies by Lipset (1959), Olson (1982), and Barro (1996). However, for the concept of democracy to increase economic welfare, public administration should be made more efficient, decision-making mechanisms should be accelerated, and policy uncertainties should be minimised.

Military expenditures are found to have a positive and significant effect on economic growth. This shows that military spending contributes to economic growth not only for the defence sector but also for technology transfer, infrastructure development and industrial growth. However, careful budget management is necessary to ensure that these expenditures are sustainable and do not result in excessive borrowing.

FDI is found to have a positive and significant impact on economic growth. However, for FDI to contribute to long-term economic development, these investments should not only be viewed as capital flows, but also their technology transfer and employment-creating effects in local economies should be maximised. To attract FDI, countries should focus not only on investment incentive policies but also on robust institutional structures and legal frameworks that support investors' long-term plans. These results align with studies by Dunning and Lundan (2008) and Carkovic and Levine (2002).

The unemployment rate is found to have a negative and significant effect on economic growth. To reduce unemployment, countries should make their labour markets more flexible, expand vocational training programs, and implement policies to create employment opportunities in both the industry and service sectors. Developing incentive



mechanisms that increase the participation of the young population in the labour force will be a factor supporting long-term economic growth. Krugman (2008) reached similar conclusions.

In conclusion, for economic growth, countries need to develop policies that go beyond democratic governance, economic freedoms and a market economy. To increase competitiveness in international trade and ensure sustainable development, it is crucial to enhance investments in physical production, strengthen industrial policies, and implement measures that promote domestic production and industrial growth. Especially for developing countries, it is inevitable to adopt industry- and technology-oriented development models to achieve sustainable economic growth. Otherwise, the assumption that only democracy and economic freedoms will directly contribute to growth will remain an illusion that does not correspond to economic realities.

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