

# A Comparative Study of Institutional Quality and Economic Performance of Selected Post-Transition Countries from Central and Eastern Europe

## Abstract

This study compares the institutional and economic indicators of selected post-transition countries in Central and Eastern Europe following the transition process. These countries have experienced institutional and economic transformations over the past few decades. They have achieved varying degrees of success in shifting from centrally planned to market economies and adopting democratic institutions. Despite the varying success, each country has significantly improved their economic and democratic institutions. This study aims to compare the progress of the post-transition countries and identify any commonalities or differences in their institutional and economic indicators. Additionally, it provides insight into the effectiveness of the transition process and its effects on the economic performance of the countries in question. It also identifies the key factors that have enabled several countries to succeed more than others in their transition processes. We employ IVGMM to assess the impact of institutional and transitional indicators on economic growth in selected post-transition European countries. Our sample contains data for 15 post-transition countries from Central and Eastern Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, North Macedonia, Poland, Romania, Serbia, the Slovak Republic, and Slovenia) from 2011-2021. The results indicate that in most countries, there is a positive correlation between institutional and transitional indicators and economic growth, suggesting that the countries in the sample have benefited from their transition to market economies. We conclude that the transition to market economies has positively impacted economic growth in the region.

**Keywords:** Transition economies, Economic growth, Democratic institutions

## Orta ve Doğu Avrupa'dan Bazı Seçilmiş Geçiş Süreci Sonrası Ülkelerde Kurumsal Kalite ve Ekonomik Verimlilik Arasında Karşılaştırmalı bir Çalışma

### Özet

Bu çalışma, Orta ve Doğu Avrupa'dan bazı seçilmiş geçiş süreci sonrası ülkelere ait kurumsal ve ekonomik göstergeleri karşılaştırmaktadır. Bu ülkeler geçen birkaç on yıldan bu yana kurumsal ve ekonomik dönüşümler tecrübe etmişlerdir. Merkezi planlama rejiminden piyasa ekonomisine geçme ve demokratik kurumları benimseme yönünde çeşitli derecelerde başarı sağlamışlardır. Başarı oranlarındaki değişen derecelere rağmen, ele alınan her bir ülke ekonomik ve demokratik kurumlarını önemli ölçüde iyileştirmişlerdir. Bu çalışma, bu seçilmiş geçiş süreci sonrası ülkelerdeki ilerlemeleri karşılaştırmayı ve bu ülkelere ait kurumsal ve ekonomik göstergelerdeki benzerlik ve farkları tespit etmeyi hedeflemektedir. Buna ilaveten bu çalışma, geçiş sürecinin etkinliği ve bu sürecin bu ülkelerdeki ekonomik verimliliğe etkileri hakkında bir görüş sağlamaktadır. Ayrıca bu çalışma, geçiş sürecinde birtakım ülkelerin diğerlerine göre daha başarılı olmalarındaki temel etkenleri belirlemektedir. Kurumsal ve geçişsel göstergelerin bu seçilmiş geçiş süreci sonrası Avrupa ülkelerinin ekonomik büyümelerine olan etkilerini değerlendirmek üzere IVGMM metodunu kullandık. Veri setimiz, Orta ve Doğu Avrupa'dan bazı seçilmiş geçiş süreci sonrası 15 adet ülkeyi (Arnavutluk, Bosna-Hersek, Bulgaristan, Hırvatistan, Çek Cumhuriyeti, Estonya, Macaristan, Latviya, Litvanya, Kuzey Makedonya, Polonya, Romanya, Sırbistan, Slovakya Cumhuriyeti, ve Slovenya) ve 2011-2021 dönemini kapsamaktadır. Bulgular göstermiştir ki, birçok ülkede kurumsal ve geçişsel göstergeler ile ekonomik büyüme arasında pozitif bir korelasyon vardır, ve bu durum incelediğimiz bu ülkelerin piyasa ekonomisine geçmekten fayda elde ettiklerini ima etmektedir. Sonuç olarak diyebiliriz ki, piyasa ekonomisine geçiş bu bölgedeki ekonomik büyümeyi olumlu yönde etkilemiştir.

**Anahtar kelimeler:** Geçiş ekonomileri, Ekonomik büyüme, Demokratik kurumlar

Gunter Merdzan (Ss. Cyril and Methodius University, Skopje, Macedonia)

**OrcID:** 0000-0002-1894-9623

**E-mail:** gjunter.merdzan@eccf.ukim.edu.mk

Prof. Dr. Trajko Slaveski (Ss. Cyril and Methodius University, Skopje, Macedonia)

**OrcID:** 0000-0003-0268-4760

**E-mail:** slaveski@eccf.ukim.edu.mk

## 1 Introduction

The economic performance of post-transition European countries has become a topic of great interest and concern. These countries underwent significant economic and political changes after the fall of communism, and some have successfully transitioned to market-based economies. In contrast, others have struggled to achieve sustained economic growth. The living standards of citizens in these countries have become vastly different, with some experiencing significant economic growth while others have remained stagnant or even declined. It is important to understand the factors that lead to successful economic transitions. Factors such as investment in infrastructure, access to capital, macroeconomic stability, and quality of institutions have been identified as key elements of a successful economic transition.

The primary interest of this paper and one of the essential factors for the economic growth of these countries is the quality of institutions, which includes a country's legal framework, regulatory environment, property rights protections, and governance structures. These institutional factors are crucial for economic performance, as they determine the ease of doing business, attract foreign direct investment, foster innovation, and ensure sustainable development. The selected post-transition European countries under examination include Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, North Macedonia, Poland, Romania, Serbia, the Slovak Republic, and Slovenia. These countries present diverse institutional environments, economic systems, and historical experiences, making them ideal candidates for comparative analysis.

The process of economic growth has been explained by three dominant theories: the neo-Keynesian Harrod-Domar model, the neoclassical Solow growth model, and the new theories developed by Paul (Romer, 1990, 1986) and Robert Lucas. These theories and models suggest that factors like savings and investment, total factor productivity, technological knowledge, and innovation contribute to differences in productivity and explain differences in development between countries.

Another hypothesis, the geography hypothesis, suggests that geography, culture, and beliefs play a significant role in determining the degree of development of economies and societies. A third hypothesis, which has been neglected for a long time, is the influence of institutions on economic growth. The emergence of New Institutional Economics and Douglass (North, 1990, 1989, 1987) highlights institutions' role in economic growth. According to North, institutions are "rules of the game in a society that govern or regulate interpersonal relationships". The institutions determine economic incentives and the distribution of resources in a society. North argues that the quality of institutions is the key factor in economic growth and development. When well-designed, institutions help reduce uncertainty and increase incentives for investment and economic activities. This increases economic growth and development.

According to Dani (Rodrik, 2007, 2000), economic and political institutions exist. Economic institutions refer to property rights, regulatory institutions, macroeconomic stabilization institutions, social security institutions, and conflict management institutions. Political institutions include democratic regimes and autocratic regimes. Democratic regimes are believed to provide more stability to economies and resist external shocks better than autocratic regimes. However, this paper doesn't divide the institutions into economic and political and explores them under one roof.

In this regard, this paper uses the Instrumental Variables Generalised Method of Moments (IVGMM) to analyse the impact of institutional and transitional indicators on economic growth in selected post-transition European countries from 2011-2021. The institutions and transitional indicators include several indexes that measure economic freedoms, corruption perception, and governance quality, as well as indexes that measure the success of transitioning from a central-planned economy to a fully market economy. Our study demonstrates that countries that have focused on improving their institutions, governance quality, and transition process have had better economic performance over the past few years and potential to have higher growth in the future. We have identified and analyzed the key factors that affect economic growth and found that these institutional and transitional indicators are the most important.

The paper is structured as follows: Section 2 reviews the relevant empirical literature. Section 3 explains the data used for the empirical analysis and the methodology employed. Section 4 presents the results of the analysis and discusses them. Section 5 provides summary and concluding remarks. The Annex provides additional tables and figures from the empirical analysis.

## 2 Empirical Literature Review

In addition to the theoretical background, there is a significant amount of empirical evidence supporting the relevance of this issue. This evidence includes studies conducted in different contexts that yielded consistent or varied results. However, most evidence indicates that institutions significantly improve economic growth in developed and developing countries. This provides a strong basis for the need to address the issue in both research and practice.

Some research studies examine the direct impact of the quality of institutions on economic growth. The paper by (Afonso, 2020), using a growth accounting framework to study the impact of institutions on economic growth in OECD countries, finds that institutions contributed more than 0.3 percentage points to the estimated average annual growth rate of real output in 28 OECD countries between 2011 and 2017. (Valeriani and Peluso, 2011), investigates the impact of institutional quality on economic growth over sixty years among countries at different stages of development. They use three institutional indicators and find that institutional quality positively impacts economic growth. The results of the pooled regression model and the fixed effects model both support the hypothesis that institutional quality is a key factor in economic growth and development. Additionally, they suggest that countries at different stages of development can benefit from improving their institutional quality. Also, the paper by (Gwartney et al., 2006) examines the impact of institutions on investment and growth. It finds a close relationship between the quality of institutions, investment, and the resulting impact of investment on growth. Models that include various indicators of institutional quality along with inputs such as physical and human capital will generally underestimate the impact of institutional quality on growth. Higher institutional quality causes more investment rather than the other way around.

Other empirical studies investigate how the quality of institutions impacts economic growth through other growth factors. Some studies indicate that institutions influence economic growth through infrastructure, investments, remittances, and other factors. The study by Zergawu et al. \cite{zergawu\_joint\_2020} examines the joint impact of infrastructure capital and institutional quality on economic growth using panel data for 99 countries from 1980-2015. They evaluate a simple growth model that includes infrastructure, institutional quality, and interactions between them. By applying the GMM method, the authors show that infrastructure capital and institutional quality positively and significantly affect economic growth. Investing in infrastructure requires improving the quality of institutions to maximise returns.

According to (Catrinescu et al., 2009), remittances are more likely to contribute to long-term growth in countries with better policies and institutions. The authors of (Zghidi et al., 2018) demonstrate that remittances have a positive relationship with economic growth across four North African countries from 1980-2012, using GMM from 1980-2012. An analysis of 83 countries for 1984-2003 by Busse and Hefeker (Busse and Hefeker, 2007) found that stability of governments, internal and external conflicts, corruption and ethnic tensions, law and order, democracy, and bureaucracy quality are significant determinants of foreign direct investment inflow.

In the literature, there are also empirical studies that have examined the relationship between institutions and economic growth in the case of transition countries. The paper by (Moers, 1999), uses growth empirics to study the relationship between institutions and growth in transition countries. It finds that institutions are significant for growth, particularly foreign direct investment, which is in turn important for the former. (Buterin et al., 2017), use panel analysis to study the impact of institutional reforms on economic growth in transition countries and Croatia. The Arellano-Bond dynamic panel analysis used in this paper showed a significant positive impact of institutional reforms on the economic growth of transition countries and Croatia. These results create preconditions that are essential for the future growth rate of the Croatian economy. The paper by (Redek and Sušjan, 2005), looks at the impact of institutions on economic growth in transition economies. It finds that institutions have a significant impact on economic growth in transition economies. The quality of institutions is a key factor in determining the success of transition economies. The effectiveness of institutions is dependent on the political and economic environment in which they operate.

The study by (Hamadi et al., 2009), discusses the relevance of institutional factors to economic growth. It uses a sample of 71 countries and finds that the analysis of economic performance should not only consider macroeconomic variables, but also governance systems. The New Institutional Economics emphasizes the importance of institutional reforms in the economic framework. Empirical research has shown that certain institutional factors are relevant to the issue of economic growth.

Empirical literature shows that institutions are critical drivers of economic growth in both developed and developing countries. Studies in most cases find a positive relationship between institutional quality and economic development, with higher quality institutions leading to improved growth. Institutions facilitate infrastructure development, attract foreign direct investment, leverage remittances for long-term growth and many more. Institutional reforms are crucial in promoting sustainable and inclusive economic growth.

### **3 Data and Methodology**

#### **3.1 Data**

In this paper, to assess the institutions' impact on economic growth and to establish whether the quality of institutions and the success of the transition process contribute to the achieved economic performance of the post-transition European countries, we use data for GDP, institutional indicators, and other economic and socio-economic indicators for each country. The paper covers 15 post-transition European countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, North Macedonia,

Poland, Romania, Serbia, the Slovak Republic, and Slovenia) from 2011-2021. Descriptive statistics about the source data used in our sample are presented in Table 1.

This paper's empirical analysis uses institutional indicators from different sources as variables. The institutional indicators include The Heritage Foundation's Overall Index of Economic Freedom (IEF\_HF), the World Bank's World Governance Indicators (WGI) and Transparency International's Corruption Perception Index (CPI\_TI).

The Heritage Foundation's Overall Index of Economic Freedom measures economic freedom based on 12 quantitative and qualitative factors, grouped into four broad economic freedom categories or pillars. Each of the twelve economic freedoms within these categories is graded on a scale of 0 to 100. A country's overall score is derived from averaging these twelve economic freedoms.

The World Bank's World Governance indicators measure governance quality through six dimensions. These six dimensions are Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The score of each indicator ranges from -2.5 to +2.5. A higher score indicates better governance quality. Higher scores are associated with better economic growth, less poverty, and better societal well-being. We used the average of the six dimensions to construct a single governance quality index.

Transparency International's Corruption Perception Index is a popular tool to measure corruption levels across countries. It scores countries from 0 (highly corrupt) to 100 (very clean). Countries with higher scores are perceived as having lower levels of corruption. We have been challenged to adjust the 2011 results (until 2011, the indicator score ranged from 0-10) with these since 2011.

We used the Transitional Indicators (TI) of the EBRD to measure a country's transitional success. The Transitional Indicators measure countries' progress in transitioning from planned to market economies. The indicators measure corruption, economic freedom, and the degree of participation in the global economy. The results are used to assess countries' progress in their transition to a market economy. The methodology changed in 2016; we have different indicators and different ranges of evaluating this process until 2014 (ranging from 1 to 4+, where 1 indicates little or no change from a rigid centrally planned economy and 4+ represents the standards of an industrialised market economy) and since 2016 (ranging from 1 to 10, where 10 represents a synthetic frontier corresponding to the standards of a sustainable market economy). We have combined them into one scale to increase accuracy and provide a more comprehensive evaluation.

GDP per capita is used as a proxy to measure economic growth. In addition to the mentioned additionally, we use exogenous variables such as World Intellectual Property Organization's Total Patent Applications (PA\_WIPO), Foreign Direct Investment as % of GDP (FDI), Domestic Credit to the Private Sector by Banks as % of GDP (Credit), Trade as % of GDP (Trade), Gross Fixed Capital Formation as % of GDP (GFCF) and Inflation measured by consumer prices as annual % (Inflation).

Country/Indicator	GDP	IEF_HF	WGI	CPI_TI	TI
<b>Albania</b>	4141.80 (378.62)	65.48 (1.00)	-0.08 (0.10)	34.77 (2.68)	5.24 (0.73)
<b>Bosnia and Herzegovina</b>	4847.40 (595.55)	59.74 (2.15)		37.65 (2.99)	5.31 (1.04)
<b>Bulgaria</b>	7408.06 (698.78)	67.16 (2.11)	0.15 (0.06)	41.30 (2.85)	5.93 (1.30)
<b>Croatia</b>	12698.05 (1185.41)	61.08 (1.23)	0.41 (0.03)	47.30 (2.68)	6.26 (1.60)
<b>Czech Republic</b>	18287.08 (1421.11)	72.63 (1.61)	0.95 (0.04)	52.97 (4.56)	7.18 (0.99)
<b>Estonia</b>	18328.84 (1932.46)	76.73 (1.75)	1.19 (0.08)	70.14 (3.87)	6.73 (2.02)
<b>Hungary</b>	13249.40 (1453.46)	66.54 (0.70)	0.55 (0.09)	48.15 (4.53)	6.28 (1.60)
<b>Latvia</b>	14250.81 (1678.18)	69.94 (3.16)	0.78 (0.08)	54.45 (5.01)	6.23 (1.56)
<b>Lithuania</b>	15067.48 (2050.46)	74.25 (2.00)	0.90 (0.09)	57.77 (3.95)	6.25 (1.58)
<b>North Macedonia</b>	4898.65 (341.61)	68.83 (1.69)	-0.06 (0.08)	39.22 (3.76)	5.39 (0.85)
<b>Poland</b>	13230.72 (1603.34)	67.51 (1.96)	0.73 (0.13)	58.98 (2.64)	6.45 (1.76)
<b>Romania</b>	9642.40 (1311.32)	67.16 (2.21)	0.21 (0.06)	44.37 (3.30)	6.10 (1.44)
<b>Serbia</b>	5957.73 (590.48)	61.33 (3.25)	-0.07 (0.07)	39.28 (2.51)	5.42 (1.13)
<b>Slovak Republic</b>	16633.69 (1259.89)	66.77 (1.35)	0.68 (0.04)	48.70 (3.46)	6.46 (1.77)
<b>Slovenia</b>	21959.81 (1689.10)	63.49 (3.00)	0.92 (0.03)	59.43 (1.52)	6.39 (1.71)

*Table 1. Descriptive statistics of the variables of interest. Source: Authors' calculations.*

From descriptive statistics and exploratory data analysis, we determined the skewness and outliers in the dataset. Due to this, we applied logarithm transformations to normalise the data and reduce the effect of outliers. The transformations enabled us to understand the data better and allowed us to use more advanced statistical methods for further analysis. Missing data is filled in using imputation techniques. All these steps help in improving the accuracy of the results. As a final step, the data are ready for further analysis. It is important to remember that the variables in the following analysis have been transformed into logarithms, although we do not constantly mention this fact.

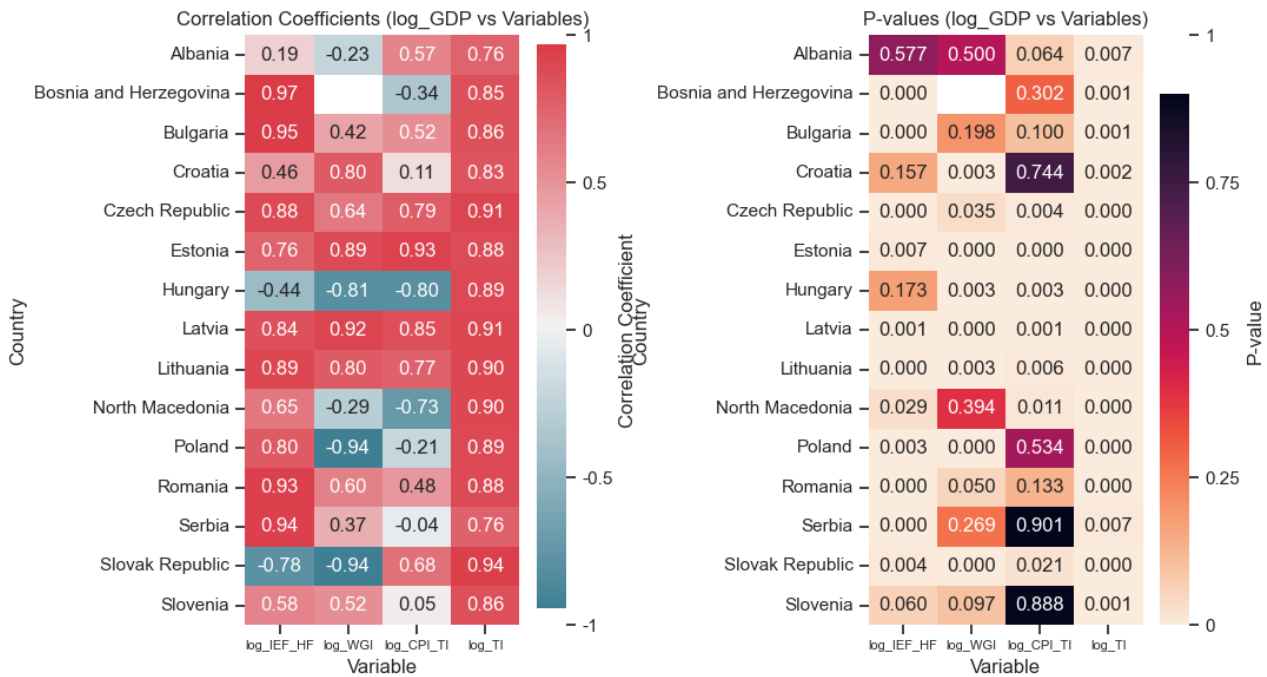
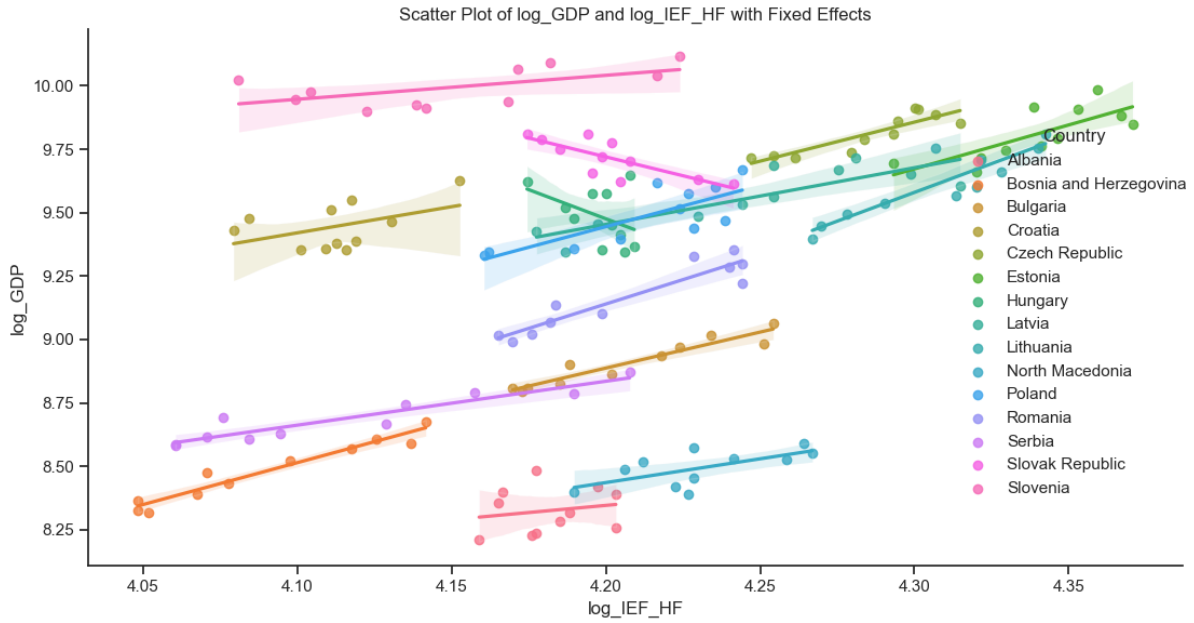


Figure 1. Correlation coefficients (on the left) and p-values (on the right). Source: Authors' calculations.

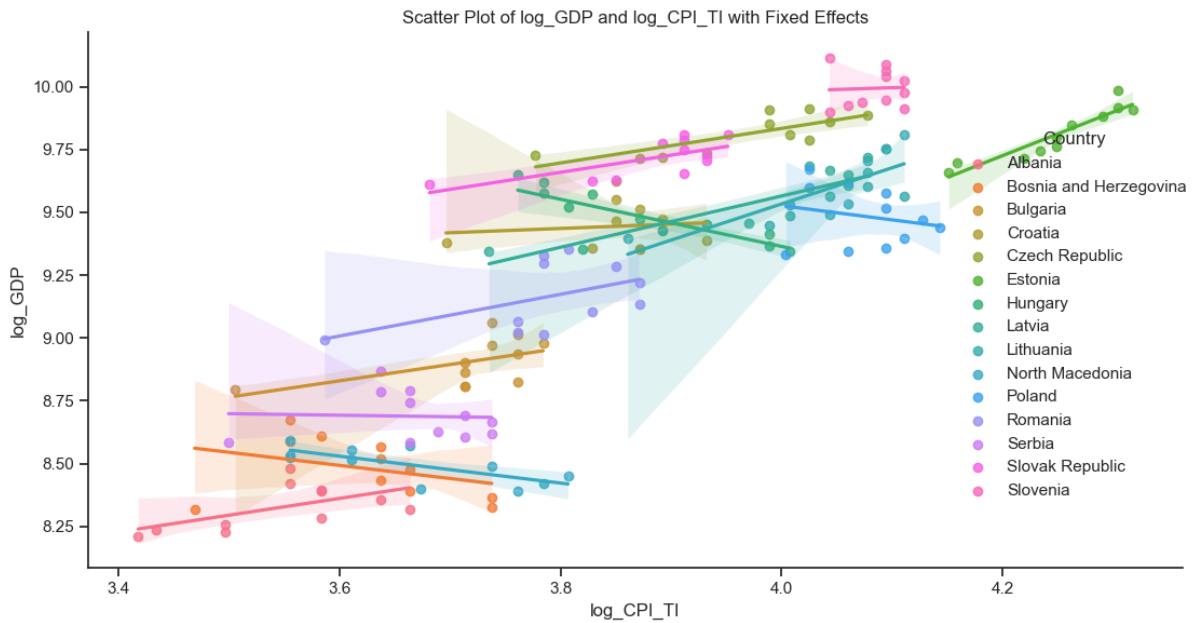
Further, we ran a correlation analysis between the variables to see which variables were correlated and which weren't. This helps us identify relationships between the variables and determine which ones are important. Correlation coefficients and their p-values among GDPs per capita and our variables of interest are presented in Figure 1. The first illustration presents the correlation coefficients. The darker the colour, the higher the correlation between the variables. The second illustration shows the p-values for each variable. The lighter the colour, the lower the p-value, indicating a significant relationship between the variables.

From Figure 1, we can conclude that no consistent pattern is observed across all countries. Countries exhibit varying degrees of correlation between GDPs per capita and other institutional variables. When considering the correlation between GDP and the Index of Economic Freedom, we can see that most countries have positive coefficients, most of which are statistically significant. This indicates a positive relationship between GDP and economic freedom. On the other hand, countries like Croatia, Hungary, the Slovak Republic, and Slovenia have negative or insignificant coefficients, implying a weaker or no relationship between the mentioned variables. The significance lies in that higher freedom is generally associated with increased economic growth and vice-versa. Figure 2 illustrates the relationship between GDPs per capita and the Index of Economic Freedom (fixed-effect regression lines). Although there are exceptions, economic growth is generally boosted by the Index of Economic Freedom.

Considering the other institutional variables, it is evident that countries like Croatia, the Czech Republic, Estonia, Latvia, Lithuania, Romania, Serbia, and Slovenia have positive correlations between GDPs per capita and World Governance indicators, suggesting that higher GDP is associated with a better governance system. It is only Bulgaria that has a positive but insignificant coefficient. However, Hungary, North Macedonia, Poland, and the Slovak Republic have negative coefficients, indicating a weaker or inverse relationship. It promotes stability, the rule of law, and effective institutions essential for economic development. Regarding the relationship between GDPs per capita and the Corruption Perception Index, Albania, the Czech Republic, Estonia, Latvia, Lithuania, Romania, the Slovak Republic, and Slovenia have positive correlation coefficients. This indicates that higher perceptions of societal corruption are associated with greater GDP per capita. Despite the positive coefficients of Bulgaria, Croatia, Romania, and Slovenia, the relationship is statistically insignificant. On the other hand, Bosnia and Herzegovina, Hungary, North Macedonia, Poland, and Serbia have negative or insignificant coefficients, suggesting a weaker or no relationship. Increasing perceptions of corruption promote transparency, attract investments, and foster trust in institutions, which is crucial to economic development (Figure 3).



**Figure 2.** Scatterplot of the relationship between the GDPs per capita and Index of Economic Freedom.  
**Source.** Authors' calculations.



**Figure 3.** Scatterplot of the relationship between the GDPs per capita and the Corruption Perception Index.  
**Source.** Authors' calculations.

We can conclude that all countries have positive and statistically significant correlation coefficients regarding the correlation between GDPs per capita and Transition Indicators. This indicates that countries' progress to a sustainable market economy is closely related to economic development. This suggests that economic growth and sustainable development are not mutually exclusive. They are closely related and can be seen as a virtuous circle, whereby the progress of one lead to the progress of the other. Developing countries tend to have lower GDPs per capita and lag in transition. However, with the right policy approaches, even the poorest countries can progress significantly towards a sustainable market economy. The scatterplot below shows the positive relationship between GDPs per capita and Transition Indicators using fixed-effect regression lines (the Annex includes scatterplots showing country-by-country correlations with regression lines).

**3.2 Methodology**

This paper employs panel data analysis techniques to assess the institutional impact on economic growth in selected post-transition European countries. We aim to calculate the impact of institutions on a country-by-country

basis and to see which countries the transition process is more successful in. The panel dataset contains annual observations from 15 post-transition European countries from 2011-2021. The panel data used in this study is structured with a multi-index format, comprising the cross-sectional unit of countries and the time dimension of years. The multi-index facilitates the organisation of the panel dataset, allowing for country-specific and time-specific examination of the variables.

As a dependent variable, we consider GDP growth. The proxy used to measure that variable is GDP per capita. The Index of Economic Freedom is the main endogenous variable, the World Governance Indicators, the Corruption Perception Index and Transition Indicators are used for control variables. Additionally, our model uses several economic and socio-economic variables as exogenous variables (Total Patent Applications, Foreign Direct Investment, Domestic Credit to the Private Sector by Banks, Trade, Gross Fixed Capital Formation and Inflation).

Our model can be represented as follows:

$$\hat{y}_{it} = \alpha + \beta \hat{x}_{it} + \gamma \hat{z}_{it} + \epsilon_{it} \quad (1)$$

where  $\hat{y}_{it}$ , is the predicted value of the dependent variable for cross-section  $i$  and period  $t$ ;  $\hat{x}_{it}$ , is the vector of the predicted value of the exogenous variables for cross-section  $i$  and period  $t$ ;  $\hat{z}_{it}$ , is the predicted value of the instrumental variables for cross-section  $i$  and period  $t$ ;  $\alpha$  and  $\beta$  are the intercept and coefficient vectors to be estimated for the exogenous variables, respectively;  $\gamma$  is the coefficient vector to be estimated for the instrumental variables;  $\epsilon_{it}$  is the error term.

Endogeneity issues could be problematic in our case. To address this, we have conducted an Instrumental Variables estimation using an Instrumental Variables Generalised Method of Moments (IVGMM). IVGMM allows us to address endogeneity by using instrumental variables correlated with the independent variable of interest but not with the error term. This helps us correct endogeneity issues and get more accurate results. Instrumental variables used in the analysis include the lagged value of the logarithm-transformed Index of Economic Freedom ( $\log\_log\_IEF\_HF\_1$ ). This lagged instrumental variable helps to instrument the endogenous variable and establish a causal relationship between the independent variables and GDP growth.

The concrete panel regression model is specified as follows:

$$\begin{aligned} \log\_GDP_{it} = & \alpha + \beta_1 \log\_IEF\_HF_{it} + \beta_2 \log\_WGI_{it} + \beta_3 \log\_CPI\_TI_{it} + \beta_4 \log\_TI_{it} \\ & + \beta_5 \log\_PA\_WIPO_{it} + \beta_6 \log\_FDI_{it} + \beta_7 \log\_Credit_{it} + \beta_8 \log\_Trade_{it} \\ & + \beta_9 \log\_GFCF_{it} + \beta_{10} \log\_Inflation_{it} + \epsilon_{it} \end{aligned} \quad (2)$$

The model includes the logarithm of the Index of Economic Freedom ( $\log\_IEF\_HF$ ) as the endogenous variable of interest and the logarithms of other economic factors as the exogenous independent variables as Total Patent Applications ( $\log\_PA\_WIPO$ ), logarithm of Foreign Direct Investment ( $\log\_FDI$ ), logarithm of Domestic Credit to the Private Sector by Banks ( $\log\_Credit$ ), logarithm of Trade ( $\log\_Trade$ ), logarithm of Gross Fixed Capital Formation ( $\log\_GFCF$ ) and logarithm of Inflation ( $\log\_Inflation$ ). Control variables such as the logarithm of Worldwide Governance Indicators ( $\log\_WGI$ ), the logarithm of the Corruption Perception Index ( $\log\_CPI\_TI$ ), and the logarithm of Transitional Indicators ( $\log\_TI$ ).

## 4 Results and Discussion

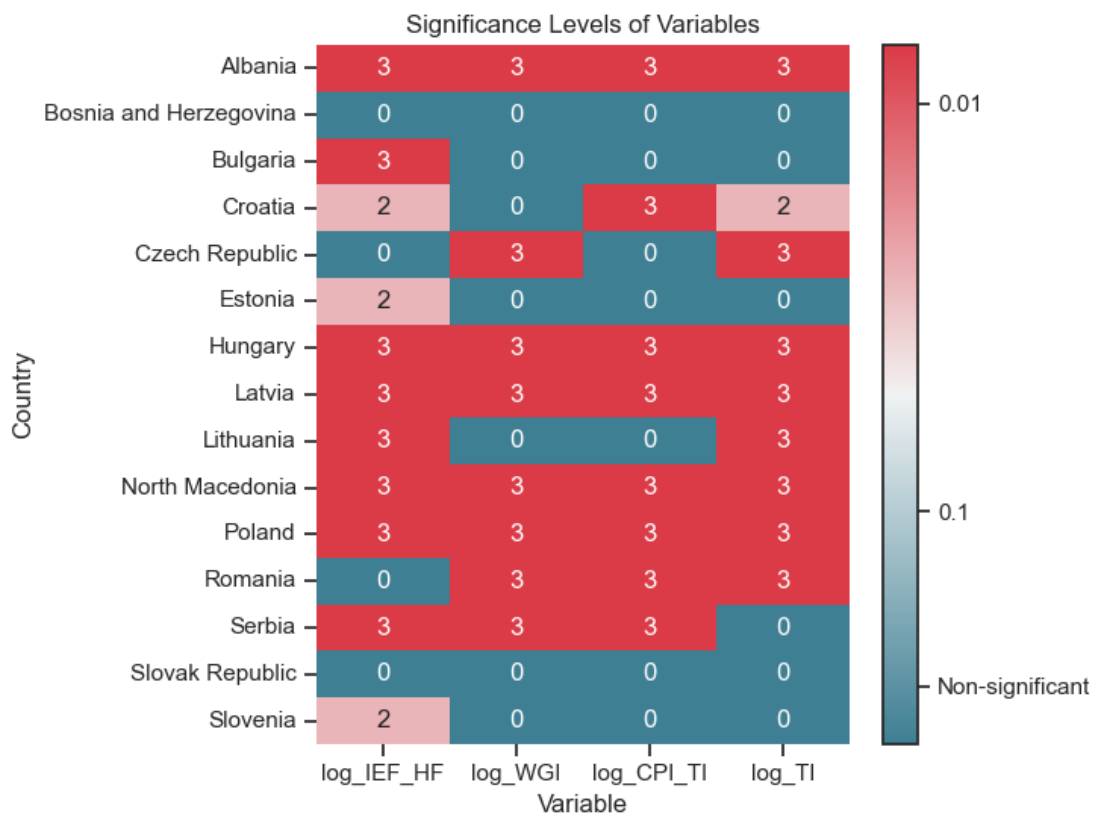
This section presents the IVGMM regression results only for our variables of interest country-by-country level. Several exogenous economic and socio-economic variables are included in the regression model to obtain more accurate and valid results, but they are not shown in the table below. The full regression table is provided in Annex (Table A2). The variables in the model are logarithm transformed, so we have a log-log regression model, and the coefficients can be interpreted as elasticity. This means that a 1% increase in the independent variable is associated with a percentage change in the dependent variable when controlling for other variables. Thus, the IVGMM regression results are useful for understanding the relationship between our variables of interest and country-level outcomes.

In this regard, the coefficients for the Index of Economic Freedom indicate the impact of the Index on economic growth across countries. In several countries, such as Albania, Bulgaria, Croatia, Estonia, Latvia, Lithuania, North Macedonia, Poland, Serbia, and Slovenia, the coefficients for the Index of Economic Freedom are positive and statistically significant. This suggests that increasing the Index of Economic Freedom increases economic growth when controlling for other factors. The magnitude of the coefficients varies across countries. As a result, when controlling for other factors, a 1% increase in the Index of Economic Freedom would averagely increase the economic growth by 0.98% (in Poland) to 2.72% (in Estonia). This suggests that countries with more economic freedom have higher economic growth rates than those with less economic freedom. It also suggests that different countries may have different sensitivity levels to the Index of Economic Freedom. In other words, the same increase in economic freedom may have a larger impact on economic growth in one country than in another.

Country/Variable	log IEF HF	log WGI	log CPI TI	log TI
Albania	1.0712***	-0.0344***	-0.8500***	0.8085***
Bosnia and Herzegovina	9.6576		-0.0679	-0.9232
Bulgaria	2.3327***	0.0394	-0.0352	0.0529
Croatia	2.1924**	-0.0144	-0.5050***	0.4512**
Czech Republic	-0.6623	0.6516***	-0.0302	0.6072***
Estonia	2.7184**	-0.3261	0.2101	-0.0454
Hungary	-1.6560***	0.2869***	1.0609***	0.7056***
Latvia	1.6684***	2.0116***	-1.0071***	0.2560***
Lithuania	1.2281***	-0.0920	0.1064	0.2690***
North Macedonia	1.5705***	-0.0432***	1.5991***	1.3232***
Poland	0.9843***	0.4706***	-2.0319***	0.3061***
Romania	-0.5184	-0.2653***	-0.9666***	0.6058***
Serbia	1.0582***	-0.0063***	0.4526***	-0.0234
Slovak Republic	1.5332	-0.9835	0.2151	-0.0154
Slovenia	1.3149**	-0.1426	-0.0138	0.0614

**Table 2.** IVGMM regression results for variables of interest. **Source:** Authors' calculations.

Hungary is the only country with a negative and statistically significant result indicates that an increase in the Index of Economic Freedom decreases the economic growth in that country. The Czech Republic, Romania, and the Slovak Republic have statistically insignificant results. There is a large positive coefficient for Bosnia and Herzegovina, but it is not statistically significant because of data issues and variables that have been omitted from this country. This is likely because these countries have heavily regulated economies, with more government intervention than is seen in countries with higher economic freedom scores. As such, the results from these countries may indicate that too much government intervention can be detrimental to economic growth.



**Figure 4.** Significance levels of the variables (3 indicates the significance level in 0.01; 2 in 0.05; 1 in 0.1, and 0 indicates that the variable has no statistically significant impact). **Source.** Authors' calculations.

The coefficients for World Governance Indicators do not show a consistent pattern across the countries. For several countries, the coefficients are not statistically significant (Bulgaria, Croatia, Estonia, Lithuania, the Slovak Republic, and Slovenia). This suggests that the degree of global governance has not significantly impacted the economic growth in these countries. Additionally, the lack of a clear pattern indicates that other variables may be



more important in determining economic growth in these countries. In the Czech Republic, Hungary, Latvia, and Poland, Worldwide Governance Indicators positively and significantly affect economic growth when controlling for other factors. This suggests that governance policies, such as the rule of law, transparency, and accountability, can increase economic growth.

On the other hand, Albania, North Macedonia, Romania, and Serbia have a negative and statistically significant impact on Worldwide Governance Indicators on economic growth. These countries have a history of weak institutions that hampered their economic growth. The lack of good governance has been identified as a major factor preventing these countries from achieving their growth potential. As a result, improving the quality of governance is essential for these countries to promote economic growth. Bosnia and Herzegovina have no data on this indicator. The coefficient is not calculated. It is important to note that the magnitude of World Governance Indicators coefficients is relatively small compared to other indicators. Only Latvia has a greater coefficient of 2.01, indicating a 1% increase in the Governance Indicators in Latvia, which averagely increase GDP growth by 2% when controlling for other factors.

Regarding the relationship between the Corruption Perception Index and economic growth, the coefficients are positive and statistically significant in several countries, including Hungary, North Macedonia, and Serbia. This implies that higher perceptions of society about corruption in their governments significantly increase economic growth when controlling for other factors. On the other hand, countries including Albania, Croatia, Latvia, Poland, and Romania have negative and statistically significant results. The explanation could be related to the fact that these countries have recently transitioned to a market economy, and the perception of corruption may be higher. And for further increases in transparency, they have implemented comprehensive reforms. In North Macedonia, the coefficient is 1.6, which indicates that a 1% increase in the Corruption Perception Index averages a 1.6% increase in economic growth.

Bosnia and Herzegovina, Bulgaria, the Czech Republic, Estonia, Lithuania, the Slovak Republic, and Slovenia have statistically insignificant results. The explanation differs for various countries. As a result of data issues, Bosnia and Herzegovina have insignificant results. Other countries have greater Corruption Perception Indexes, and the results are insignificant because they are already close to perfect scores. Therefore, even slight changes in corruption indexes do not significantly affect the overall results.

Only the positive coefficients are statistically significant when analysing the relationship between Transitional Indicators and economic growth. This indicates that the transition from centrally planned to market economies positively impacts GDP per capita growth. Albania, Croatia, the Czech Republic, Hungary, Latvia, Lithuania, North Macedonia, Poland, and Romania have positive and statistically significant results. The coefficients for these countries range from 0.26 to 1.32. However, Bosnia and Herzegovina, Bulgaria, Estonia, Serbia, the Slovak Republic, and Slovenia have either a negative coefficient or a statistically insignificant result. Insignificant results could be explained by data issues for several countries. However, other countries have already fully transitioned to market economies, and changes in this index don't affect economic growth significantly.

The IVGMM regression results show that the Index of Economic Freedom positively impacts economic growth in many countries, except for Hungary, which needs further investigation. The World Governance Indicators have mixed results, with good governance policies positively impacting growth. Weak institutions lead to negative growth effects in Albania, North Macedonia, Romania, and Serbia. The Corruption Perception Index shows varied results, with higher perceptions of corruption positively or negatively impacting growth. Transitioning from centrally planned to market economies generally positively impacts economic growth. Policy interventions need to be tailored to each specific country due to the complex and context-dependent nature of the relationship between variables and economic growth.

## 5 Conclusion

This study provides valuable insights into the relationship between institutions and economic growth in selected post-transition European countries. The analysis shows that institutional quality and the success of the transition process are essential to determining economic performance.

The Index of Economic Freedom has a positive impact on economic growth in several countries, including Albania, Bulgaria, Croatia, Estonia, Latvia, Lithuania, North Macedonia, Poland, Serbia, and Slovenia. This suggests that higher levels of economic freedom are associated with higher economic growth rates. However, Hungary is an exception, where an increase in economic freedom has a negative impact on economic growth, and further investigation is needed to understand the underlying factors contributing to this result.

Good governance policies positively and significantly affect economic growth in some countries, such as the Czech Republic, Hungary, Latvia, and Poland. This emphasizes the importance of factors such as the rule of law, transparency, and accountability in fostering economic development. However, weak governance institutions have a negative impact on economic growth in countries like Albania, North Macedonia, Romania, and Serbia, and these countries need to prioritize improving the quality of governance to unlock their growth potential. Perceptions of corruption have varied effects on economic growth across countries.

Higher perceptions of corruption positively impact economic growth in countries such as Hungary, North Macedonia, and Serbia. In contrast, countries like Albania, Croatia, Latvia, Poland, and Romania experience a negative relationship between perceptions of corruption and economic growth. Countries with recent market transitions and comprehensive reforms may initially exhibit higher corruption perceptions, but ongoing efforts to increase transparency and combat corruption can contribute to sustained economic growth.

Countries that have successfully transitioned from centrally planned to market economies experience significant positive effects on economic growth. However, countries that have completed their transition process or face data limitations show either insignificant or negative coefficients. In conclusion, the findings of this study highlight the importance of institutions and the success of the transition process in driving economic growth.

Countries with higher levels of economic freedom, good governance policies, and successful market transitions tend to experience better economic performance. Policymakers and stakeholders in post-transition European countries need to prioritize institutional reforms and effective transition processes to create an enabling environment for investment, innovation, and economic development.

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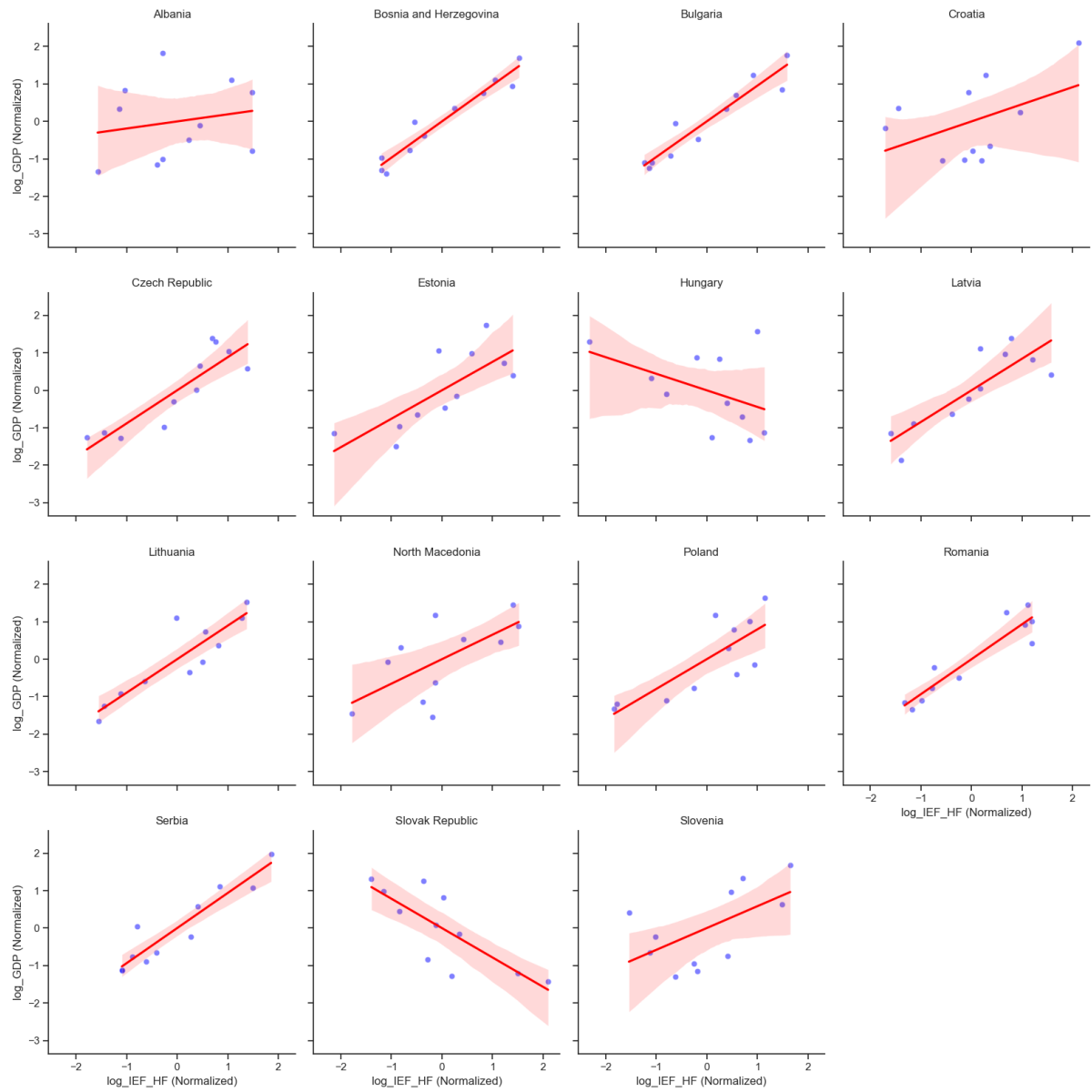
## Appendix

Country	GDP	IEF HF	WGI	CPI TI	TI	PA WIPO	FDI	Credit	Trade	GFCF	Inflation
Albania	4141.80 (378.62)	65.48 (1.00)	-0.08 (0.10)	34.77 (2.68)	5.24 (0.73)	32.64 (57.30)	8.09 (0.88)	35.11 (3.01)	74.67 (5.41)	24.77 (1.95)	1.93 (0.56)
Bosnia and Herzegovina	4847.40 (595.55)	59.74 (2.15)	-0.34 (0.10)	37.65 (2.99)	5.31 (1.04)	71.18 (50.45)	2.42 (0.42)	53.67 (1.37)	91.57 (5.29)	21.93 (0.79)	0.53 (1.64)
Bulgaria	7408.06 (698.78)	67.16 (2.11)	0.15 (0.06)	41.30 (2.85)	5.93 (1.30)	239.82 (41.34)	3.32 (0.88)	55.63 (7.09)	124.13 (6.14)	19.50 (1.60)	1.70 (1.84)
Croatia	12698.05 (1185.41)	61.08 (1.23)	0.41 (0.03)	47.30 (2.68)	6.26 (1.60)	186.36 (54.40)	2.79 (2.31)	61.22 (6.61)	91.05 (9.06)	20.05 (0.99)	1.11 (1.43)
Czech Republic	18287.08 (1421.11)	72.63 (1.61)	0.95 (0.04)	52.97 (4.56)	7.18 (0.99)	861.36 (140.95)	3.55 (1.37)	50.70 (1.61)	146.37 (7.24)	26.00 (0.74)	2.04 (1.22)
Estonia	18328.84 (1932.46)	76.73 (1.75)	1.19 (0.08)	70.14 (3.87)	6.73 (2.02)	37.45 (15.47)	6.91 (5.71)	66.72 (5.76)	154.44 (10.66)	26.93 (2.08)	2.24 (2.09)
Hungary	13249.40 (1453.46)	66.54 (0.70)	0.55 (0.09)	48.15 (4.53)	6.28 (1.60)	582.55 (120.32)	18.81 (40.26)	39.96 (8.50)	164.01 (3.53)	22.80 (3.08)	2.58 (1.98)
Latvia	14250.81 (1678.18)	69.94 (3.16)	0.78 (0.08)	54.45 (5.01)	6.23 (1.56)	134.00 (49.85)	3.69 (2.23)	47.93 (15.09)	123.83 (3.65)	22.59 (1.76)	1.76 (1.56)
Lithuania	15067.48 (2050.46)	74.25 (2.00)	0.90 (0.09)	57.77 (3.95)	6.25 (1.58)	124.00 (21.49)	3.40 (2.15)	41.76 (3.64)	146.58 (7.76)	19.80 (1.40)	2.09 (1.76)
North Macedonia	4898.65 (341.61)	68.83 (1.69)	-0.06 (0.08)	39.22 (3.76)	5.39 (0.85)	132.00 (82.78)	3.51 (1.77)	49.32 (2.61)	122.30 (13.43)	22.65 (1.45)	1.56 (1.54)
Poland	13230.72 (1603.34)	67.51 (1.96)	0.73 (0.13)	58.98 (2.64)	6.45 (1.76)	4222.36 (357.65)	3.01 (1.36)	51.60 (2.23)	97.31 (7.56)	18.97 (1.12)	1.99 (1.97)
Romania	9642.40 (1311.32)	67.16 (2.21)	0.21 (0.06)	44.37 (3.30)	6.10 (1.44)	1062.09 (172.36)	2.46 (0.89)	29.66 (4.47)	82.77 (4.18)	24.14 (1.68)	2.68 (2.36)
Serbia	5957.73 (590.48)	61.33 (3.25)	-0.07 (0.07)	39.28 (2.51)	5.42 (1.13)	193.36 (28.43)	6.35 (2.05)	42.45 (2.21)	99.47 (12.11)	19.00 (2.54)	3.94 (3.31)
Slovak Republic	16633.69 (1259.89)	66.77 (1.35)	0.68 (0.04)	48.70 (3.46)	6.46 (1.77)	222.36 (27.66)	2.13 (2.14)	56.07 (8.04)	180.50 (7.38)	21.01 (1.40)	1.78 (1.57)
Slovenia	21959.81 (1689.10)	63.49 (3.00)	0.92 (0.03)	59.43 (1.52)	6.39 (1.71)	235.91 (84.26)	2.27 (1.41)	53.86 (14.92)	149.84 (8.03)	19.11 (0.81)	1.13 (1.04)

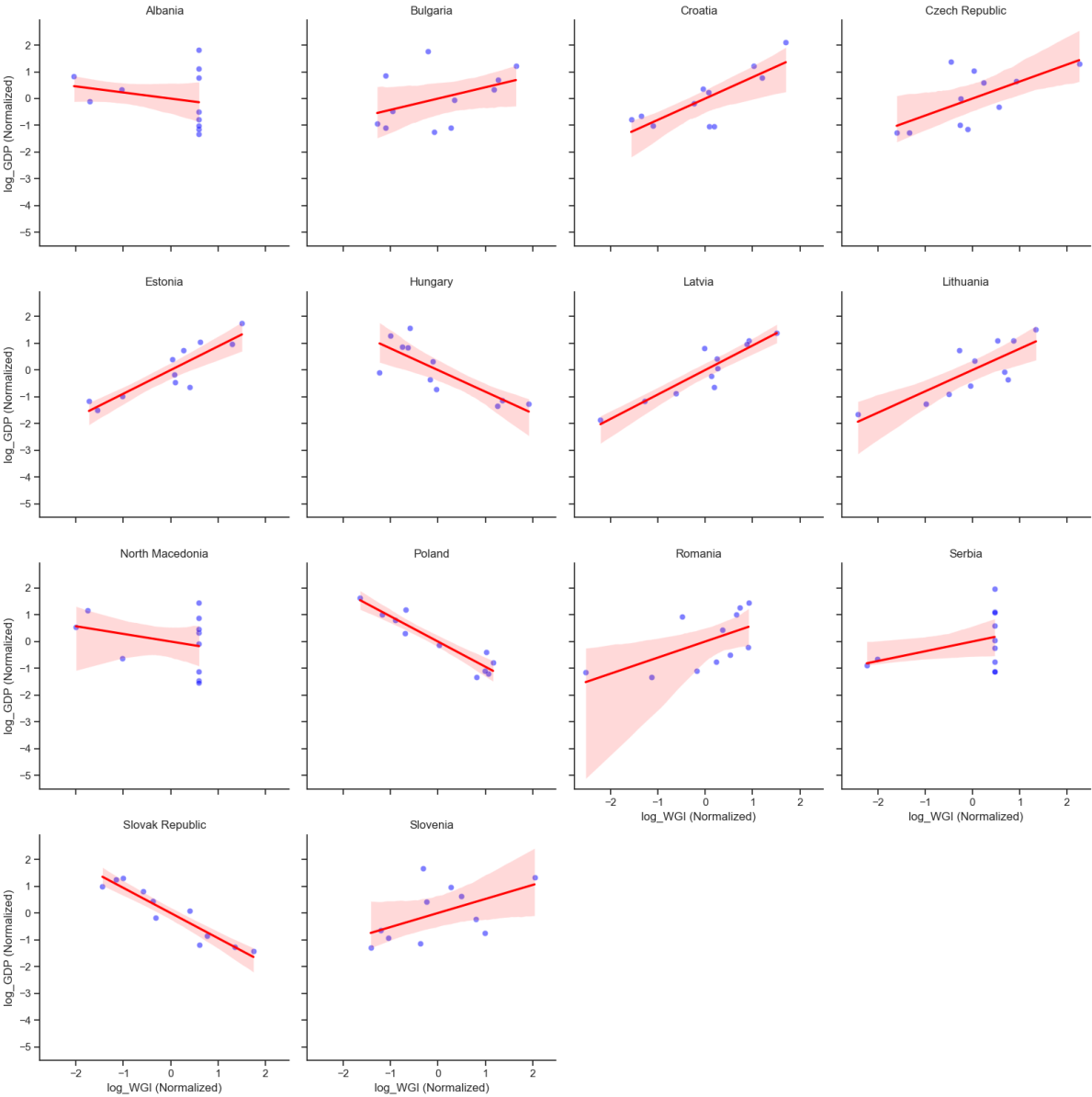
Table A1. Descriptive statistics for all variables. Source: Authors' calculations.

Country	log IEF HF	log WGI	log CPI TI	log TI	log PA WIPO	log FDI	log Credit	log Trade	log GFCF	log Inflation
Albania	1.0712***	-0.0344***	-0.8500***	0.8085***	-0.0861***	-1.2405***	1.3748***	0.8454***	-0.0503***	-0.0829***
Bosnia and Herzegovina	9.6576	102.4521	-0.0679	-0.9232	0.0773	-0.0632	3.5389	0.9363	-3.6116	0.0149
Bulgaria	2.3327***	0.0394	-0.0352	0.0529	-0.0353	-0.0418	0.0980	-0.0822	-0.1793	-0.0167
Croatia	2.1924**	-0.0144	-0.5050***	0.4512**	0.0611	0.0291**	0.4509***	0.5762**	-1.0774	-0.0037
Czech Republic	-0.6623	0.6516***	-0.0302	0.6072***	0.1377**	0.0067	0.6146**	0.6171***	1.5921***	0.0027
Estonia	2.7184**	-0.3261	0.2101	-0.0454	-0.0735*	0.0934***	-0.3192	-0.1497	-0.1687*	-0.0035
Hungary	-1.6560***	0.2869***	1.0609***	0.7056***	-0.5730***	0.0100**	0.5914***	2.2742***	0.3593***	-0.0426***
Latvia	1.6684***	2.0116***	-1.0071***	0.2560***	0.0708***	-0.1009***	0.2623***	0.7019***	0.6198***	0.0160***
Lithuania	1.2281***	-0.0920	0.1064	0.2690***	-0.0429	0.0307**	-0.3541***	0.8796***	0.1760	-0.0366***
North Macedonia	1.5705***	-0.0432***	1.5991***	1.3232***	-0.0703***	-0.0447***	-4.1228***	1.3390***	1.2146***	-0.0873***
Poland	0.9843***	0.4706***	-2.0319***	0.3061***	0.4335***	-0.0223***	-0.0936	1.8960***	0.4505***	-0.0253***
Romania	-0.5184	-0.2653***	-0.9666***	0.6058***	-0.6209***	-0.3851***	-0.1343	4.1184***	0.1238	0.0275
Serbia	1.0582***	-0.0063***	0.4526***	-0.0234	-0.0471	0.0886***	0.2860***	0.3294***	0.0565	0.0412***
Slovak Republic	1.5332	-0.9835	0.2151	-0.0154	-0.0099	0.0397	0.2237	0.2711	-0.0790	0.0514*
Slovenia	1.3149**	-0.1426	-0.0138	0.0614	-0.0579	0.0263**	0.2163	1.1953**	-0.7028	0.0095

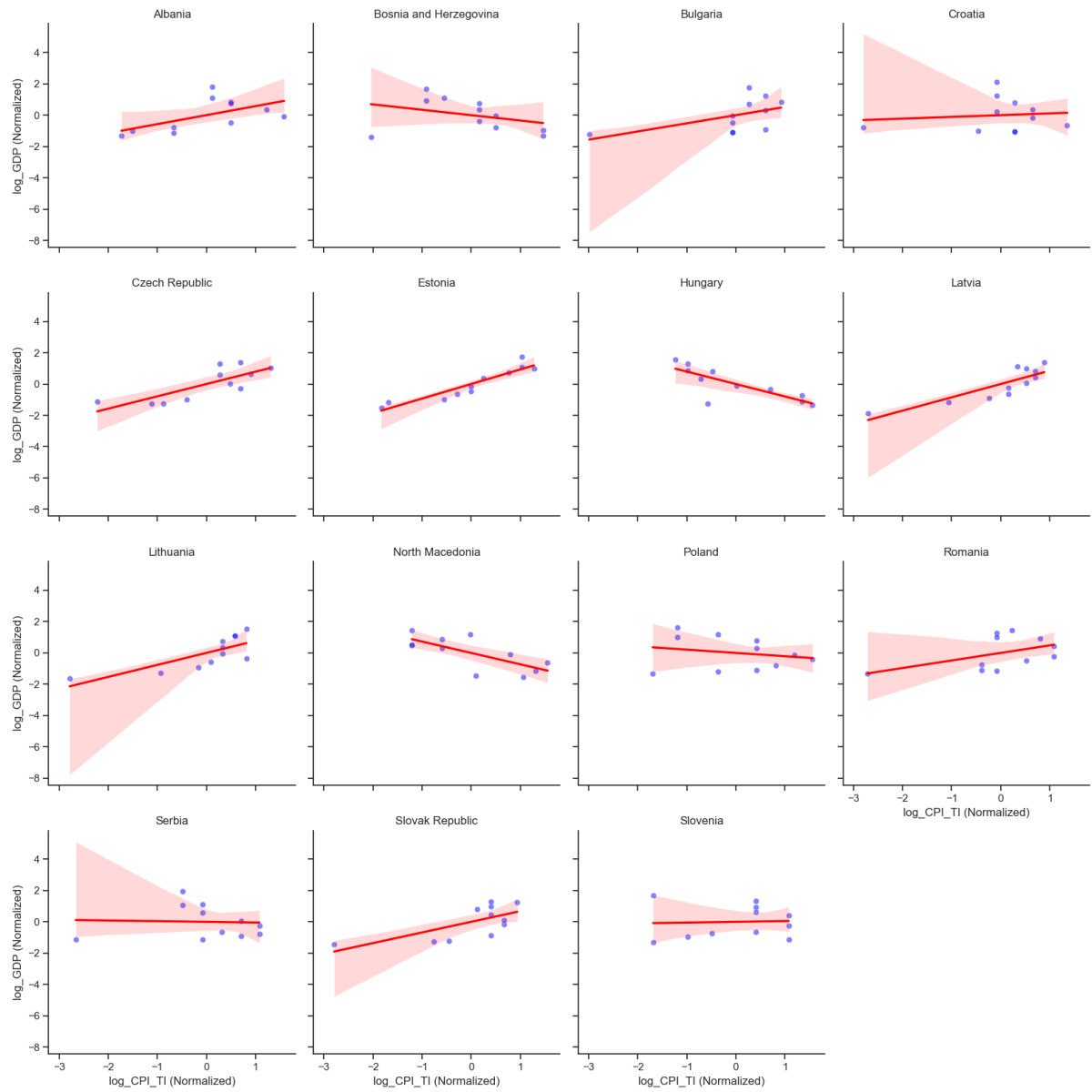
Table A2. IVGMM regression results for all variables.



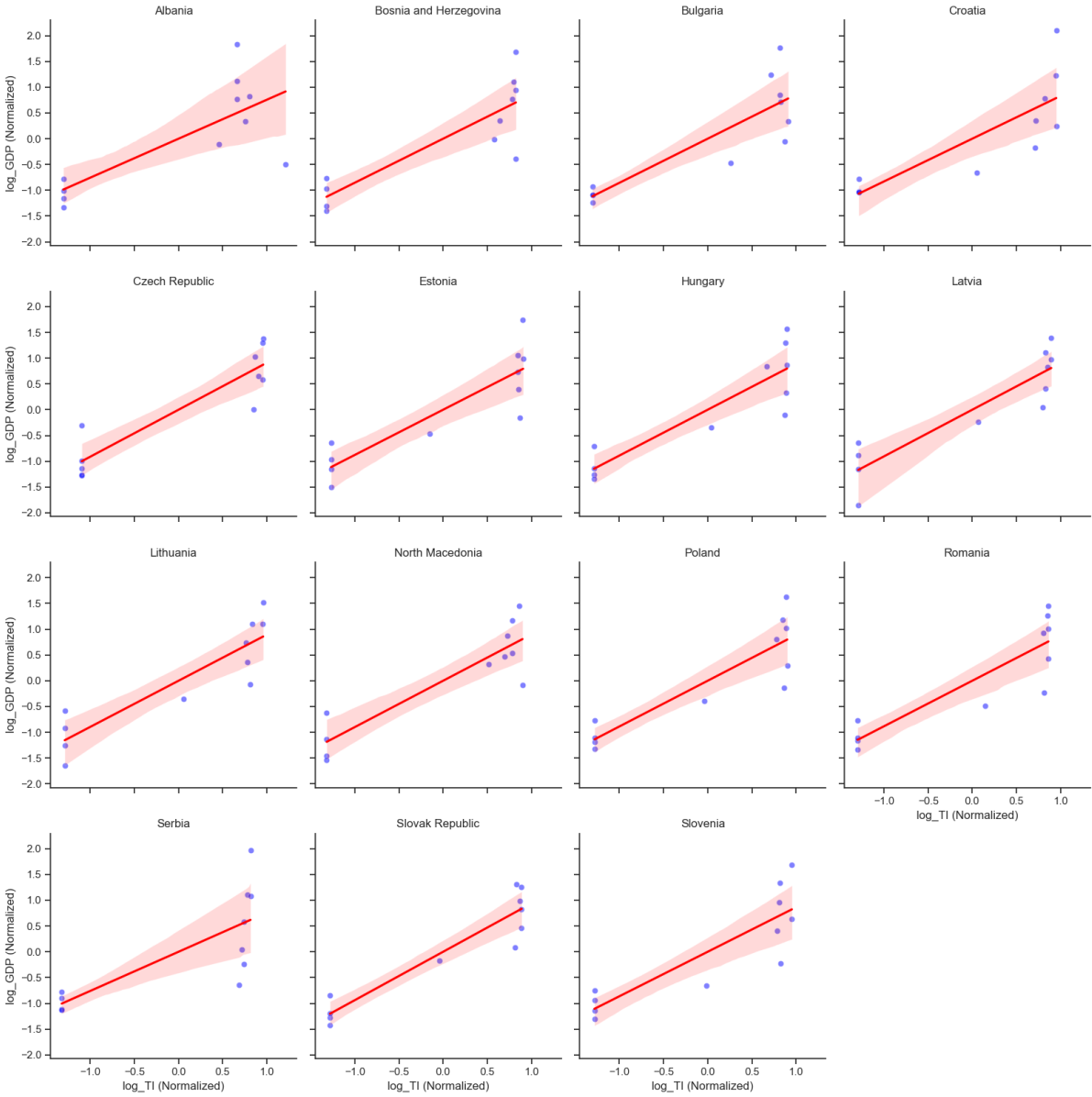
**Figure A1.** Scatterplot of the relationship between per capita GDP and Index of Economic Freedom.



**Figure A2.** Scatterplot of the relationship between per capita GDP and World Governance Indicators.



**Figure A3.** Scatterplot of the relationship between per capita GDP and Corruption Perception Index.



**Figure A4.** Scatterplot of the relationship between per capita GDP and Transition Indicators.