



Munich Personal RePEc Archive

# **Natural resources curse or blessing? Evidence from a large panel dataset**

Hayat, Arshad and Rakshit, Shoumyadeep

Metropolitan University Prague, CZU Prague

July 2020

Online at <https://mpra.ub.uni-muenchen.de/101704/>  
MPRA Paper No. 101704, posted 20 Jul 2020 14:09 UTC

# Natural resources curse or blessing? Evidence from a large panel dataset

Arshad Hayat<sup>a</sup> and Shoumyadeep Rakshit<sup>b</sup>

## Abstract

Natural resources are expected to worsen institutional quality, thus slowing economic growth. In this paper, we investigate the link between institutional quality, natural resources, and economic growth. We used a panel data of 117 countries, growth relevant IRCG, institutional quality indicators, and apply the system generalized method of moments. Our results confirm that institutional quality promotes economic growth. We found that natural resource slows down the growth-inducing impact institutional quality only in for corruption and democratic accountability, thus confirming the idea of the natural resource curse. Natural resources were, however, found to enhance the institutions induced economic growth for all other indicators except corruption, democratic accountability, and bureaucracy, thus confirming the idea of so-called natural resource blessing. The results are robust for two model specifications and across two different indicators of natural resource abundance, namely, natural resource exports and natural resource rents.

JEL classification: O43, Q32

Key words: Natural resources, institutional quality, economic growth

<sup>a</sup> Arshad Hayat is an assistant professor of economics at Metropolitan University Prague, Prague, Czech Republic. Email: [arshad.hayat@mup.cz](mailto:arshad.hayat@mup.cz)

<sup>b</sup> Shoumyadeep Rakshit is a Ph.D. candidate at Czech University of life sciences, Prague, Czech Republic.

## 1. Introduction:

Natural resources are a great wealth for a nation. The political economy of a resource rich country is generally dominated by resource induced interactions. The economic progress is determined by the successful capitalization of the resource. Institutions in general have a direct bearing on economic growth through its instruments such as bureaucracy, regulatory bodies, the judiciary and financial institutions. The institutions play an instrumental role in achieving resource induced progress leading to positive economic growth. In this paper, we will engage in a quantitative analysis to test the above condition presented. The research has been broken down into streams along the institutional channel, wherein we study the interaction between institutions and economic growth, natural resources, and both combined.

The Neoclassical growth posits that the main drivers of economic growth are investment, human capital, and technological adoption. This is predominantly dictated by the utilitarian concept, wherein the rationality and creating choices driven by freedom as its central tenet. The only institution that neoclassical theory vouches for is the market, where the individuals are profit maximisers (based on hedonistic characteristics). To accentuate economic growth, human capital is a pivotal pillar in conjunction with technology adoption. Therefore, to have an effective work force, necessary skills must be made available to the populace to create an ecosystem where the human capital can be efficiently monetized in sync with technological innovation. To create such an ecosystem, the presence of a functioning institution is imperative since they can effectively enforce the social contract, hence laying fertile grounds for enhanced economic activity. According to North (1991), Institutions provide the incentive structure of an economy; as that structure evolves, it shapes the direction of economic change towards growth, stagnation, or decline. An encouraging economic growth can emerge in the interplay of economic and political institutions, where the latter seeks less rents and attributes power to groups that have ab acumen for property rights enforcement, and the will to create effective constraints for power holders (Acemoglu, et al. 2005).

Firstly, we would like to discuss the concept Natural Resource Curse since it is the backbone of our research. Natural Resource curse is a phenomenon that states that the economic growth of a resource rich country will be lower than that of a resource scarce one. Therefore, it can be stated that the Resource abundance leads to a Dutch Disease effect leading to exchange rate overvaluation and consequently impacting other sectors of the economy (Sachs & Warner, 2001). The most important dimension supporting the curse is that of the institutional channel, which is the catharsis of our research. The institutional quality is negatively impacted due to the abundance of natural resources. Empirical studies conducted by Sala-i-Martin & Subramanian (2012) show that Nigeria, a resource rich country in Oil, has not seen the growth it desired because of institutional failure. Further study by Auty (1995) show the discrepancy in the economic performance between Sub Saharan Africa, Latin American countries, and East Asian Countries owing to cultural factors (Political Regime) and environmental factors such as natural resource endowment and urbanization.

In this paper, we reinvestigate the presence of natural resource curse through the channel of institutional quality.

After establishing the above claims that institutions are imperative for economic growth and that natural resource curse is a channel that can impede economic progress through its overarching effect on Institutional quality. Though the relationship between natural resources, institutional quality, and economic growth is extensively researched, in this paper, we make an original contribution in the following ways. Earlier studies on the topic have been specifically region focused (see, for instance, Subramanian & Xala-i-Martin 2012; Raggl, 2017, Brahim, Laylia, & Badreddine, 2017) and many of the existing studies<sup>1</sup> used WGI<sup>2</sup> indicators of institutional quality which are inconsistent<sup>3</sup> across countries and across time. Therefore, the use of these indicators in a longitudinal data is not desirable. This paper attempts to make an original contribution to the natural resources curse literature in the following ways. This paper uses a large dataset of 117 countries and uses a more consistent institutional quality indicator of IRCG and uses two different natural resources indicators, namely, natural resources exports and natural resources rents, to investigate the relationship between natural resources, institutional quality and economic growth. The rest of this paper is organized as follows. Section 2 describes the model and variables, section 3 presents the data and methodology used, section 4 presents our results and discussion. Section 5 concludes the paper.

## 2. Model Specification and variables

The objective of this study is to investigate the presence of any significant impact of institutional quality on the economic growth of the country. This study further aims to investigate the presence of natural resource curses through the channel of institutional quality deterioration. This section describes the econometric models used in this paper. In the first step, this paper uses the following simple dynamic panel data (DPD) model to estimate the potential role of institutional quality measures on the economic growth of the country. The adopted model is like the one used by Azman-Saini et al. (2010) and Gui-Diby (2014).

$$Y_{it} = \alpha Y_{it-1} + \gamma INST_{it} + X_{it} \beta + v_{it} \quad (2.1)$$

where  $v_{it} = \mu_i + \varepsilon_{it}$

$Y_{it}$  is the real growth rate of GDP per capita;  $INST$  is the IRCG institutional quality indicator.  $Y_{it-1}$  is the lagged value of real GDP growth per capita.  $X_{it}$  represents all the exogenous control variables included in the model estimations. These variables include initial GDP, gross domestic investment,

<sup>1</sup> see for instance Subramanian & Xala-i-Martin 2012, Brahim, Laylia, & Badreddine, 2017

<sup>2</sup> WGI indicators can be accessed at <http://info.worldbank.org/governance/wgi/#doc-intro>

<sup>3</sup> The WGI methodology section describes it in the following way “Changes over time in a country’s score on the WGI reflect a combination of three factors (i) changes in the underlying source data, (ii) the addition of new data sources for a country that are only available in the more recent period, and (iii) changes in the weights used to aggregate the individual sources.” <http://info.worldbank.org/governance/wgi/Home/Documents#wgiDataCrossCtry>

human capital, international trade openness, inflation, government consumption, spending, population growth rate.

To control the initial measure of economic development of a country, the variable of initial GDP has been included in the model to lend it. The initial measure of economic development of a country will be controlled by the initial GDP and hence has been included in the model. According to Neoclassical Growth theory, the pivotal pillars of economic growth are labor, capital, and technology. The narratives of the neoclassical models of economic growth lay a strong emphasis on the inversely proportional relationship between the magnitude of economic development and economic growth (Solow, 1956; Barro, 1991, 1998). Further Studies (see, for example, Mauro, 1995; Carkovic & Levine, 2002; Feng 2003) state that the rate of growth of poorer countries is faster than that of richer countries. This is the bedrock for the theory of Economic Convergence that suggests low diminishing returns for richer countries and numerous studies claim it. The variable Initial GDP is defined as the logarithmic value of real GDP per capita for the first year of each five-year subgroup of the dataset. The wheels of economic growth are set in motion by domestic investment. The market indicates the positive effects produced by Gross Domestic Investment on economic growth and studies by Levine & Renelt (1992), Feng (2003), Alfaro et al. (2004), and Kormendi & Meguire (1985) support the claim. Investment as a percentage of GDP as an instrument of investment was used by these studies. In our study, to further substantiate the claim, a control variable has been introduced, which is the ratio of the domestic investments to GDP in the model, which is expected to have a positive impact on economic growth. The second factor to affect a positive impact on economic growth is Human Capital. Human Capital is the effective workforce which is the means to reach economic growth. Numerous Empirical Studies have reported the positive impacts of Human Capital on economic growth. To measure the impact of Human Capital, we are using Gross secondary enrolment as a proxy variable following the studies by Adams (2009) and Gui-Diby (2014). Following variable selection, we lay the hypotheses that Human Capital is instrumental in positive economic growth.

There are conflicting studies illustrating the causal effect of inflation on economic growth. According to Tobin-Mundell hypothesis, economic growth has a growth(broadening) potential due to an anticipated inflation leading to portfolio adjustment. These adjustments lead to reduced interest rates, proliferating investments leading to positive effects on economic growth. However, there are studies contrary to this argument as proposed by Barro (1995) who talks about price stability that states economic growth is negatively impacted by inflation. In this study, we consider that inflation will positively influence the consumer price index (CPI) and consequently will impact economic growth negatively. The study by Alcala and Ciccone, 2004 inferred that international trade openness has a positive impact on labor productivity due to an appreciation in the areas of specialization and competition. Just to further testify the claim that trade as a Ricardian logic leads to comparative advantage and consequently enhancing specialization and inducing economic efficiency. To further corroborate the claim trade openness positively impacts economic growth, there are empirical studies by Harrison (1996); Frankel and Romer (1999), Dollar and Kraay (2003) supporting the

claim. In order to measure the trade openness, we will be using the ratio between imports and exports of goods and services to GDP as established from studies by Frankel and Romer (1999). Economic Growth is not directly impacted by the Government Spending Consumption (GSC) since the latter doesn't influence the private productivity. Going further into the rationale, it can be said that economic growth is negatively impacted on two grounds which are the lowering of savings and distortionary effect of GSC. Barro (1995) proposed that government spending as a percent of GDP showed to have a negative impact on economic growth. Further studies by Butkiewicz and Yankikhaya (2011) portray a similar negative correlation between government spending, consumption, and economic growth. There are studies such as Dao (2014) which show an ambiguous relationship between Government consumption Spending and economic growth due to the heterogeneity in the quality of governance around the world. Primarily, we will be using the Barro (1995) indicator which is government consumption spending as percent of GDP in our study. It can be argued that good institutions provide fertile grounds to amplify economic growth. The quality of Institutions has a deterministic impact on economic growth. Studies by Jude and Leveuge (2015) have put forth a case that clearly shows that the quality of institution can be a major cog in the wheel to appropriate better economic performance. Empirical studies, especially from developing countries, further testify the role of institutions in economic and sustainability development. Study conducted in Africa by Fayissa and Nsiah (2013) clearly show that the parameter quality of institutions plays an instrumental role in successfully implementing sustainable economic growth objectives and therefore good governance will set wheels to development. To analyze the case further, corruption will be used to gauge institutional quality and Mo (2001) established the spillover effect of corruption on economic growth and consequently a deterministic relationship is found between them. Governance and quality of institutions as variables induce a positive impact on economic growth and this relationship was found by Knack and Keefer (1995) using the International Country Risk guide (ICRG) and Business Environmental Risk Indicator (BERI). Corruption, laws and order will be used as indicators for portraying the quality of institutions categorized as ICRG indicators following the studies of Knack and Keefer (1995). The Neoclassical growth models suggest that increase in population growth leads to a decrease in the growth of output per capita. Solow (1956) pioneered in introducing the role of population growth in assessing economic growth. The theoretical argument that population growth has a negative impact on economic growth finds further credibility in studies by Studies like Barro (1998), Feng (2003), Alfaro et al. (2004), Gui-Diby (2014), Jude & Leveuge (2015), and Bucci (2015). We will establish a negative correlation between the rate of annual population growth and economic growth similar to Alfaro et al.(2004).

In the second model described below, natural resources and the interaction term between natural resources and FDI inflow are included to find out if the presence of natural resources in the country alters the FDI-growth relationship.

$$Y_{it} = \alpha Y_{it-1} + \gamma INST_{it} + \theta NR_{it} + \varphi (INST_{it} \times NR_{it}) + X_{it} \beta + \eta_{it} \quad (2.2)$$

where  $\eta_{it} = \mu_i + \delta_{it}$

NR<sub>i</sub> is the indicator for natural resources. In this paper, we use two separate natural resources indicators, namely, natural resource exports (as a percentage of goods exports) (NR Exports) and natural resources rents (as a percentage of total GDP) (NR Rents). Studies exploring the impact of natural resource abundance on productivity (e.g., Sachs & Warner, 2001) have used the share of natural resources in goods export as an indicator of the size of the natural resources sector.

According to Darlington (1990), there always exists a multicollinearity problem with the interaction term since it shows a strong correlation with the variables used to determine the term and similar findings have dotted the interaction term 2.2 used in our research. Burill (2007) proposed a two-step procedure to cater to this problem. Initially, the term INST X NR is regressed on INST and NR exports variables and then the residuals from this regression are used instead of the interaction term. There, two steps are needed to cater to this problem. This procedure is consistent across the paper wherever the interaction term is used. All other variables are the same as described.

### 3. Data and Methodology

In this section, we are going to describe the data and methods used in this paper.

#### 3.1 Data

The data used in the model estimation is purely based on the availability of data sets for the selected countries. The model presented above uses a dynamic panel data of 117 countries with the related period range being 1992-2016 for the estimations. The selected variables as indicators of institutional quality that are the IRCG Institutional Indicators published by Political Risk Group (PRS). The advantage of the IRCG model is the related flexibility provided in assessing risk to cater to one's own model. Therefore, the model presented above uses 12 indicators for assessing institutional quality with varying range of scores for each indicator independently. In this model, we use a hybrid approach for the estimation of both the individual and combined study of the indicators. For the combined approach, we are using the Institutional Quality Index (IQI) as the sum of the scores of indicators for each country. The data for the macroeconomic indicators that are trade openness, FDI inflow, GDP per capita, real GDP per capita growth rate, and natural resources exports are the World development indicators (WDI) part of the World Bank Databank. To study the case of human capital as a pillar of economic growth, our model uses the Enrollment rate which is the Gross secondary enrollment rate and the data for the same is obtained from UNESCO Institute of Statistics (UIS).

**Table 1. Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP Growth	3119	2.149	5.127	-62.378	121.78
NR Exports	3094	28.391	30.865	0	99.791
NR Rents	3119	8.313	11.896	0	68.778
Domestic Investment	3119	23.763	7.365	-.693	58.151
Initial GDP	3119	14058.167	18809.333	0	107235.27

Govt Spending	3094	15.591	5.346	.911	55.55
Trade Openness	3119	82.515	52.841	.021	442.62
Population growth	3119	1.5	1.571	-4.537	17.511
Inflation rate	3070	33.621	469.857	-16.117	23773.131
Enrollment rate	3094	74.553	31.971	6	164
<b><i>Institutional indicators</i></b>					
Bureaucracy	3050	2.27	1.087	0	4
Corruption	3119	2.896	1.283	0	6
Democratic Accountability	3119	3.976	1.622	0	6
Ethnic Tension	3119	4.093	1.291	0	6
External Conflict	3119	10.081	1.486	2.21	12
Govt Stability	3119	8.056	1.768	1	12
Internal Conflict	3119	9.296	1.963	0	12
Investor Profile	3119	7.96	2.347	1	12
Law Order	3119	3.866	1.357	0	6
Military in Politics	3119	3.904	1.761	0	6
Religious Tension	3119	4.675	1.304	0	6

### 3.2 Methodology

In this section, we describe the methodology used in the estimation of the model described in the section above.

This paper adopts a dynamic panel data model and the generalized method of moments (GMM) estimation method to investigate the impact of institutional quality on economic growth. Following studies like Gui-Diby (2014), Feeny et al. (2014), and Adams & Opoku (2015), this paper adopted the system generalized method of moments (SYS-GMM) to estimate the models described in the section above. SYS-GMM is preferred over the difference generalized method of moment (DIFF-GMM) because DIFF-GMM is found to perform poorly in the presence of time series and Bond et.al (2001) found DIFF-GMM to provide weak instruments. SYS-GMM provides estimation efficiency by including additional instruments (Arellano & Bover, 1995; Blundell & Bond, 1998). This paper uses XTABOND2 command for STATA developed by Roodman (2009a) for the estimation of SYS-GMM models. The estimation results for this paper are produced using STATA version 14.0.

To test the validity of the instruments for each regression, the Sargan test of overidentifying restrictions is conducted, and the results are provided in each table. Similarly, to test for the autocorrelation, the Arellano-Bond test of order two AR (2) is performed for each regression, and the results are provided in each table.

## 4. Results and discussion

This section is dedicated to the discussion of our results and findings. Table 1 provides with the descriptive statistics of all the variables used in our model. In the succeeding section (Table 2), we analyze the estimations that show the impact of institutional quality on economic growth. The institutional quality indicators are used to represent the relationship between institutions and economic growth. In the next section, we introduce the variable natural resources to investigate the natural resources curse taking place through the channel of institutional quality. For this purpose, we use two institutional quality indicators, namely, natural resources curse and natural resources rent. The results are presented in tables 3 and 4 for natural resources exports and natural resources rents, respectively.

Table 2 presents our basic results where we estimate the impact of institutional quality on the economic growth of the country. The table presents the results (columns 1-8) with 8 growth relevant indicators of institutional quality produced by PRS.

The main results of our interest is the coefficients of institutional quality indicators. Our results indicate that the coefficients of all institutional quality indicators are positive except that of democratic accountability. The coefficient of bureaucracy is found to be positive, however, insignificant. These results are in line with the existing literature on the positive impact of institutional quality. Peng et al. (2008) found that good quality of institutions enables firms to invest and innovate, thus leading to competition and growth. Mauro (1995) found that corruption lowers investments thus causing economic growth to slow down. Similarly, Hayat and Cahlik (2017) found that corruption and rules of law & order are significant determinants of economic growth.

The role of the military in politics from the point of view of growth is still debated and the empirical research is not very clear on that. McKinlay & Cohan (1975) found a heterogeneous levels of economic performance both in military and civilian governments. Our results show a positive coefficient of the variable military in politics, thus reinforcing the idea of lack of military interference in politics improves growth performance.

The coefficient of democratic accountability is found to be significant and negative, which would be considered unexpected. However, the lack of democratic accountability could provide investors with certainty and long-term stability. Zheng (2014) argues that the lack of democratic accountability enables China to enact bold reforms and provide a credible environment for investment and growth. The rest of the results are very much as expected. The coefficient of initial GDP, population growth rate, government spending is found to be negative and statistically significant while the coefficient of investment, trade openness, and enrollment rate were found to be positive and significant.

Now that we have determined the growth enhancing impact of institutional quality, we investigate the presence of natural resource curse taking place through the institutional quality by introducing natural resource exports and an interaction term of natural resource curse and institutional quality (NR Exports X Institutions). We ran two different model specifications for each

of the institutional quality indicators. The results are presented in table. 3.

The interaction term for NR and bureaucracy is negative, however, insignificant, while the interaction term for NR and corruption is negative and statistically significant, indicating a negative impact on the corruption (controlling) and growth relationship. This indicates the presence of natural resource curse taking place through worsening of corruption level.

Corruption tends to create a dead weight loss in the institutional and economical frameworks and impedes the resource allocation equitably. Therefore, it can be said from the perspective of corruption that it induces a principal and agent problem in the institutional framework. Alfada (2019) found a strong growth deteriorating the impact of corruption. The problem is proliferated further by the presence of natural resources, as there is an unequal distribution of proceeds from the resource utilization at the agent side and an insinuating impact on the principal due to the rent seeking behavior of the agent. The rent seeking behavior is further aggravated with a horde to accumulate the maximum share of the resource capital rather than the productive and efficient usage of the capital itself. There is another aspect to this conundrum that portrays the factor of patronage additionally to rent seeking that further exacerbates the problem of resource curse, wherein the agent shows proclivity to control the decision making and create a favorable nepotist environment and hence creating an atmosphere of unequitable profit sharing from the resources. This is one major dimension which impacts the effective utilization of resources and thins the list of beneficiaries(principal). Our findings of natural resources curse taking place through the enhanced corruption levels is in line with earlier studies that show natural resources abundance leading to increased corruption levels (Arezki & Bruckner 2011). Similarly, Thus, our results confirm the presence of natural resource curse taking place by altering the corruption and growth relationship.

Another interesting observation is the negative coefficient of the interaction term between democratic accountability and natural resource exports. Democratic accountability was not a significant determinant of economic growth in our earlier results. however, this negative coefficient of its interaction term with the natural resource indicates the presence of a negative impact of democratic accountability on economic growth. This shows that while democratic accountability is not a determinant of growth in general, in a resource rich countries, it tends to slow down economic growth. However, for all the remaining institutional quality indicators, our study found no adverse impact on the intuitions-growth relationship, thus rejecting the presence of natural resource curses taking place through those indicators. On the contrary, our study found that natural resources exports enhance the growth inducing the impact of all the remaining institutional quality indicators. For the robustness of our results, we estimated the same model with an interaction terms with natural resource rents instead of natural resource exports. We present those estimated results in table 4. The results are consistent across both natural resource indicators.

**Table 2. Institutional quality and economic growth:** System generalized method of moments (SYS-GMM) estimates  
 Dependent variable: Growth rate of Real GDP rate per capita

VARIABLES	Bureaucracy	Corruption	External Conflict	Internal Conflict	Government Stability	Investor Profile	Military in Politics	Religious Tension	Democratic Accountability
Log (Initial GDP)	-1.962* (1.168)	-2.717*** (0.464)	-1.556*** (0.243)	-2.315*** (0.308)	-0.706*** (0.120)	-1.518*** (0.443)	-2.786*** (0.577)	-1.618*** (0.250)	2.038* (1.084)
Investment	0.150*** (0.018)	0.171*** (0.017)	0.146*** (0.015)	0.078*** (0.016)	0.107*** (0.015)	0.116*** (0.015)	0.111*** (0.015)	0.170*** (0.017)	0.055 (0.034)
Govt Spending	-0.104*** (0.034)	-0.172*** (0.028)	-0.133*** (0.024)	-0.205*** (0.029)	-0.110*** (0.022)	-0.115*** (0.025)	-0.388*** (0.079)	-0.127*** (0.023)	-0.039 (0.032)
Trade Openness	0.002 (0.002)	0.004** (0.002)	-0.009*** (0.003)	-0.014*** (0.003)	-0.001 (0.002)	-0.003 (0.004)	-0.012*** (0.004)	-0.001 (0.002)	-0.029** (0.014)
Enrollment rate	0.010 (0.008)	0.011* (0.006)	0.019*** (0.006)	0.024*** (0.006)	0.014** (0.006)	0.002 (0.007)	-0.034*** (0.013)	0.008 (0.006)	0.064*** (0.023)
Inflation rate	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.001** (0.000)
Population growth rate	-0.471*** (0.169)	-0.383*** (0.086)	-0.298*** (0.099)	-0.092 (0.111)	-0.800*** (0.078)	-0.689*** (0.076)	0.129 (0.203)	0.467** (0.238)	-2.470*** (0.770)
Institutions	2.805 (2.611)	4.583*** (0.950)	4.360*** (0.921)	3.229*** (0.523)	1.266*** (0.255)	1.451** (0.640)	4.901*** (1.240)	5.010*** (1.041)	-7.593** (3.157)
Sargan test p-	0.111	0.161	0.367	0.808	0.725	0.598	0.625	0.128	0.77
AB AR (2) test p-value	0.155	0.437	0.16	0.549	0.403	0.058	0.571	0.337	0.277
No of Instruments	32	32	32	32	32	32	32	32	32
No of Countries	121	121	121	121	121	121	121	121	121
No of Observations	2,820	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867

All regressions include a constant term. Standard errors in parentheses. All the regression models are estimated with the system generalized method of moments specific homoscedasticity and autocorrelation consistent robust standard errors. The A-B AR (2) test has a null hypothesis of no second-order serial correlation in the residuals while the Sargan test has the null hypothesis of joint exogeneity of the instruments set. Rejecting the null hypothesis of both tests provides support for the consistency of models. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table. 3 Institutional quality, natural resources and economic growth:** System generalized method of moments (SYS-GMM) estimates,  
Dependent variable: Growth rate of Real GDP rate per capita

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Bureaucracy		Corruption		External Conflict		Internal Conflict		Government Stability	
log (Initial GDP)	-0.835*** (0.175)	-1.600*** (0.348)	-0.604*** (0.140)	-0.425** (0.199)	-0.646*** (0.121)	-0.670*** (0.124)	-0.702*** (0.137)	-0.758*** (0.145)	-0.687*** (0.120)	-0.674*** (0.121)
Domestic Investment	0.134*** (0.014)	0.133*** (0.014)	0.122*** (0.014)	0.122*** (0.014)	0.137*** (0.015)	0.135*** (0.015)	0.121*** (0.014)	0.117*** (0.015)	0.126*** (0.015)	0.130*** (0.015)
Government Spending	-0.076*** (0.022)	-0.097*** (0.023)	-0.078*** (0.022)	-0.066*** (0.024)	-0.092*** (0.022)	-0.094*** (0.022)	-0.092*** (0.022)	-0.096*** (0.022)	-0.088*** (0.022)	-0.086*** (0.022)
Trade Openness	0.003* (0.002)	0.003* (0.002)	0.003* (0.002)	0.003* (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)
Enrollment rate	0.017*** (0.006)	0.016*** (0.006)	0.011* (0.006)	0.010* (0.006)	0.010 (0.006)	0.010* (0.006)	0.012* (0.006)	0.013** (0.006)	0.010 (0.006)	0.009 (0.006)
Inflation rate	0.001 (0.001)	0.000 (0.001)	-0.002*** (0.001)	-0.001* (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001** (0.001)
Population growth rate	-0.615*** (0.071)	-0.652*** (0.072)	-0.642*** (0.071)	-0.614*** (0.074)	-0.583*** (0.071)	-0.601*** (0.074)	-0.586*** (0.076)	-0.603*** (0.077)	-0.860*** (0.083)	-0.846*** (0.084)
Institutions	0.183 (0.302)	1.761** (0.689)	-0.025 (0.176)	-0.368 (0.324)	0.286* (0.162)	0.341** (0.173)	0.193 (0.131)	0.265* (0.145)	0.328*** (0.095)	0.348*** (0.097)
NR Exports X Institutions	-0.036 (0.038)	-0.016 (0.039)	-0.068*** (0.025)	-0.105*** (0.038)	0.052*** (0.019)	0.052*** (0.019)	0.000 (0.015)	0.001 (0.015)	0.066*** (0.013)	0.072*** (0.014)
NR Exports		0.019** (0.008)		-0.008 (0.007)		0.003 (0.004)		0.004 (0.004)		-0.005 (0.004)
Sargan test p-value	0.07	0.08	0.11	0.10	0.09	0.09	0.08	0.09	0.10	0.11
AB AR(2) test p-value	0.451	0.469	0.250	0.380	0.099	0.101	0.026	0.028	0.976	0.895
No of Instruments	57	57	57	57	57	57	57	57	57	57
No of Countries	120	120	120	120	120	120	120	120	120	120
No of Observations	2,796	2,796	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843

All regressions include a constant term. Standard errors in parentheses. All the regression models are estimated with the system generalized method of moments special homoscedasticity and autocorrelation consistent robust standard errors. The A-B AR (2) test has a null hypothesis of no second-order serial correlation in the residuals; the Sargan test has the null hypothesis of joint exogeneity of the instruments set. Rejecting the null hypothesis of both tests provide support for the consistency of model. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Continued...

Variables	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Investor Profile		Military in Politics		Religious Tension		Democratic Accountability	
log (Initial GDP)	-0.844*** (0.139)	-0.891*** (0.144)	-0.726*** (0.151)	-1.169*** (0.225)	-0.617*** (0.128)	-0.739*** (0.147)	-0.601*** (0.132)	-1.131*** (0.272)
Domestic Investment	0.122*** (0.014)	0.119*** (0.015)	0.125*** (0.014)	0.116*** (0.015)	0.127*** (0.014)	0.125*** (0.015)	0.135*** (0.015)	0.138*** (0.015)
Government Spending	-0.078*** (0.022)	-0.080*** (0.022)	-0.099*** (0.025)	-0.150*** (0.032)	-0.078*** (0.023)	-0.075*** (0.023)	-0.083*** (0.022)	-0.097*** (0.023)
Trade Openness	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	-0.001 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.002)	0.010*** (0.004)
Enrollment rate	0.005 (0.006)	0.006 (0.006)	0.006 (0.007)	-0.001 (0.007)	0.008 (0.006)	0.007 (0.006)	0.008 (0.006)	0.002 (0.007)
Inflation rate	-0.001** (0.001)	-0.001** (0.001)	-0.002*** (0.001)	-0.001** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001** (0.001)	-0.001** (0.001)
Population growth rate	-0.732*** (0.086)	-0.766*** (0.090)	-0.575*** (0.078)	-0.542*** (0.080)	-0.593*** (0.088)	-0.551*** (0.092)	-0.588*** (0.084)	-0.451*** (0.105)
Institutions	0.386*** (0.115)	0.430*** (0.120)	0.311 (0.226)	1.198*** (0.402)	0.173 (0.245)	0.683* (0.390)	-0.123 (0.173)	-1.433** (0.611)
NR Exports X Institutions	0.024* (0.013)	0.024* (0.013)	0.011 (0.022)	0.045* (0.025)	0.016 (0.020)	0.042 (0.026)	-0.093*** (0.025)	-0.112*** (0.027)
NR Exports		0.005 (0.004)		0.016*** (0.006)		0.009* (0.006)		0.028** (0.012)
Sargan test p-value	0.20	0.21	0.21	0.24	0.19	0.20	0.11	0.11
AB AR(2) test p-value	0.064	0.065	0.099	0.093	0.121	0.134	0.274	0.299
No of Instruments	57	57	57	57	57	57	57	57
No of Countries	120	120	120	120	120	120	120	120
No of Observations	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843

All regressions include a constant term. Standard errors in parentheses. All the regression models are estimated with the system generalized method of moments specific homoscedasticity and autocorrelation consistent robust standard errors. The A-B AR (2) test has a null hypothesis of no second-order serial correlation in the residuals while the Sargan test has the null hypothesis of joint exogeneity of the instruments set. Rejecting the null hypothesis of both tests provide support for the consistency of models. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table. 4 **Institutional quality, natural resources and economic growth:** System generalized method of moments (SYS-GMM) estimates

Dependent variable: Growth rate of Real GDP rate per capita

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Bureaucracy		Corruption		External Conflict		Internal Conflict		Government Stability	
log (Initial GDP)	-0.841*** (0.177)	-1.952*** (0.323)	-0.645*** (0.140)	-0.868*** (0.166)	-0.650*** (0.121)	-0.717*** (0.124)	-0.739*** (0.136)	-0.844*** (0.143)	-0.645*** (0.118)	-0.654*** (0.118)
Domestic Investment	0.136*** (0.014)	0.141*** (0.014)	0.127*** (0.014)	0.127*** (0.014)	0.127*** (0.014)	0.124*** (0.014)	0.123*** (0.014)	0.117*** (0.014)	0.133*** (0.015)	0.131*** (0.015)
Government Spending	-0.071*** (0.022)	-0.110*** (0.024)	-0.086*** (0.022)	-0.101*** (0.023)	-0.086*** (0.022)	-0.093*** (0.022)	-0.087*** (0.022)	-0.098*** (0.023)	-0.086*** (0.022)	-0.088*** (0.022)
Trade Openness	0.004** (0.002)	0.002 (0.002)	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Enrollment rate	0.014** (0.006)	0.021*** (0.006)	0.011* (0.006)	0.014** (0.006)	0.011* (0.006)	0.014** (0.006)	0.012** (0.006)	0.016*** (0.006)	0.008 (0.006)	0.009 (0.006)
Inflation rate	-0.000 (0.001)	-0.001 (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002** (0.001)	-0.002*** (0.001)
Population growth rate	-0.627*** (0.072)	-0.786*** (0.081)	-0.616*** (0.070)	-0.716*** (0.081)	-0.599*** (0.071)	-0.678*** (0.078)	-0.555*** (0.075)	-0.625*** (0.080)	-0.806*** (0.080)	-0.829*** (0.084)
Institutions	0.232 (0.308)	2.517*** (0.636)	0.092 (0.180)	0.500** (0.244)	0.247 (0.169)	0.400** (0.180)	0.237* (0.128)	0.370*** (0.140)	0.431*** (0.106)	0.416*** (0.107)
NR Rents X Institutions	0.106 (0.085)	0.104 (0.084)	-0.064 (0.081)	-0.005 (0.085)	0.029 (0.034)	0.025 (0.034)	0.052** (0.026)	0.047* (0.026)	0.138*** (0.032)	0.132*** (0.033)
NR Rents		0.109*** (0.027)		0.044** (0.018)		0.033** (0.014)		0.033** (0.014)		0.011 (0.013)
Sargan test p-value	0.06	0.07	0.09	0.11	0.20	0.19	0.20	0.19	0.22	0.22
AB AR(2) test p-value	0.385	0.638	0.244	0.182	0.116	0.145	0.48	0.067	0.796	0.824
No of Instruments	57	57	57	57	57	57	57	57	57	57
No of Countries	120	120	120	120	120	120	120	120	120	120
No of Observations	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843

All regressions include a constant term. Standard errors in parentheses. All the regression models are estimated with the system generalized method of moments specific homoscedasticity and autocorrelation consistent robust standard errors. The A-B AR (2) test has a null hypothesis of no second-order serial correlation in the residuals while the Sargan test has the null hypothesis of joint exogeneity of the instruments set. Rejecting the null hypothesis of both tests provide support for the consistency of models. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Continued...

Variables	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Investor Profile		Military in Politics		Religious Tension		Democratic Accountability	
log (Initial GDP)	-0.844*** (0.139)	-0.891*** (0.144)	-0.726*** (0.151)	-1.169*** (0.225)	-0.617*** (0.128)	-0.739*** (0.147)	-0.601*** (0.132)	-1.131*** (0.272)
Domestic Investment	0.122*** (0.014)	0.119*** (0.015)	0.125*** (0.014)	0.116*** (0.015)	0.127*** (0.014)	0.125*** (0.015)	0.135*** (0.015)	0.138*** (0.015)
Government Spending	-0.078*** (0.022)	-0.080*** (0.022)	-0.099*** (0.025)	-0.150*** (0.032)	-0.078*** (0.023)	-0.075*** (0.023)	-0.083*** (0.022)	-0.097*** (0.023)
Trade Openness	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	-0.001 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.002)	0.010*** (0.004)
Enrollment rate	0.005 (0.006)	0.006 (0.006)	0.006 (0.007)	-0.001 (0.007)	0.008 (0.006)	0.007 (0.006)	0.008 (0.006)	0.002 (0.007)
Inflation rate	-0.001** (0.001)	-0.001** (0.001)	-0.002*** (0.001)	-0.001** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001** (0.001)	-0.001** (0.001)
Population growth rate	-0.732*** (0.086)	-0.766*** (0.090)	-0.575*** (0.078)	-0.542*** (0.080)	-0.593*** (0.088)	-0.551*** (0.092)	-0.588*** (0.084)	-0.451*** (0.105)
Institutions	0.386*** (0.115)	0.430*** (0.120)	0.311 (0.226)	1.198*** (0.402)	0.173 (0.245)	0.683* (0.390)	-0.123 (0.173)	-1.433** (0.611)
NR Rents X Institutions	0.024* (0.013)	0.024* (0.013)	0.011 (0.022)	0.045* (0.025)	0.016 (0.020)	0.042 (0.026)	-0.093*** (0.025)	-0.112*** (0.027)
NR Rents		0.005 (0.004)		0.016*** (0.006)		0.009* (0.006)		0.028** (0.012)
Sargan test p-value	0.10	0.12	0.11	0.14	0.11	0.09	0.18	0.19
AB AR(2) test p-value	0.076	0.089	0.157	0.093	0.196	0.340	0.217	0.294
No of Instruments	57	57	57	57	57	57	57	57
No of Countries	120	120	120	120	120	120	120	120
No of Observations	2,843	2,843	2,843	2,843	2,843	2,843	2,843	2,843

## 5. Conclusion

The institutional quality is a necessary cog in the wheel to stimulate an environment of trust and safeguarding of transactions in an economy. Through legal, financial, and social frameworks, institutions can create an efficient resource utilization mechanism to propel economic growth. According to our findings, institutional quality does have a positive impact on the economic growth.

While we engaged in the discussion to prove the hypothesis that institutional quality a necessary driver of economy, we further investigated how natural resources abundance alter that institutional quality-economic growth relationship. The investigation led us to corroborate the claims of the natural resource curse on institutions only in case of corruption and democratic accountability. In all other institutions natural resources abundance boosted their ability to enhance economic growth.

Natural resources curse in literature is explained to take place through two main channels. Firstly, through the worsening the institutional quality which leads to slowing down economic growth. Secondly, the decline in competitiveness of the manufacturing exports which is caused by appreciation of real exchange rate and the increased price levels as a result of the inflow of natural resources rents. one limitation of this study is that we focused solely on the institutional channel of natural resources curse. Our study found evidence of supporting the concept of natural resources curse taking place only through two institutional quality indicators namely corruption, and democratic accountability. However, contrary to many existing studies on natural resources curse, we found evidence that natural resources curse encourages institutions induced economic growth for all the institutional quality indicators except for corruption, and democratic accountability, thus providing evidence for the idea of so-called natural resources blessing.

Natural resources should ideally be a boom to a nation and its effective usage might produce positive externalities. Institutions catering to resource and growth relationships should design policies that effectively uses resources and distributes outcomes in line with social equity. The appropriate choices of policy instruments can mitigate the impediments in reaching a desired outcome with optimal utilization of resources and maximum collective utility. Trying to assess a case of a natural resource country that is rich in non-renewable sector. The policies designated should not only be catering to the utilization of the resource available, but also using it to appropriate a diversification drive into other economic sectors such as information technology. This not only decreases the country's overt reliance on resources, but also creates an insulation from the economic shocks that are driven by them. Policy makers should take measures to improve the quality of institutions specifically controlling the level of corruption and improving democratic accountability to experience economic growth and prosperity as well as avoid the natural resources curse. Further policy research needs to be conducting in understanding and mitigating the risks associated with institutions with low quality.

## Bibliography:

1. Acemoglu, Daron & Johnson, Simon & Robinson, James A., (2005). Institutions as a Fundamental Cause of Long-Run Growth, Handbook of Economic Growth, in: Philippe Aghion & Steven Durlauf (ed.), Handbook of Economic Growth, edition 1, volume 1, chapter 6, pages 385-472, E
2. Adams, S., (2009). Foreign Direct Investment, Domestic Investment, and Economic Growth in Sub-Saharan Africa, *Journal of Policy Modeling* 31 pp. 939-949
3. Alcalá, F., & Ciccone, A. (2004). Trade and Productivity. The Quarterly Journal of Economics, Vol. 119, Issue 2, pp. 613-646, <https://doi.org/10.1162/0033553041382139>
4. Alfada, A., (2019). The destructive effect of corruption on economic growth in Indonesia: A threshold model. *Heliyon*, Volume 5, Issue 10. <https://doi.org/10.1016/j.heliyon.2019.e02649>
5. Alfaro, L., Chanda, S., Kalemli-Ozcan, S., & Sayeknomics, S. (2004). FDI and Economic Growth: The Role of Local Financial Markets. *Journal of International Economics*, 64 (1), pp. 89-112.
6. Arellano, M. and Bover, O., (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, 68(1), pp.29-51.
7. Arezki, R., & Bruckner, M. (2011). Oil rents, corruption, and state stability: Evidence from panel data regressions. *European Economic Review*. Volume 55, Issue 7, pp 955-963
8. Auty, R.M., (1995). Economic development and the resource curse thesis. In *Economic and Political Reform in Developing Countries* (pp. 58-80). Palgrave Macmillan, London.
9. Azman-Saini, W.N.W., Baharumshah, A.Z. and Law, S.H., (2010). Foreign direct investment, economic freedom and economic growth: International evidence. *Economic Modelling*, 27(5), pp.1079-1089.
10. Barro, R.J. (1991). Economic Growth in a Cross Section of Countries. The Quarterly Journal of Economics, Vol. 106, No. 2, pp. 407-443
11. Barro, R.J. (1998). Determinants of Economic Growth: A Cross-Country Empirical Study. *The MIT Press, edition 1, volume 1, number 0262522543*
12. Blundell, R. & Bond, S., (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics* Volume 87, pp. 115-143.

13. Bucci, A. (2015). Product proliferation, population, and economic growth. *Journal of Human Capital, Volume 9*, pp. 170-197
14. Burill, D., (2007). Modeling and Interpreting Interactions in Multiple Regression, Internet, available at <http://www.minitab.com>
15. Butkiewicz, J.L., & Yanikkaya, H. (2011). Institutions and The Impact of Government Spending on Growth. *Journal of Applied Economics*. Vol, 14. Issue, 2. pp. 319-341.
16. Carkovic, M.V., & Levine, R. Eric. (2002). Does Foreign Direct Investment Accelerate Economic Growth? *University of Minnesota Department of Finance Working Paper*. Available at SSRN: <https://ssrn.com/abstract=314924>.
17. Dao, A, T., (2014). Trade Openness and Economic Growth. *Mark A. Israel '91 Endowed Summer Research Fund in Economics*. 2. [http://digitalcommons.iwu.edu/israel\\_economics/2](http://digitalcommons.iwu.edu/israel_economics/2)
18. Darlington, R., (1990). *Regression and Linear Models*. McGraw-Hill, New York
19. Dollar, D., & Kraay, A. (2003). Institutions, Trade, and Growth. *Journal of Monetary Economics Volume 50, Issue 1*, pp 133-162 [https://doi.org/10.1016/S0304-3932\(02\)00206-4](https://doi.org/10.1016/S0304-3932(02)00206-4)
20. Fayissa, B., & Nsiah, C. (2013). The Impact of Governance on Economic Growth in Africa. *The Journal of Developing Areas*. Volume 47 (1). pp.91-108
21. Feeny, S., Iamsiraroj, S., & McGillivray, M. (2014). Growth and Foreign Direct Investment in the Pacific Island countries. *Economic Modelling*. Volume 37, pp. 332-339
22. Feng, Y. (2003). Democracy, Governance, and Economic Performance: Theory and Evidence. *The MIT Press Cambridge, Massachusetts. United States*
23. Frankel, J.A., & Romer, D. (1999). Does Trade Cause Growth. *American Economic Review, Vol 89, No. 3*, pp. 379-399
24. Gui-Diby, S.L., (2014). Impact of foreign direct investments on economic growth in Africa: Evidence from three decades of panel data analyses. *Research in economics*, 68(3), pp.248-256.
25. Harrison, A. (1996). Openness and Growth: A Time-Series, Cross-Country Analysis for Developing Countries. *Journal of Development Economics, Vol 48*, pp. 419-447
26. Hayat, A. and Cahlik, T., (2017). FDI and Economic Growth: A Changing Relationship Across Country and Over Time.

27. Jude, C., & Leveuge, G. (2015). Growth Effect of FDI in Developing Economies: The Role of Institutional Quality. *Banque de France Working Paper, 559*. Banque de France, Orleans.
28. Knack, S., & Keefer, P. (1995). Institutions and Economic Performance: Cross-country Tests Using Alternative Institutional Measures. *Economics and Politics, Vol. 7, No. 3*. pp. 207-227.
29. Kormendi, R.C., & Meguire, P.G. (1985). Macroeconomic Determinants of Growth: Cross-country Evidence. *Journal of Monetary Economics, Volume, 16, Issue 2*. Pp. 141-163  
[https://doi.org/10.1016/0304-3932\(85\)90027-3](https://doi.org/10.1016/0304-3932(85)90027-3)
30. Levine, R., & Renelt, D. (1992). A Sensitivity Analysis of Cross-Country Growth Regressions. *American Economic Review, American Economic Association, vol. 82(4)*, pages 942-963.
31. Mauro, P., (1995). Corruption and growth. *The quarterly journal of economics, 110(3)*, pp.681-712.
32. McKinlay, R.D. and Cohan, A.S., (1975). A comparative analysis of the political and economic performance of military and civilian regimes: a cross-national aggregate study. *Comparative Politics, 8(1)*, pp.1-30.
33. Mo, P. H., (2001). Corruption and Economic Growth. *Journal of Comparative Economics, Volume 29(1)*, pp. 66-79
34. North, D. C. (2016) 'Institutions and Economic Theory', *The American Economist, 61(1)*, pp. 72-76.
35. Peng, M.W., Wang, D.Y. and Jiang, Y., (2008). An institution-based view of international business strategy: A focus on emerging economies. *Journal of international business studies, 39(5)*, pp.920-936.
36. Raggl, Anna. K., (2017). Natural Resources, Institutions, and Economic Growth: The Case of Nigeria. Policy Research Working Paper; No. 8153. World Bank, Washington, DC. © World Bank.
37. Sachs, J.D. & Warner, A.M., (2001). The curse of natural resources. *European economic review, 45(4-6)*, pp.827-838.
38. Sala-i-Martin, X., & Subramanian, A. (2012). Addressing the Natural Resource Curse: An Illustration from Nigeria. *Journal of African Economies, Vol. 22, number 4*, pp. 570-615  
[doi:10.1093/jae/ejs033](https://doi.org/10.1093/jae/ejs033)
39. Solow, R.M., (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics, Vol. 70, No. 1* pp. 65-94

40. WGI indicators can be accessed at <http://info.worldbank.org/governance/wgi/#doc-intro>

41. Zheng, Yu. (2014). Governance and Foreign Investment in China, India, and Taiwan. Credibility, Flexibility, and International Business. *Michigan University Press*. United States

## Appendix I

### Definition of Variables

Variable	Description	Source
FDI Inflow	Net FDI Inflow as a percentage of GDP measured in 2010\$.	UNCTAD
GDP growth	Growth Rate of Real GDP Per capita	WDI
NR Exports	Percentage of Natural Resource exports in goods exports Fuels comprise the commodities in SITC section 3 (mineral fuels, lubricants, and related materials). Ores and metals comprise the commodities in SITC sections 27 (crude fertilizer, minerals nes); 28 (metalliferous ores, scrap); and 68 (non-ferrous metals).	WDI
NR Rents	Rents received from natural resources exports as a percentage of GDP.	WDI
Inflation rate	Rate of growth of consumer price index	WDI
Trade Openness	The sum of exports and imports as a percentage of GDP	WDI
Govt Spending	Government consumption expenditure as a percentage of GDP	WDI
Initial GDP	The GDP per capita of the initial year of each five-year subset of the dataset starting 1991.	WDI
Population Growth Rate	The annual growth rate of the population of the country	WDI
Domestic Investment	Gross domestic capital formation as a percentage of GDP (Gross domestic investment)	WDI
Enrollment	Gross secondary school enrollment rate of secondary school-going age	SDG's of UIS
Corruption	It evaluates the degree of corruption within the political system	PRS-IRCG
Law & Order	Quantifies Law and Order, that is, the strength and impartiality of the legal system	PRS-IRCG
<i>Institutional Quality Variables</i>	<i>Institutional Quality Variables</i>	<i>Institutional Quality Variables</i>
Government Stability	Government measures the government's ability to carry out its policies and constitutional principles.	PRS-IRCG Office. (2016)

