

# Political institutions and economic performance in Ethiopia: an autoregressive distributed lag bound approach to co-integration

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## Abstract

**Purpose** – The main objective of this study is to examine how political institutions affect economic performance in Ethiopia over the 1980–2019 time periods.

**Design/methodology/approach** – Mainly, the impact of political institution indicators including, level of democracy, political violence, democratic accountability and regime durability have been examined using autoregressive distributed lag (ARDL) bound test approach to co-integration and the error correction model.

**Findings** – This study confirms that level of democracy and democratic accountability has an adverse long effect on the economic performance of Ethiopia. On the other hand, political violence has a negative short-run causal effect on economic performance in Ethiopia. The study concluded that the deterioration of political institutions harmfully affected economic performance in Ethiopia.

**Practical implications** – Government policymakers should primarily pay attention to promoting and changing those political institutions that harm economic performance. Additionally, better management of political violence has important implications for fostering the economic performance of Ethiopia.

**Originality/value** – This study provides some valuable evidence on the nexuses between political institutions and economic performance in Ethiopia. Likely, this is the first investigation on the subject under the consideration to use time analysis and will vigorously contribute to the literature as well by employing the ADRL bound test. Previous studies have examined the impact of the institution on economic growth on a cross-country basis. Further analysis is required to understand the effects of institutions such as level of democracy, political violence and democratic accountability on economic development.

**Keywords** ARDL model, Bound test, Political institution, Economic performance, Ethiopia

**Paper type** Research paper

## 1. Introduction

Living standards, as captured by average income per capita, vary dramatically across countries. Among many other factors, economic factors such as physical and human capital and technological advancement are identified as the proximate cause of the cross-country difference in economic development. However, the recent debate over the fundamental determinants of long term economic development emphasized the role of the institutional framework in explaining the cross-country differences in per capita output (Acemoglu and Robinson, 2008; Leeuwen, 2008; North, 1990a, b). “Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction and in consequence they structure incentives in human exchange, whether political, social, or economic” (North, 1990a, b). They are socially approved behavior models that restrict the

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rationality of an individual and constrain or encourage specific behavior and assume that high-quality institutions encourage efficient use of limited production resources to fulfill the needs of society (Vitola and Senfelde, 2015a).

Over the last several decades, a massive amount of cross-country empirical research has examined the relationship between political institutions and development (Araee, 2016; Heshmati and Kim, 2017; Nawaz, 2015; Pereira and Teles, 2009). These studies concluded that political institution has a positive impact on economic growth. The other studies found a negative relationship between democratic institutions and economic development (Abeyasinghe, 2004; Aisen and José, 2013; Iqbal and Daly, 2014; Kurzman *et al.*, 2002; Tavares and Wacziarg, 2001). Additionally, an increasing number of study established the weaker and ineffective role of the institution on economic performance in Africa (Asfaw and Mbeche, 2006; Effiong, 2015; Rachdi and Saidi, 2015; Fikadu *et al.*, 2019), particularly Sub-Saharan African (SSA). Region institutional environments are affected by poor enforcement of the rule of law, corruption, mismanagement, absence of strong civil society and political interference.

Most of the above evidence established that institutions matter for economic growth and development, although the conclusion made is inconsistent. The question of interest in this study is that “does political institution matter for economic performance in Ethiopia?”. There is no framework for political power in Ethiopia and no democratic transparency (Araya, 2019; Bayu, 2019). The political climate is shrinking, marked by a lack of democratic culture, the destruction of the rule of law, the economic monopolization of the party and petty corruption. Although Ethiopia’s economy is rapidly growing than other SSA, extreme poverty and high-income inequality that still exist has root in its failure of political institutions (Asefa, 2018). However, such a cross-sectional study did not tell us to what extent political institutions influence economic growth over time. Thus, further research is required to understand how the level of democracy, political violence and democratic accountability influence economic performance.

To this extent, the current study aimed to examine by what means political institutions affect economic performance in Ethiopia using autoregressive distributed lag (ARDL) and error correction (EC) time series models. The empirical investigation uses the time series data of Ethiopia over the period of 1980–2019. There is a vigorous empirical study regarding the between institutions and economic performance.

## 2. Literature review

### 2.1 Theoretical literature

There is a wide discussion about the causes of economic performance disparities across the globe. The neoclassical economist stressed investment and saving long years ago as the key determinant of the economic growth of a country. The new growth theory later highlighted a country’s human resources and innovation potential as a vital determinant of economic growth. The new growth theory, unlike the neoclassical theoretical view, assumes technological advancement and technology as an endogenous factor in the development of economic activity. The other theoretical strands, revived by the new institutional economy, have recently emphasized the crucial role of institutions in economic performance (Aron, 2000; North, 1990a, b; Popescu, 2012; Sardadvar, 2011). In fact, according to North (1990a, b), “institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction and in consequence they structure incentives in human exchange, whether political, social or economic.”

The new theory integrates the theory of institutions into mainstream economics and contributes to explaining economic development by considering not only standard factors of production but also institutions (Aron, 2000; Acemoglu *et al.*, 2005; North and Thomas, 1973; Temin, 2008; Vitola and Senfelde, 2015b). Henceforth, development practitioners and

policymakers have recognized that institutions affect economic growth by fostering better policy choices by creating an incentive structure that helps to reduce transaction costs, minimize uncertainty and promote efficiency, maintain social harmony. However, weak institutions can increase volatility, unpredictability, instability, corruption and the cost of transactions (Acemoglu and Robinson, 2010a, b; Vitola and Senfelde, 2012).

## 2.2 Empirical literature

Following the recent advancement in econometrics methodology, an enormous amount of empirical work examining the relationship between institutions and growth has exponentially increased in recent decades. However, there is no consensus among the literature on how political institutions affect economic growth (Knutsen, 2012). According to Tavares and Wacziarg (2001), democracy hinders growth by reducing the rate of physical capital accumulation and, less robustly, by raising the ratio of government consumption to gross domestic product (GDP). The study indicates that democratic institutions are responsive to the demands of the poor by expanding access to education and lowering income inequality but do so at the expense of physical capital accumulation. Kurzman *et al.* (2002) affirm that democracy is an obstacle for promoting investment—the single strongest predictor of economic growth—because democracies regimes dare not impose unpopular measures to increase investment but only an authoritarian regime will be able to do so. Rachdi and Saidi (2015) state that existing literature provides conflicting views on the effect of democracy on economic growth. Using a generalized method of moments (GMM) system, the study shows that democracy, measured by Institutionalized Democracy Score, Institutionalized Autocracy Score, Competitiveness of Executive Recruitment, Openness of Executive Recruitment and Executive Constraints have a robust and negative impact on growth in Middle East and North Africa (MENA) countries.

Aisen and José (2013), using the system-GMM estimator, found that political instability adversely affects development by decreasing productivity growth rates and to a lesser degree, physical and human capital accumulation. Furthermore, the study demonstrates that economic freedom and ethnic homogeneity are beneficial to development, whereas democracy may have a slight negative effect. Iqbal and Daly (2014) concludes that institutional qualities promotes economic growth in strongly democratic economies and fail to boost growth in democratically weak countries. Das and Quirk (2016) concludes market-creating and market-stabilizing institutions have been found to be effective in fostering economic growth. It also found that institutions such as “democracy” that legitimize the economy are not inherently ideal for growth in developing countries.

Araee (2016), using the Generalized Method of Moments (GMM) found that democracy has a positive and robust effect on economic growth, and it is influenced by political instability more than democracy. Nawaz (2015) examines the impact of various institutions on economic growth using panel data for 56 countries over the period 1981–2010, at an aggregated level for world representative sample as well as for the sample disaggregated by the development level. Using the fixed-effects model and system GMM, the empirical analysis confirms a positive relationship between institutions and economic growth, but greater impact high-income countries as compared to low-income countries. Heshmati and Kim (2017) examined the effect of democracy on the economic growth of a panel data of 144 countries. The finding shows that democracy had a robust positive impact on economic growth.

Asfaw and Mbeche (2006) examines the role of institutions in the development process of African countries. Accordingly, institutions have played a greater role in the economic development of several East Asian countries, but in Africa they are weaker and ineffective because of poor enforcement of the rule of law, corruption, mismanagement, absence of strong civil society and political interference. Using panel regressions, Bodea and Elbadawi (2008) found that organized political violence, especially civil war, significantly lowers long-

term economic growth. According to this study, SSA has been disproportionately impacted by civil war, widening its income gap relative to East Asia. [Matthew and Adegboye \(2014\)](#) investigated the impact of trade openness and institutions on economic growth in 30 SSA countries using least square dummy variables and the GMM. The study revealed that institutions had a significant positive impact on economic growth but trade openness only had a little significance on growth in the region. Using static panel regression, [Masaki and Walle \(2014\)](#) found that level democracy is positively associated with economic growth in SSA countries that have remained democratic for longer periods of time. Using robust estimation of system GMM, [Fikadu et al. \(2019\)](#) found that Eastern African economies could not be explained by political institution, considering level of democracy (Polity2) as proxy.

Limited studies assessed the role of institutions in the development process of Ethiopia. [Araya \(2019\)](#) explored what strategic controls and accountability measures are in place to regulate the rule-making process. The results revealed that in Ethiopia there is no political control mechanism in place, and no accountability measures have been taken. [Bayu \(2019\)](#) critically analyzes good governance performance using World Bank Governance Indicator Framework. The study revealed that the shrinking political landscape has made citizens develop a kind of attitude that their vote has no power to bring any difference and the political culture “democratic centralism” has made elected government to be accountable for the party channels, instead of ensuring accountability for their constituencies. In addition, huge interference of politics in the civil service, the highly politicized nature of the public institution, the prevalence of corruption and weak political commitment, and weak and vulnerable governance institutions challenged government effectiveness. Moreover, the study states lack of democratic culture, the erosion of the rule of law, party monopolization of the economy, as well as the politicization of the civil service, the incidence of grand and petty corruption is on the rise and it continues to be perceived as a pervasive problem.

### *2.3 Institutional development and economic performance in Ethiopia*

The institutional development experience of Ethiopia has been described into three historically distinct periods: (1) the period 1941–1974 was described as period of institution building, (2) 1974–1991 the period of human and economic distress and (3) from 1991 to the 2018 the period of restructuring and experimentation with ethnic federalism. Many institutions that are still important to our lives today, although battered and tattered, trace their roots to this time, were characterized by some solid achievements in the pre-1974 periods. Such institutions cover the full spectrum of public policy, economics, education and infrastructure ([Asefa, 2018](#)). In 1974, the provisional soldiers’ administrative council known as the Derg regime overthrew Haile Selassie I. Then the Derg set up a military style socialist government. However, droughts, famine and insurrections rushed through the fall of the Derg. The Tigrayan People’s Liberation Front (TPLF) merged with other ethnically oriented resistance movements in 1989 to form the Revolutionary Democratic Front of the Ethiopian Peoples (EPRDF).

Although a multiparty structure was introduced by the EPRDF government in 1991, one party dominated the political landscape and it was marked by authoritarianism and repression. This was compounded by the implementation of a series of draconian laws by the government that permitted the state to censor political activists and journalists, decimate political opposition and limit freedom of speech and association. Institutions such as the National Electoral Board of Ethiopia, the Commission on Human Rights and the judicial system that is meant to be accountable to parliament have been ineffective and extremely partisan among the public. The government’s unwarranted impact on the function of such institutions has eroded the legitimacy of the institutions and made them fragile and incapable of ensuring control and balance in the nation. This has resulted in a significant lack of unbiased outlets to rectify public concerns and inevitably lead to prolonged violent demonstrations, the only means of communication with the government ([IPSS, 2020](#)).

Over the past decades, Ethiopia's economic growth has been relatively fast and stable. In 2004–2014, real GDP growth averaged 10.9%. By taking population growth of 2.4% per year into account, actual per capita GDP growth averaged 8.0% per year. This rate of growth is the highest ever witnessed by the country and also exceeds what was achieved in that time by low-income and SSA countries. With a change to an even higher gear in 2004, rapid economic growth began in 1992. As average production increased from 0.5% in 1981–92 to 4.5% in 1993–2004 and to 10.9% in 2004–14, econometric research confirms a history of two growth accelerations. Shortly after the political and economic change of 1991, the first 'gear shift took place with the collapse of the communist Derg dictatorship and the implementation of a more market-oriented economy. In turn, the subsequent government of the EPRDF initiated a series of systemic economic reforms during the 1990s, paving the way for the second acceleration of growth beginning in 2004. Interestingly, structural economic reforms have been largely absent from the recent success story of Ethiopia, although if introduced, they offer promising growth prospects (WB, 2016).

The insight from international and regional research reviewed above found mixed results on the impact of political institutions on economic growth. The explanation for the best of this research may be attributed to robust econometrics studies of the sample heterogeneity, even though previous studies used sophisticated econometrics methods. Whereas, the research on political institutions and economic growth nexuses carried out in Ethiopia was based on a cross-sectional design. To the best of this study, the ARDL provides better insight to understand the dynamism's impact of the political institution on economic performance. To this extent, this study aims to investigate how political institutions affect economic performance in Ethiopia using employing an ARDL time series.

### 3. Research methodology

#### 3.1 Data

This study has used annual time series data of Ethiopia over the 1980–2019 time period. The data were sourced from different databases including the United Nations Conference on Trade and Development (UNCTAD) data center, World Bank Development Indicator (WDI), and the International Monetary Fund (IMF), Center for Systematic peace (CSP) and International County Risk Guide (ICRG). Table 1 show the brief descriptions, the source and expected sign of variables included in the analysis. As the purpose of this study is to examine the impact of political institutions on economic performance, real GDP per capita, in US dollars at constant prices (2015), is used as a proxy measure of economic performance. The indicator is a basic economic indicator and measures the level of total economic output relative to the population of a country. The Center for Systematic peace (CSP) is measuring the political regime characteristics and political violence of many states in the world recorded in its Polity V databases. Among such numerous indicators, POLITY2, Political violence (MPV) and regime durability (DBY) were included in this study.

The first and most important indicator of political institution is the level of democracy which is measured by POLITY2. Monty G. Higher level of democracy would have positive impact on economy. Political violence is the deliberate use of power and forces to achieve political goals and characterized by both physical and psychological acts aimed at injuring or intimidating populations. Political violence diminishes individuals' trust in the moral organization of society, government entities; lessen the willingness of individuals to engage in political activities and processes of democracy (Marshall, 2019). Regime durability is the number of years since the most recent regime change or the end of the transition period defined by the lack of stable political institutions. It is calculated as the first year during which a new polity is established is coded as the baseline "year zero" (value = 0) and each subsequent year adds one to its value consecutively until a new regime change or transition period (Marshall and Gurr, 2020).

Variable	Brief description	Expected sign	Source
GDPC	Real GDP per capita measured in 2015 US\$	NA	UNDP
FDI	Foreign direct investment per capita	+	UNDP
TOPEN	Trade openness which measured in US\$	+	UNDP
POPG	Percent of annual population growth	+	WB
INF	Inflation as percent of consumer price index	-	IMF
POLITY2	Level of democracy measured from -10 (strong autocracy) to +10 (strong democracy)	+	CSP
MPV	Political violence measured from 0 (no violence) to 10 (high violence)	-	CSP
DEA	Democratic accountability which measured from 0 (less accountable) to 6 (more accountable government)	+	ICRG
DM <sub>1991</sub>	Time Dummy having value of "1" if the time period is 1991, "0" otherwise	-	CSP
DBY	The number of years since the most recent regime change	+/-	CSP

**Note(s):** the mathematical operations "+", "-" and "+/-" indicate that the variables will be expected have positive impact, negative impact and ± negative or positive impact on economic performance respectively, and NA = not applicable

**Source(s):** Author own compilation

**Table 1.**  
Variable descriptions  
and expected sign and  
source of the data

The Last political institution variable that was selected to be included in the analysis is democratic accountability. This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society but possibly violently in a nondemocratic one (Howell, n.d.). The study also included some macroeconomic variables that are important determinants of economic growth. Accordingly, FDI per capita (FDI), trade openness (TOPEN), annual population growth (POPG) and inflation (INF) were introduced to the baseline model.

Table 2 shows the summary statistics for the variables included in the study. The average value of GPD per capita (GDPC) is \$367.199, while minimum and maximum values are \$208.111 and 768.225, respectively. In addition, the result shows that the political-institutional environment in Ethiopia is not good. On average, the level of democracy (POLITY2) is negative 2.846, while minimum and maximum values are -8 and 1, which has a standard deviation of 3.468. Likewise, political violence (MPV) and democratic accountability (DEA) has an average score of 2.625 and 2.906, respectively. The average number in which regime can change is around 6 years, while the maximum number year 15. On average FDI and TOPEN perform 6.398 \$/ per capita and \$2408.414, respectively. The standard deviation of FDI and TOPEN is 10.585 and 2467.688, which almost near average. POG and INF has mean

Variable	Mean	Standard deviation	Minimum	Maximum
GDPC(in \$)	367.199	152.802	208.1115	768.2254
POLITY2	-2.846	3.468	-8	1
MPV	2.625	2.657	0	6
DEA	2.906	1.094	1	4.5
DBY	5.974	4.451	0	15
FDI	6.398	10.585	-0.065	39.988
TOPEN	2408.414	2467.688	435.894	8590.200
INF	9.275	10.250	-9.146	44.371
POPG	2.946	0.343	1.878	3.591

**Source(s):** Author computation using data from UNCATD, WB, CSP, IMF and ICRG

**Table 2.**  
Summary statistics

of 9.275 and 2.946, respectively, while standard deviations are 10.250 and 0.343. The standard deviation of POPG is far lower than average value.

### 3.2 Econometric model specification

The method selection for time series analysis is based on the unit root test results which determine the stationarity of the variable. If all the variables of interest are stationary, the methodology becomes ordinary least square (OLS) or vector autoregressive (VAR) models can provide unbiased estimates. But, if all the variables of interest are nonstationary, OLS or VAR models may not be appropriate because the nonstationary variables can be made stationary by taking first difference which might lose important information of the variables. Similar problem arises when the series are of integrating of order of mixed type. However, ARDL model which is an OLS based model is appropriate for both nonstationary time series as well as for times series with mixed order of integration (Shrestha and Bhatta, 2018).

Therefore, following Mankiw *et al.* (1992) growth model augmented with political institution variables, we specify the following functional forms:

$$GDPC_t = f(\text{Poliy}2_t, \text{MPV}_t, \text{DEA}_t, \text{FDI}_t, \text{POPG}_t, \text{TOPEN}_t, \text{INF}_t, \text{DBY}_t, \text{DM}_{1991}) \quad (1)$$

Where: “*t*” is the time ranging from 1980 to 2019 G.C. The abbreviation GDPC stands for real GDP per capita and it the dependent variable of this study. The variable  $\text{DM}_{1991}$  is the time dummy which is used to capture unexpected shocks where complete state failure happened to the country, in this case, Ethiopia. The other variables are as noticed and defined in the data description section.

Thus, generally, we specify an ARDL (*p*, *q*) model that examines the effect of political institution on economic performance in Ethiopia as in the following equation;

$$\begin{aligned} \ln GDPC_t = & \beta_{0i} + \sum_{i=1}^p \alpha_i \ln GDPC_{t-i} + \sum_{i=0}^q \beta_{1i} \text{Polity}2_{t-i} + \sum_{i=0}^q \beta_{2i} \text{MPV}_{t-i} + \sum_{i=0}^q \beta_{3i} \text{FDI}_{t-i} \\ & + \sum_{i=0}^q \beta_{4i} \text{POPG}_{t-i} + \sum_{i=0}^q \beta_{5i} \text{LNTOPEN}_{t-i} + \sum_{i=0}^q \beta_{65i} \text{DEA}_{t-i} + \sum_{i=0}^q \beta_{7i} \text{INF}_{t-i} \\ & + \sum_{i=1}^p \beta_{8i} \text{DBY}_{t-i} + \sum_{i=1}^p \beta_{9i} \text{DM}_{1991} + \epsilon_t \end{aligned} \quad (2)$$

Where: *p* and *q* are the length of the lag for dependent and independent variables respectively,  $\alpha$  is the coefficient of lag period of real GDP per capita,  $\beta_0$  is the intercept,  $\beta_1, \beta_2, \dots, \beta_9$  are the coefficients of regressors,  $\epsilon_t$  is an error term. It is important to note that the GDPC and TOPEN are used in regression in natural logarithmic form. The institutional variables are measured in ordinal values and the other macroeconomic variables are reported in percentage values, hence inappropriate to take a natural logarithm to transform.

### 3.3 Estimation techniques

To estimate Eqn (2), the first step is to carry out unit root test in the time series variables. The study used Augmented Dickey–Fuller (ADF) test in testing the unit root in the series, with and without a trend. The ADF model test unit root as follows;

$$\Delta y_t = \mu + \delta y_{t-1} + \sum_{i=1}^k \beta_i \Delta y_{t-1} + e_t \quad (3)$$

Where,  $\delta = \alpha - 1$ ,  $\alpha$  is the coefficient of  $y_{t-1}$ , and  $\Delta y_t$  is first difference of  $y_t$ . The null hypothesis of ADF is  $\delta = 0$  against the alternative hypothesis of  $\delta < 1$ . If we do not reject null, the series is nonstationary whereas rejection means the series is stationary. After performing stationary test, the next is to conduct a co-integration test to establish a long-run relationship. In this study, bound test approach proposed by [Pesaran et al. \(2001\)](#) to co-integration test is employed. The ARDL bound test equation can be specified as in the following;

$$\begin{aligned} \Delta \ln \text{GDP}p_c_t &= \beta_{0i} + \sum_{i=1}^p \alpha_i \Delta \ln \text{GDP}p_c_{t-i} + \sum_{i=0}^q \beta_{1i} \Delta \text{Polity}2_{t-i} + \sum_{i=0}^q \beta_{2i} \Delta \text{MPV}_{t-i} \\ &+ \sum_{i=0}^q \beta_{3i} \Delta \text{FDI}_{t-i} + \sum_{i=0}^q \beta_{4i} \Delta \text{POPG}_{t-i} + \sum_{i=0}^q \beta_{5i} \Delta \text{LNTOPEN}_{t-i} \\ &+ \sum_{i=0}^q \beta_{6i} \Delta \text{DEA}_{t-i} + \sum_{i=0}^q \beta_{7i} \Delta \text{INF}_{t-i} + \sum_{i=0}^q \beta_{8i} \Delta \text{DBY}_{t-i} + \sum_{i=0}^q \beta_{9i} \Delta \text{DM}_{1991} \\ &+ \lambda_1 \ln \text{GDP}p_c_{t-i} + \lambda_2 \text{Polity}2_{t-i} + \lambda_3 \text{MPV}_{t-i} + \lambda_4 \text{FDI}_{t-i} + \lambda_5 \text{POPG}_{t-i} \\ &+ \lambda_6 \text{LNTOPEN}_{t-i} + \lambda_7 \text{DEA}_{t-i} + \lambda_8 \text{INF}_{t-i} + \lambda_9 \text{DBY}_{t-i} + \lambda_{10} \text{DM}_{1991} + u_t \end{aligned} \quad (4)$$

Where the vector  $\beta'$  is the short-run coefficients,  $\lambda'$  is the long-run coefficients and  $u$  is the error component. F-test is applied for the joint null hypothesis that the coefficients on the level variables are jointly equal to zero. If the test statistic falls below the lower critical value, denoted as I (0), we cannot reject the null hypothesis of no co-integration. But, if the test statistic falls above the upper critical value, denoted as I (1), we can reject the null hypothesis of no co-integration ([Pesaran et al., 2001](#)). After confirming the existence long-run equilibrium relationship, the ARDL model of the co-integrating vector is reparameterized into a dynamic error correction model (ECM) by linear transformation. The ECM integrates the short-run dynamics with the long-run equilibrium without losing long-run information and avoids problems. In that case, we specify ECM version of ARDL as in the following;

$$\begin{aligned} \Delta \ln \text{GDPC}_t &= \beta_{0i} + \sum_{i=1}^p \beta_{1i} \Delta \ln \text{GDPC}_{t-i} + \sum_{i=0}^q \beta_{2i} \Delta \text{Polity}2_{t-i} + \sum_{i=0}^q \beta_{3i} \Delta \text{MPV}_{t-i} \\ &+ \sum_{i=0}^q \beta_{4i} \Delta \text{FDI}_{t-i} + \sum_{i=0}^q \beta_{5i} \Delta \text{POPG}_{t-i} + \sum_{i=0}^q \beta_{6i} \Delta \text{LNTOPEN}_{t-i} \\ &+ \sum_{i=0}^q \beta_{7i} \Delta \text{DEA}_{t-i} + \sum_{i=0}^q \beta_{8i} \Delta \text{INF}_{t-i} + \sum_{i=0}^q \beta_{9i} \Delta \text{DBY}_{t-i} + \sum_{i=0}^q \beta_{10i} \Delta \text{DM}_{1991} \\ &+ \lambda \text{ECT}_{t-1} + \omega_t \end{aligned} \quad (5)$$

Where,  $\lambda$  represents of error correction term (ECT) and  $\omega_t$  is the error component associated with ECM.

### 3.4 ARDL diagnostic tests

The robust and unbiased estimation depends on the goodness of fit, which can be evaluated by  $R^2$ . When the value  $R^2$  is closer to 1, the model is considered to be better. In addition, Durbin Watson (DW) statistics have used to test whether there is autocorrelation in residuals.



If the value of DW is close to two, then the model is considered to be “utocorrelation free”. The Jarque–Bera normality test is used to determine whether the regression errors are normally distributed, which is a joint asymptotic test whose statistic is calculated from the skewness and kurtosis of the residuals. The test for the presence of heteroscedasticity problems is conducted by the Breusch–Pagan–Godfrey test. It tests the null hypothesis that the residuals are both homoskedastic. The larger value of the probability value is desired to retain the null hypothesis of homoscedasticity. The stability of the model, whether the parameters of the estimated model are stable across various subsamples of the data, is examined by cumulative sum (CUSUM) and cumulative sum (CUSUM) square tests.

**4. Result and discussion**

Table 3 shows the result of the unit root test for separate variables included in this study. The study evaluated if variables stationary at level, and after the first difference, by specifying a model with intercept only, with intercept and trend. As the result, all variables are confirmed to have a unit root at level, except for inflation. Inflation is stationary at the level at 1% level of significance. After the first differences, all of the variables are stationary at 1% and 5% level of significance. The result indicates that the variables in this study are a mixture of integrated order of I(0) and I(1). This validates the use of the ARDL method developed by (Pesaran *et al.*, 2001).

Table 4 shows the result of bound test for co-integration for the selected ARDL (1, 1, 0, 1, 1, 1, 0, 1, 0) model. Based Akaike info criterion (AIC) lag selection method, all variables were specified at lag 1 except, DEA and inflation which were specified at lag 0. The result

Variables	At level		At first difference	
	Constant only	Constant and trend	Constant only	Contestant and trend
LNGDPC	1.657761	-0.679659	-4.092726***	-5.285872***
POLITY2	-1.49948	-1.61187	-5.57919***	-5.46866***
MPV	-2.16265	-2.45727	-5.73016***	-5.6891***
DEA	-1.42784	-0.47369	-4.75927***	-5.06682***
FDI	-0.77555	-4.92462	-4.47756***	-4.02121**
LNTOPEN	0.308094	-1.78253	-4.42987***	-4.54109***
POPG	-0.97791	-2.84799	-4.5339***	-4.46952**
INF	-4.56125***	-4.8952***	-9.21167***	-9.07497***
DBY	-2.43019	-2.43865	-5.2647	-5.15411

**Table 3.**  
ADF unit root test results

**Note(s):** the numbers reported are *t*-ratio and the asterisks \*\*\*\* and \*\* indicates the rejection of the null hypothesis of non-stationary at 1%, 5% and 10% significant level respectively  
**Source(s):** Author’s computation using Eviews 11

Bounds test statistic	Value	Bound	Significance level		
			10%	5%	1%
<i>F</i> -statistic	13.52816	I(0)	1.88	2.14	2.65
<i>K</i>	9	I(1)	2.99	3.3	3.97
<i>t</i> -statistic	-6.49752	I(0)	-2.57	-2.86	-3.43
		I(1)	-4.56	-4.88	-5.54

**Table 4.**  
Bounds test for co-integration analysis

Selected Model ARDL (1, 1, 0, 1, 1, 1, 0, 1, 0)  
lag selection method Akaike info criterion (AIC)

**Source(s):** Author’s estimation using Eviews 11

confirmed that the value of the  $F$ -statistic for the joint significance is greater than the upper bound critical values at 1%, 5% and 10% levels of significance. It is clear from the result that  $F$ -statistic = 13.52816, which implies the rejection of the null hypothesis in favor of the alternative hypothesis. Therefore, there is a long-run relationship between the variable in the equation. The  $t$ -bound test also confirms that there is a long-run relationship among the variable, the absolute value of  $t$ -test = 6.49752 is greater than  $I(1)$  at 1%, 5% and 10% levels.

Table 5 shows the diagnostics test results for the robustness of the ARDL model. The Breusch–Godfrey Serial Correlation LM test and Breusch–Pagan–Godfrey Heteroskedasticity test confirm that residuals are free from serial correlation ( $p = 0.555$ ) and heteroskedasticity problems ( $p = 0.676$ ). Likewise, the value of Jarque–Bera normality test ( $p = 0.7207$ ) is not significant, implying that errors in the series have a normal distribution.

The Ramsey functional form test also confirms that the model is specified well,  $p = 0.5326$  cannot reject the null hypothesis of the model is correctly specified. Additionally, Figures 1 and 2 depict the result of model stability of the estimated ARDL regression coefficients. As portrayed in the graphs, CUSUM test and square test statistics are neatly within the boundaries at the 5% significant level. Hence, this confirms the stability of the long-run and short coefficients in the estimated model.

Table 6 shows the estimated long-run effect of political institutions and other convectional macroeconomic variables on economic performance (LNGDPC). The result indicated that the level of democracy (POLITY2) has a negative significant long-run effect on LNGDPC at a 1% level. This finding confirms the previous finding (Aisen and José, 2013; Das and Quirk, 2016; Iqbal and Daly, 2014). Bardhan (2005) stated that institutions that harm economic performance often tend to persist for long periods in many poor countries. On the other hand, the result shows that political violence (MPV) has no significant long-run effect on the LNGDPC of Ethiopia.

Description of test types	Test statistics	Value	Prob
Breusch–Godfrey Serial Correlation LM Test	$F$ - Statistics	0.359225	0.5553
Heteroskedasticity Test Breusch–Pagan–Godfrey	$F$ - Statistics	0.796005	0.6760
Specification test: Ramsey RESET Test*	$F$ - Statistics	0.634568	0.5326
Normality Test: Jarque–Bera		0.65508	0.7207

Source(s): Author’s calculation using Eviews 11

Table 5.  
Diagnostics tests  
of ARDL

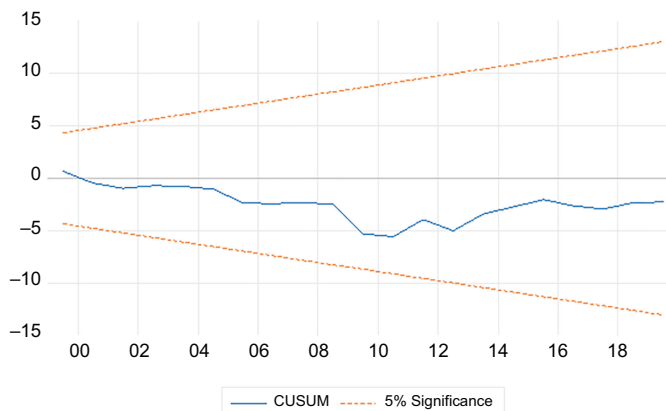
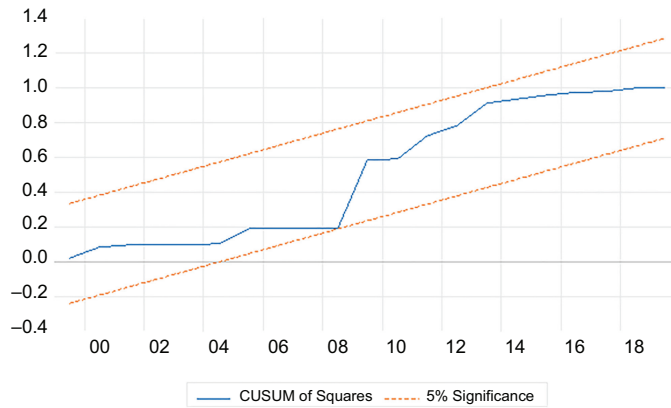


Figure 1.  
Cumulative sum  
(CUSUM) test



**Figure 2.**  
Cumulative sum  
(CUSUM) square test

Regressors	Coefficient	Std. Error	t-Statistic	Prob
<i>Dependent variable: D(LNGDPC)</i>				
POLITY2	-0.01843	0.00587	-3.13808	0.0048***
MPV	-0.00138	0.00553	-0.25016	0.8048
DEA	-0.07520	0.01553	-4.84112	0.0001***
FDI	0.01073	0.00119	9.02562	0.0000***
LNTOPEN	0.32482	0.02140	15.17793	0.0000***
POPG	0.06204	0.05447	1.13886	0.2670
INF	-0.00183	0.00091	-2.01269	0.0565*
DM <sub>1991</sub>	-0.47854	0.13246	-3.61270	0.0015***
DBY	-0.01000	0.00237	-4.22338	0.0003***
R-squared	0.996775	Akaike info criterion		-4.06363
Adjusted R-squared	0.994429	Schwarz criterion		-3.33849
F-statistic	424.9345	Hannan-Quinn criterion		-3.80345
Prob (F-statistic)	0.0000	Durbin-Watson stat		2.200985

**Source(s):** Author's estimation using Eviews 11

**Table 6.**  
Estimated long run  
coefficients for selected  
ARDL (1, 1, 0, 1, 1, 1, 0,  
1, 0) model

Also, [Table 6](#) shows that DEA has a negative influence on GDP per capita at the % level. The result implies that in the long-run DEA adversely influenced economic performance in Ethiopia. It might be because, in a nation where the quality of an institution is dysfunctional, weak democratic institutions, politicians and public officials have fewer checks on their power, making it easier for them to engage in rent-seeking ([Iqbal and Daly, 2014](#); [Masaki and Walle, 2014](#)). Likewise, the dummy variable (DU 1991) has an inverse relation with economic performance in the long run. According to CSP (2020), Ethiopia faced complete state failure in 1991. The finding of this study revealed that, in the long run, the impact of DU1991 declined as real GDP per capita increased over time. Moreover, regime durability (DBY) harms real GDPP per capita at a 1% level. The result implies that keeping all other factors constant, an increase in regime durability by a year led to a decrease in economic performance by 1% in the long run.

Similarly, the result indicates that most of the standard macroeconomic variables included in this study have a significant effect on economic performance (LNGDPC). In the long run, the inflow of FDI per capita and trade openness (LNTOPEN) has a positive influence on real GDP per capita at a 1% level. It implies that an increase in FDI by \$1 per capita led to an improvement in real GDP by 1%, ceteris paribus. Similarly, keeping all other variables

constant, an increase in trade openness with other nations led to an improvement in real GDP by 32.48% in Ethiopia. On the other hand, inflation (INF) has a negative significant long-run effect on real GDP per capita at 10%.

Table 7 shows the estimated result of the error correction model, which is the short-run dynamics. The finding indicates that the level of democracy (Polity2) cannot explain economic performance in the short run. However, political violence has short-run inverse relationships with real GDP per capita at a 5% level. This finding is consistent with Aisen and José (2013), which found that a higher degree of political instability is associated with lower growth rates of GDP per capita. Bodea and Elbadawi (2008) maintained that organized political violence, especially civil war, significantly lowers long-term economic growth in Sub-Saharan African.

The result shows that the standard macroeconomic variables inflows of FDI per capita, trade openness (LNTOPEN), and annual population growth (POPG) have a short-run positive effect on economic performance in Ethiopia at 10%, 5%, and 1% level, respectively. The result implies that an increase in FDI, Trade openness and annual population growth led to 0.195%, 8.25%, and 36.12%, respectively, ceteris paribus. Moreover, the dummy variable DM1991 has a short-run negative impact on economic performance in Ethiopia, which implies that a decrease in DM1991 would lead to an increase in real GDP per capita. Furthermore, the result indicates that the parameter CointEq. (-1), at the 1% level, the error correction coefficient is negative and statistically important. This suggests that all the variables have a long-run relationship or are co-integrated. The result suggests that the mechanism corrects its previous time imbalance at a rate of 71.16% annually.

Table 8 demonstrates the Granger causality test at lags 1 and 2 between variables of political institutions and actual GDP per capita. The result revealed that causality exists between the degree of democracy (measured by POLITY2) and the actual per capita GDP at 10% and 1% respectively. The result suggests that economic growth is caused by the level of democracy, but the reverse is not accurate. In addition, political violence (MPV) and real GDP per capita have a strong unidirectional causality at a 1% level, under lag length 1, and 5% level, under lag length 1. The result suggests that economic growth is caused by political aggression, but the reverse may not be true. This result is consistent with Bruinshoofd (2016) which argues that over the longer term, institutional quality and economic growth improve each other but this virtuous cycle is driven by institutional quality. Similarly, the result shows

Regressors	Coefficient	Std. error	t-Statistic	Prob
<i>Dependent variable: DLNGDPC</i>				
C	2.48305	0.17895	13.87600	0.0000***
D (POLITY2)	-0.00243	0.00355	-0.68401	0.5011
D (MPV)	-0.00909	0.00284	-3.19656	0.0042***
D (FDI)	0.00195	0.00101	1.92440	0.0673*
D (LNTOPEN)	0.08250	0.03371	2.44766	0.0228***
D (POPG)	0.36126	0.04488	8.05001	0.0000***
D (DM <sub>1991</sub> )	-0.10079	0.03157	-3.19285	0.0042***
CointEq (-1)	-0.71608	0.05187	-13.80667	0.0000**
R-squared	0.91306	Akaike info criterion		-4.5252
Adjusted R-squared	0.89343	Schwarz criterion		-4.1839
F-statistic	46.51080	Hannan-Quinn criterion		-4.4027
Prob. (F-statistic)	0.0000	Durbin-Watson stat		2.2010

**Note(s):** The asterisks \*\*\*, \*\* and \* sign indicates the significance of the coefficients at 1%, 5% and 10% significant level respectively

**Source(s):** Author's estimation using Eviews 11

**Table 7.**  
Estimated coefficients  
of short run ARDL  
Error Correction  
Regression

**Table 8.**  
Pairwise Granger  
causality tests

Null hypothesis	Lag: 1		Lag: 2	
	F-statistic	Prob	F-statistic	Prob
POLITY2 does not Granger Cause LNGPDC5	3.72722	0.0614*	12.508	0.00009***
LNGPDC5 does not Granger Cause POLITY2	0.04486	0.8335	0.35746	0.7021
MPV does not Granger Cause LNGPDC5	11.2268	0.0019***	3.95313	0.0289**
LNGPDC5 does not Granger Cause MPV	0.13986	0.7106	0.11238	0.894
DEA does not Granger Cause LNGPDC5	8.98516	0.0049***	3.40766	0.0451**
LNGPDC5 does not Granger Cause DEA	5.491	0.0248**	3.68685	0.0359**

**Source(s):** Author's estimation using Eviews 11  
**Note(s):** The asterisks \*\*\*, \*\* and \* sign indicates the significance of the F-test at 1%, 5% and 10% significant level respectively

that there is bidirectional causality between DEA and per capita real GDP, suggesting that economic performance are caused by DEA and vice versa.

## 5. Conclusions and recommendations

### 5.1 Conclusion

Following the studies that have investigated the impact of institutions on economic performance in developing economies, particularly Africa's economies, this study examined how political institutions affect economic performance in Ethiopia over the periods of 1980–2019. The short-run and long-run relationships between political institutions, along with other standard economic variables, are explored by using the Autoregressive Distributed Lag approach to co-integration. Specifically, the effect of Political institutions including the level of democracy, political violence, regime durability, and DEA was investigated.

This finding of this study reveals that the level of democracy and DEA has a long-run adverse impact on Ethiopia's economic performance. The result of the granger causality test confirms that there is a significant long-run causality between these measures of political institution and real GDP per capita. Importantly, this confirms with [Kurzman et al. \(2002\)](#) which affirm that democracy is an obstacle for promoting investment because Democracies regimes dare not impose unpopular measures to increase investment but only an authoritarian regime will be able to do so. Also, political violence has a short-run negative effect on economic performance in Ethiopia. The result of the Granger causality test also confirms that there is a short-run causal relationship between political violence and real GDP per capita. This study concludes that the deterioration of political institutions in Ethiopia hinders its economic performance over the last four decades. The weak quality of institutions prevents it from gaining the benefits of a high continued economic performance, which is depending upon the quality of institutions.

### 5.2 Recommendation

From a policy perspective, the level of democracy and DEA should have to be paid more attention. The government policymakers need to give priorities to improving the quality of political institutions. Additionally, better management of political violence has important implications for fostering the economic performance of Ethiopia. This study contributes to the existing literature by examining how the level of democracy, DEA and political violence has influenced economic performance in Ethiopia. However, several political institutions' indicators that economic performance remains unconsidered. Hence, a future study needs to focus on such areas.

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