Afro Asian Journal of Social Sciences
Volume IX, No I. Quarter I 2018
ISSN: 2229 – 5313

THE EFFECT OF ELECTORAL DEMOCRACY ON ECONOMIC GROWTH IN EGYPT 1970-2015

Shereen Nosier
Assistant Professor, Department of Economics, Faculty of Economic Studies and Political Science, Alexandria University, Smoha, Alexandria, Egypt

ABSTRACT

The objective of the study is to examine the impact of democracy on economic growth in Egypt during the period 1970-2015. Political Democracy, Size of Government, Physical Capital Accumulation, Total Trade, and Population Growth have been identified as the potential determinants of economic growth in Egypt. Six different measures of democracy are considered, using Variety of Democracy indices; namely Electoral Democracy, Freedom of Association, Clean Elections, Freedom of Expression, Political Civil Liberties, and Civil Society Participation. Results concluded that the long-run elasticities are statistically significant and indicate that a 10% increase in democracy enhances economic growth in Egypt by 2% - 19% in the different models. Finally, the causality results revealed a bidirectional relationship between democracy and economic growth with all its measures in the long run. However, democracy Granger causes economic growth in the short run only when the electoral index is used as a measure of democracy.

1. Introduction

The relationship between democracy and economic growth has been investigated in the literature since 50 years. Researchers are trying to answer many questions; does democracy facilitate economic growth or hinder it? Is economic growth a prerequisite for democracy or the other way around? Does democracy influence economic growth directly or indirectly? What are the most important channels between democracy and economic growth? The results are inconclusive. For most researchers, democracy influences economic growth significantly, with a positive or negative effect. It depends on measures of democracy, the type and the composition of countries used in the studies, the examined time periods, and finally the channel through which the effect

of democracy transfers to economic growth. Physical capital accumulation, government size, trade openness, population growth, human capital, income inequality, political instability, corruption, fiscal deficit, and inflation are the most important channels.

The main purpose of this paper is to investigate the impact of democracy on economic growth in Egypt for the period 1970-2015 using the time-series co-integration approach. This objective can be obtained through achieving the following sub-purposes. First, the long-run relationship between democracy and economic growth in Egypt has been identified over the period of the study. The long-run and short-run effects of democracy on economic growth have been estimated simultaneously; determining the speed of adjustment from the short-run disequilibrium to the long-run equilibrium. Finally, the Granger causal relationship between economic growth and democracy has been examined in Egypt.

The remainder of the paper is organized in six sections. Section 2 gives a literature review of the relationship between democracy and economic growth worldwide. The description of the adopted models and the specification of the variables are explained in Section 3. The adopted methodology is illustrated in Section 4. The results are reported, evaluated and explained in Section 5. Finally, Section 6 summarizes and draws conclusions and directions for future research.

1. Literature Review

By surveying the literature, we can distinguish three conflicting results about the significance and direction of the effect of democracy on economic growth, indicating that there is no consensus on this relationship.

Many researchers validate the development theories and the compatibility hypothesis (Goodin, 1979; Hibbs, 1973; Marsh, 1979; McCord, 1965), indicating that democracy fosters economic growth in the long run. (Acemoglu, et al., 2014) confirm that democratizations increase income per capita by about 20% in the long run. In addition,(Gerring, et al., 2005) apply their study on a panel of 180 countries across the world from 1950 to 2000 and conclude that when democracy is

measured as a stock variable, it has a strong positive effect on economic growth regardless of the specification of the growth equation.

The supporters of democracy argue that rulers are potential looters (Harrington, 1992) and democratic regime can act to constrain them. Democracy fosters higher political rights and civil liberties, which enhance the motivation of citizens for work and invest, hence stimulating economic growth. Finally,(Bhagwati, 1995) argues that democracies rarely engage in military conflicts with each other, which encourages peace and stability, and thus promotes economic growth (Doucouliagos&Ulubasoglu, 2006).

In contrast, a negative and significant effect of democracy on economic growth is detected in some studies, validating the conflict hypothesis (Andreski, 1968; Apter, 1965; Chirot, 1977; De Schweinitz, 1964; Huntington, 1987; Rao, 1985) and indicating that democracy hinders economic growth. (Rachdi&Saidi, 2015) used a sample of 17 MENA countries and found that democracy has a robust and negative impact on growth.

The advocates for the conflict hypothesis discuss that democracies have weak political institutions, working to achieve the popular demands at the expense of profitable and effective investments. Autocratic regimes are easier to take strict economic policies, which are required for economic growth even if at the expense of the poor. Firm decisions can be implemented to prevent the social instabilities due to ethnic, religious, and class struggles. In general, developing countries in today's world cannot achieve rapid economic growth through a democratic framework and they have to face the dilemma of choosing to pursue either economic growth or democratic development, but not both simultaneously. Overall, this view implies that political democracy is a luxury good that cannot be afforded by Third World countries (Doucouliagos&Ulubasoglu, 2006).

Finally,(Przeworski&Limongi, 1993; Sirowi&Inkeles, 1990) review many studies, and conclude that democracy has an economically small and statistically insignificant effect on economic growth. In addition,(Narayan, et al., 2011) study a panel of 30 Sub Saharan African countries,

and provide the same results for most of the countries. At the same time,(Acemoglu, et al., 2001; Hall & Jones, 1999) detect a strong relationship between the quality of institutions and long-term economic growth. The latter finding, together with the insignificant effect of democracy on growth, supports the skeptical hypothesis (Pye, 1966), which indicates that there is no systematic relationship between democracy and economic growth. The effectiveness of policies implementation, the stability of the regime, and the successful leadership that can effectively adapt to rapidly changing in technical and market conditions are more important for growth (Doucouliagos&Ulubasoglu, 2006).

Another trend in economic growth/democracy literature indicates that the direct effect of democracy on economic growth can be weak or insignificant; however, the indirect effect is remarkable and significant. Therefore, the estimation of this indirect effect is the main target for them. To achieve this, researchers decompose the total effect of democracy on growth into its different components; mainly human capital, physical capital accumulation, income distribution, political stability, among others (Alesina, et al., 1996; Baum & Lake, 2003; Sturm & de Haan, 2001).

(Baum & Lake, 2003) use a sample of 128 countries worldwide, and conclude that democracy has no statistically significant direct effect on growth. Rather, there are significant indirect effects of democracy on growth through increased life expectancy in poor countries and increased secondary education in non-poor countries. Moreover,(Acemoglu, et al., 2014) proclaimed that long-run Gross Domestic Product (GDP) increases by about 20 - 25% in the 25 years following democratization of 175 countries over the period from 1960 up to 2010. This increase is due to several factors; mainly economic reforms, greater investment in primary schooling and better health, greater physical investment, greater taxation and public good provision, and lower social unrest. Finally,(Tavares &Wacziarg, 2001) apply their model on a panel of 65 industrial and developing countries from 1970 to 1989. They concluded that democracy fosters growth by improving the accumulation of human capital, and lowering income inequality. On the other hand, democracy hinders growth by reducing the rate of physical capital accumulation and, less robustly, by raising the ratio of government consumption to GDP.

When summing up the effects of democracy on growth, the negative effect through physical investment dominates, and the overall effect of democracy on economic growth is moderately negative.

Measuring the direction of Granger causality relationship between democracy and economic growth is of great importance and has been the focus of several papers. (Gasiorowski, 2000;Heo& Tan, 2001; Narayan, et al., 2011) provided an empirical evidence for a unidirectional relationship between democracy and economic growth. They concluded that democracy Granger causes economic growth in 49 underdeveloped countries (968-1991), 10 out of 32 developing countries (1950-1982), and for just two-out of 30 Sub Saharan Africa countries (1972-2001), respectively.

On the other hand,(Narayan, et al., 2011) reveals evidence reinforcing theLipset hypothesis, since economic growth is prerequisite for democracy and fosters it in the long run in Botswana, Niger and Chad out of 30 Sub Saharan African countries. In addition,(Djezou, 2014) proclaims a unidirectional relationship running from economic growth to democracy in Côte d'Ivoire from 1960 to 2012.

(Narayan, et al., 2011) revealed long-run Granger neutrality between the two variables for the vast majority of the sample. (Heo& Tan, 2001) confirms the skeptical hypothesis as well in other eight developing countries.

Finally, feedback relationship between democracy and economic growth has been found in the empirical results of (Baklouti&Boujelbene,2016).They have come to the conclusion that a bi-directional causal relationship appears to persist between democracy and economic growth in 12 MENA countries over the period from 1998 to 2011. Moreover, three countries among 32 developing countries in (Heo& Tan, 2001) proved this dual causality between democracy and economic growth.(Ray & Ray, 2011) suggest that there is a long-run mutual causality between economic growth and democracy in India over the period from 1980/81 to 2009/10.

While the previous studies contribute considerably to knowledge in the area of economic growth/democracy models, there is limited coverage of the literature on some aspects. Egypt is not considered adequately as a focus area of the relationship between growth and democracy. In addition, the measures of democracy in the literature are partial and not comprehensive, thus they do not reflect the different aspects of democracy. This paper uses a comprehensive measure of democracy; Varieties of Democracy index (V-DEM). In V-DEM index, the democracy is measured widely and precisely. Moreover, instead of only considering the effect of democracy as a whole on economic growth, this work examines various sub-indices and sub components. Determining which component of democracy is more significant and responsible for economic growth is in the focus of this paper, which is expected to be of great value for policy makers. Finally, rigorous econometric techniques are strongly recommended to improve the results of the estimation. This study attempts to address this matter and use the ARDL model to estimate the long-run and short-run relationship between democracy and economic growth simultaneously, and determine the speed of adjustment to the equilibrium, which is rarely used in economic growth/democracy literature. Moreover, the study examines the Granger causal links between the variables via the ARDL framework.

2. Model Specification

To estimate the direct effect of democracy on economic growth, we control for other factors, which affect economic growth and work as potential channels between democracy and economic growth, in the estimated equation. Therefore, the estimated parameter of democracy represents the direct effect of democracy on economic growth assuming that other included factors are constant. We specified a time series model to estimate economic growth in Egypt over the period from 1970 to 2015 (T=1, 2… 46 year).

Following the theory and literature, and taking into account the important channels between democracy and economic growth, the following factors are identified as potential explanatory variables to study economic growth in Egypt: government size (GZ), total trade (TR), gross fixed capital formation (GFC), population growth (POPG) and democracy (DEM). The researcher tried to include the human capital as an important determinant of economic growth in Egypt, but

endogeneity has occurred which affected the accuracy of the results. This can be assured by (Tavares &Wacziarg, 2001).

All the data, except for the democracy indicators, are collected from the World Bank, 2016. The measure for democracy considered in this work is obtained from the V-DEM index, constructed by the V-DEM institute, University of Gothenburg. The V-DEM indices contain data about 174 countries worldwide, over the period from 1900 – 2016. It consists of five main indices; mainly electoral democracy, liberal democracy, deliberative democracy, egalitarian democracy and participatory democracy, in addition to 39 mid-level democracy indices, and many indicators for each index (Coppedge, et al.,2016). In this paper, the effect of specific indices and indicators of democracy on economic growth in Egypt is examined. We measure democracy by the electoral index (PDEM), as well as its main indicators separately; mainly freedom of association index (FRSS), clean elections index (FAIR), freedom of expression index (FREE) and political civil liberties index (PCL). In addition, the effect of civil society participation index (CSP) is also examined as important component of participatory democracy index.

Our analysis is based on the following power regression equation:

$$GDPG_t = AGZ_t^{\beta_1} TR_t^{\beta_2} GFC_t^{\beta_3} POPG_t^{\beta_4} DEM_t^{\beta_5} e^{u_t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

where*t* =1,2,…..,46 (1970-2015), *A* intercept, β_s estimated coefficients, u_t residuals.Double-logarithm transformation is essential for transferring the variables into the linear form as follows.

$$LNGDPG_t = \beta_0 + \beta_1 LNGZ_t + \beta_2 LNTR_t + \beta_3 LNGFC_t + \beta_4 LNPOPG_t + \beta_5 LNDEM_t + u_t \ldots\ldots\ldots(2)$$

The natural logarithm transformation is helpful to obtain the normal distribution of the data. The estimated parameters in this form are the elasticities and the difference in logs approximates the growth rates, so the results will be interesting and easy to interpret.

From the previous discussion, six models are studied in this paper, each model represents different measure of democracy over the period of the study. This is to examine the effect of

specific indicators of democracy on economic growth in Egypt. $LNGDPG_t$ is the natural log of economic growth for Egypt in period *t*, $LNGZ_t$ is the natural log of government size, $LNTR_t$ is the natural log of total trade, $LNGFC_t$ is the natural log of gross fixed capital formation, $LNPOPG_t$ is the natural log of population growth, and $LNDEM_t$ is the natural log of democracy index, which is represented by six different indices; mainly $LNPDEM_t$, $LNFRSS_t$, $LNFAIR_t$, $LNFREE_t$, $LNPCL_t$ and $LNCSP_t$. Finally,u_t is an error term. β_0, β_1, β_2, β_3, β_4, β_5 are the parameters to be estimated, and according to the theory, it is expected that: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 < 0$, $\beta_5 > 0$.

3. Methodology

Until the beginning of the 1990s, static regression dominated the literature. It assumed that all the variables in the model are stationary. It has been proved from the literature that the macroeconomic data are mostly non-stationary; therefore, the OLS estimator does not produce reliable estimates and the regression tends to be spurious. Researchers use differenced variables in the model to obtain stationary variables, but in this case important information related to the long-run analysis is lost.

The co-integration approach is very attractive since it retains the long-run relations and obtains highly consistent parameters in the long run (Stock, 1987). Moreover, the associated ECM estimates the short-run dynamics relations; in addition, the speed of adjustment toward the long-run equilibrium can be measured. However, there are integration and co-integration restrictions that the models have to overcome in order to apply this approach.The Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979) and the Phillips-Perron (PP) (Phillips &Perron, 1988) are usedfirst to examine the stationarity status of the variables in the different models. (Pesaran, et al., 2001) proposed the ARDL approach of co-integration which can be applied and yields consistent estimates of the long-run parameters irrespective of whether the underlying variables are *I*(0), or *I*(1), or a combination of them. In addition, the ARDL approach permits different number of lags for each regressor to capture the DGP in a general to specific framework (Feridun, 2009). The Monte Carlo results indicate that the ARDL approach works properly even when the model has endogenous regressors. Finally, the error terms in the co-integration

equation are IID; the standard errors of the estimated elasticities are standard normal, therefore the standard critical values can be used and the diagnostic tests can be performed to evaluate the statistical performance of the models (Song, et al., 2008).

The ARDL approach involves several steps. First, the optimal number of lags for all level variables is selected, using the appropriate information criteria, mainly Akaike Information Criterion (AIC) and Schwartz Information Criterion (SIC).The second step is the bounds test, which involves estimating the Conditional Unrestricted Error Correction Model (UECM) to test for the existence of a long-run steady state relationship between the dependent variable and all the explanatory variables. Then, we can proceed to estimate the UECM (p, q, m, n, s, v) as in Equation (5).

$$\Delta LNGDPG_t = \sigma_0 + \sum_{i=1}^{p-1} \sigma_{1i}\Delta LNGDPG_{t-i} + \sum_{i=0}^{q-1} \sigma_{2i}\Delta LNGZ_{t-i} + \sum_{i=0}^{m-1} \sigma_{3i}\Delta LNTR_{t-i} + \sum_{i=0}^{n-1} \sigma_{4i}\Delta LNGFC_{t-i} + \sum_{i=0}^{s-1} \sigma_{5i}\Delta LNPOPG_{t-i} + \sum_{i=0}^{v-1} \sigma_{6i}\Delta LNDEM_{t-i} + \gamma_1 LNGDPG_{t-1} + \gamma_2 LNGZ_{t-1} + \gamma_3 LNTR_{t-1} + \gamma_4 LNGFC_{t-1} + \gamma_5 LNPOPG_{t-1} + \gamma_6 LNDEM_{t-1} + \epsilon_t \ldots.(5)$$

where p, q, m, n, s, v are the optimal lags of level of the regressors$LNGDPG_t$, $LNGZ_t$, $LNTR_t$, $LNGFC_t$, $LNPOPG_t$and $LNDEM_t$respectively, Δ is the first difference operator, and σ_0 is a drift component. The left hand side of Equation (5) is the natural log of economic growth ($LNGDPG_t$). The right hand side of the equation represents the explanatory variables in one lag in level, and in differences with the optimal lags for each variable; $LNDEM_t$ represents five different measures of democracy in Egypt in five models. The parameters σ_{si} correspond to the short-run relations, whereas γ_s correspond to the long-run relations; ϵ_t is random errors.

The Wald or F-statistic is used to test the joint significance of lagged levels of the variables in the UECM, and determine the existence of the long-run equilibrium under the null hypothesis of no co-integration $(H_0: \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = \gamma_6 = 0)$ against the alternative that a long-run relation exists $(H_1: \gamma_1 \neq \gamma_2 \neq \gamma_3 \neq \gamma_4 \neq \gamma_5 \neq \gamma_6 \neq 0)$ in Equation (5). However, as discussed by (Pesaran, et al., 2001), both statistics have no standard distribution, irrespective of whether the regressors are purely *I*(0), purely *I*(1) or mutually co-integrated. Therefore,(Pesaran,

et al., 2001) computed two types of asymptotic critical values for a given significance level in the case of including and excluding trend. The first type assumes that all the variables are *I*(1), and the other assumes that all the variables are *I*(0). If the computed Wald or F-statistics exceed the upper critical value, the null hypothesis is rejected and the underlying variables are co-integrated. If the Wald or F-statistics are below the lower critical value, the null cannot be rejected and the variables are not co-integrated. Finally, if the Wald or F-statistic values lies between the two bounds, the test is inconclusive.

Once a long-run relationship has been established by the bounds test, the long-run relations can be estimated using the ARDL (p, q, m, n, s, v) as in Equation (6).

$$LNGDPG_t = \gamma_0 + \sum_{i=1}^{p} \gamma_{1i} LNGDPG_{t-i} + \sum_{i=0}^{q} \gamma_{2i} LNGZ_{t-i} + \sum_{i=0}^{m} \gamma_{3i} LNTR_{t-i} + \sum_{i=0}^{n} \gamma_{4i} LNGFC_{t-i} + \sum_{i=0}^{s} \gamma_{5i} LNPOPG_{t-i} + \sum_{t=i}^{v} \gamma_{6i} LNDEM_{t-i} + \vartheta_t \ldots (6)$$

where p, q, m, n, s, v are the optimal lags of level of the regressorsLNGDPG$_t$, LNGZ$_t$, LNTR$_t$, LNGFC$_t$, LNPOPG$_t$, and LNDEM$_t$ respectively, γ_0 is a drift term, and $\gamma_{1i}, \gamma_{2i}, \gamma_{3i}, \gamma_{4i}, \gamma_{5i}$ and γ_{6i} are the long-run elasticities in economic growth model to be estimated using the general to specific approach (Hendry, 1995).By normalizing Equation (6) on economic growth, the static long-run parameters can be obtained as in Equations (7).

$$LNGDPG_t = \tau_0 + \tau_1 LNGZ_t + \tau_2 LNTR_t + \tau_3 LNGFC_t + \tau_4 LNPOPG_t + \tau_5 LNDEM_t + \varepsilon_t \ldots (7)$$

where $\tau_0 = \frac{\gamma_0}{1-\gamma_{2i}(L)}$, $\tau_1 = \frac{\gamma_{2i}(L)}{1-\gamma_{2i}(L)}$, $\tau_2 = \frac{\gamma_{3i}(L)}{1-\gamma_{2i}(L)}$, $\tau_3 = \frac{\gamma_{4i}(L)}{1-\gamma_{2i}(L)}$, $\tau_4 = \frac{\gamma_{5i}(L)}{1-\gamma_{2i}(L)}$, $\tau_5 = \frac{\gamma_{6i}(L)}{1-\gamma_{2i}(L)}$.

$\tau_0, \tau_1, \tau_2, \tau_3, \tau_4, \tau_5$are the static long-run parameters, (L) are the lag operators for the different variables.

The next step in the ARDL approach is estimating the associated ECM including the errors of the long-run estimation lagged one period, the first differences of all the variables and their lags, as in Equation (8). This ECM is also performed using the Hendry general to specific approach.

$$\Delta LNGDPG_t = \sigma_0 + \sum_{i=1}^{p-1} \sigma_{1i}\Delta LNGDPG_{t-i} + \sum_{i=0}^{q-1} \sigma_{2i}\Delta LNGZ_{t-i} + \sum_{i=0}^{m-1} \sigma_{3i}\Delta LNTR_{t-i} + \sum_{i=0}^{n-1} \sigma_{4i}\Delta LNGFC_{t-i} + \sum_{i=0}^{s-1} \sigma_{5i}\Delta LNPOPG_{t-i} + \sum_{i=0}^{v-1} \sigma_{6i}\Delta LNDEM_{t-1} + \varphi EC_{t-1} + \omega_t \ldots\ldots(8)$$

whereσ_{si} are the short-run parameters, and φ is the speed of adjustment toward the long-run steady state equilibrium. Finally, the models have to undergo several statistical checking in order to ascertain their statistical reliability.

'One interesting consequence of the Granger representation theorem is that if X and Y are co-integrated then some form of Granger causality must occur. This is either X must Granger cause Y or Y must Granger cause X or both' (Koop, 2000, p.180). X Granger causes Y if past values of X have explanatory power for the current value of Y, so that if X precedes Y, X is inferred to cause Y. Applying this intuition to the ARDL approach, we can detect both the long-run as well as the short-run causality by testing two hypotheses on Equation (9).

$$\Delta LNGDPG_t = \sigma_0 + \sum_{i=1}^{p-1} \sigma_{1i}\Delta LNGDPG_{t-i} + \sum_{i=1}^{q-1} \sigma_{2i}\Delta LNGZ_{t-i} + \sum_{i=1}^{m-1} \sigma_{3i}\Delta LNTR_{t-i} + \sum_{i=1}^{n-1} \sigma_{4i}\Delta LNGFC_{t-i} + \sum_{i=1}^{s-1} \sigma_{5i}\Delta LNPOPG_{t-i} + \sum_{i=1}^{v-1} \sigma_{6i}\Delta LNDEM_{t-i} + \varphi\, EC_{t-1} + \omega_t \ldots\ldots\ldots\ldots(9)$$

Using the Wald test distributed as chi-square with one degree of freedom χ_1^2, the first hypothesis examines the significance of the error correction term; H_0: $\varphi = 0$. Whereas the rejection of this null hypothesis indicates the presence of the co-integration relationship between the variables according to (Sims, et al., 1990), it implies the existence of long-run causality according to (Corradi, et al., 1990). The second hypothesis examines the significance of the short-run elasticity of economic growth with respect to each explanatory variable and its lags jointly using a Wald test again distributed as chi-square with q-1 degree of freedom χ_{q-1}^2 ; H_0:$\sigma_{i1} = \sigma_{i2} = \sigma_{i3} = \ldots\ldots = \sigma_{iq-1} = 0$, since q is the lag order of each explanatory variable. The rejection of this null indicates the presence of short-run causality between economic growth in Egypt and each explanatory variable (Santana-Gallego, et al., 2011).

Afro Asian Journal of Social Sciences
Volume IX, No I. Quarter I 2018
ISSN: 2229 – 5313

4. Empirical Results

4.1. Unit Root Results

Both the ADF and PP unit root tests are performed and the results are reported in Table 1. At the 5% level of significance, the results of both tests indicate that $LNGDPG_t$, and four indices of democracy, mainly $LNFREE_t$, $LNFRSS_t$, $LNPCL_t$, and $LNCSP_t$ are found to be stationary variables, *I*(0). The rest of the variables in the model are non-stationary in levels, but stationary in first differences, *I*(1) variables, according to the appropriate specification of each series.However we proceed by estimating the co-integration relation of the six models, since we use the ARDL technique which permits a co-integration relationship to exist irrespective of whether the variables have the same integrating order or not, especially *I*(0) and *I*(1).

Table 1: Unit Root Tests According to the Appropriate Deterministic Trend

Variables in levels	Trend Specification	ADF	PP	Variables in differences	Trend Specification	ADF	PP
$LNGDPG_t$	Constant	-3.982 (0.003)	-4.026 (0.003)	**$\Delta LNGDPG_t$**	none		
$LNGZ_t$	Constant	-1.724 (0.413)	-1.722 (0.414)	**$\Delta LNGZ_t$**	none	-8.107 (0.000)	-7.954 (0.000)
$LNTR_t$	Constant	-2.210 (0.206)	-2.423 (0.141)	**$\Delta LNTR_t$**	none	-5.704 (0.000)	-5.706 (0.000)
$LNGFC_t$	constant+ trend	-3.210 (0.096)	-2.368 (0.390)	**$\Delta LNGFC_t$**	constant	-5.017 (0.000)	-4.933 (0.000)
$LNPOPG_t$	constant+ trend	-2.782 (0.212)	-1.566 (0.791)	**$\Delta LNPOPG_t$**	none	-2.223 (0.027)	-2.453 (0.015)
$LNPDEM_t$	Constant	-0.436 (0.894)	-2.201 (0.209)	**$\Delta LNPDEM_t$**	none	-8.759 (0.000)	-6.470 (0.000)
$LNFRSS_t$	Constant	-4.442 (0.005)	-3.463 (0.056)	**$\Delta LNFRSS_t$**	none	-	-5.444 (0.000)
$LNFAIR_t$	Constant	-2.057 (0.263)	-1.654 (0.447)	**$\Delta LNFAIR_t$**	none	-4.846 (0.000)	-3.919 (0.000)
$LNFREE_t$	constant+ trend	-9.349 (0.000)	-4.712 (0.000)	**$\Delta LNFREE_t$**			
$LNPCL_t$	constant+ trend	-4.133 (0.012)	-6.884 (0.000)	**$\Delta LNPCL_t$**			
$LNCSP_t$	constant+ trend	-4.064 (0.014)	-3.599 (0.041)	**$\Delta LNCSP_t$**			

5. ARDL Approach Results

The model has been estimated six times using the same explanatory variables with different measures for democracy.

5.1.1. Estimating the Bounds Tests

Four lags are chosen as a maximum lag for all the models, and different ARDL specifications are chosen according to the AIC. The results of bounds tests (computed F-statistics) for all the models are presented in Table 2.

The null hypothesis of no co-integration is rejected at the 1% level of significance in the six models, indicating that there is a co-integration relation among economic growth and its important determinants at the 1% level of significance. Therefore, we can proceed by estimating the long-run relationships between these variables.

Table 2: The Results of F-Statistics for Co-Integration Relationship

Wald Test	LNPDEM	LNFRSS	LNFAIR	LNFREE	LNPCL	LNCSP
F-statistic	30.046***	29.694***	30.929***	44.253***	33.437***	13.902***
Chi-square	180.277	178.166	185.574	309.770	200.620	83.415

***indicate that F-statistics fall above the upper bound at the 1% level of significance.

5.1.2. Estimating the Long-Run Equilibrium Relationships

Having determined the best ARDL specification for all the models, long-run parameters were estimated. By normalizing on economic growth (LNGDPG), the static long-run steady-state parameters were obtained, and examined statistically in the different modelsas illustrated in Table 3.

The models perform reasonably.The adjusted R^2 is higher than 95% in all the models, and the long-run diagnostic tests indicate no statistical problem in all the models. Moreover, they are stable, since all the CUSUM, CUSUMSQ statistics and their plots fell consistently within their

95% confidence level, suggesting that the estimated long-run parameters are all stable as illustrated in Figure 2.

All the long-run elasticities are significant at the 1% level of significance, mostly with the expected signs. The long-run growth elasticity with respect to government size is significant, and has a positive sign, indicating that a 1% increase in government expenditure tends to increase economic growth in Egypt by about 0.9% -1.9%, other factors remaining constant. It seems that the government spending is effective and more beneficial to economic growth than its costs.

Economic growth elasticity with respect to gross capital formation takes the expected positive sign. A 1% increase in capital tends to increase economic growth by 1.1% - 1.8%, indicating that it is important factor to promote economic growth in Egypt over the period of the study. Capital formation increases the production and employment's opportunities. In addition, it leads to technical progress, increases specialization and thus leads to the expansion of market. (Levine &Renelt, 1992) concluded that physical capital investment has been shown to be one of the most significant determinants of economic growth.

A 1% increase in total trade tends to increase economic growth significantly by about 1%, *citrus paribus*. Total trade maximizes the benefits from competition and innovation, comparative advantage and transferring technology, therefore fosters economic growth.

Moreover, a 1% increase in population growth in Egypt decreases economic growth by 3.5% – 4.6%. High dependency ratios because of rapid population growth can restrict economic growth. Because governments and families spend far more on children than the children can quickly repay in economic production. Therefore, consumption related to children hinders household savings, increases government expenditure and eventually deteriorates the growth of GDP (Cincotta&Engelman, 1997).

Table 3: Long-Run Results of ARDL Co-Integration Approach with Intercept

ARDL specification	ARDL (4,4,4,4,3,4) (LNPDEM)	ARDL (3,4,4,4,2,4) (LNFRSS)	ARDL (4,4,4,4,4,4) (LNFAIR)	ARDL (3,4,4,4,4,3) (LNFREE)	ARDL (3,4,4,4,3,4) (LNPCL)	ARDL (4,4,4,2,3,3) (LNCSP)
constant	-6.878***	-8.588***	-5.587***	-8.187***	-7.660***	-8.715***
$LNGZ_t$	1.679***	1.973***	0.900***	1.412***	1.684***	1.986***
$LNTR_t$	0.913***	0.980***	1.063***	0.873***	0.933***	0.918***
$LNGFC_t$	1.786***	1.627***	1.115***	1.854***	1.506***	1.646***
$LNPOPG_t$	-4.591***	-4.128***	-3.530***	-4.072***	-3.959***	-4.314***
$LNDEM_t$	1.935***	0.540***	0.122***	0.020***	0.401***	0.341***
	Goodness of fit & diagnostic tests					
R^2	0.988	0.981	0.990	0.994	0.984	0.954
Adj. R^2	0.963	0.949	0.965	0.978	0.953	0.888
B-G LM F-state	0.969 (0.410)	0.398 (0.679)	2.013 (0.184)	0.591 (0.572)	0.112 (0.895)	3.402 (0.061)
BPG hetero. χ^2-state	28.647 (0.431)	28.509 (0.334)	26.970 (0.573)	29.041 (0.463)	27.369 (0.444)	27.318 (0.290)
JB	0.262 (0.877)	1.090 (0.579)	1.396 (0.498)	0.159 (0.923)	0.361 (0.835)	0.574 (0.750)
RESET F-statistics	0.0001 (0.992)	0.133 (0.722)	0.270 (0.614)	1.130 (0.307)	0.071 (0.794)	0.886 (0.362)

***, **, * indicate significance at the 1%, 5% and 10% levels respectively. Note: B-G LM test, B-P-G heteroscadasticity, JB, and RESET are respective Breusch-Godfrey Lagrange Multiplier statistics for residual autocorrelation, Breusch-Pagan-Godfrey test of heteroscedasticity, Jarque-Bera of non-normality test and Regression Equation Specification Error Test.

The long-run results confirmed the role of democracy on economic growth in Egypt; however, its effect differs from indicator to another. Democracy has a positive and significant effect on economic growth according to all the used measures of democracy. In the long run, democracies create a stable environment and positive incentives for investment, innovation and thus promote economic growth.

A 1% increase in the electoral index of democracy (LNPDEM) tends to increase economic growth strongly by 1.94% holding other factors constant. Using the main components of the electoral index, the effect on economic growth is much less. The freedom of association (LNFRSS) has stronger positive effect on economic growth than other sub-indices of electoral index, a 1% increase in freedom of association, increases economic growth by 0.54%.

In addition, higher civil rights and civil liberties (LNPCL) by 1% enhances the motivation of citizens for work and invest, distributes scarce resources effectively, and maximizes the private

profits, and thus promotes economic growth by 0.40%. (Heo& Tan, 2001) indicate that democratic processes and the exercise of civil liberties and political rights lead to social conditions that are most friendly to economic growth.

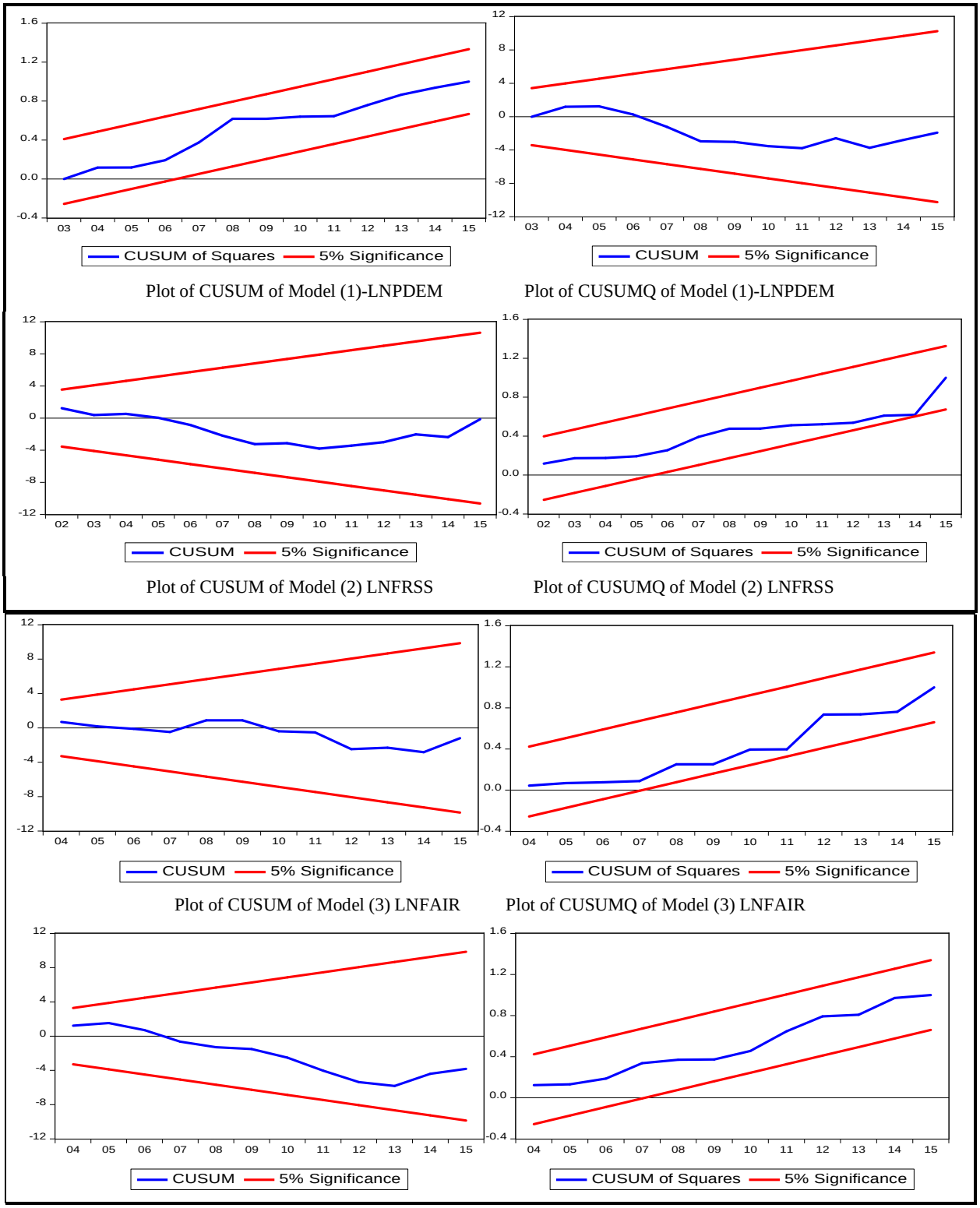
Moreover, a 1% increase in clean elections index (LNFAIR) leads to an increase in economic growth on average by 0.12%. Clean elections, whose results are accepted by all parties and peaceful transition of power, decrease uncertainty for political actors and public policies that they follow. This can be translated into greater investment opportunities, and thus stimulates economic growth.

Finally, a 1% increase in freedom of expression index (LNFREE)tends to increase economic growth by small percentage (0.02%). Political and economic freedom improves property rights and market competition, which in turn fosters economic growth.

The effect of civil society participation index (LNCSP) is also positive and significant; a 1% increase in that index increases economic growth by 0.34%. (Sirowy&Inkeles, 1990, p.134) discuss the importance of civil participation to enhance economic growth. ‘Popular political participation not only has the consequence of breaking down the privilege and vested interests of a few but also feeds a participative mentality that carries over into the economic arena and greatly increases the flow of information so essential to effective and efficient governments. In sum, political pluralism acts to release energies and foster conditions conducive to change, entrepreneurial risk, and economic development’.

Afro Asian Journal of Social Sciences
Volume IX, No I. Quarter I 2018
ISSN: 2229 – 5313

Figure 1: Plots of CUSUM and CUSUMQ in the Long Run



Plot of CUSUM of Model (1)-LNPDEM

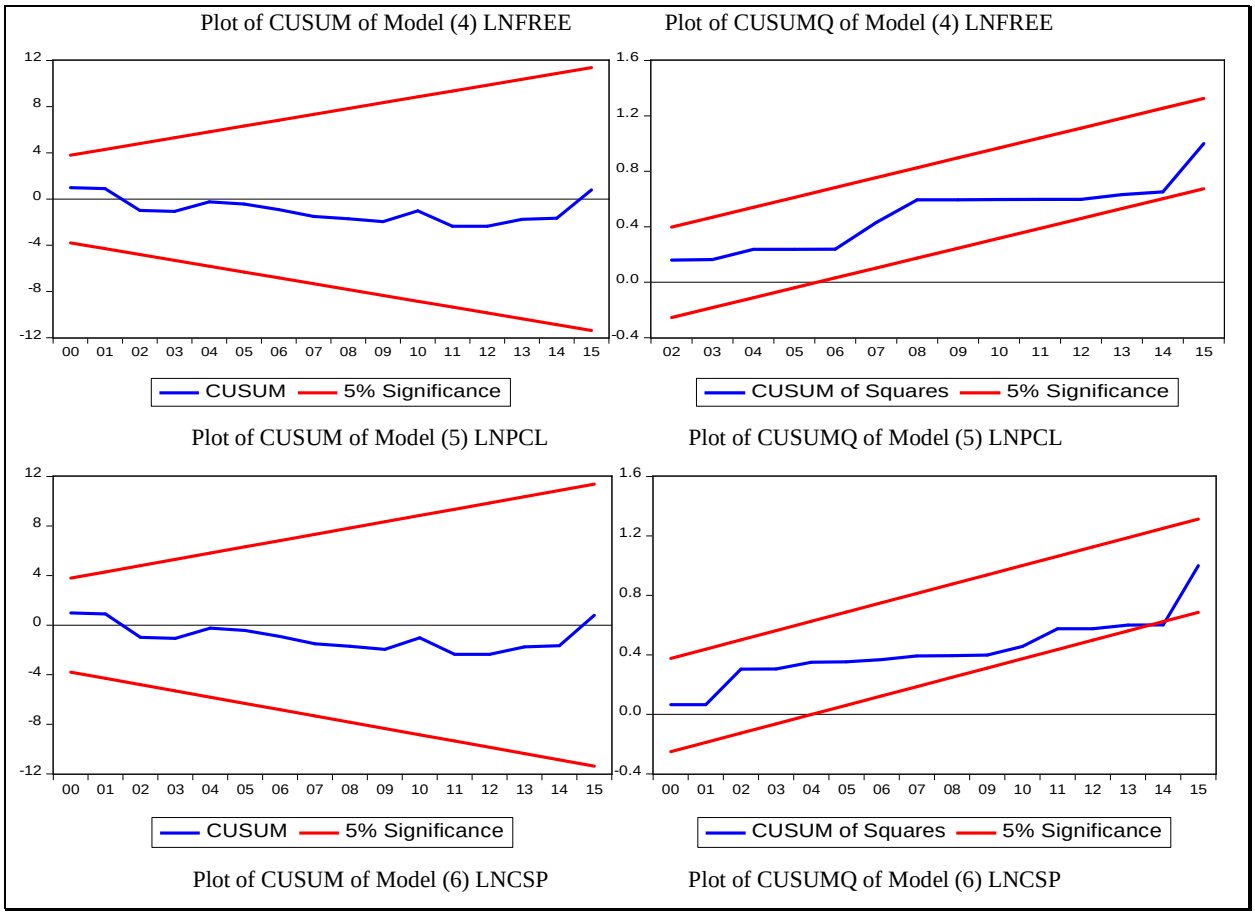
Plot of CUSUMQ of Model (1)-LNPDEM

Plot of CUSUM of Model (2) LNFRSS

Plot of CUSUMQ of Model (2) LNFRSS

Plot of CUSUM of Model (3) LNFAIR

Plot of CUSUMQ of Model (3) LNFAIR



5.1.3. Estimating the Short-Run Dynamic Relationships

The error correction term (φ) is significantly different from zero and has the correct negative sign at the 1% level of significance in the six models as illustrated in Table 4. Therefore, economic growth in Egypt and their important determinants are co-integrated and a long-run relationship exists between them. In particular, more than 0.87%-100% of the disequilibrium in the short run will be corrected in a year.

Adjusted R^2 in the ECMs are generally smaller than adjusted R^2 in the co-integration long-run estimations, they range from 69% to 86% in the different models. It is clear from the above results that the long-run relations are more significant and stronger than the short-run relations are. There are good theoretical reasons for this finding. Time is required in the transferring process of political regime, to enact good economic policies, to implement these policies, and for

economic agents to respond to these policies. Furthermore, the political transition process usually is associated with riot and political unrest in the short run. This is because of the various methods of pressure that such impatient groups of workers and the poor can use to express their demands - such as demonstrations, street protests, and sit-ins - and because political elites and their parties usually fulfill these demands to win their support in elections. Consequently, the democratic regimes become overburdened and take ineffective economic decisions (Sirowy&Inkeles, 1990).

Table 4: Short-Run Results of ARDL Co-Integration Approach with Intercept

	Different Democracy Indicators					
VARIABLES	**LNPDEM**	**LNFRSS**	**LNFAIR**	**LNFREE**	**LNPCL**	**LNCSP**
Constant	-0.067	0.006	-0.041	0.061	-0.011	0.016
L(ΔLNGDPG$_t$)	0.305***	-	-	0.330**	0.351***	0.294***
L(ΔLNGDPG$_t$)	0.358***	-	-	0.315***	0.451***	0.462***
L(ΔLNGZ$_t$)	-	1.254**	-	-	1.198**	1.223**
ΔLNTR$_t$	-	-	-0.889**	-	-	-
L(ΔLNTR$_t$)	-0.965**	-0.645*	-	-	-1.029**	-0.856**
ΔLNGFC$_t$	1.776***	1.892***	1.584***	1.311***	1.503***	1.170***
L(ΔLNGFC$_t$)	-	1.183***	1.124**	1.204**	-	-
L(ΔLNPOPG$_t$)	-	-	-	4.716***	3.042*	3.434**
ΔLNDEM$_t$	-	-	-	-0.540**	-	-1.716***
L(ΔLNDEM$_t$)	2.381**	-	-	-0.879***	-	-1.231**
	-	-	-	-2.338***	-	-
ECT$_{t-1}$	-1.200***	-0.875***	-1.145***	-1.502***	-1.346***	-1.349***
	Goodness of fit & diagnostic tests					
R^2	0.812	0.741	0.690	0.862	0.809	0.833
Adj. R^2	0.774	0.697	0.658	0.811	0.763	0.780
B-G LM Test **F-statistics**	0.285 (0.754)	1.051 (0.361)	0.233 (0.793)	1.660 (0.208)	0.353 (0.706)	0.481 (0.623)
B-P-G test **$\chi 2$**	11.803 (0.107)	4.709 (0.361)	1.373 (0.849)	9.913 (0.538)	7.036 (0.533)	0.803 (0.370)
JB	1.728 (0.421)	1.666 (0.435)	24.543 (0.000)	14.0623 (0.001)	2.424 (0.298)	1.498 (0.473)
RESET **F-statistics**	4.385 (0.052)	4.050 (0.582)	2.828 (0.101)	3.289 (0.089)	2.588 (0.125)	1.751 (0.200)

***, **, * indicate significance at the 1%, 5% and 10% levels respectively.

As far as the short-run coefficients are concerned, lags of economic growth affect economic growth positively. Physical capital formation is always positive and significant in all models, with a coefficient more than one, reflecting the high importance of this variable. Total trade has a negative effect on growth, whereas government size and population growth has a positive effect.

Democracy has a positive and significant effect on economic growth only in one model, when the electoral index is used as a measure of democracy; however, its effect is negative when the freedom of expression and civil society participation index are used as measures of democracy. The latter results is in line with the political Kuznets curve hypothesis (Kuznets, 1959), which states that at the first stage of the political democracy, democracy redistributes income negatively because of its negative effect on the income equality, so reduces economic growth. However in the long run, democracy will reduce income inequality and thus support economic growth. Therefore, the relationship between democracy and economic growth is non-monotonic. Moreover, this finding is in line with (Hayek, 1960, p.95) intuition: 'It is in its dynamic, rather than in its static, aspects that the value of democracy proves itself. As is true of liberty, the benefits of democracy will show themselves only in the long run, while its more immediate achievements may well be inferior to those of other forms of government'. Furthermore, the results of (Papaioannou&Siourounis, 2008) validate our findings and show that growth accelerates after a usually costly and volatile transition period and the benefits of democracy appear in the long run.

5.1.4. Granger Causality Results

The results of the long-run as well as short-run causality relationships are provided and reported in Table 5 and Table 6.

Democracy is of great importance as a main cause and result of economic growth in Egypt over the period of the study, since there is a dual relationship between the two variables in the long run on all the models, thus, growth of one of them will push the other. This finding suggests that democracy and economic growth in Egypt have been complementary and reinforcing. The only exception exists when the clean election indicator (LNFAIR) is used, since clean election Granger causes economic growth not the other way around. Economic growth is not a prerequisite for clean election, yet other factors determine it.Similar results were reported by (Narayan, et al., 2011) using the Freedom House dataset, and concluded that for Botswana there is a mutual Granger causality between democracy and real GDP in the long run, and the increase in one supports the other. However, in Gabon, the results indicate that long-run Granger

causality runs from democracy to real GDP and that improvements in democracy have a negative effect on real GDP.

On the other hand, our short-run results suggests that government size and physical capital formation Granger cause economic growth in the short run in most cases, whereas the effect of democracy is less significant in almost all the models. Only in one model, the electoral democracy index Granger causes economic growth at the 5% level of significance. There is neutrality between democracy and economic growth in the other cases.

Table 5: Long-Run Causality Tests for the Different Models

Variables	x_1^2	Variables	x_1^2	Conclusions
LNPDEM,LNGZ,LNTR,LNGFC, LNPOPG⟹ LNGDPG	71.688 (0.000)	LNGDPG,LNGZ,LNTR, LNGFC, LNPOPG ⟹ LNPDEM	3.305 (0.069)	Bi-directional Relationship at 10% significance level
LNFRSS,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNGDPG	45.311 (0.000)	LNGDPG,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNFRSS	29.040 (0.000)	Bi-directional Relationship at 1% significance level
LNFAIR,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNGDPG	56.378 (0.000)	LNGDPG,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNFAIR	2.121 (0.145)	Uni-directional Relationship from FAIR to GDPG
LNFREE,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNGDPG	15.787 (0.000)	LNGDPG,LNGZ,LNTR,LNGFC, LNPOPG⟹ LNFREE	5.988 (0.014)	Bi-directional Relationship at 5% significance level
LNPCL,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNGDPG	46.480 (0.000)	LNGDPG,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNPCL	14.589 (0.001)	Bi-directional Relationship at 1% significance level
LNCSP,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNGDPG	45.080 (0.000)	LNGDPG,LNGZ,LNTR,LNGFC, LNPOPG ⟹ LNCSP	12.099 (0.001)	Bi-directional Relationship at 1% significance level

Table 6: Short-Run Causality Tests for the Different Models, χ_3^2 Statistics

Indicators of Democracy	LNPDEM	LNFRSS	LNFAIR	LNFREE	LNPCL	LNCSP
ΔLNGZ⟹ΔLNGDPG	3.712 (0.054)	3.549 (0.060)	4.391 (0.036)	4.9524 (0.026)	4.197 (0.041)	3.818 (0.051)
ΔLNGFC⟹ΔLNGDPG		5.951 (0.015)	4.227 (0.040)		5.852 (0.016)	5.734 (0.017)
ΔLNPOPG⟹ΔLNGDPG				8.392 (0.004)		
ΔLNDEM⟹ΔLNGDPG	5.373 (0.021)					
ΔLNGDPG⟹ ΔLNDEM		3.130 (0.077)				

6. Conclusion, Future Work and Policy Implications

In this study, the effect of democracy on economic growth in Egypt is investigated over the period from 1970 to 2015. Different measures of democracy are used to determine the effect of each specific aspect of democracy on economic growth separately. The electoral democracy, freedom of association, clean elections, freedom of expression, political civil liberties and civil society participation are chosen for this purpose. The ARDL co-integration approach is applied to estimate the long-run as well as the short-run relations simultaneously and to determine the speed of adjustment toward the steady state equilibrium. Moreover, the issue of the causal direction between democracy and economic growth is clarified using the Granger causality analysis within the ARDL framework.

First of all, the results of the study clarified a long-run steady state relationship between economic growth in Egypt on the one hand and democracy, government size, total trade, gross fixed capital, and population growth on the other along the period of the study. The short-run disequilibrium has shown to be corrected very quickly through about one year for all the models.

The long-run effect of democracy on economic growth is shown to be significant and positive regardless of the applied measure of democracy. Our results support the compatibility hypothesis. Furthermore, there is a bivariate Granger causality between democracy and economic growth in the long run. Once a certain development level is reached; the transition to democracy is actually possible and strongly accessible. At the same time, democracy creates incentive for work and innovation, which leads directly to increase economic growth. Consequently, there is no reason to sacrifice democracy to obtain economic growth in the long run as some researchers argue.

The existence of all the components of the electoral democracy together has more effect on economic growth than reaching individually; different components may feed each other and work together towards reinforcing economic growth. Therefore, policy makers need to move in all directions towards achieving the electoral democracy simultaneously to maximize the effect on economic growth.

Moreover, our findings realize the importance of specific aspects of democracy over others. Among the components of the electoral democracy index, the freedom of association revealed the strongest influence, followed by the political civil liberties. In addition, the civil society participation index is a significant component of the participatory democracy index.

As far as the short-run relationships are concerned, coefficients are less significant than the coefficients in the long run, indicating that economic growth takes long time to react significantly to the change in government size, trade, fixed capital formation, population and democracy. Democracy has a positive and significant effect on economic growth only when the electoral index is used as a measure of democracy; however, its effect is negative when the freedom of expression and civil society participation index are used. Electoral democracy index Granger causes economic growth, whereas each sub-component alone cannot cause economic growth in the short run.

Some areas in economic growth/democracy models have not been addressed in this study and need to be considered in future works. The indirect effect of democracy on economic growth can be measured to investigate whether democracy affects economic growth through other channels of influence, especially human capital, inflation, corruption and political instability. Moreover, the effect of other specific indicators of democracy on economic growth can be examined. Furthermore, where suitable data exist, panel data is a potentially more robust technique to be used in economic growth/democracy models.

REFERENCES

Acemoglu, D., Naidu, S., Restrepo, P, Robinson, J.A., 2014. Democracy does cause growth (No. w20004). National Bureau of Economic Research.

Acemoglu, D., Robinson, J.A., Johnson, S., 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. American Economic Review. 91, 1369-1401.

Alesina, A., Ozler, S., Roubini, N., Swagel, P., 1996.Political Instability and Economic Growth.Journal of Economic Growth. 1, 189-211.

Andreski, S., 1968.Military Organization and Society. Palo Alto: Stanford University Press.

Apter, D.E., 1965.The politics of modernization.The University of Chicago Press.

Baklouti, N., Boujelbene, Y., 2016. The Nexus between Democracy and Economic Growth: Evidence from Dynamic Simultaneous-Equations Models. Journal of the Knowledge Economy, 1-19.

Baum, M., Lake, D., 2003. The Political Economy of Growth: democracy and human capital. American Journal of Political Science. 47, 333-347.

Bhagwati, J., 1995. Democracy and Development: new thinking on an old question. Indian Economic Review. 30(1), 1-18.

Chirot, D., 1977. Social change in the twentieth century. New York: Harcourt Brace Jovanovich.

Cincotta, R. P. &Engelman, R., 1997. Economic and Rapid Change: The Influence of Population Growth. Population Action International, 1-30.

Coppedge, M., Gerring, J., Lindberg, S. I., Skaaning, S., Teorell, J., 2016. V-Dem Codebook v6.Varieties of Democracy (VDem) Project.

Corradi, V., Galleotti, M., Rovelli, R. 1990. A Cointegration Analysis of the Relationship between Bank Reserves, Deposits and Loans: The Case of Italy, 1965-1987. Journal of Banking and Finance. 14, 199-214.

De Schweinitz, K. 1964. Industrialization and democracy: economic necessities and political possibilities, Free Press of Glencoe.

Dickey, D.A., Fuller, W.A., 1979. Distributions of the Estimators for Autoregressive Time Series with a Unit Root.Journal of American Statistical Association. 74(366), 427-431.

Djezou, W.B., 2014. The Democracy and Economic Growth Nexus: Empirical Evidence from Côte d'Ivoire. The European Journal of Comparative Economics. 11(2), 251-266.

Doucouliagos, C.H., Ulubasoglu, M.A. 2006. Economic Freedom and Economic Growth: Does Specification Make a Difference? European Journal of Political Economy. 22, 60 - 81.

Feridun, M. 2009. Unit Roots, Structural Breaks and Cointegration Analysis: A Review of the Available Processes and Procedures and an Application. Presented at the Macroeconomics and Financial Economics Workshop: Recent Developments in Theory and Empirical Modelling workshop, Eastern Mediterranean University.

Gasiorowski, M.J., 2000. Democracy and macroeconomic performance in underdeveloped countries - An empirical analysis.Comparative Political Studies. 33, 319-349.

Gerring, J., Bond, P., Barndt, W.T., Moreno, C., 2005. Democracy and economic growth: a historical perspective. World Politics. 57(03), 323 - 364.

Goodin, R.E., 1979. The development-rights trade-off: Some unwarranted economic and political assumptions. Universal Human Rights. 1(2), 31-42.

Hall, R.E., Jones, C.I., 1999. Why Do Some Countries Produce So Much More Output per Worker than Others? The Quarterly Journal of Economics. 114(1), 83-116.

Harrington, J., 1992. Harrington: 'The Commonwealth of Oceana and A System of Politics'. Cambridge University Press.

Hayek, F.A., 1960. The Constitution of Liberty, University of Chicago Press.

Hendry, D.F., 1995. Dynamic econometrics. Oxford University Press on Demand.

Heo, U., Tan, A., 2001. Democracy and economic growth: A causal analysis. Comparative Politics. 33(4), 463-473.

Hibbs, D. A., 1973. Mass political violence: A cross-national causal analysis, 253. New York: Wiley.

Huntington, S.P., 1987. Understanding political development: An analytic study. Boston: Little Brown.

Koop, G., 2000. Analysis of Economic Data, second ed. John Wiley, England: UK.

Kuznets, S., 1959.Economic Growth and Income Inequality.American Economic Review. 45(1), 1–28.

Levine, R., Renelt, D., 1992. A Sensitivity Analysis of Cross-Country Growth Regressions.American Economic Review. 82(4), 942–963.

Marsh, R.M., 1979. Does democracy hinder economic development in the latecomer developing nations? Comparative Social Research. 2(2), 215-248.

McCord, W.M., 1965. The springtime of freedom: evolution of developing societies (No. 321.7), Oxford University Press.

Narayan, P.K., Narayan, S., Smyth, R., 2011. Does democracy facilitate economic growth or does economic growth facilitate democracy? An empirical study of Sub-Saharan Africa.Economic Modelling. 28, 900–910.

Papaioannou, E., Siourounis, G., 2008. Democratisation and Growth.The Economic Journal. 118 (October), 1520–1551.

Pesaran, M.H., Shin, Y., Smith, R.J., 2001. Bounds Testing Approaches to the Analysis of Level Relationships.Journal of Applied Econometrics. 16(3), 289-326.

Phillips, P.C.B., Perron, P., 1988. Testing for a Unit Root in Time Series Regression.Biometrica. 75(2), 335-346.

Przeworski, A., Limongi, F., 1993.Political Regimes and Economic Growth.Journal of Economic Perspectives.7, 51- 69.

Pye, L.W., 1966. Aspects of political development: an analytic study, Little, Brown and Company.

Rao, V., 1985.Democracy and Economic Development.Studies in Comparative International Development. 39, 67-81.

Ray, S., Ray, I.A., 2011. Regional analysis on the relationship between Economic Growth and Democracy: Evidence from India. Afro Asian Journal of Social Sciences, 2(2.3).

Santana-Gallego, M., Ledesma-Rodríguez, F., Pérez-Rodríguez, J.V., 2011. Tourism and trade in OECD countries. A dynamic heterogeneous panel data analysis.Empirical Economics. 41(2), 533-554.

Sims, C.A., Stock, J.H., Watson, M.W., 1990.Inference in Linear Time Series Models with Some Unit Roots.Econometrica. 58, 113-145.

Sirowy, L., Inkeles, A., 1990. The Effects of Democracy on Economic Growth and Inequality: A review. Studies in Comparative International Development. 25(1), 126–157.

Song, H., Witt, S.F., Li, G., 2008. The advanced econometrics of tourism demand.Routledge.

Stock, J.H., Watson, M.W., 1987.Testing for Common Trends.Journal of the American Statistical Association. 83(404), 1097-1107.

Sturm, J.E., De Haan, J., 2001. How Robust is The Relationship between Economic Freedom and Economic Growth? Applied Economics. 33, 839-844.

Tavares, J., Wacziang, R., 2001. How democracy affects growth. European Economic Review. 45(8), 1341–1378.

V-DEM institute, University of Gothenburg, Sweden. https://www.v-dem.net/en/data/data-version-7-1/

World Bank, 2016.World Development Indicators (WDI).Economic and Social Data Service (ESDS) International, (Mimas) University of Manchester.