An Analysis of Relation Between Economic Growth and Democratization: An Empiric Application (A Sample of Turkey)

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ABSTRACT

The aim of this study is to analyze the relation between democratization and economic growth in Turkey, using time series data from 1980 to 2006. In the scope of this aim, an econometric application was held by using co-integration analyses and causality test in which the civil rights and liberties, politic liberties, and growth of population are added the model as an independent variables, and Gross Domestic Production (GDP) as a dependent variable. Results show that there is a long run relationship between civil rights liberties, political liberties, population growth rate and GDP growth rate. It is also found out that there is a unidirectional causality from civil rights and political liberties to GDP growth rate.

Key Words: *Democratization, Economic growth, Political Freedom, co-integration.*
Jel Classification: *C32, E01, O40.*

Ekonomik Büyüme ve Demokratikleşme Arasındaki İlişkinin Analizi: Ampirik Bir Uygulama (Türkiye Örneği)

ÖZET

Bu çalışmanın amacı Türkiye'de demokratikleşme ile ekonomik büyüme arasındaki nasıl bir ilişki olduğunu incelemektir. Bu amaç çerçevesinde öncelikle literatürde yapılmış olan çalışmalar titizlikle irdelenmiştir. Türkiye için eşbütünleşme analizi ve granger nedensellik testlerinin uygulandığı ekonometrik bir çalışma yapılmış ve bu uygulamada sivil hak ve özgürlükler, politik özgürlükler ve nüfus artışı bağımsız değişken, ekonomik büyümeyi temsil eden GSYİH büyüme hızı ise bağımlı değişken olarak modelde yer almıştır. Yapılan analiz sonucunda sivil haklar, nüfus büyüme hızı, politik özgürlükler ve ekonomik büyüme arasında uzun dönemli bir ilişki tespit edilmiştir. Ayrıca sivil haklar ve politik özgürlüklerden ekonomik büyümeye doğru tek yönlü bir nedensellik ilişkisinin olduğu gözlenmiştir.

Anahtar Kelimeler: *Demokratikleşme, Ekonomik büyüme, Politik özgürlük, eşbütünleşme.*
Jel Sınıflaması: *C32, E01, O40.*

INTRODUCTION

The age old debate in the circles of economists on the importance of democracy in developmental issues still holds its importance. These circles roughly encamped in two groups. The first group, consisting of liberal thinkers, accepts that the democracy is an inseparable and principal part of development. On the other hand, mostly libertarian and Marxist thinkers' second group assumes that the democracy is not the integral part of development process. According to this aforementioned group, democracy, on the contrary, has the primary responsibility in the misallocation of the scarce sources in developing countries.

These two groups have not arrived at a consensus so far, and preferred to stay in their ideological cocoons. However, the debate on democracy and development interrelations has been revitalized by new researches using innovative data collected in different countries. Though, it seems that the old question has not reached to an end since some recent studies find strong affirmative evidences between democracy and development, the others conclude just the opposite.

Looking at the general sense, the question comes to mind that "whether countries which have a democratization always become a rich country" as most of the societies which have the advanced democracy are among the class of prosperous countries. In this concept, Lipset[1] (1959) argued that in the countries which provides certain level of economic growth, democracy would make progress faster, and democracies are just be able to improve in economically developed countries without any interruption.

In this study, some previous literature on economic growth and democratization are studied, and then an analysis is conducted for Turkey. The results of empiric implementation are given in the last section of the study,

I. LITERATURE REVIEW

To test the relation between democracy or democratization and economic growth or economic development, there have been many empiric studies conducted. In this section, some of them will be mentioned briefly.

Lipset (1959) reached the conclusion that democratization process of countries will proceed faster as the level of income increases and democracies will get stronger. Coleman's (1960) and Cutright's (1963) research on 75 and 77 countries respectively, show that economic development effects democracy positively. In another study Neubauer (1967) analyzed 23 democratic countries and made a socio-economic evaluation. According to this research, developed countries do not get to be more democratic as they grow economically.

Kim (1971) found out that there is a positive relationship between economic growth and democracy in Japan. In another study Jackmann (1973) analyzed 60 communist countries and it is found out that there is not a linear relation between democracy and economic growth; Arat's (1988) results show that for developed countries, the relationship between democracy and economic growth is not important, whereas there is a positive relationship between them for developing countries.

Another supporting evidence to a positive relationship between economic growth and democracy is provided in studies by Helliwel (1992) and Burhart *et al.* (1994) present evidence for 125 and 131 countries respectively. Persson and Tabellini (1994) and Besley *et al.* (1998) reached the conclusion that as democracy get more power, investment incentives will decrease significantly and it would cause to slow down the economic growth. Muller (1995) obtained results that income inequality will affect democracy negatively and this cause to eliminate the positive effect on economic growth.

[1] Lipset's study in 1959 is shown as the first research on the democratization and economic growth.

The findings of Alesina *et al.* (1996) indicate that lower economic growth causes political instability. According to the Londragen *et al.* (1996), there is a positive relation between income and democratization. Errson ve Lane (1996) observed the 130 countries and found out that there is a week relationship between economic growth and democratization. In another study, the findings of Barro (1996) present evidence for 100 countries which indicates that in countries where the political liberties are not sufficiently advanced, economic growth will increase, as the effectiveness of democracy increase, where as in countries where the political liberties are in a normal level, economic growth will decrease, as the effectiveness of democracy increase.

In the studies of Minier (1998) and Papaioanna and Siouraunis (2004) also indicates the positive relationship between economic growth and democratization. Finding of Tavares and Wacziarg (2001) shows that improvement of democratization will positively contribute the human capital. According to Gasiorowski (2000), political democracy has negative effect in developing countries on macroeconomic perspective, due to various effects of pressure groups on government; democracy can cause high inflation in less developed countries.

In another study Przeworksi *et al.* (2002) analyzed the impact of democracy on economic prosperity by using the data from 1950 to 1990 for 135 countries Result shows that there is no relation between democracy and economic development. It is argued that impacts of productivity of capital, labor and factor on economic growth are equal for 135 countries.

Findings of the Colaresi *et al.* (2003), Boix *et al.* (2003) and Ghali *et al.* (2003) indicate that there is a positive relationship between economic growth and democracy. Mohtadi and Roe (2003) reached the conclusion that growth rate will be faster in countries where democracy is fully established than in countries where democracy is not fully established.

Finally, Başar and Yıldız (2009) found that there is a positive relationship between economic growth and democratization by using the data from 1923 to 2003 for Turkey. However in their study they could not detect any relation between two variables from 1962 to 2003.

II. DATA AND METHODOLOGY

In this study, data sets from 1980 to 2006 are used for Turkey. Data of GDP from 1980 to 2006 is used to measure the growth rate for Turkey. Data used in the analyses as the yearly growth rate of GDP, is calculated as the 1987 fixed prices by Turkish Statistical Institute and obtained from the website of Ministry of Development.

Data of political liberties and civic liberties are obtained from Freedom House and represent the independent variables. Data of political liberties and civil liberties are ranked from 1 to 7. According to this, if political liberties and civil liberties are getting better in a country, values approach to 1; otherwise values approach to 7. These values become 1 in countries where there is no any restriction for political liberties and civil liberties. In the study population growth

rate is added to the model as a control variable which obtained from Turkish Statistical Institute.

The model which is established to find out the long run and causality relation between variables is written below.

$$lngdpgrowth = \beta_0 + \beta_1 \, lnpopgrowth + \beta_2 \, dlnpol + \beta_4 dlncivil + \varepsilon_t$$

In the model ***lngdpgrowth*** symbolizes the logarithmic value of GDP growth rate for Turkey from 1980 to 2006. ***dlnpol*** and ***dlncivil*** symbolize the logarithmic value of politic rights and liberties and civil rights and liberties respectively, and both of them are in their first difference after taking logarithm. **l*npopgrowth*** represents the population growth rate for Turkey from 1980 to 2006.

Before starting econometric analyses, to check the stationary situation, Augmented Dickey Fuller test has been conducted. After that lag length is decided as a preparation to co-integration test. Johansen Co-integration test is used to test the long run relationship between variables. Then to see the direction of causality Granger Causality test is conducted.

III. FINDINGS

Results of stationarity test show that ***lngdpgrowth*** and **l*npopgrowth*** are stationary at level (no unit root); but ***lnpol*** and ***lncivil*** have a unit root problem and they become stationary after taking first difference. Explanations about stationarity are given at the following part of the study.

According to the table below, **l*ngdpgrowth*** has no unit root so it is stationary at level [I(0)]. Finding of this result can be reached by two different approaches. The first of it depends on the probability value. If the probability value is smaller than %1, %5 or % 10, null hypothesis which assumes that variables have a unit root, can be rejected. As it is seen in the table, probability value is 0,0003 and null hypothesis can be rejected at %1. The latter approach relies on the t statistics. If the absolute value of the t statistic is greater than the absolute critical value at %1, %5 or %10, null hypothesis is rejected at related level. Results show that t statistic is greater than the critical value at %1 which means null hypothesis can be rejected at %1. As it is seen from the results there is a consistency between two approaches.

Table 1: l*ngdpgrowth* Unit Root test

Null Hypothesis: ***lngdpgrowth*** has a unit root				
Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.201222	**0.0003**
Test critical values:	1% level		-3.711457	
	5% level		-2.981038	
	10% level		-2.629906	

Unit root test of ***lnpopgrowth*** is given below. According to the table below, ***lnpopgrowth*** has no unit root so it is stationary at level [I(0)]. The result of first approach shows that probability value is smaller than % 5 and the second approach also give the same result that null hypothesis can be rejected at %5.

Table 2: l*npopgrowth* Unit Root test

Null Hypothesis: **l*npopgrowth*** has a unit root				
Exogenous: None, Lag Length: 3 (Automatic based on SIC, MAXLAG=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.552815	**0.0132**
Test critical values:	1% level		-2.669359	
	5% level		-1.956406	
	10% level		-1.608495	

Another unit root test is conducted for ***lnpol*** series given below. According to the table, ***lnpol*** has a unit root so it is not stationary at level. As it is not stationary at level, it is necessary to make a difference of it until it becomes a stationary series. As it is seen below, ***dlnpol*** becomes stationary after taking first difference [I(1)]. The result of first approach shows that probability value is smaller than % 1 and the second approach also give the same result that null hypothesis can be rejected at %1.

Table 3: *dlnpol* Unit Root Test

Null Hypothesis: ***dlnpol*** has a unit root				
Exogenous: None, Lag Length: 0 (Automatic based on SIC, MAXLAG=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.138046	**0.0000**
Test critical values:	1% level		-2.660720	
	5% level		-1.955020	
	10% level		-1.609070	

Unit root test for ***lncivil*** series is given below. Table shows that, ***lncivil*** has a unit root so it is not stationary at level. Because of having unit root, it is indispensible to take difference of the series. According to the table, ***dlncivil*** becomes stationary after taking first difference [I(1)]. The result of first approach shows that probability value is smaller than % 1 and the second approach also give the same result that null hypothesis can be rejected at %1.

Table 4: *dlncivil* Unit Root Test

Null Hypothesis: ***dlncivil*** has a unit root				
Exogenous: None, Lag Length: 0 (Automatic based on SIC, MAXLAG=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-7.191561	**0.0000**
Test critical values:	1% level		-2.660720	
	5% level		-1.955020	
	10% level		-1.609070	

After stationarity test, co-integration test is conducted to analyze the long run relationship between time series. To find out the right lag length, up to 3 lags are checked individually as the time series consist of 27 years, and not to lose data. By considering the AIC results, lag length is chosen 2 as it gives the smallest value.

Long run relationship between 4 variables is analyzed by Trace and Max-Eigen Tests. According to the Trace test results; there is one co-integrated vector at the 0.05 level. (Null hypothesis is rejected as the probability value is smaller than the 0.01 (Another indicator which supports this finding is comparisons of trace statistics and critical value of % 5. According to this approach, null hypothesis is rejected if trace statistic is greater than critical value. As it is seen in the table, for the first null hypotheses, trace statistic is greater than critical values e.g. for the trace statistics (81,84109) is greater than the critical value (55,24578). Therefore, the first hypothesis is rejected. But the second hypothesis which assumes there is at most one co-integrated vector cannot be rejected as the probability value is greater than % 5. Second approach also gives the same finding as the trace statistics (30,18136) is smaller than the critical value (35,01090).

Table 5: Trace Test for Co-Integration

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.883805	81.84109	55.24578	0.0001
At most 1	0.605586	30.18136	35.01090	0.1499
At most 2	0.268598	7.852869	18.39771	0.6979
At most 3	0.014307	0.345845	3.841466	0.5565
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Max-Eigen test also gives the same results with the Trace test. According to the result of Max Eigen Test there is 1 co-integrated vector found at the 0.05

level. None hypothesis is rejected as probability value is smaller than the 0.05. But second hypothesis which assumes that there is at most one co-integrated vector cannot be rejected, hence it is accepted. The second approach also gives the same results with the probability value as Max-Eigen statistics is smaller than critical value of % 5, e.g. in the "at most 1" hypothesis Max-Eigen statistic (22,32849) is smaller than critical value (24,25202). So this hypothesis cannot be rejected.

Table 6: Max-Eigen Test for Co-Integration

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.*
None *	0.883805	51.65973	30.81507	0.0000
At most 1	0.605586	22.32849	24.25202	0.0880
At most 2	0.268598	7.507023	17.14769	0.6573
At most 3	0.014307	0.345845	3.841466	0.5565
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

After co-integration test, to define the direction of causality, Granger test is conducted.

Table 7: Granger Causality Test

Sample: 1980 2006, **Lags**: 2			
null hypothesis:	Obs	F-statistic	Probability
lnpopgrowth does not granger cause lngdpgrowth	25	0.80034	0.46305
lngdpgrowth does not granger cause lnpopgrowth		0.40310	0.67355
dlnpol does not granger cause lngdpgrowth	25	2.81221	**0.08390**
lngdpgrowth does not granger cause dlnpol		0.81231	0.45795
dlncivil does not granger cause lngdpgrowth	25	4.09261	**0.03237**
lngdpgrowth does not granger cause dlncivil		0.92454	0.41302
dlnpol does not granger cause lnpopgrowth	25	0.82760	0.45152
lnpopgrowth does not granger cause dlnpol		0.19933	0.82088
dlncivil does not granger cause lnpopgrowth	25	0.46232	0.63638
lnpopgrowth does not granger cause dlncivil		1.94841	0.16862
dlncivil does not granger cause dlnpol	25	1.63011	0.22088
dlnpol does not granger cause dlncivil		2.10497	0.14803

Results of granger causality test show that there is not a causality relationship between population growth rate and gdp growth rate. Null hypothesis is accepted as the probability is bigger than % 10. It is found out that there is a unidirectional causality relationship between politic liberties and gdp growth. And

this causality direction exists from politic liberties to gdp growth as the probability value is smaller than % 10, therefore null hypothesis is rejected. There is also another causality relation between civil liberties and gdp growth. This causality is also unidirectional from civil liberties to gdp growth because null hypothesis is rejected at %5. Results also show that there is no causality relation between remain variables as their probability values are greater than %10. For example there is no causality relation between politic liberties and population growth; civil liberties and population growth; and civil liberties and politic liberties.

CONCLUSION

In this study to analyze the relationship between democratization and economic growth, gdp growth rate is chosen as dependent variable, whereas population growth rate, politic liberties and civil liberties are chosen as independent variables. Findings of the study show that there is a long run relationship between independent variables such as civil liberties, population growth rate, politic liberties, and dependent variable which is economic growth rate. Result of granger causality test also shows that there is a unidirectional causality from civil rights liberties to GDP growth rate. Same causality relation also found out from political liberties to GDP growth rate. Outcomes of the study are consistent with the literature.

Increase on democratization could effect on country's economic performance and may give opportunity to forecast for coming years. In advanced democracies, it is given an important privilege to an individual's rights and freedom. Therefore it is prevented in various ways from damaging an individual's economic liberties by evading rules in democratic countries.[2]

It can be said that democracy may play an active role for providing political stability and also contribute more to economic development. Economic development is occurred as a result of an individual entrepreneurship. Hence, the simple meaning of democracy is thought as "to be self managing to mankind", it is seen that development of democracy will contribute the economic growth as well. Established democracy is important for a country to stable the investment opportunities.

Democracy also brings an increase together in the justice, accumulation of capital and income distribution. Because democracy has a role of providing warranty for individual's freedom of expression and also economic freedom. Starting from this point, providing economic development can be associated with expansion of the politic and civil liberties. Advanced democracies established in developed countries, never qualified as an excessive or in other word luxury for developing countries, but they should become a precondition for providing development.

[2] In democratic societies, important actors such as regulatory authorities for economy, organizations for protection of copyrights may prevent from damaging actions to economic liberties.

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