

Economic Growth and Democracy in Turkey

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Abstract

This essay examines the relationship between economic growth and democracy in Turkey between 1980 and 2010 by using the Johansen co-integration model and Vector Error-Correction Model (VECM). The data used in the study are obtained from Turk Stat for GDP growth and POLITY IV Project for democracy index. The main aim of this study is to see if there is a significant relationship between economic growth and democracy in Turkey. By using the models indicated above, we find that there is a significant relationship between these variables in Turkey. Future research on Turkey can examine causality effects as well.

Keywords: Economic growth, democracy, Turkey.

Introduction

The relationship between democracy and growth has been one of the most controversial issues in political science literature during and after the Cold War. Lipset has pointed out that democracy and the economic situation of a country are related to each other and that economic development might even be one of the prerequisites to democracy.¹ Since then, there have been numerous studies done, and if one struggles to look for a consensus on these studies, he or she will come across the fact that the theoretical inferences and empirical outcomes of these studies vary considerably.

However, we should not deny that significant progress has been made by studies on democracy and economic growth relations in the political

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1 Lipset, S. M., 1959, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy", *American Political Science Review*, Vol. 53, No. 1, 69-105.

science realm. The main motivation of these studies is to examine how democracy fosters economic growth? Does economic growth hamper or consolidate democracy? Is the relationship between these two variables relevant? The aim of this paper is to contribute to the literature by examining one country's case which may provide us with a more comprehensive understanding of the democracy-growth relationship. I thus will analyze whether the relationship between democracy and economic growth is significant in Turkey or not. The rest of the study is designed as follows: I will discuss the literature on democracy-growth relations; and later on, I will touch upon the main problems of the analyses in literature. I will explain why examining country specific cases for these types of studies may provide us more plausible results. Finally, I will present the methodological structure of the study, and the conclusion.

Literature Review

We see many different studies in the literature that analyze the dimension of the relationship between economic growth and democracy. There are many scholars who admit Lipset's assertions, and are many others who do not. Friedman, who claims that there is a reciprocal relationship between the two, sees democracy as a positive supporter of economic development where the more democratic rules will bring the more liberal economic rules, which contributes to more economic development.² So long as scholars develop new statistical measurement techniques and more reliable data sets regarding democracy and economic growth, the results vary evenly. With this regard, I demonstrate the conflicts and findings in the literature.

Coleman³, Cutright⁴, Helliwell⁵, Burkhart et al.⁶, Boix and Stokes⁷, Epstein et al.⁸, find similar results regarding the positive effects of economic

2 Friedman, Milton, 1962, *Capitalism and Freedom*, Chicago: University of Chicago Press.

3 Coleman, J. S., 1960, "Conclusion: the Political Systems of the Developing Area", in Almond, G. A., Coleman, J. S., eds., *The Politics of Developing Areas*, Princeton: Princeton University Press, 532-81.

4 Cutright, P., 1963, "National Political Development: Measurement and Analysis", *American Sociological Review*, Vol. 28, 253-64.

5 Helliwell, J. F., 1992, "Empirical Linkages between Democracy and Economic Growth", *NBER Working Paper*, No: 4066. See also, Helliwell, J. F., 1994, "Empirical Linkages between Democracy and Economic Growth", *British Journal of Political Science*, Vol. 24, 225-48.

6 Burkhart, R. E., Lewis-Beck, M. S., 1994, "Comparative Democracy: The Economic Development Thesis", *American Political Science Review*, Vol. 88, No 4, 903-10.

7 Boix, C., Stokes, S. C., 2003, "Endogenous democratization", *World Politics*, Vol. 55, 517-49

8 Epstein, D. L., R. Bates, J. Goldstone, I. Kristensen, S. O'Halloran, 2006, "Democratic Transitions", *American Journal of Political Science*, Vol. 50, No 3, 551-569.

development on democratization. Boix and Stokes, for instance, claim that income equality, and not high income causes countries to democratize and to sustain democracy,⁹ and economic development both causes democracy and sustains it.¹⁰

With regard to income equality and socioeconomic distribution, Muller, using 58 countries in his study, notes that the effect of economic development on democracy is important, but income inequality is destroying this positive effect.¹¹ Recently, Reenock et al., who touch on the regressive socioeconomic distribution and democratic survival, find that both economic growth and economic development have beneficial effects on democratic survival.¹²

We see many different studies that test the relationship between growth and democracy. Scholars focus on this relationship in terms of the regime type of countries, the level of economic development, transitions to democracy or its sustainability, and so on. Przeworski et al. assert that poor democracies with a certain level of income per capita are fragile, and claim also that economic growth is conducive to the survival of democracy.¹³ According to Przeworski and Limongi, even though the economic development does not cause further democratization, it is crucial for maintenance of democracy.¹⁴ Similarly, Lipset states that the more economic development, “the greater the chances that it will sustain democracy”¹⁵. In contrast, Przeworski and Limongi argue that “we do not know whether democracy fosters or hinders economic growth”.¹⁶

9 Boix and Stokes, p. 544.

10 Boix and Stokes, p. 545.

11 Muller, E. N., 1995, “Economic Determinants of Democracy”, *American Sociological Review*, Vol. 60, No: 6, 966–82.

12 Reenock C., M. Bernhard, and D. Sobek, 2007, “Regressive Socioeconomic Distribution and Democratic Survival”, *International Studies Quarterly*, Vol. 51, p. 690. For further studies on the relationship between inequality and democracy, see: Houle Christian, 2009, “Inequality and Democracy: Why Inequality Harms Consolidation but Does not Affect Democratization”, Vol. 61, No: 4, 589-622; and Ansell B., and D. Samuels, 2010, “Inequality and Democratization: A Contractarian Approach”, *Comparative Political Studies*, Vol. 43, No: 12, 1543-1574.

13 Przeworski, A., M. Alvarez, J. A. Cheibub, and F. Limongi, 1996, “What Makes Democracy Endure?” *Journal of Democracy*, Vol. 7, No. 1, 39-55.

14 Przeworski, A. and Limongi, F. 1997, “Modernization: Theories and Facts”, *World Politics*, Vol. 49, No. 2, 155-83.

15 Lipset S. M., 1960, *Political Man: The Social Bases of Politics*. Garden City, New York: Doubleday and Company, p. 31. See also Peck's (1962) review on Lipset's 'Political Man'.

16 Przeworski, A. and Limongi, F. 1993, “Political Regimes and Economic Growth”, *Journal of Economic Perspectives*, Vol. 7, No. 3, p. 64.

Przeworski et al., by using the Markov model in a more recent study, found that the impact of economic growth on democratization is not significant.¹⁷ Acemoglu et al.¹⁸ and Epstein et al. challenge Przeworski et al.'s results, and Epstein et al. assert that higher incomes per capita significantly increase the likelihood of democratic regimes. They classify 169 countries as autocracies, democracies, and partial democracies, and found also that higher incomes per capita enhance the consolidation of existing democracies.¹⁹ However, in their recent study of *Income and Democracy: Lipset's Law Inverted*, Fayad et al. retest the results and find that there is a significant relationship (though negative) between income and democracy, just like Lipset's (1959) result.²⁰

Milanovic reanalyzes the results of Lipset (1959) and Przeworski and Limongi's (1997) studies, and claims that income has a significant effect on the transition to higher level of democracy.²¹ We see similar direction in Gould and Maggio's study. They support the idea that economic development influences transitions to democracy, but they find economic development has more effects on democratic survival than transition to democracy.²² Lipset has proposed that, "while higher levels of income may not be a precondition for democratization processes to start, they may be nonetheless advantageous for democracy to endure and become consolidated".²³

Cutright claims that socio-economically developed countries are more likely to become democratic.²⁴ Neubauer, in contrast to Cutright, finds no certain relationship between economic development and democracy.²⁵ In other words, this relationship is not distinctive. Jackman also found that

17 Przeworski, A., M. Alvarez, J. A. Cheibub, and F. Limongi, 2000, *Democracy and Development*, New York: Cambridge University Press.

18 Acemoglu, D., Johnson, S., Robinson, J.A., Yared, P., 2008, *Income and Democracy*, *American Economic Review*, 98 (3), 808-842.

19 Epstein, D. L., R. Bates, J. Goldstone, I. Kristensen, S. O'Halloran, 2006, "Democratic Transitions", *American Journal of Political Science*, Vol. 50, No 3, 551-569.

20 Fayad G., R.H. Bates, and A. Hoeffler, 2011, *Income and Democracy: Lipset's Law Inverted*. Available at: <http://www.csae.ox.ac.uk/conferences/2011-EDiA/papers/454-Fayad.pdf>.

21 Milanovic, B., 2005, 'Relationship between Income and Emergence of Democracy Re-examined, 1820 – 2000: A Non-Parametric Approach', *Law and Economics*, 0509004, Econ WPA.

22 Gould A.C., and A.J. Maggio, 2003, "Political Regimes and Economic Development: A Model of Reference-Dependent Choices and Experimental Data".

23 Lipset, S. M., 1994, "The Social Requisites of Democracy Revisited" *American Sociological Review*, Vol. 59 (1): 1-22.

24 Cutright, P., 1963, "National Political Development: Measurement and Analysis", *American Sociological Review*, Vol. 28, 253-64.

25 Neubauer, D. E., 1967, "Some Conditions of Democracy". *The American Political Science Review*, Vol. 6, No 4, 1002-9.

there is no linear relationship between economic development and democracy.²⁶ Arat, similar with Neubauer and Jackman, finds that the economic development in the medium level is important for democracy, but in the long run we see no relationship between the two.²⁷

Bollen finds that the relationship between economic development and democracy is significant, but early or later development is not a determinant for this relationship.²⁸ According to Acemoglu et al., there is no causal effect of income on democracy.²⁹ Robinson reviews recent research on the effects of economic development on democracy, by claiming that there is no evidence that economic development has a causal effect on democracy, but these two variables are correlated.³⁰ Maybe one of the most recent studies in the literature is done by Treisman, who found that development is associated with more democratization in the medium run.³¹

While arguing the relationship between economic situation and democracy, Diamond and Linz assert that economic crises are important threats to democratic stability.³² Diamond claims that democracies are more likely to survive in countries that are already developed.³³ Glasure et al., in their study of *Level of Economic Development and Political, Democracy Revisited*, find that even though there is no linkage between economic development and democracy in developed countries. In developing countries, on the other hand, economic development has a negative effect on democracy.³⁴ Barro analyzes democracy-growth relations in 100 countries from 1960 to

26 Jackman, R. W., 1973, "On the Relation of Economic Development to Democratic Performance", *American Journal of Political Science*, Vol. 17, No: 3, 611–21.

27 Arat, Z. F., 1988, "Democracy and Economic Development: Modernization Theory Revisited", *Comparative Politics*, Vol. 21, No: 1, 21–36. For similar opinions; see Barrington Moore, 1966, *Social Origins of Dictatorship and Democracy*, Boston: Beacon Press, and Weber Max, 1930, *The Protestant Ethic and the Spirit of Capitalism*, London: Allen&Unwin.

28 Bollen, K.A., 1979, "Political Democracy and the Timing of Development", *American Sociological Review*, Vol: 44, 572–87.

29 Acemoglu D, Johnson S, Robinson J.A., Yared P., 2005, *Income and Democracy*, *NBER Working Series*, 11205.

30 Robinson J.A., 2006, "Economic Development and Democracy", *Annual Review of Political Science*, Vol. 9, 503-527.

31 Treisman, Daniel, 2011, "Income, Democracy, and the Cunning of Reason", *NBER Working Paper*, No: 17132.

32 Diamond L., and J.J. Linz, 1989, "Introduction: Politics, Democracy, and Society in Latin America", in Diamond, Linz, and Lipset, eds., *Democracy in Developing Countries: Latin America*, Boulder, Colo., Lynne Rienner.

33 Diamond, L., 1992, *Economic Development and Democracy Reconsidered*, in G. Marks and Diamond (eds.) *Reexamining Democracy: Essays in Honor of Seymour Martin Lipset*. California: Sage Publications, p. 114.

34 Glasure, Y.U., L. Aie-rie and J. Norris, 1999, "Level of Economic Development and Political, Democracy Revisited", *International Advances in Economic Research*, Vol. 5, No: 4, 466-477.

1990 and finds that the effect of democracy on growth is weakly negative.³⁵ Alesina et al. examine the relationship between political instability and per capita GDP growth in a sample of 113 countries for the period 1950-1982, and find that in countries and time periods with a high propensity of government collapse, growth is significantly lower than otherwise.³⁶

Linz and Stepan claim that even though economic prosperity does weaken nondemocratic regimes; it does not weaken the democratic regimes.³⁷ Inglehart says that economic structure of a society has a positive effect on its democratization.³⁸ Huntington states that "in poor countries democracy is unlikely" and..."as countries develop economically..."they become good prospects for democratization".³⁹ Huber et al. analyze the future of democracy in the contemporary Third World, and find that expectations to democratization are better for the countries that are at higher levels of economic development.⁴⁰ Another result of their study is that the low level of economical performance has bad effects on democracy. Barro finds that the countries at low level of economic development do not sustain democracy, but if a poor country can establish liberal economy, then this country would tend to become more democratic on it's on.⁴¹

Taking into consideration the fluctuating, ambiguous results and divided structure of the literature, we can draw a conclusion that we are far from a consensus, at least so far, on the effects of economic development on democratization. We may claim that there is still a lot to be done in this literature. I will discuss the debates of measurement, reliable data, and other issues we see in the literature as controversial.

35 Barro, R., 1999, "Determinants of Democracy", *Journal of Political Economy*, 107(6): 158-183.

36 Alesina, A., Özler, S., Roubini, N., Swagel, P., 1996, "Political Instability and Economic Growth", *Journal of Economic Growth*, Vol. 1, 189-211.

37 Linz, J., and A. Stepan, 1996, *Problems of Democratic Transition and Consolidation: Southern Europe, South America and Post-Communist Europe*. Baltimore, MD: Johns Hopkins University Press.

38 Inglehart, R., 1990, *Culture Shift in Advanced Industrial Society*, Princeton: Princeton University Press.

39 Huntington, S., 1991, *The Third Wave: Democratization in the Late Twentieth Century*. Norman, OK: University of Oklahoma Press.

40 Huber E., D. Rueschemeyer and J. D. Stephens, 1993, "The Impact of Economic Development on Democracy", *Journal of Economic Perspectives*, Vol. 7, No 3, 71-85, p. 85.

41 Barro, R.J., 1997, *Determinants of Economic Growth: A Cross-Country Empirical Study*, MA: The MIT Press, Cambridge.

Debates

We have discussed the literature exhaustively in the previous section in order to show the complexity of the results. It is difficult to see a moderate consensus on debates from Lipset until today. This is not only because of the measurement problems of some concepts such as democracy, growth, income and so on but also a lack of available data in many countries which hinders us to make accurate comparisons between countries in the medium and long run. Also, causality problems are omitted in many studies and must be considered. For instance, Acemoglu et al. point out those previous cross-country estimations that find a positive correlation between education and democracy could be biased as a result of omitting variables.⁴²

Some of the literature has begun to further explore the bilateral relationship between democracy and other development goals such as, aside from growth, poverty, education, inequality, and corruption.⁴³ One striking study has been done by Doucouliagos, H., and M. Ulubasoglu who apply meta-regression analysis to the population of 470 estimates derived from 81 papers on the democracy-growth association. They challenge the consensus of an inconclusive relationship with a meta-analytic review and a quantitative assessment of the democracy-growth literature, claiming that democracy has no direct effect on economic growth.⁴⁴

The problem here is that countries might have their own *sui generis* characteristics that may affect and determine the relationship between growth and democracy. Thus, it is difficult to get reliable and accurate results, particularly in the long run, in cross national research studies. For instance, during the process of joining the European Union, countries are affected by the politics of the Union. The candidate countries need to fulfill the political and economic criteria of the Union to become a full member. Therefore, if one decides to make a comparison between these candidate countries and some other countries in different parts of the world, he should not ignore the effects of the European Union on developments in the country. Similarly, there are many other external and internal deter-

42 Acemoglu D, Johnson S, Robinson J.A., Yared P., 2005, *Income and Democracy*, NBER Working Series, 11205.

43 Menocal A.R., 2007, "Analyzing the Relationship between Democracy and Development: Defining Basic Concepts and Assessing Key Linkages", *Wilton Park Conference on Democracy and Development*..

44 See; Doucouliagos, H., and M. Ulubasoglu, "Democracy and Economic Growth: A Meta-Analysis", School of Accounting, Economics and Finance, Deakin University, Australia. Available at: <http://www.international.ucla.edu/cms/files/Doucouliagos.pdf>.

minants that affect the democratization process of these countries. That is why we see numerous different results regarding the same researches.

We will examine one country case in order to reduce these potential problems. A little research has been done so far on country specific samples.⁴⁵ For instance, Iqbal et al. investigate the relationship between economic development and democracy in Pakistan, and find that economic growth fosters progress toward democratic performance. They note however that the relationship between development and democracy is unclear and indeterminate due to Pakistan's unique political conditions.⁴⁶ Monshipouri and Samuel⁴⁷ and Kim⁴⁸ examine the relationship between economic development and democracy in Pakistan and Japan, respectively. Recently, Ray and Ray investigate this relationship by using co-integration analysis and find that democracy is an important indicator for economic development in India and there is long run equilibrium between these two variables.⁴⁹ Uysal et al. look into the case of Turkey and find that there is a significant relationship between economic growth and democracy in Turkey in the long run.⁵⁰

In this study, we will examine the medium-run relationship between economic growth and democracy in Turkey between 1980 and 2010 to see whether there is a significant relationship between the two. Turkey is a good case to investigate in this regard because of its regional importance. Turkey is one of the few secular and democratic Muslim countries in the world. Even though Turkey has experienced three military coup d'états (1960, 1971, and 1980), its direction towards the European Union has never stopped.

45 See; Heo, U.K. and T. Aleander, 2001, "Democracy and Economic Growth: A Causal Analysis, Comparative Politics", Vol. 33, No: 4, 463-473; Başar, S., and Ş. Yıldız, 2009, "İktisadi Buyumenin Demokratikleşme Uzerine Etkileri", *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, Vol. 12, 56-75; and Acemoglu D., M. Angélica, P. Querubín, J.A. Robinson, 2007, "Economic and Political Inequality in Development: The Case of Cundinamarca, Colombia," NBER Working Papers, No: 13208.

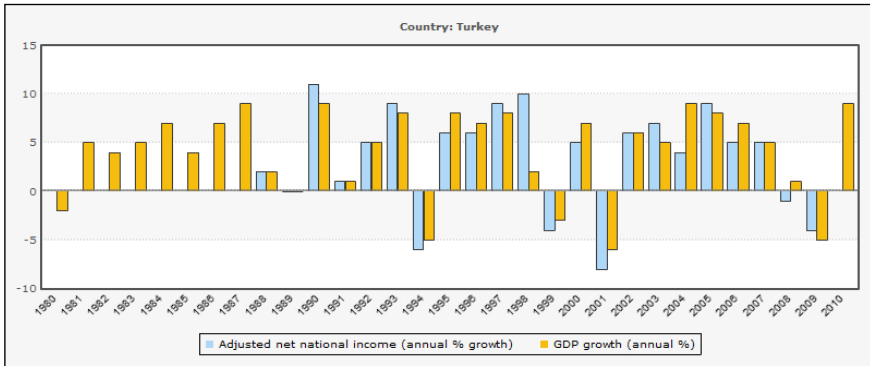
46 Iqbal N., Khan S.J.I., Irfan M., 2008, "Democracy, Autocracy, and Macroeconomic Performance in Pakistan", *AJ&K*, Vol. XVII, No: 1.

47 Monshipouri, M., and Samuel, A., 1995, "Development and Democracy in Pakistan: Tenuous or Plausible Nexus?" *Asian Survey*, Vol. 35, No: 11, 973-89.

48 Kim, C. L., 1971, "Socio-economic Development and Political Democracy in Japanese Prefectures", *The American Political Science Review*, Vol. 65, No: 1, 184-6.

49 Ray S., and I.A. Ray, 2011, "Regional Analysis on the Relationship between Economic Growth and Democracy: Evidence from India", *Afro Asian Journal of Social Sciences*, Vol. 2, No. 2,3.

50 Uysal D., M.C. Özşahin, Ş. Özşahin, 2010, "Co-Integration Analysis of Economic Development and Democracy: The Case of Turkey", *Current Research Journal of Economic Theory*, Vol. 2, No. 3, 102-111.

Figure 1: GDP Growth in Turkey, 1980-2010

Source: <http://www.indexmundi.com>

Particularly after the 2002 elections, when the one party (AK Party) won the elections, Turkey becomes one of the world's fastest growing economies (figure 1). At the same time, the country is trying to clear away the bad effects of the last military cope in 1980. Looking at Turkey's last three decades is especially important since the country uses the constitution that was prepared by the military after the 1980 coup de d'état. It can be said that Turkey is experiencing a new transition process. This transition is not only moving the country towards more democratization but also towards greater economic development. We basically will test the relationship between growth and democracy in order to see if this relationship is significant or not.

Data and Method

Since the levels of democracy have changed greatly over the last two centuries, measuring the stability of democracy is impossible⁵¹. However, Granato et al. challenge this claim by saying that, Robert and Miller's assumption has no theoretical basis.⁵² Insomuch as its measurement problem, the variety of definitions of democracy triggers contradicted results.⁵³ Today, countries are divided in terms of different democracy regimes (table 1).

51 Robert, J. and R. Miller, 1996, "A Renaissance of Political Culture?", *American Journal of Political Science*, 40: 632-59.

52 Granato, J., R. Inglehart, and D. Leblang, 1996, "The Effect of Cultural Values on Economic Development: Theory, Hypotheses, and Some Empirical Tests", *American Journal of Political Science*, Vol. 40, No 3, 607-631.

53 See, for example; Collier and Adcock (1999), Collier and Levitsky (1997), Bollen (1990), and Schmitter and Karl (1991).

Table 1: Democracy Index 2011 by Regime Type

	countries	% of countries	% of world population
Full democracies	25	15.0	11.3
Flawed democracies	53	31.7	37.1
Hybrid regimes	37	22.2	14.0
Authoritarian regimes	52	31.1	37.6

Source: Economist Intelligence Unit; CIA World Factbook.

One of the most commonly used criteria of democracy by Robert Dahl, who identifies several crucial criteria that are essential for democracy in ‘polyarchy’. Some of them are: control over governmental decisions about policy constitutionally vested in elected officials; relatively frequent, fair and free elections; universal adult suffrage; the right to run for public offices; freedom of expression; access to alternative sources of information that are not monopolized by either the government or any other single group; freedom of association.⁵⁴

In this study, we will examine the medium-run relationship between economic growth and democracy in Turkey between 1980 and 2010. We use two data; economic growth and democracy. The data for GDP growth is obtained from Turkish Statistical Organization.⁵⁵ For democracy index, we use the Polity IV index ranges from -10 to +10. While “hereditary monarchy” is coded as -10, “consolidated democracy” is coded as +10.⁵⁶ Using these data, we aim to test if there is equilibrium between growth and democracy in Turkey between 1980 and 2010.

We use the Eviews program to test for co-integration, and to perform Vector Error Correction Model (VECM). First we use the Augmented Dickey-Fuller (ADF)⁵⁷ test to see the univariate time series for the presence of unit roots or non/stationarity. ADF test can be described as the formulation below:

54 Dahl, R. A., 1971, *Polyarchy: Participation and Opposition*, New Haven, CT: Yale University Press.

55 See; www.tuik.gov.tr.

56 For further information on Polity IV Project, see; <http://www.systemicpeace.org/inscr/p4manualv2010.pdf>,

57 For further information, see; Dickey, D.A. and W. A. Fuller, 1981, “Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root”, *Econometrica*, Vol. 49, No: 4, 1057-1072; and Engle, R.F. and C.W.J. Granger, 1987, “Co-Integration and Error Correction: Representation, Estimation and Testing”, *Econometrica*, Vol. 55, No: 2, 251-276.

$$\Delta Y_t = \mu + \gamma Y_{t-1} + \sum_{j=1}^p \alpha_j \Delta Y_{t-j} + \beta t + \omega_t$$

As can be seen from the table 2 below, by using the maximum lag range, we estimate the stationary with Akaike (AIC), Schwarz (SC), and Hannan-Quinn (HQ) methods. Augmented

Dickey-Fuller unit root test results show that the variables are stationary with %5 significance level. We then test for autocorrelation. The results are presented in table 3.

Table 2: Augmented Dickey-Fuller (ADF) Tests

	DEMOCRACY			GROWTH		
	<i>t-stat</i>	<i>Prob.</i>	<i>critical values</i>	<i>t-stat</i>	<i>Prob.</i>	<i>critical values</i>
SC	-13.3737	0.0000	-4.33933(%1)	-6.50794	0.0000	-4.296729(%1)
			-3.587527(%5)			-3.568379(%5)
			-3.22923(%10)			-3.218382(%10)
AIC	-10.3153	0.0000	-4.394309(%1)	-6.50794	0.0000	-4.296729(%1)
			-3.612199(%5)			-3.568379(%5)
			-3.243079(%10)			-3.218382(%10)
HQ	-10.3153	0.0000	-4.394309(%1)	-6.50794	0.0000	-4.296729(%1)
			-3.612199(%5)			-3.568379(%5)
			-3.243079(%10)			-3.218382(%10)

Table 3: Autocorrelation Test

Autocorrelation	Partial Correlation	lag	AC	PAC	Q-Stat	Prob.
*** .	*** .	1	-0.5	-0.5	8.0268	0.005
. .	.* .	2	0	-0.333	8.0268	0.018
. .	.* .	3	0.003	-0.245	8.0272	0.045
. .	.* .	4	-0.007	-0.202	8.0288	0.091
.* .	.* .	5	-0.077	-0.301	8.2489	0.143
. * .	.* .	6	0.16	-0.109	9.2496	0.16
.* .	.* .	7	-0.073	-0.085	9.4693	0.221
. .	.* .	8	-0.013	-0.091	9.4769	0.304
. .	. .	9	0.047	-0.011	9.5748	0.386
.* .	.* .	10	-0.08	-0.09	9.8776	0.451
. .	. .	11	0.04	-0.058	9.9576	0.534
. .	.* .	12	0	-0.08	9.9576	0.62

We use Q-statistic to test for autocorrelation with the first 12 lags. The results of the autocorrelation test show that the residuals are not autocorrelated. Since the only first three lags fall in the %5 significance level others are more than this point. As a result, the serial correlation is not a problem for our model. The next step is to show the results of the Johansen Co-integration Test with Trace Statistic and Max-Eigen Statistic, which allows us to see whether there is a significant relationship between economic growth and democracy in Turkey between 1980 and 2010. The results of Co-integration Test are shown in table 4 below.

Table 4: Johansen Co-integration Test

Co-integration Rank Test (Trace)				
Hypothesized	Eigenvalue	Trace	0.05	
No. of CE(s)		Statistic**	Critical Value	Prob.
None *	0.654497	33.63128	18.39771	0.0002
At most 1 *	0.206068	5.999695	3.841466	0.0143
Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized	Eigenvalue	Max-Eigen	0.05	
No. of CE(s)		Statistic	Critical Value	Prob.
None *	0.654497	27.63159	17.14769	0.0011
At most 1 *	0.206068	5.999695	3.841466	0.0143

*denotes rejection of the hypothesis at the 0.05 level. **Trace test is also known as Likelihood Ratio test.

Based on the results of co-integration analysis, both trace statistics and maximum eigen statistics values fall in highly significant p value, which indicates that the null hypothesis that there is no co-integration equation can be rejected. We also present the results of normalized and adjustment coefficients in table 5. Normalized co-integrating coefficients indicate the positive relationship between growth and democracy.

Table 5: Co-integration Test for Normalized and Adjustment Coefficients

	Normalized co-integrating coefficients	Adjustment coefficients
Democracy	1.000000	-0.002351 (0.00323)*
Growth	7.213647 (1.14233)*	-0.167244 (0.02989)*

*standard errors are in parentheses.

Finally, we use the Vector Error Correction Model (VECM). The coefficient of the error correction term is statistically significant. As can be seen from the table 6, VECM model shows us the difference between short term and long term of the variables. The coefficients of the two different time period of the variables show the relationship between growth and democracy.

Table 6: Vector Error Correction Model (VECM)

<u>Variables</u>	Democracy	Growth
Democracy _(t-1)	-0.088052 (0.05227)	0.361170 (0.48273)
Growth _(t-1)	0.038376 (0.02289)	-0.844564 (0.21136)
Democracy _(t-2)	-0.068713 (0.05305)	-0.030863 (0.48992)
Growth _(t-2)	0.009279 (0.02289)	-0.391416 (0.21139)

*standard errors are in parentheses.

Conclusion

Lipset started the debates on the bilateral relationship between democracy and growth. Despite lack of a certain consensus, there is no room for doubt that all empirical and theoretical studies have contributed to this literature since then. However, the ambiguous results in the literature show that there is still a lot to be done. It would be better if these studies focus more on country specific samples. In order to get more constant and accurate results, we recommend future studies to pay more attention to the country specific samples. Hence, a couple of studies on specific countries would help us to categorize the countries in terms of their results.

Therefore, making comparison between countries will be easier and more plausible since we may test cross national samples based on these categorizations. For that reason, we aim to look at the relationship between economic growth and democracy in Turkey between 1980 and 2010 in order to see if there is a significant relationship between these variables. Our co-integration results show that there is a significant relationship between economic growth and democracy in the period examined. Our results support the previous literature on Turkey, which found a significant relationship between growth and economy in the long run.

However, further research on Turkey is needed to understand the causal effects in depth. For instance, one should take the important determinants such as inflation, political institutions, economic institutions, social structures, and even education into account in order to analyze the causality.

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