

ISSN 2090-3359 (Print)
ISSN 2090-3367 (Online)



Advances in Decision Sciences

Volume 22(A)
22nd Anniversary Special Issue
December 2018

Michael McAleer
Editor-in-Chief
University Chair Professor
Asia University, Taiwan



Published by Asia University, Taiwan

ADS@ASIAUNIVERSITY

A New Perspective on the Diffusion of Global Democracy¹

Hyeok Yong Kwon

Department of Political Science
Korea University
Seoul, Korea

Hang Keun Ryu²

Department of Economics
Chung Ang University
Seoul, Korea

Daniel J. Slottje

Department of Economics
Southern Methodist University
Dallas, Texas, USA

September 2018

1 The authors are grateful for the helpful comments and suggestions of the Editors and a referee. This research was supported by the National Research Foundation of Korea (NRF-2017S1A3A2066657).

2 Corresponding author: hangryu@cau.ac.kr

Abstract

Francis Fukuyama hypothesized that liberal democracy may constitute the final form of human government and Samuel Huntington described the transition of some thirty countries from non-democratic to democratic political systems between 1974 and 1990 as the “third wave,” with the implication that it would sweep the rest of the world’s countries with it. It is rather obvious that both predictions missed the mark. This paper attempts to shed light on why these predictions were wrong. Most regime changes over the last 50 years occurred in countries with relatively small populations with the result that the majority of the world’s population was unaffected by the diffusion of global democracy. Concurrent with the autocracy to democracy transition, there is usually, of course, a confrontation between the political groups in power and those seeking power. If the “third wave” is adjusted for population count, observed global democracy diffusion (and attendant global confrontation) becomes a much less significant event. To describe the weakening phenomenon of global confrontation of political systems, some new tools are used. Specifically, a political Gini coefficient (PGC), and a global political polarization index (PPI) are introduced. These summary measures can be observed after adjusting for population count and country count. Though the Gini and PPI are generally utilized as income inequality measures in the economics discipline, both provide insight here as the Gini describes the unequal distribution of democracy and the PPI describes the degree of polarization of two rival political systems.

JEL: D72, D30

Keywords: Population measure, political polarization index, political Gini coefficient, Przeworski index, the third wave, polity IV data.

1. Introduction

Francis Fukuyama (1992) hypothesized that liberal democracy may constitute the final form of human government. Huntington (1991) classified the American and French Revolutions as the first wave, the promotion of democracy during the Allied occupancy in West Germany, Italy, Austria, Japan, and Korea after the World War II as the second wave, and the transition of some thirty countries from non-democratic to democratic political systems between 1974 and 1990 as the third wave of democratization.

The ‘third wave’ of democratization has changed the political system of Southern Europe, Latin America, East Asia, Eastern Europe, and African countries from authoritarian rules towards democratic regimes.

By most accounts, the year 1989 earmarked a new era in which we observed more democratic countries than autocratic ones for the first time in human history. Some of these third wave countries were small in population and still have unstable political systems. Most countries that are large in either land area or in population count have not changed their political system in the last 50 years (Russia may have a different label but it remains a non-democracy).

The U.S., Russia, China, Japan, and big Western European countries have all stayed the same. Of course sitting here in 2018, these theories of political evolution have not come to fruition. A major portion of the world’s population wakes up every day under autocratic rule with no end to it in sight. This paper examines other dimensions of relatively well known factors to attempt to provide insight into why the world’s political systems have not evolved as researchers expected they would.

Recently, the third wave faced a reverse wave of sorts. Diamond (2016) described the phenomenon of how the expansion of freedom and democracy came to a prolonged halt. From 2006 through 2013, there was no net expansion in the number of electoral democracies. In fact, he observed that the democracy process was in decline after 2008. Empirical tables in the Diamond study (2016) show the proportion of liberal democracy countries was 41% in 2014

but that this proportion decreases to 33% if we include only states with populations of over one million.

What is apparent is that it is still the case that a large proportion of the world's population is under autocratic rule. It is not hard to argue that issues related to global confrontation and rivalism between liberal democracies and autocracies are more important than issues of expansion and recession of democracy, but both are important.

One purpose of this paper is to introduce new tools to analyze how adjusting for population count impacts the measurement of the diffusion (or lack thereof) of democracy across the globe. One must be careful how the population count is measured. When viewing the country count, it is reasonable that each country is counted as one unit, but in performing the population count, each person is counted as one unit.

The polity IV index is a measure of how democratic or autocratic a political system is; cf. Marshall et al. (2016). The index has a value of -10 for a hereditary monarchy to +10 for complete democracy:

www.systemicpeace.org/polityproject.html).

If a country has a population of 10 million people with a polity IV value equal to 9, then 10 million counts of polity IV with a value of 9 will be used in the analysis. The U.S., Western European countries (such as the U.K., France, and Germany), Japan, China, and Russia are all populous countries and not one of them has experienced a shift in its political system (as noted above, Russia obviously is not a democracy). Most of the remaining countries are relatively small.

Many of these countries face political instability and are vulnerable to external shocks and foreign influences. The tools used here are concentration measures that are frequently used in the economics literature. The Gini coefficient and Wolfson's polarization index are utilized here to describe the distribution of democracy. These concentration measures provide additional insights unobserved in the dichotomous division of countries into democracy and non-democracy used by political science researchers such as Przeworski et al. (2000).

In Section 2 below, the level of political confrontation for the last 55 years is reviewed. Section 3 derives various global confrontation measures. Section 4 discusses the “China effect.” And section 5 provides our conclusions.

2. A Comparison of Political Confrontation over the Last 55 years

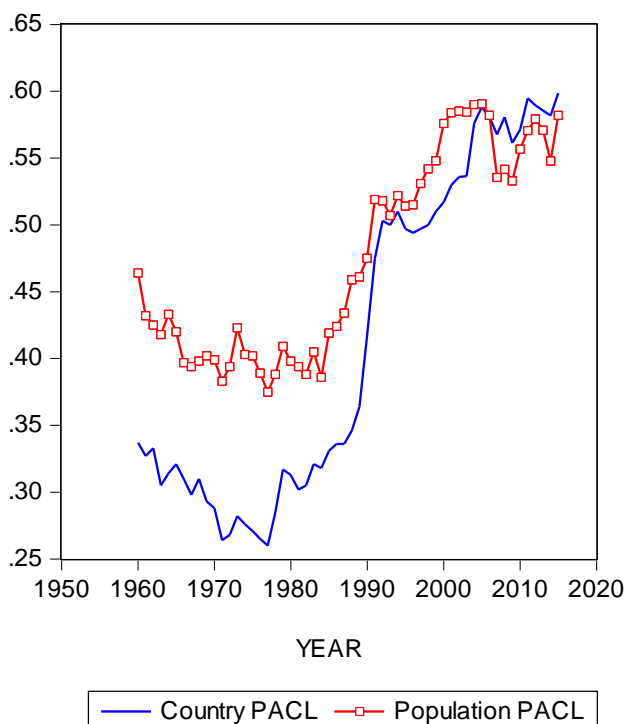
2.1 Review of Huntington’s Third Wave

Over the last 40 years, the quality of democracy and the number of democratic countries increased significantly. When describing the so-called third wave, Huntington reported in his Table 1.1 that the percentage of total national states rose from 24.6% in 1973 to 45.4% in 1990. The same result can be reproduced using the Przeworski index (Przeworski, Alvarez, Cheibub, and Limongi: PACL, henceforth) in Fig. 1 below.

Conceptually, Przeworski et al. (2000) defined a country to be democratic when the head of the executive branch is elected, the legislature is elected, there are more than two political parties competing for the office, and the power transfer occurs at least once under the same electoral rule. The PACL measured by country count rose from 1974 (26%) to 1990 (50%) and then again until 2000 (58%).

Movement of the PACL as measured by population count is somewhat sluggish because only countries with relatively small populations had joined the third wave. The world population enjoying democracy rose less significantly from 46.38% to 58.20% during the same period.

Fig.1 Country PACL and Population PACL



2.2. Political confrontation between democracies and autocracies

Huntington's three waves of democracy expansion and Fukuyama's end of history theory seem to present implications for the seemingly fading confrontations between political systems. As was noted above, one of the widely used measures of democracy is Polity IV, which conceptually defines democracy as the recruitment of the head of the executive through open and free elections as well as institutional constraints on potential tyrannical behavior of the head of the executive (Marshall et al. 2016). Przeworski et al. (2000) defined a country to be democratic if the polity IV value is larger than or equal to six.

In the democratization literature, a country is classified to be democratic if the Polity IV value is larger than or equal to six. In contrast to Huntington's and Fukuyama's implications, in 2015 most people were living either under democracy or under autocracy. Fewer people

(17.41%) were living in the middle range of $-6 \leq \text{Polity IV} \leq +5$, which can be termed hybrid regimes. About 24.39% of population lived in autocracy ($\text{polity IV} \leq -7$) and 58.20% lived in democratic countries with $\text{polity IV} \geq 6$.

Table 1
Population proportions under democracy and autocracy

	Population Proportion in 1960	Population Proportion in 1983	Population Proportion in 2015
Autocracy $\text{polity IV} \leq -7$	40.07	45.08	24.39
Middle Range $-6 \leq \text{Polity IV} \leq +5$	13.56	14.43	17.41
Democracy $\text{polity IV} \geq 6$	46.38	40.49	58.20

These trends and figures raise a number of interesting questions.

Issue 1: Has there been an improvement in the level of democracy globally in 2015 relative to 1960 and 1983?

If population count is considered, the proportion of people living under democracy shrank between 1960 and 1983, but the overall proportion expanded during the period from 1960 to 2015. However, at the same time it is still true that fully 42% of the world's population were living in non-democratic countries.

By the mid-1980s, communism was seen as “the grand failure” using Zbigniew Brzezinski’s phrase, and the “unabashed victory of economic and political liberalism” by Huntington (1991, 27). This is a surprising remark when comparing the population histogram for 1960 and 1983.

A large portion of the world's population was under autocratic rule (45% at polity IV = -7) and autocracy was at its peak in 1983. The country count and population count indicate very large differences in 1983, as shown in Fig. 1.

The proportion of democratic countries increased by a relatively small number but the proportion of people living under democracy was still relatively low during the period from 1974 to 1983. The proportion of the population count living under democracy increased only 10% during the period from 1974 to 1991. It is a smaller number than the number reflected by the proportion of country count increase (which was 20%) over the same period of time.

Issue 2: The “end of history” theory suggests that most people are currently living under democratic regimes or will be living under democracy in the near future.

But in 2015, many people were still living either under autocracy. Fewer people were living in the middle ranges described with $-6 \leq \text{polity IV} \leq +5$. About 24% of the world's population was under autocracy and 58% was under democracy. An important question can be asked as to why there are two competing peaks (a bimodal distribution) rather than a single peak in the middle (a unimodal distribution).

In 1960, two super power groups (the USA and European countries in one side and China and Russia on the other side) had been established and still 55 years later such a striking polarization phenomenon has not changed. Fig.2 shows two competing peaks of autocracy and democracy. Fig.3 shows the level of ongoing confrontation for the last 55 years. Clearly no “end of history” occurred, nor did a wave sweep autocratic forms of government away forever.

Fig. 2 Country histogram and Population histogram (2015)

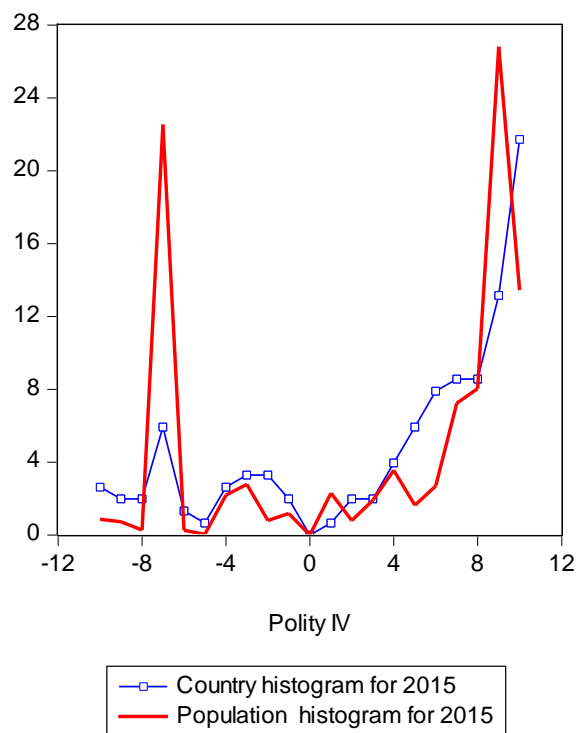
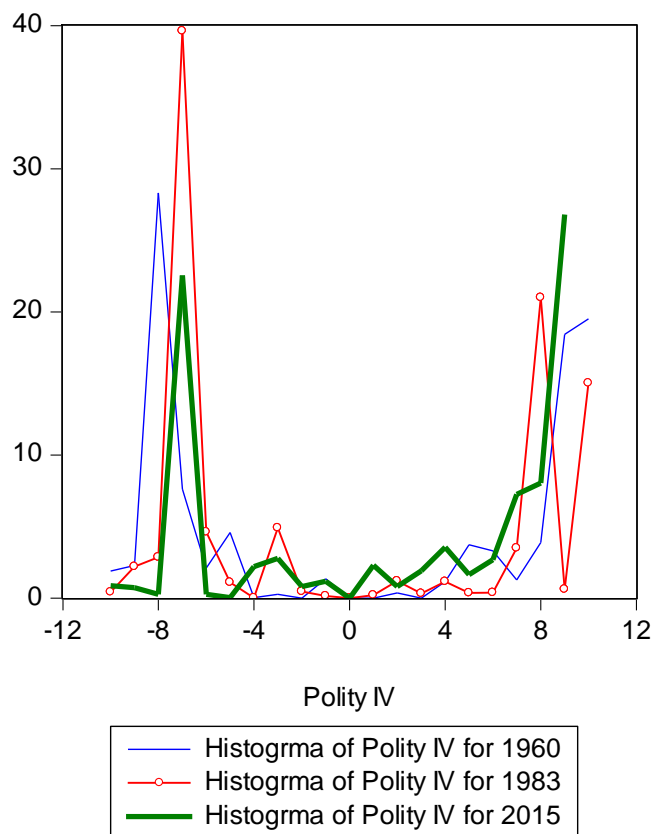


Fig. 3 Population histograms for 1960, 1983, and 2015



3. Summary Measures of Democracy Distribution

In this section, we will introduce various summary measures and indices of the concentration of distributions. These measures are primarily used in economics to examine income distributions, but here we apply them to the distribution of democracy. The tools we utilize in the study are,

1. Political Polarization Index (PPI)
2. Global Democracy Index (GDI)
3. Political Gini Coefficient (PGC)
4. Przeworski, Alvarez, Cheibub, and Limongi (PACL)
5. Histogram

Since the polity IV index has a range of values between -10 and 10, we need to normalize the measure such that a Polity IV value of 10 corresponds to $d_i = 1$, and a Polity IV value of -10 corresponds to $d_i = 0$:

$$d_i = \frac{\text{Polity IV}_i + 10}{20}$$

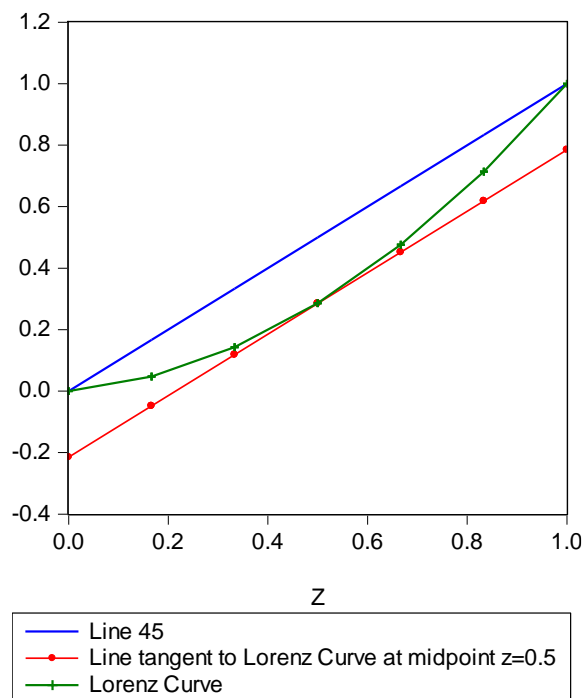
3.1 Review of Wolfson's Polarization index

Wolfson (2001) considered the Gini coefficient and Theil's entropy measure as not useful measures to describe the fact groups of income earners tended to move into richer and poor groups away from the so-called middle class, he labeled this phenomenon the income polarization effect. These indices are insensitive to relative income changes of the poorest group because they correspond to the bottom area of the Lorenz curve. Wolfson defined a polarization index as:

$$P = \frac{4\mu}{m} |0.5 - L(0.5) - 0.5\text{Gini}|$$

where m is the median of a batch of income data and μ is the mean of income shares. Since $|0.5 - L(0.5) - 0.5\text{Gini}|$ is the addition of two triangular areas below the Lorenz curve, P can be bigger than one if the median m is very small.

Fig. 4 Derivation of the Wolfson Index



Example of Wolfson's Polarization Index

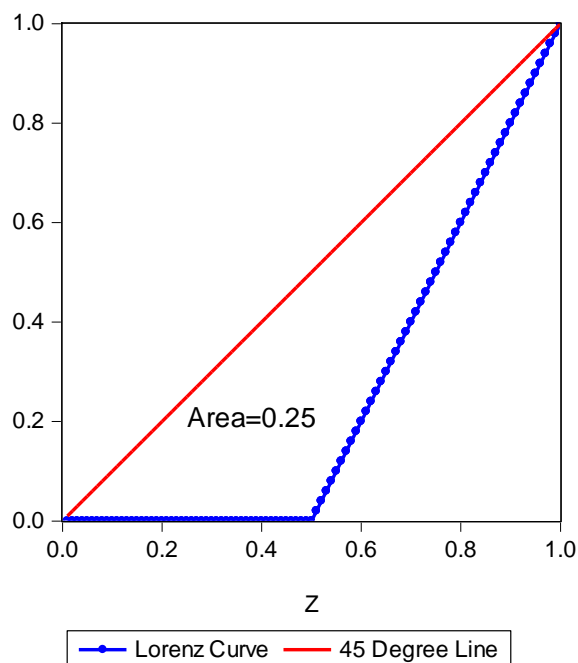
Consider the extreme case when 50 countries are at polity $IV = -10$ (we rescale it to $z=0$) and the remaining 50 countries are at polity $IV = +10$ (we rescale it to $z=1$). It can be

seen in Fig. 5 below that the area below the Lorenz curve is 0.25 and the slope of the Lorenz curve at the mid-point is one. Therefore $P=1$ for the extreme polarization case because:

$$m / \mu = 0.01 / 0.01 = 1$$

$$P = \frac{4\mu}{m} |0.5 - L(0.5) - 0.5\text{Gini}| = 1$$

Fig.5 Example of Wolfson's polarization index

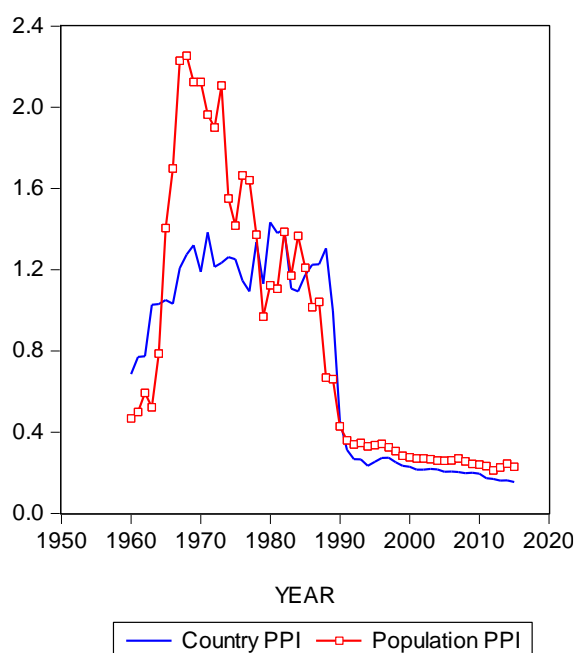


Counter Claim 1:

We now apply these tools to the questions at hand, that is, Huntington claimed that the third wave of democratization occurred between 1974 and 1990 but if we measure the same effect with the country political polarization index (PPI), then there was actually very little

difference over time during the period from 1974 to 1990. However, if we measure the world population PPI, then the polarization began to decrease beginning in 1970, long before the collapse of the USSR and the demise of communism in the other bloc of socialist countries. It will be the subject of future research to explore why the population PPI was decreasing, while the country PPI maintained its relatively high value.

Fig.6 Country PPI and Population PPI



3.2 Global Democracy Index (GDI)

Though Przeworski et al. (2000) divided countries into those that are democratic and those that are non-democratic; the *quality* of democracy is an important issue. Diamond (2013) claims two-thirds of the world's democratic countries enjoy reasonably "high-quality" life experiences with liberal democracy. He defines a country as being a liberal democracy if:

- a) Electoral competition is institutionalized, fair, and open,

- b) Civil liberties are better protected,
- c) Rule of law exists, and
- d) Low levels of political violence and abuses or impunity by state security services.

In this paper, we also want to capture the quality of country's democracy by using a measure of the average status of global democracy over all countries or over the whole population. Przeworski et al. (2000) does not distinguish between extreme transitions of polity IV from -10 to +5, but does distinguish between a small change of polity IV from +5 to +6.

Using the normalized polity IV values explained above:

$$d_i = \frac{\text{Polity IV}_i + 10}{20}$$

Polity IV=10 corresponds to $d_i = 1$, and Polity IV = -10 corresponds to $d_i = 0$

Define the global democracy index as:

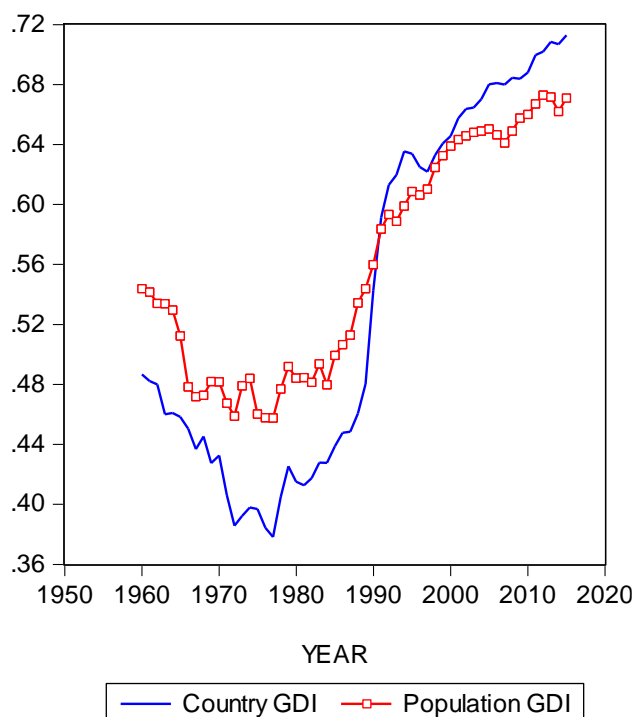
$$GDI = \frac{1}{n} \sum_{i=1}^n d_i$$

If all the countries have Polity IV values of +10, then the GDI=1 and if all the countries have Polity IV values of -10, then the GDI=0.

Fig.7 shows the country GDI (Qualitative index of democracy) has increased from 0.37 (1977) to 0.71 (2015). This is why some believe democracy became the dominant political

system after the third wave. In comparison, the population GDI increased much less from 0.46 (1975) to 0.67 (2015).

Fig.7 Country GDI and Population GDI



3.3 Political Gini Coefficient (PGC)

In economics, the Gini coefficient is used to describe the level of income inequality in a given income distribution. The Gini coefficient has a value near zero for a relatively even distribution of income but has a value near one for a severely unequal distribution of income. We now define a political Gini Coefficient, PGC. If all the countries are under democratic rule or are under autocratic rule, then the political Gini coefficient will be zero. If all countries are divided into two rival groups, then the Gini coefficient will be large. Using the normalized polity IV values, an autocratic country with polity IV = -10 is placed at $z = 0$ and a fully democratic country with polity IV = +10 is placed at $z = 1$.

The proportion of countries falling inside $z = [0, 0.01]$ is denoted as the share of total democracy amount for the group belonging to $z = [0, 0.01]$ and can be written as $s(0 \leq z \leq 0.01)$. The proportion of countries falling inside $z = [0.01, 0.02]$ is denoted as the share of total democracy belonging to this group. Then the Gini coefficient can be found with:

$$\text{Gini} = 2\mu_1 - 1, \quad \mu_1 = \int_0^1 z s(z') dz'$$

In our analysis we consider democracy as a “normal” good (analogously to a good one wants to consume more of as money income increases) and we note it was enjoyed by a relatively small number of countries in 1970s. If a democratic system is a normal good and if it can be distributed to autocratic countries (like a money transfer from the rich to the poor), then the PGC will decrease. A decreasing country PGC and a decreasing population PGC are interpreted here to mean that the normal good (democracy) is spreading to relatively poorer (autocratic) countries.

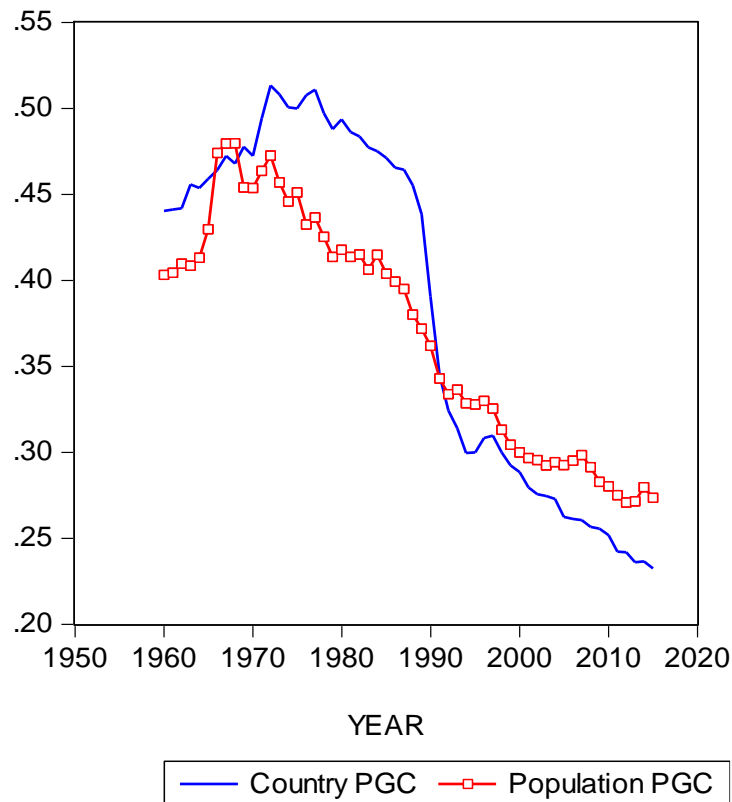
Until 1983, autocracy was expanding but the country PGC began to fall beginning in 1970 and the population PGC began to fall beginning in the mid-1960s. After achieving these peaks, both the country PGC and the population PGC decreased to indicate a widening diffusion of democracy.

Counter Claim 2:

The commonly held belief noted above is that the expansion of democracy stopped after 2000. This phenomenon is generally explained as being due to the effect of several financial crises and the expansion of China and its influence. This phenomenon is also observed with the proportion of democratic countries (PACL) which stagnated after 2005 (red line) for both country PACL and population PACL in Fig.1. But our new measures (country GDI indicated with the blue line and country PGC indicated with the blue line) show a continued

expansion of democracy after 2000. No significant increase in the PPI is detected after the year 2000.

Fig.8 Country PGC and Population PGC



4. China Effect

A few years ago, Larry Diamond (2013, 2016) predicted that China would become a democratic country in five years, but there is still no obvious signal of immediate change. His research and some of the other research cited in this paper appear to have a prediction problem. In economics, overall efficiency can be improved when there are many participants in the market and individual power over market outcomes should be so small such that no one can

significantly influence the market determined equilibrium price. If someone (or something) has market power, he (it) will turn from price taker to price maker in that market.

An analogous situation is found in examining global political confrontation. China has a population of 1.37 billion (17.8% of the world's population) and a polity $IV = -7$. When one has a dominant player in the global market for democracy, political equilibrium will take a longer period to achieve. From now on, global democracy expansion may take a different route because one could argue the remaining autocratic countries have survived the diffusion of democracy for a long time and they are well-armed with political ideology and religious beliefs to repel democratic principles and the democratic belief system.

5. Conclusion

Francis Fukuyama's "The end of history and the last man" considered democracy as the final form of human government. Samuel Huntington explained that a rapid increase in the rise of democratic countries during the 1970s and 1980s was the "third wave." These results can be partially confirmed by using the country PACL measure that uses the ratio of democratic countries to all countries. However, this paper has suggested several counter claims.

- (1) If we measure the proportion of the world's population living under democratic rule, the evolution of the world's political systems towards democracy is not so obvious. Countries with large populations or large in land mass did not change their political systems. Only small countries underwent system transitions. This means the political confrontation between democratic countries and autocratic countries is still an ongoing phenomenon rather than coming to an end.

- (2) China has a strong non-democratic peak at polity IV = -7 and Russia also remains an autocratic country. The issue should rightly be about the confrontation of opposing political systems rather than about the global dominance of democracy.
- (3) This paper introduced a political polarization index (PPI). The income polarization index was first introduced by Wolfson. Based on this PPI, global political polarization measured by population count began to decrease from 1970s long before the collapse of the USSR. Although autocracy was at its worldwide peak in the early 1980s as measured by country count numerically and by population count numerically, the population count of the PPI suggested an early signal of the collapse of autocratic countries. A deeper meaning of this signal will be analyzed in the future.
- (4) This paper also introduced a political Gini coefficient (PGC) and a global democracy index (GDI). Considering democracy as a normal good per the economics literature, the political Gini coefficient analyzed how democracy (the presumed normal good) is distributed among countries and among the world's population.
- (5) The global democracy index is equivalent to the PACL but it is more sensitive to detecting changes in the Polity IV data although Przeworski et al. (2000) divided countries discreetly into democratic countries or non-democratic countries. Utilizing these new tools gives the policymaker and political scientist opportunities to analyze these issues with a new perspective.

References

Diamond, Larry, 2013. *Democratic Development*, Coursera.com.

Diamond, Larry, 2016. *In Search of Democracy*. London: Routledge.

Fukuyama, Francis, 1992. *The End of History and the Last Man*. New York: Free Press.

Huntington, Samuel, 1991. *The Third Wave*. Norman, OK: University of Oklahoma Press.

Marshall, Monty G., Ted Gurr, and Keith Jagers. 2016. *POLITY IV Project: Political Regime Characteristics and Transitions, 1800-2015*. Centre for Systemic Peace. The Pennsylvania State University.

Przeworski, Adam, Michael Alvarez, Jose Cheibub, and Fernando Limongi, 2000. *Democracy and Development*. Cambridge: Cambridge University Press.

Wolfson, Michael C., 1997, "Divergent Inequalities: Theory and Empirical Results," *Review of Income and Wealth* 43(4): pp.401-421.