

Democracy and the Human Development Sequence: A Revised Cross-Country Comparison

Jairo Acuña – Alfaro*

Abstract: This paper provides a parsimonious empirical test of the relationship between democracy and HD, using time-series cross-sectional data on 164 countries from 1972 to 2002. The paper specifies a similar partial model to those found in the global comparative literature on democracy and development in an effort to replicate earlier findings and advance the proposition that there are strong reciprocal connections between HD and democratization that form two chains which reinforce one another cumulatively over time. The statistical analysis aims to show that the causal relationship forms two chains that run in both directions. This gives rise to virtuous and vicious circles, with good or bad performance on human development and democracy reinforcing each other. Cross-country partial regressions show a significant relationship in both directions. Yet evidence over time has strong sequential implications, and where a choice is necessary, democracy should be given sequencing priority over HD and economic growth,

* Jairo Acuña-Alfaro, Policy Advisor on Public Administration Reform and Anti-Corruption at UNDP – Viet Nam since October 2007. Editor of the series of policy discussion papers on public administration reform including public sector performance, civil service reform and anti-corruption. Editor of “Reforming Public Administration in Vietnam: Current Situation and Recommendations” in 2009 published by the National Politics Publishing House; and lead author of the Viet Nam Provincial Governance and Public Administration Performance Index (PAPI). Mr. Acuña studied at the University of Oxford (DPhil cand. and M.Litt), University of Essex (MA Political Economy) in the United Kingdom and Universidad Nacional (MSc International Relations) in Costa Rica. E-mail: jairo.acuna@undp.org.

respectively. The discussion is relevant in lieu of ongoing debates about post 2015 Millennium Development Goals in regards to governance and democratization.

Keywords: Democracy, HD, Model Specification, Identification, Endogeneity, Development Lopsidedness, Large “N”, Policy Sequence, Elective Affinities

Introduction

This paper argues that democratization and human development (HD) are intertwined and form some kind of “elective affinity”. That is, democracy should be considered a capability - a potentiality. If we accept Sen’s argument that at the individual level it is reasonable to extend the analysis to the societal level, then, paraphrasing Sen, democracy becomes an “opportunity freedom”. The capability of a person is a “derived notion” that reflects and focuses on the ability of human beings to lead lives they have reason to value and to enhance the substantive choices they have.¹ Among the list of central human functional capabilities, two are particularly relevant for this reasoning: (i) practical reason, defined as being able to form a conception of the good and to engage in critical reflection about the planning of one’s own life, and (ii) control over one’s environment, in particular politically or being able to participate effectively in political choices that governs one’s life, having the right of political participation, protection of speech and association and so forth.²

At the societal level, democracy is a capability as it focuses and reflects on freedoms. The actual choosing of these freedoms among

¹ Sen (1989 and 1997).

² Nussbaum (2000:78-80). Other central human functional capabilities identified by Nussbaum include: life; bodily health; bodily integrity; senses, imagination and thought; emotions; affiliation; other species; play and material control over one’s environment.

societal groups leads to different ways of living. Therefore, this paper focuses the analysis in terms of vicious, virtuous and lop-sided processes of democratization and HD. The purpose of the paper is to sharpen current understanding of the relationship between democratization and HD processes at the empirical and global levels. In doing so, this paper will argue that there exists a strong connection between HD and democracy. On the one hand, democracy³ provides the political and social environment in which individuals can freely choose how to exercise their capabilities as well as permitting sustained improvements in HD by providing stability. On the other hand, improvements in the quality of life (education, health and income) are important contributors to democratic consolidation and stability.

The empirical models used in this paper parallel Stewart and associates' on the sequencing priorities for HD and economic growth (EG).⁴ Stewart et al argue that when a choice is necessary, HD should be given priority over economic growth. Therefore, the exploration of the relationship between HD and democracy will revolve around this suggestion (see figure 1). If democracy is found to have an influence on HD, the former will also affect EG (sequence i). In the case that democracy is found not to influence HD, two sequencing options are possible: on the one hand democracy may still affect EG (sequence iii.a), or conversely, EG will have stronger influences on democracy but not HD (sequence iii.b). If democracy and HD are found to have equivalence, both will influence EG (sequence ii).

³ The measurement of democracy in this paper is based on Acuna-Alfaro (2005) aggregation method of the most common cross-country and time-series scales used in scientific literatures: Vanhanen's index of democratization, Polity IV and Freedom House. The aggregation consists of create a single composite index of democracy (CID) combining procedural, substantive and institutional attributes of democracy.

⁴ Stewart et al (2000).

Figure 1. Possible Sequencing Options for Policy Reform

Starting point: $HD > EG$ and therefore $HD \rightarrow EG$ (from Stewart et al [2000])

i.	Dem > HD <i>then</i>	Dem > EG <i>and</i>	Dem $\rightarrow$ HD $\rightarrow$ EG
ii.	Dem = HD <i>then</i>	Dem > EG <i>and</i>	Dem $\rightarrow$ HD $\rightarrow$ EG <i>or</i> HD $\rightarrow$ Dem $\rightarrow$ EG
iii.	Dem < HD <i>then</i>	a) Dem > EG <i>and</i> b) Dem < EG <i>and</i>	HD $\rightarrow$ Dem $\rightarrow$ EG <i>or</i> HD $\rightarrow$ EG $\rightarrow$ Dem

Dem = Democracy, HD = HD, EG = EG

Source: Author's own elaboration for illustrative purposes.

To explore these possible sequencing options for policy reform, this paper is structured in two sections. The first section aims to set the record straight on the cross-country empirical evidence concerning the association between democracy and human development in the last three decades. Secondly, the paper deepens the discussion with a typology of country cases, some representing the mutual enhancement of HD and democracy and some demonstrating asymmetric performance. This section will investigate the movement of countries from one category to another between 1975 and 2002. The conclusions will reflect on possible implications for macro-public policy and sequencing priority for policy reforms as identified in figure 1.

Democracy and Human Development: A Comparative Survey

Following Lipset's (1959) pioneering article the relationship between democracy and development has generated what may be the largest body of research in comparative politics. Indeed, "it is generally accepted that there is a relationship between economic development and democracy which can be demonstrated by quantitative empirical evidence".⁵ However, it is important to consider that the literature on the

⁵ Foweraker and Landman (2004:1).

relationship between democracy and development has mainly focused on the conditions for the functioning of democracy, with a heavy emphasis on per capita income or EG as proxies for development. The results of these tests have enhanced rather than resolved debates in development studies, as findings have been contradictory (while some note weak negative relations, others find strongly positive or even no association). Indeed, it has been suggested that using the same models of democratization and the same country-years, with different measures of democracy generates different results.⁶

This paper argument begins with the basic premise that HD is the central objective of human activity⁷ and treats democracy as potentially a very important instrument for advancing it. Conceptually, both democracy and HD have the same logic of inference: the expansion of capabilities and the exercise of liberties. Indeed, from the HD perspective, the relationship may be seen as endogenous, as individuals can only fully exercise their capabilities in a democratic environment. Democracy's three merits identified by Sen, related to its intrinsic importance, its instrumental contribution and its constructive role, are intertwined with the three main attributes of democracy. Yet, as experience suggests the merits of democracy can also have subdued effects upon development processes if democracy is left adrift and its processes do not rest upon the provision of balanced opportunities for human beings. The installation of a formally democratic national regime (a transition "in the narrow sense") does not solve all development ailments and democratic institutions may not be seen as mechanical devices for development.⁸ But such a transition opens up the opportunity for broader socio-economic processes of democratization that make it possible to achieve or look after the functionings that individuals have reason to value. Democracy at least enables an environment in which

⁶ See discussion by Casper and Tufis (2003).

⁷ As argued by Stewart et al (2000).

⁸ Sen (1999a, b).

individuals have the opportunity to implement their capabilities and exercise their freedoms in order to expand their human potential.

Thus, in what follows, the association between democracy and human development will be assessed using simple two-by-two tables that will provide illustrations of bivariate relationships. Traditionally, scholars have used a broad range of methods (quantitative and qualitative) when trying to prove whether there is a relationship between development and democracy. However, quantitative analyses have dominated the discussion. For simplicity and measurement standards these studies have used similar indicators of development and democracy. The former is normally measured as per capita income (and we have argued that development goes much further beyond that), while the latter has mostly been treated as a dichotomous variable (we have argued that democracy is a long-term process with different levels and stages). The quantitative exercises have used statistical and econometric techniques. These studies⁹ have provided contradictory explanations for the relationship and suggest four broad possible directions:

- (1) development is conducive to democracy (“development first” and modernization theory approaches),
- (2) non-democratic regimes are better at bringing economic development (Lee hypothesis),
- (3) democracy is needed in order to sustain development (Sen);
- (4) there is no relationship between economic development and democracy.

While some statistical investigations note a weakly negative relation, others find a strongly positive one. Of these four possible explanations, the data from 1972 to 2002 suggest the third is the most plausible and this paper builds upon it. Democracy is needed in order not just to bring about development, but more comprehensively to sustain

⁹ Including for example: Lipset (1959), Barro (1997), Przeworski et al, (2000), Drazen (2000), Boix (2002), and Barro and Sala-i-Martin (2004).

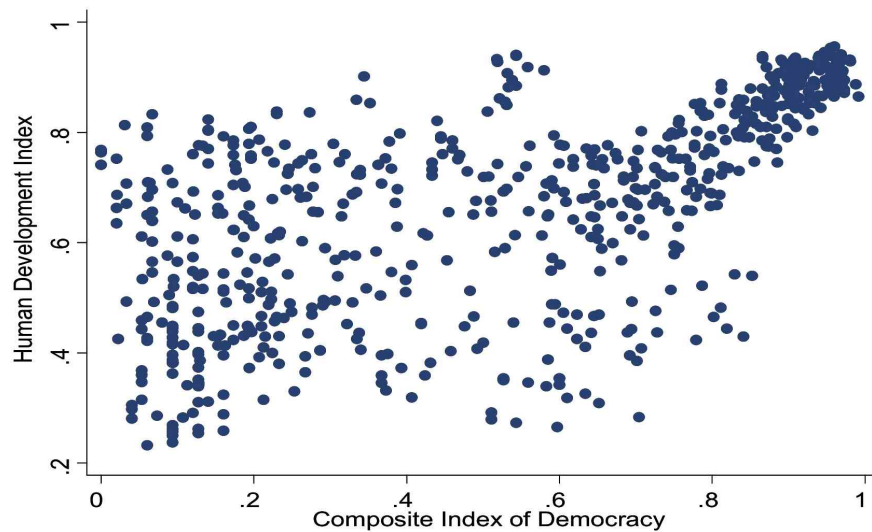
and maintain development levels.

In addition, as Sen has pointed out, the question also involves a fundamental issue of methods of research. That is, it is not enough only to look at statistical connections, it is also necessary to examine and to scrutinize the causal processes that are involved in human development, and how democracy can contribute to it. Yet a recurrent problem of the existing empirical research is the use of narrow measurements of both processes (mostly income per capita for development and a dichotomous variable to measure democracy). Therefore, there is a tangible need to explore composite and aggregative approaches that can be unbundled at the same time.

Democratic principles fall naturally and inescapably on the HD perspective. When citizens can exercise their civil rights and political liberties (attribute 1 of the Composite Index of Democracy, CID¹⁰) theoretically, a country should have higher levels of human development as individuals have more opportunities to lead the lives they value. Expanding their real freedoms (or capabilities) should lead to better living conditions. In addition, when societies openly and transparently establish and enforce the rules of the game; when individuals are assured that the institutions and procedures through which they can express effective preferences about alternative policies and leaders are respected; when there are institutionalized constraints on the exercise of power by the executive (attribute 2 of CID); and when the guarantee of civil liberties for all citizens in their daily lives and in acts of political participation is enacted (attribute 3 of CID), it is also expected that societies may achieve higher human development scores. Yet, a close look at the statistical association between human development and democracy (see graph 1) may seem to suggest there is a weak established pattern for the past 30 years, with the group of high industrialized countries grouped in the north-east quadrant of the graph.

¹⁰ For a methodological discussion on the construction of the Democracy variables for this paper see Acuña-Alfaro (2005).

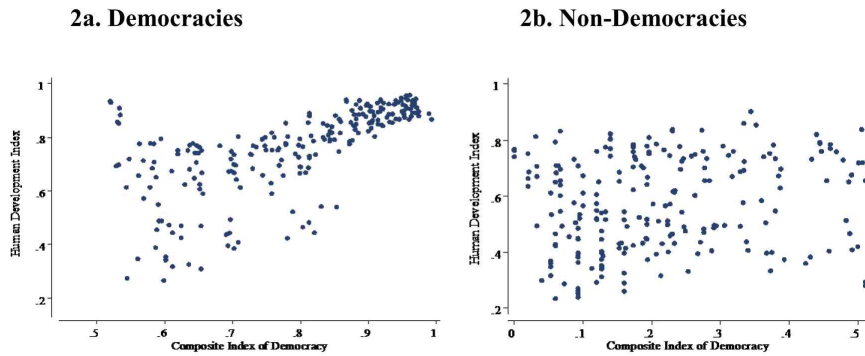
Graph 1. Human Development and Democracy 1975-2002



Source: UNDP for HDI and Acuna-Alfaro (2005).

However a closer examination of the association using the threshold values assigned to the CID to classify political regimes as democracies and non-democracies (see Appendix) suggests that in the case of countries obtaining scores of 0.517 or higher in the indicator (considered as democracies), there is a tendency to obtain higher human development scores with higher democracy scores at the upper right of the scatter (see graph 2a). While for the cases of countries with scores of 0.516 or less in the CID (non-democracies), no pattern at all is shown (see graph 2b). Non-democratic countries can however achieve moderate and high levels of human development. Although there seems to be no direct links between democracy and HD, the higher the democracy scores, the greater the chances of obtaining higher HD scores as well.

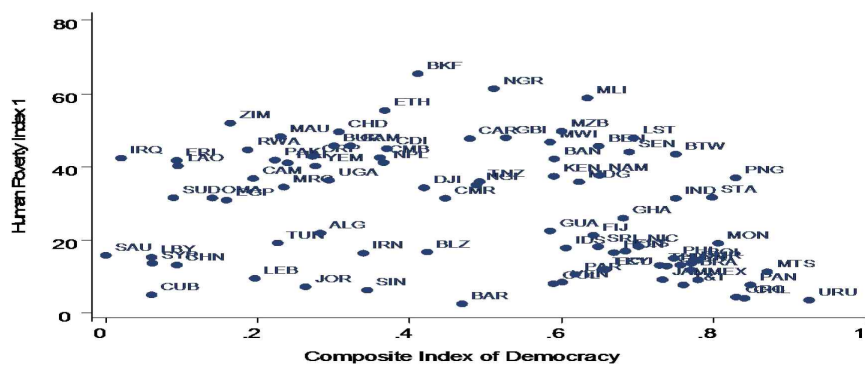
Graph 2. HD and Democracy by Democracy scores, 1975-2002



Source: UNDP for HDI and Acuna-Alfaro (2005).

A similar pattern is suggested with a cross-sectional examination of the association between democracy and the human poverty index for developing countries. The scatter plot of all developing countries suggests an inverted U-shape association if the Middle East and oil producing countries are excluded. Countries with the lowest democracy scores like Cuba, Jordan, China, Syria and Libya, have similar levels of human poverty as countries with the highest CID scores such as Costa Rica, Chile, Uruguay and Panama. Yet, countries ranked in the middle of the CID (or with low democracy classification) such as Mali, Nigeria and Malawi, show the worst deprivations in terms of human poverty.

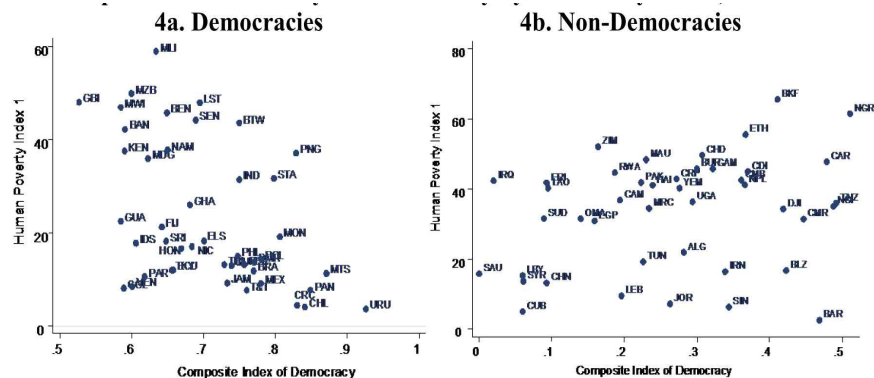
Graph3. Human Poverty and Democracy, 2002



Source: UNDP for HDI and Acuna-Alfaro (2005).

Yet again, when splitting the countries according to the threshold values assigned to the CID, the non-democratic regimes are much more disperse than democratic regimes (see graphs 4a and 4b). These findings suggest a more linear negative relationship between democratic-scoring countries with human poverty, than non-democratic ones. It also suggests that, excluding outliers like Singapore and Iran from the democratic regimes, the more democratic the countries are, the less human poverty their citizens will experience. The case of Singapore here seems to confirm the Lee hypothesis (named after Lee Kuan-Yew, Singapore's leader and former president) that non-democratic regimes are better at bringing about economic development and reducing poverty and that when a certain developmental level has been reached, the probabilities for a transition to democracy increase exponentially.¹¹ However, this hypothesis is sustainable only in the very few and well-known cases of East Asia, and not in Africa or the Latin American region (with the exception of Cuba, which, even though it has reduced poverty, lacks economic growth). Therefore, it is necessary to look at the majority of countries and not only at the few exceptional outliers.

Graph 4. Human Poverty and Democracy by Democracy scores, 1975-2002

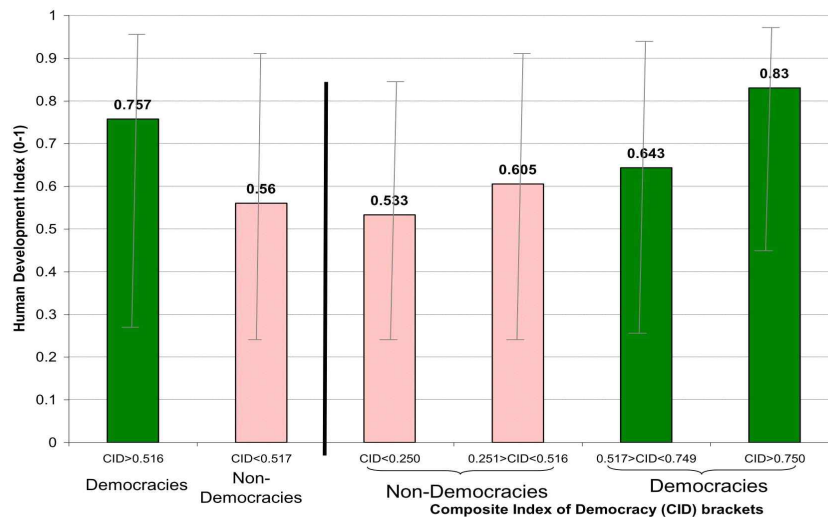


Source: UNDP for HPI-1 and Acuna-Alfaro (2005).

¹¹ Przeworski et al (2000).

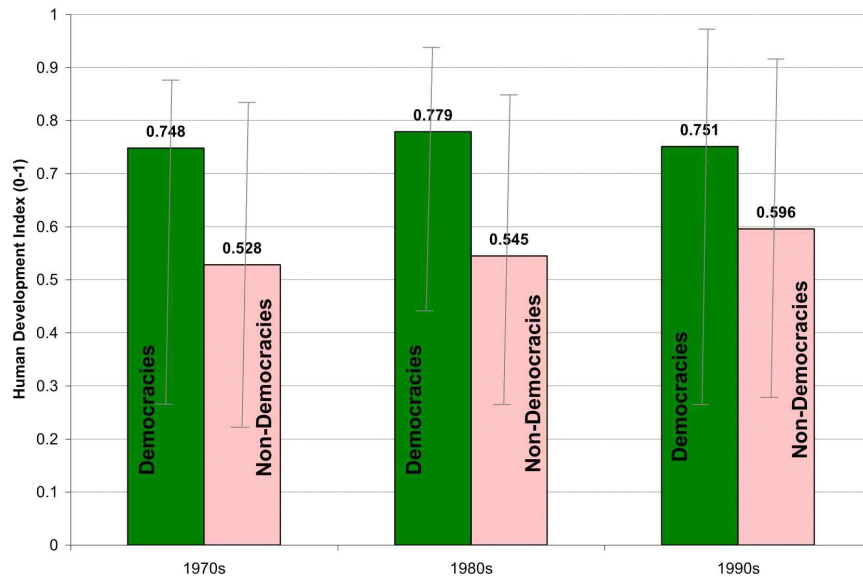
So far, this paper has dealt with general descriptions of democracy and its attributes and the human development approach. Taking the discussion one step further regarding the associations between democracy and HD, the data suggests that democratic regimes, on average, outperform non-democracies in terms of human development and its individual variables (education, health and income). Dividing the CID into democracies and non-democracies, in all development indicators (human development, education, health and income) democratic-scoring countries outperform non-democratic ones between 1972 and 2002. This suggests that democracies are better at promoting and causing advances in human development. Thus, setting the record straight, democracies have outperformed non-democracies in every considered aspect of human development. When a full sample of countries is considered, democracies have achieved consistently higher levels of human development than non-democracies in the past three decades (see graphs 5 and 6).

Graph 5. Mean Levels of Human Development Index (1975-2002)



Note: The thin gray vertical lines represent an approximation of the variation in the sample, with the highest and lowest scores. Source: *UNDP for HDI and Acuna-Alfaro (2005)*.

Graph 6. Mean Levels of Human Development by Decade



Note: The thin gray vertical lines represent an approximation of the variation in the sample, with the highest and lowest scores. Source: *UNDP for HDI and Acuna-Alfaro (2005)*.

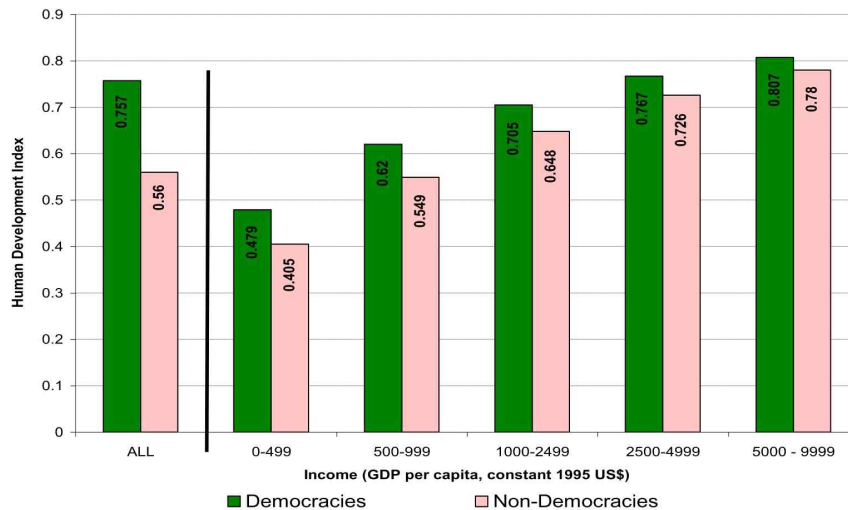
The relationship becomes even stronger at higher levels of democracy, where countries tend to achieve higher levels of human development.¹² This translates to almost a 50% advantage in human development levels (0.757 versus 0.560 in the human development index). This difference in itself is not startling considering that the figures include countries at different levels of income per capita, since it has “long been recognized by all sides that most prosperous states in the world are well-established democracies”.¹³ The real debate therefore, is whether middle and low income democracies are capable of sustaining

¹² Graph 6 suggests a reduction in human development levels in democracies during the 1990s with respect to the 1980s. However, it is due to the fact that countries in low human development levels have trespassed the threshold democracy score during the 1990s. This has reduced the mean HDI for democracies, while increased it for non-democracies.

¹³ Halperin et al (2005:30).

higher human development levels than non-democracies. Reducing the sample to middle and low income countries, graph 2.7 shows little discernible difference with the overall trends in graphs 5 and 6. The average human development levels are higher for democracies than for non-democracies for each income group considered.

Graph 7. Mean Levels of Human Development Index (1975-2002)



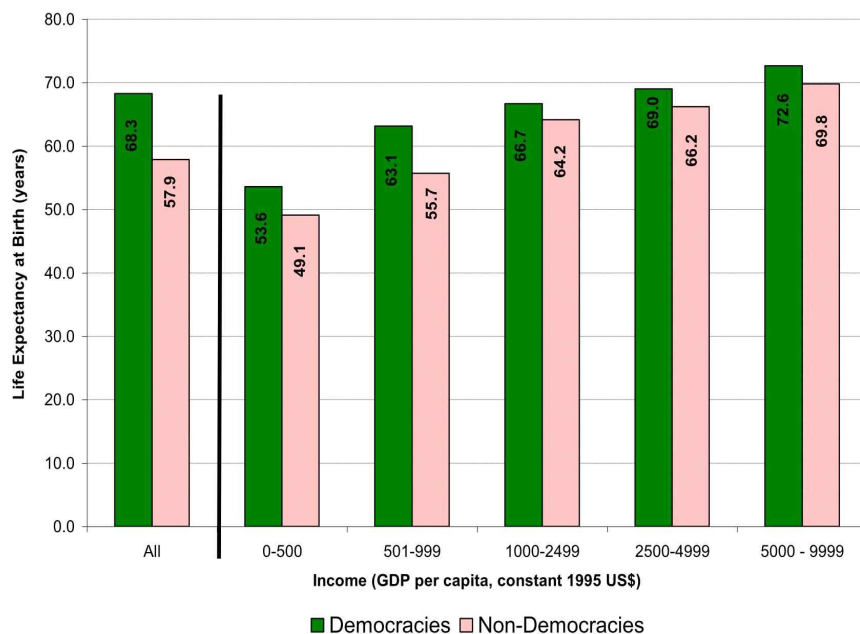
Source: UNDP for HDI and Acuna-Alfaro (2005).

Although economic growth is perhaps the most commonly cited way to compare one country's development with another's, it is in many ways a reductionist approach and an inadequate indicator of socio-economic progress. Therefore, this paper uses a more holistic approach with the human development index. Yet it must be recognized that on average human development indicators tend to fall and rise with income.¹⁴ Some countries have an HDI score far below their income levels, while others invert this relationship. For example "Bahrain has an average income almost twice the level of Chile but, despite recent progress, lower HDI rank because it underperforms on education and

¹⁴ See for example UNDP (2006:263-265).

illiteracy”.¹⁵ Also, the HDI is a less effective measure of cross-country performance the higher the country’s scoring, since near universal literacy and education enrolment, allied to upper limits of health (life expectancy), tend to equalize scores among countries. Keeping this in mind, the following graphs show that in the middle to low tier of the HDI rankings citizens living in democratic countries live longer, healthier and more productive lives on average, than those in non-democracies. On average, citizens in democracies live ten more years than individuals in non-democracies. Although the gap closes in middle and low income countries (see graph 8), on average democracies are healthier places to live in.

Graph 8. Mean Health Levels (1972-2002)

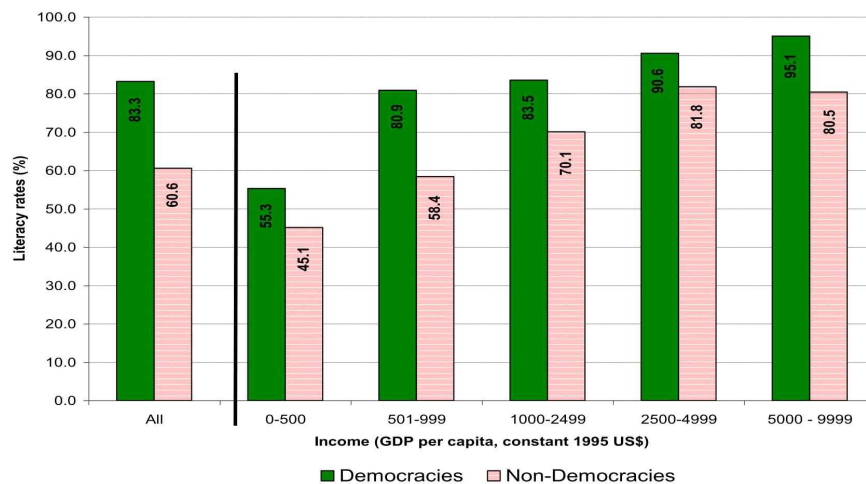


Source: World Development Indicators (November 2004) for life expectancy rates and Acuna-Alfaro (2005).

¹⁵ UNDP (2006:264).

Education is the other human development component and graph 9 also shows that democracies are more congenial places to learn. On average, at each income category considered, citizens in democratic countries achieved higher education levels as measured by literacy rates. Considering all countries, democracies on average had a literacy rate of 83.3%, compared to 60.6% from non-democracies. This is not surprising, since “considering secondary school enrollment ... low income democracies have typically realized enrolment levels nearly double to those of autocracies”.¹⁶ These findings seem to confirm Lipset’s suggestion of more than fifty years ago, that education is far more important than income or occupation, since the better educated the population of a country, the better the chances for democracy.¹⁷ As such, it is expected that the higher one’s education, the more likely one is to believe in democratic values and support democratic practices.

Graph 9. Mean Education Levels (1972-2002)



Source: *World Development Indicators* (November 2004) for literacy rates and Acuna-Alfaro (2005).

¹⁶ Halperin et al (2005:36-37).

¹⁷ See Lipset (1959:78-79).

The Model: On the Causality of the Relationship

The predominance of research has aimed to estimate the following linear¹⁸ model:

$$d_i = \beta_0 + \beta_1 y_i + \beta_2 z_i + \varepsilon_i \quad (1)$$

where d_i is a measure of democracy in country i in some period, y_i is the per capita income level of that country, z_i is another explanatory variable relevant for explaining how developed a country is and ε_i is the error term. In some cases time-series cross-sectional (TSCS) variations are used, and in these cases the variables would also include a time subscript in equation one. Yet, some of the most significant problems with this model are:

1. It focuses on the conditions for the functioning of democracy or the socio-economic characteristics,
2. The development proxies used are rather reductionist, focusing on income per capita or energy consumption and development is more comprehensive than that,
3. Predominantly, it uses dichotomous measure of democracy and as such it does not capture marginal changes,
4. When continuous measures of democracy are introduced, they basically refer to specific characteristics/attributes of a democratic regime, and not a holistic/comprehensive standpoint,
5. Although some models may include both time and cross-sectional variation, they often do not control for past levels of development or democratization.

¹⁸ An exception is Barro (1997) who introduced a nonlinear model. Earlier, Dahl (1971:67) posited that “inspection of the evidence ... strongly suggests that the relationship is not linear”. Yet, Dahl did not elaborate any formal model.

The causal effect of democracy on HD is β_1 , and to consistently estimate this parameter using OLS regression, it is required that d_i be uncorrelated with the error term. That is to say, it is required for democracy to be exogenous to development. However, as have been agreed earlier, conceptually, this paper argues for an endogenous relationship. This means democracy cannot be exogenously varied in a sample of countries to see what happens to HD. Unfortunately, “unlike natural sciences, social sciences cannot undertake controlled experiments, so they have to infer causality from the data generated by real-world social systems”.¹⁹ Moreover, given that the key concepts are abstract, inherently difficult to measure (if not latent/unobservable in the case of democracy), and tend to overlap, a degree of ambiguity in the argument is inevitable. Therefore, unavoidably, an arbitrary choice of terms and proxies imposes some confusion on the subject. There is no escape to this, since the causal factors at work in the democracy - HD relationship are much more complex than can be illustrated in a simple diagram (figure 1) or parsimonious explanations (equations 2 - 7).

Nevertheless, with the data available on both multidimensional processes, and to some extent using the Occam’s razor principle,²⁰ the models to be examined follow two distinct causal chains: one runs from HD to democracy, indicating, in addition to being the outcome itself, HD helps increase democratic effects; the other runs from democratization to HD, as democratic mechanisms allocate resources contributing to HD improvements. The models introduced assume that democracy contributes toward HD through its aggregative nature and not at the individual level of

¹⁹ Robinson (2006:517).

²⁰ This principle was proposed by the English philosopher William of Occam and refers to the need not to increase the number of entities required to explain a given phenomenon beyond what is necessary. As Acemoglu and Robinson (2006:16) explain: “one should strive for a high degree of parsimony in formulating answers to complex questions”

its attributes. That is, democracy, however one thinks about it, is complex; it combines three different attributes that can have emergent effects and that may work at cross-purposes. They may, at the same time, encourage HD but hinder income and EG. Even further, these democracy attributes' indicators may grant governments the needed authority to exercise power and promote development, but also allow them to evade education progresses. Indeed, democracy may foster long-term thinking, at the cost of short term disasters or vice-versa.²¹

In that sense, to organize the discussion to follow, a parsimonious model with a series of partial equations is introduced. This is done in order to discuss some of the ideas that have been suggested and build explanations on the contribution of democracy towards HD. As mentioned earlier, caution is important, since at the theoretical level the relationship is endogenous and at the empirical level, the estimation model is particularly prone to suffer from omitted-variables bias and endogeneity. Therefore, all the statements made below are subject to these caveats of data and to the aggregation levels in which indicators are built.

The Variables

To test the relationship between the two processes, three attributes of democracy plus the aggregated CID are used. To explain levels of development, the analyses include socioeconomic variables commonly used in democratization studies and related to the definition of HD [including per capita GDP in constant 1995 US\$,²² illiteracy rates (percentage of adult population), and life expectancy at birth (years)], and the HDI. Table 1 summarizes the different variables used both as attributes of democracy and development indicators, and shows an overall description of their statistics.

²¹ See Przeworki et al (2000).

²² Values expressed in their logs to reduce skewness' problems.

Table 1. Descriptive Statistics of HD and Democracy (1972-2002)

Variable	Obs	Mean	Std. Dev.	Min.	Max.
HD					
HD Index (HDI)	855	.662	.191	.232	.956
Life Expectancy at birth (years) (life)	2471	64.056	11.418	31.22	81.560
Literacy rates (% adult population) (lit)	3310	68.874	25.652	6.14	99.800
GDP <i>percapita</i> (<i>gdppc</i>)	4209	5902.410	9275.868	49.32	59053.040
Log GDP <i>percapita</i> (<i>lngdppc</i>)	4209	7.527	1.574	3.899	10.986
Annual GDP growth (%)	4251	3.124	6.758	-51.03	106.28
Democracy					
Composite Index of Democracy (CID)	4577	.434	.317	0	.992
Formal Attribute of Democracy	4580	.238	.271	0	1
Procedural Attribute of Democracy	4218	.514	.378	0	1
Substantive Attribute of Democracy	4570	.494	.339	0	1

Source: UNDP, Statistics Office; World Development Report, 2004; for Democracy see Acuna-Alfaro (2005).

The regressions analyses are partial and built around rather reductionist econometric models that include only the three variables contained to measure the HDI developed by the UNDP. Thus caution should be used when interpreting the results and making inferences, as other variables necessarily need to be taken into account to properly and fully explain the relationship. The dataset collates the core democracy and HD indicators (aggregated and disaggregated) for 164 countries over 31 years from 1972 to 2002, for a total of 5,084 observations.²³ These years cover the so called “third wave” period of democratization. The geographical and temporal scope of the measures provides sufficient degrees of freedom for substantive inferences to be made about the relationship between HD and democracy.²⁴

²³ To keep consistency with the HDI evidence available at every five years intervals, the number of observations for the econometric regressions is 1,148 ($N \times T = 164 \times 7$).

²⁴ Since the case selection is not determined in any way by the values informing the dependent variables, it is plausible to make valid inferences from the comparisons. As discussed by King et al (1994:129) case “selection should allow for the possibility of at least some variation on the

The correlation matrix for the three development indicators, the HDI and the three democracy attributes and the CID is reported in table 2. Focusing first on the associations between development indicators themselves, it is clear that the correlations are stronger between HDI (as expected), as well as with the associations between democracy attributes themselves and stronger correlated with CID (as expected as well). The four development measures are correlated with the four democracy measures. However, one limitation of correlation analysis is that the connections can work either way. That is, from development to democracy or from democracy to development. The former assumes the modernization theory approach, which suggests that democracy is but the crowning state in development processes, while the latter implies that development can only succeed over time if its design and implementation take into account open and pluralistic political conditions (i.e. democracy).

The associations between development and democracy indicators are clear (see table 2). Overall, these results replicate earlier findings on the positive association between development and democracy and offer some support for the traditional literature. But, as argued elsewhere “it is the variations in the relationship that are important for this inquiry, and only more advanced analysis that controls for time-dependent, unit and regional effects can achieve more specific inferences about the nature of the relationship”.²⁵ Interestingly, Foweraker and Landman replicated the traditional modernization theory direction of the relationship, using traditional and reductionist economic development measures (GDP per capita and energy consumption).

dependent variable”.

²⁵ Foweraker and Landman (2004:9).

Table 2. Correlation Matrix for HD and Democracy

	HDI	CID	Health	Education	Income	Formal	Proced.	Substant.
HDI	1 (855)							
CID	0.6228 (841)	1 (4577)						
Health	0.9383 (852)	0.5691 (2252)	1 (2471)					
Education	0.8937 (600)	0.4739 (3018)	0.8001 (1562)	1 (3310)				
Income	0.8990 (847)	0.5838 (4076)	0.8043 (2113)	0.6280 (2856)	1 (4209)			
Formal	0.7083 (839)	0.8801 (4544)	0.6511 (2252)	0.5230 (3041)	0.6840 (4062)	1 (4580)		
Procedural	0.5598 (800)	0.9716 (4218)	0.5325 (2014)	0.4407 (2946)	0.5036 (3772)	0.8369 (4195)	1 (4218)	
Substantive	0.6653 (840)	0.9270 (4569)	0.5867 (2247)	0.4580 (3014)	0.6427 (4069)	0.8362 (4539)	0.8951 (4216)	1 (4570)

Note: Number of observations in parenthesis (). Correlations reported are pairwise.

Given the high levels of correlations among the explanatory variables as shown in table 2, the models are partial and bivariate in order to provide an indication of the extent of democracy's aggregative contribution towards the aggregate HDI as an outcome and the other way around. Chain A is basically purported by modernization theory and follows Lipset's well-known dictum that developed nations have better chances to sustain democracy. With respect to chain B, it is expected that the aggregate measure of democracy has a statistically significant contribution to both the aggregate measures of HDI and each of its related development indicators of education and health, but not necessarily with the level of economic development.²⁶

Considering the panel contains more units than time periods ($N > T$),

²⁶ In fact, Robinson (2006:525) argues that "existing research along these lines finds no robust evidence that income per capita has a causal effect on democracy". See also Acemoglu et al (2005).

estimation by OLS procedures are used with a common autoregressive term. Tests to determine serial correlation (spatial and serial) and heteroscedasticity were done and all showed problems with serial correlation.²⁷ Therefore, the partial regression estimations are done using Panel Corrected Standard Error (PCSE). This procedure produces corrected standard errors that reflect the repeated panel structure of the data. The inclusion of an auto-regressive term controls precisely for time-serial correlation, expressed in these models as the tendency of the democracy measures (chain A) and HD measures (chain B). PCSE is used also considering that since “PCSE are not difficult to compute, they should replace OLS standard errors for TSCS data”.²⁸ Also, this technique has been frequently used in the existing literature.

These partial models are simplistic and reductionist in the sense that they ignore other explanatory variables that influence HD outcomes. Thus a second set of equations needs to be introduced to include dummies that intend to control for regional effects.

Chain A: From HD to Democracy

The first chain identified assumes the causality of the relationship runs from HD to democracy. It follows on the assumptions and postulates of modernization theory. In fact, the preponderance of research on the relationship between development and democracy concentrates on this direction of the relationship. Conventionally, the hypothesis is that the higher the HD levels the higher democracy and its attributes. In that

²⁷ Tests included the Wooldridge test for autocorrelation in panel data (Ho: no first-order autocorrelation); the Breusch-Pagan test for independence (Ho: spatial independence); and the modified Wald test for groupwise heteroscedasticity in cross-sectional time-series (Ho: groupwise homoscedasticity [equal variance]).

²⁸ Beck and Katz (1995:641) estimated that PCSE are within 10% of true variability, even under conditions of extremely high heteroscedasticity and contemporaneous correlation of the errors.

logic, the initial bivariate partial models explore the influence of HD on democracy without time lags. The equation to estimate is thus:

$$d_{it} = \beta_0 + \beta_1 hd_{it} + \varepsilon_{it} \quad (2)$$

where d_{it} is a measure of democracy in country i in some period (in this case the models use both the aggregative CID as well as its disaggregated attributes), hd_{it} is the HD level of that country, and ε_{it} is the error term. Ideally, the model will have included another explanatory variable, relevant for explaining how developed a country is; however, as shown in table 2, development indicators are highly correlated and therefore are problematic to include as explanatory variables in the same model.²⁹ Therefore, a variation of this model (equation 3), will exchange the explanatory variable lagged by 5 years. This is to test the argument that past levels of HD have an influence on current levels of democracy. This equation also will be replicated with each democracy attribute as dependent variables individually.

$$d_{it} = \beta_0 + \beta_1 hd_{i(t-5)} + \varepsilon_{it} \quad (3)$$

Finally, a multivariate model is introduced (equation 4) to explore the influence of development indicators (current and lagged by 5 years) on democracy, with regional dummies as explanatory control variables.³⁰

$$d_{it} = \beta_0 + \beta_1 hd_{i(t-5)} + \beta_2 Dummies_{it} + \dots + \varepsilon_{it} \quad (4)$$

²⁹ Yet, these are partial models to explore the relationship at the maximum level of aggregations, and suffer from omitted variables. Nevertheless, as this level of aggregation, the models provide robust indication of the complementarity and compatibility of both processes.

³⁰ South and East Asian countries are the comparators; therefore, they are not included in the models.

The parameter estimates for each democracy attribute with adequate degrees of freedom is reported in table 3. Parameters were estimated for the aggregative CID and each one of the three democracy attributes listed in table 1. The tables therefore report OLS estimates with PCSE in parentheses and inferential probability statistics for z - which is to be interpreted in the same fashion as the traditional t statistic. Since the method of estimation controls for unit and time effects across the pooled or panel TSCS matrix, the number of observations is included along with the number of countries reported. Since the data-set comprises cases at different levels of HD and with different political regimes, the second part of the table includes estimate parameters for the partial bivariate relationship between HD and each democracy attribute, while controlling for regional differences in the sample (table 3b).

By differentiating the dependent variable it can be noted that HD has an impact on the overall CID and each of its three attributes. The results show a positive and significant effect of HD on democracy, even when controlling for regional effects. These findings lend robust support to the traditional modernization thesis, and there is little doubt that at this level of aggregation, democracy is indeed a function of development. But, what is the intuitive interpretation of the coefficients estimated? According to the first equation in table 3a (first column on the left) a one percentage point increase in the average HDI is estimated to increase the CID by 0.891 percentage points. This is not a marginal change considering the aggregative nature of the variables used. Thus for example, if El Salvador were to catch up with Costa Rica in the HDI it will need to increase its HDI by 0.114 (from 0.720 to 0.834 in 2002). This will have an effect of 0.101 on the democracy index, which means that even El Salvador obtains the same HDI score than Costa Rica, in terms of the CID it will be lower at 0.785, in contrast to Costa Rica's 0.830 CID score. In the other models, exchanging the dependent variable for each attribute of democracy, the ratio is basically one to one.

Yet, these findings may be fundamentally misleading if time effects are not taken into account. Indeed, current research tends to mistakenly

jump from a pattern generated by the cross-sectional variation to making assertions about time-series variation.³¹ More than three decades ago, O'Donnell noted in his discussion of the current empirical literature on modernization that "the attempt to substitute "horizontal" data referring to many countries ... for this "longitudinal data" and still say something about causal, time-spanning processes within each unit is a fallacy".³² Why do past levels of HD matter? They matter because democracy and HD are both complex and multidisciplinary processes. Both evolve through time and require a process of adaptation and reproduction, neither democracy or HD can be created in a vacuum, they are adapted and evolve continually.

Decisions made in the past on the explanatory variables have in impact on the actual score today of the dependent variable. This period of adaptation may either improve democracy or on the contrary, decrease democratic performance. Therefore, theoretically and practically, a lag of five years is introduced. Even though it is still a short period, five years are selected as it is a reasonable period to expect at least marginal changes in the dependent variable. Also, since the longitudinal data on the HDI only covers every five years since 1975, as it does not make much sense to construct annual scores given the aggregative nature of the index. A lag of 10 years will substantively reduce the robustness of the analysis given the low number of degrees of freedom left. Surprisingly, the estimates on the influence of past levels of HD (lagged by 5 years) on democracy at time t , lost its statistical significance with the institutional attribute of democracy (table 3a), although, the inferential probability value (z score) is very close to the 10% level of significance threshold and within the 20% two-sided significance level.

When the regional dummies are included, the lagged HDI keeps its statistical significance only with the electoral attribute of democracy.

³¹ See for example Robinson (2006:520-522) critique of Przeworski et al (2000) on this matter.

³² O'Donnell (1973:6).

This finding can have several plausible explanations. The first is that past levels of HD account for current levels of HD but not levels of democracy. A stronger explanation would suggest that current democracy levels are not determined by past HD levels as democracy is dependent on the political will of political actors irrespective of

Table 3. Parameter Estimates for Chain A: From HD to Democracy (1972-2002) Regressions with Panel Corrected Standard Errors, PCSE (pairwise selection)

3a.	Democracy (CID)		FORMAL		PROCEDURAL		SUBSTANTIVE	
Constant	-0.098 (-0.95)	0.236* (1.88)	-0.333*** (-6.06)	-0.098 (-0.85)	-0.045 (-0.30)	0.335** (2.22)	-0.131* (-1.73)	0.226* (1.64)
HDI _t	0.891*** (6.14)		0.925*** (10.99)		0.971*** (4.81)		1.022*** (8.63)	
HDI _(t-5)		0.357** (1.97)		0.545*** (3.05)		0.339 (1.61)		0.455** (2.18)
Obs	838	821	836	821	797	782	837	821
Groups	156	150	156	150	145	142	156	150
R ²	0.1643	-	0.265	0.098	0.118	-	0.265	0.061
Constant	0.023 (0.27)	0.400*** (6.19)	-0.185** (-2.96)	0.107** (2.05)	0.058 (0.42)	0.532*** (5.32)	-0.022 (-0.43)	0.444*** (6.11)
HDI _t	0.705*** (5.78)		0.656*** (7.27)		0.906*** (5.11)		0.911*** (12.58)	
HDI _(t-5)		0.076 (0.78)		0.171** (2.01)		0.069 (0.47)		0.148 (1.25)
LatAm	0.054 (0.70)	0.109* (1.76)	-0.005 (-0.11)	0.038 (1.01)	-0.013 (-0.14)	0.092 (1.19)	-0.001 (-0.03)	0.072 (1.36)
Africa	-0.004 (-0.08)	-0.139** (-2.88)	-0.003 (-0.12)	-0.112*** (-5.99)	-0.032 (-0.38)	-0.185** (-2.63)	-0.023 (-0.44)	-0.190** (-3.35)
MENA	-0.292*** (-12.58)	-0.241*** (-8.76)	-0.171*** (-9.36)	-0.144*** (-9.66)	-0.453*** (-13.83)	-0.361*** (-9.30)	-0.320*** (-9.04)	-0.264*** (-10.87)
OECD	0.248*** (4.41)	0.301*** (5.82)	0.189*** (4.89)	0.253*** (6.26)	0.206*** (4.26)	0.286*** (5.46)	0.299*** (6.08)	0.379*** (7.08)
EECA	0.051 (-1.14)	0.065* (1.64)	0.051* (1.66)	0.125*** (4.87)	-0.118** (-2.99)	-0.054 (0.85)	-0.162*** (-3.64)	-0.040 (0.91)
Obs	838	821	836	821	797	782	837	821
Groups	156	150	156	150	145	142	156	150
R ²	0.304	0.241	0.416	0.425	0.249	0.166	0.393	0.309

Unstandardized coefficients reported with z scores in parenthesis. Probability of z: *p<0.10, **p<0.05, ***p<0.01

development levels. That is, the sustainability of democracy relies on the political will of the elites. A third interpretation of this lack of relationship is related to the latter, due to the composition of the indicators. That is, HD levels are rigid in the sense its scores are tracking changes from one year to the next, such that any given year's score is likely to be related to its score in the previous year. On the contrary, the measurement of democracy is more elastic and varies not only depending on development levels.

Both the MENA and OECD regional dummies (table 7.3b) are negative and positive, respectively, as expected, given that the comparator are the South and East Asian countries. Both the African and Latin American dummies are a bit puzzling, especially the latter, since the former is negative only with the lagged HDI models. This is perhaps a suggestion that the higher level of HD (OECD and Latin American countries), the stronger a country's compatibility and complementarity with democracy outcomes.

Chain B: From Democracy to HD

Turning the analysis to the second chain, from democracy to HD, ample evidence suggests that as people enjoy civil liberties and political rights, institutions operate openly and transparently and citizens cast their votes in free and competitive elections, the higher the levels of HD. Democracy contributes towards HD not through the guarantee that policy decisions will be right for development, but through guaranteeing the right change when it is wrong or not providing development outcomes.³³ The equation to estimate is thus:

$$hd_{it} = \beta_0 + \beta_1 d_{it} + \varepsilon_{it} \quad (5)$$

³³ This is perhaps what Halperin et al (2005:14) refer to as “democracies are learning organizations”.

where hd_{it} is the HD level of that country (alternatively, the model will use each development indicator of the HDI, including education, health and income), d_{it} is a measure of democracy in country i in some period (in this case the models use both the aggregative CID as well as its disaggregated attributes), and ε_{it} is the error term. As in equation 2, ideally, the model will have included another z_{it} explanatory variable, relevant for explaining how democratic a country is; however, as shown in table 2, democracy attributes are highly correlated and therefore are problematic to include as explanatory variables in the same model. Therefore, a variation of this model (equation 6), will exchange the explanatory variable lagged by 5 years. This is to test the argument that past levels of democracy have an influence on current levels of HD. This equation will be replicated also with each democracy attribute as dependent variables individually.

$$hd_{it} = \beta_0 + \beta_1 d_{i(t-5)} + \varepsilon_{it} \quad (6)$$

Finally, a multivariate model is introduced (equation 7) to explore the influence of democracy attributes (current and lagged by 5 years) on development, with regional dummies as explanatory control variables.

$$hd_{it} = \beta_0 + \beta_1 d_{i(t-5)} + \beta_2 Dummies_{it} + \dots + \varepsilon_{it} \quad (7)$$

The parameter estimates for each democracy attribute with adequate degrees of freedom are reported in table 4. Parameters were estimated for the aggregative HDI and each one of the three development indicators listed in table 1. Table 4a shows the partial bivariate estimates, while table 4b includes estimate parameters for the partial bivariate relationship between democracy and each development indicator, while controlling for regional differences in the sample. An extra equation was introduced in table 4a related to the impact of democracy on EG, which was found to be not statistically significant.³⁴ This is an indication that democracies are healthier places to live and more congenial places to

learn, but not more prosperous with regard to EG.³⁵ Also, this supports the argument that democracies are better at providing health and education to their populations through its distributional channels.

By differentiating the dependent variable it can be noted that democracy has an impact on the overall HDI and on each of its three development indicators, but not on the levels of EG. The results show a positive and significant effect of democracy on HD, even when controlling for past levels of democracy and regional effects. On the former, the partial estimates in tables 4a and 4b suggest the longer democracy is in place, the more pronounced its expected impact on the levels of HD.³⁶ The intuitive explanation of the coefficients estimates suggest that for every one percentage point increase in the overall CID, HD will increase by 0.143 percentage, education rates by 16.3%, life expectancy by 6.2% and income by 0.94 percentage points. Thus for example, if El Salvador were to catch up with Costa Rica in the CID it will need to increase its CID by 0.146 (from 0.684 to 0.830 in 2002). This will have a marginal effect of 0.021 on the HDI, which means that even El Salvador obtains the same CID score than Costa Rica, in terms of the HDI it will be lower at 0.741, in contrast to Costa Rica's 0.834 HDI score.

Additional models were also conducted exchanging the explanatory variables with the three attributes of democracy. As expected, the results replicate the findings of table 4, both at current levels and with the use of lags. By differentiating the explanatory variables, each attribute of democracy is found to have a statistical significance with education, health and income, but not with EG.

³⁴ Barro (1997) and Barro and Sala-i-Martin (2004), found the relationship between democracy and EG was nonlinear.

³⁵ See for example Smith (2005) and Mainwaring and Perez-Liñan (2005) for Latin America.

³⁶ See also Gerring et al (2005).

Table 4. Parameter Estimates for Chain B: From Democracy to HD (1972-2002) Regressions with Panel Corrected Standard Errors, PCSE (pairwise selection)

4a.	HDI		EDUCATION		HEALTH		INCOME		GROWTH	
Constant	0.586*** (22.52)	0.598*** (24.57)	62.729*** (10.99)	64.828*** (11.55)	59.644*** (29.94)	60.5113*** (32.92)	7.039*** (66.44)	7.055*** (58.14)	3.242*** (5.83)	3.299*** (5.72)
CIDt	0.143*** (3.93)		16.344*** (3.50)		6.202*** (2.93)		0.943*** (3.33)		-0.815 (-0.86)	
CID _{t-5}		0.144*** (3.34)		15.438*** (3.30)		5.887*** (2.58)		1.013*** (3.03)		-0.299 (-0.35)
Obs	838	724	666	556	1028	872	949	815	955	818
Countries	156	156	111	110	163	163	156	156	162	162
R ²	0.715	0.734	0.451	0.525	0.843	0.859	0.853	0.852	0.001	0.0009
Constant	0.641*** (25.11)	0.624*** (30.78)	66.866*** (14.73)	68.880*** (16.56)	61.316*** (27.61)	62.429*** (32.02)	6.909*** (54.54)	6.961*** (59.18)	3.570*** (5.59)	
CIDt	0.588*** (4.19)		9.218*** (3.37)		2.705** (2.61)		0.251** (3.27)		-0.490 (-0.39)	
CID _{t-5}		0.056*** (3.24)		8.447*** (3.07)		2.078** (2.17)		0.250** (2.72)		
LatAm	0.064*** (9.14)	0.067*** (7.79)	10.574*** (6.73)	10.536*** (6.57)	4.435*** (7.61)	4.653*** (10.50)	0.629*** (4.30)	0.615*** (3.99)	-0.882** (-1.97)	
Africa	-0.201*** (-20.18)	-0.198*** (22.70)	-21.819*** (-7.66)	-20.984*** (-7.52)	-14.473*** (-6.50)	-14.718*** (-6.37)	-0.859*** (-4.90)	-0.905*** (-5.49)	-0.468 (-0.75)	
MENA	0.052*** (4.38)	0.055*** (4.48)	-6.577* (-1.84)	-5.215* (-1.68)	3.262** (3.09)	3.521** (3.30)	0.925*** (5.26)	0.911*** (4.87)	0.306 (0.41)	
OECD	0.103*** (3.72)	0.104*** (4.52)	-8.176*** (-4.38)	-7.097*** (-4.62)	3.875** (2.44)	4.573** (3.31)	2.303*** (8.74)	2.282*** (12.28)	-0.675 (-0.48)	
EECA	0.107*** (4.27)	0.105*** (5.20)	25.639*** (7.23)	24.325*** (7.57)	7.448** (3.38)	6.742*** (3.64)	0.333 (1.34)	0.362** (2.05)	0.179 (0.10)	
Obs	838	724	666	556	1028	872	949	815	955	
Countries	156	156	111	110	163	163	156	156	162	
R ²	0.868	0.881	0.652	0.709	0.916	0.931	0.928	0.935	0.004	

Unstandardized coefficients reported with z scores in parenthesis. Probability of z: *p<0.10, **p<0.05, ***p<0.01

In summary, both chains, taken as a whole, showed a significantly positive effect of HD on democracy and a significantly positive effect of

democracy on HD. With respect to the specific links in each chain, these findings lend robust confirmation of the tested hypotheses. For chain A, the higher the levels of HD, the higher the aggregative measure of democracy, and the higher each of the three attributes of democracy. The most surprising finding, counter to the expectations, was that past levels of HD did not improve democratic performance in half of the models. For chain B, the relationship between democracy and HD was stronger and significant in all cases, including the lagged democracy scores. The regional dummies were generally positive for OECD countries and negative for Africa and MENA countries in both chains. Since, on average, OECD countries are far more advanced both democratically and in HD levels, this was expected and indicates that countries with high scores in one indicator tend to have high scores on the other, in a kind of spiral virtuous relationship.

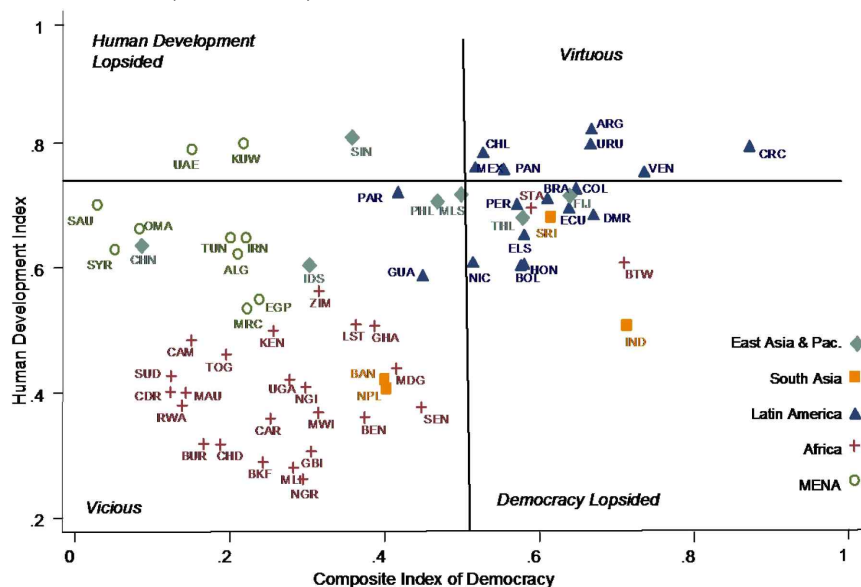
Virtuous, Vicious and Lop-Sided Interactions between Democratization and Development

The elective affinity approach of this paper considers democratization – HD processes compatible with it and over the long run interdependent. Another way to empirically demonstrate the linkages is by way of introducing a framework of development patterns. Countries can be on a cumulative reinforcing upward spiral, with high levels of democracy leading to higher levels of HD and high HD in turn further promoting democratization processes. Conversely, weak HD results in low democracy levels and consequently poor progress towards democratization. Country performance can therefore be classified into four categories: *virtuous*, *vicious* and two types of lop-sidedness, i.e. lopsided with strong democracy/weak HD (democracy-lopsided); and lopsided with strong HD/weak democracy (HD-lopsided). In the virtuous circle democracy enhances HD, which in turn promotes democratization; in the vicious circle, poor performance on HD tends to lead to poor

advances in democratization which in turn depresses HD achievements, and so on. Where linkages are weak, cases of lop-sided development may occur. On the one hand, HD may not bring about democratization (as in the case of Cuba for example); on the other hand, democratization may not generate advances in HD as it currently persists in most Central American countries.

Visually, this can be classified comparing countries performance on HD and democracy using the threshold values of 0.750 for high HD levels,³⁷ and the minimum threshold for the democracy score (0.517). Graph 2.10 shows this classification for 1975 to 2002 for all developing countries for which data is available. The vertical and horizontal axes represent the average performance for the period. OECD countries are not included as they were all predominantly in the virtuous category

Graph 10. Developing Countries. Classification of Democracy and HD Performance (1975-2002)



³⁷ UNDP's classification suggests a threshold value of 0.8 to be considered in the high HD category.

Source: Own calculations based on Acuna-Alfaro (2005) and UNDP for HDI.

during the period under study. Dividing the graph in quadrants, countries positioned in the NE quadrant are in a virtuous circle, while those in the SW quadrant are in a vicious circle. Countries that score above the democracy but below the HD thresholds are democracy-lopsided (SE quadrant). Finally, countries that have higher HD levels and low democratization scores are HD-lopsided (NW quadrant).

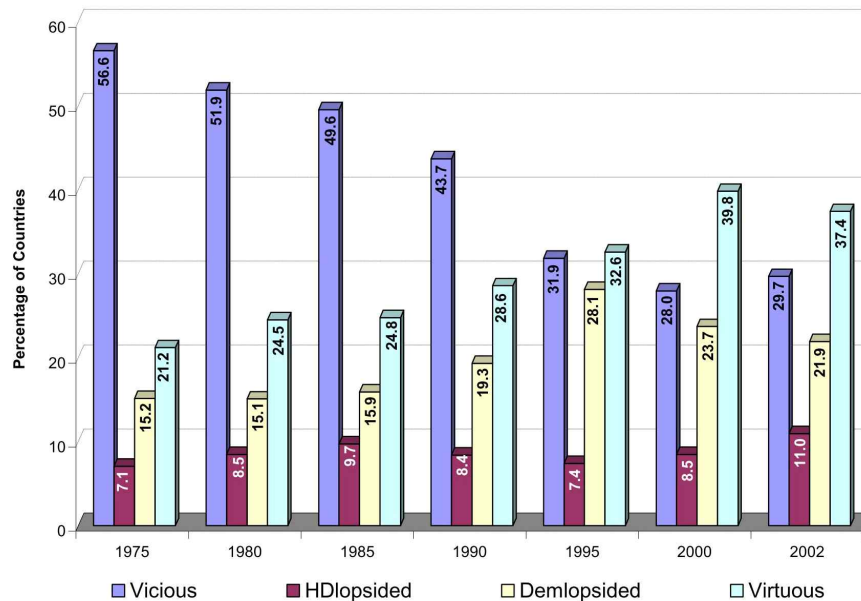
As can be seen in graph 10, strong regional patterns emerge. African countries are heavily represented in the vicious quadrant (with the exception of Botswana and South Africa in the democracy lopsided quadrant). Middle Eastern and North African countries are predominantly in the western quadrants, with UAE and Kuwait in the HD lopsided quadrant. South Asian countries are distributed among the southern quadrants. Bangladesh and Nepal are in the vicious quadrant and India and Sri Lanka are in the democracy lopsided quadrant. East Asian and the Pacific countries are in three quadrants: Singapore is in the HD lopsided quadrant; China, Indonesia, Philippines and Malaysia are in the vicious quadrant, and Fiji and Thailand are in the democracy lopsided quadrant.

One of the striking features of this display is that only Latin American countries are in the virtuous quadrant and none are in the HD lopsided quadrant. Latin American countries' average position is in the middle of the quadrants; two countries' average performance is in the vicious quadrant (Guatemala and Paraguay); nine are in the democracy lopsided quadrant and seven are in the virtuous quadrant. This suggests that even non-democratic regimes have been established in the region during the period of study. The transition towards democracy, together with political instability has meant a positive movement towards improvements in living conditions for Latin American citizens. The two countries are located in the virtuous quadrant (Costa Rica) and in the democracy lopsided quadrant (El Salvador).

Graph 11 depicts the movement of countries from one quadrant to another, suggesting a strong pattern. The graph shows a systematic

reduction of countries in the vicious circle category, from 56.6% in 1975 to fewer than 30% in 2000. The beneficiary of this reduction is the virtuous category. In 1975 only 21.2% of developing countries were in this quadrant, yet by 2000 nearly two out of five countries were in the virtuous quadrant. The lopsided quadrants have been more stable, with fewer countries moving into or out of the quadrant.

Graph 11. Variation in Classification of Countries Performance over Time (1975-2002)



Source: Author's own elaboration.

However, the important issue for policy analysis is to investigate how countries move over time and how they move from one category to another and ideally, towards inclusion in the virtuous circle category. Much can be learnt about this by looking at table 1 and figure 2 which explores the movements of countries over the past three decades. Taking the movements of countries during the period under study, it is interesting to note at the global level that country movements are mostly

East to West or West to East. That is, countries move from the vicious and HD lopsided quadrants to the virtuous and democracy lopsided quadrants or vice versa. Vertical movements seem to be one way (South to North; that is from vicious to HD lopsided or from democracy lopsided to the virtuous quadrant), with the exception of Belize that moved forth and back from vicious to HD lopsided due to reductions in HD levels. No country has moved between all four quadrants. Only three countries have remained in the democracy lopsided circle quadrant throughout (Botswana, India and Sri Lanka). Out of the 17 countries that have remained in the vicious circle category throughout, 16 are from Africa (ten from Sub Sahara, six from North Africa) and one from East Asia (China). HD-lopsidedness is a temporary condition in all cases except for Kuwait that remained in the NW quadrant throughout, and UAE, Singapore and Barbados, which have stayed in that category since 1980. Only one country has crossed quadrants diagonally (Peru), from vicious to virtuous, but exceptionally close to the HDI threshold.

Table 5 tracks movements in a sample of 87 developing countries.³⁸ As expected the movements along the CID axis are more elastic than the movements along the HDI grid. Therefore, there has been a concentration of movement along the democracy lopsided quadrant. Indeed, of the actual 79 movements between quadrants, nearly 50% were from the vicious circle to the democracy lopsidedness (37 movements). Thirteen were the reverse, from the democracy lopsidedness to the vicious circle quadrant, and 11 moved from the SE quadrant to the virtuous circle quadrant. On the other hand, of the movements to and from the HD lopsidedness seven went from the vicious circle quadrant, two countries moved to the vicious quadrant and eight moved into the virtuous category (four from Eastern European countries and four from

³⁸ The reduction of the sample was intentional and systematic. OECD countries were excluded as they are all in the virtuous circle quadrant. Also, in order to have a comparative consistency, countries with more than two missing observations were excluded, with the exception of the newly independent EECA countries for which data is only available after 1990.

Latin American countries). And more importantly, only one country (Argentina) moved out of the virtuous circle quadrant. This suggests that countries once positioned in the NE quadrant tend to stay there indefinitely in a virtual spiral relationship.

At the regional level, even though African countries have also experienced reduced HD levels, they have not moved out of the vicious category due to their low levels of HD. No African country has moved into any of the Northern quadrants (HD lopsided or virtuous circle). Out of the 25 countries sampled in Sub Sahara Africa, only Botswana remained in the democracy lopsided circle throughout. Ten Sub Saharan Africa countries in the vicious circle category in 1975 remained in that category throughout. Three countries (Ghana, Nigeria, Zimbabwe) moved from the vicious circle quadrant to the democracy lopsided quadrant from 1975 to 1980, but all three returned to the vicious circle quadrant in 1985. Three countries (Ghana, Nigeria, Zimbabwe) moved from the vicious circle quadrant to the democracy lopsided quadrant between 1990 and 1995, but two (Niger and Lesotho) returned to the vicious circle quadrant in 1985, and the Central African Republic (CAR) had a CID score of .579 in 2000 but .479 in 2002 (within the margin of error). Ghana and Senegal moved into the democracy lopsided circle in 2000.

Table 5. Virtuous, Vicious and Lop-Sided Performance (1975-2002)

		1975	1980	1985	1990	1995	2000	2002
Latin America								
5	Argentina	Virtuous	HDlopsided	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
19	Bolivia	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
22	Brazil	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided	Virtuous	Virtuous
31	Chile	Vicious	Vicious	HDlopsided	Virtuous	Virtuous	Virtuous	Virtuous
33	Colombia	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Virtuous	Virtuous	Virtuous
37	Costa Rica	Demlopsided	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
45	Dom. Rep.	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
47	Ecuador	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided	-	Demlopsided
49	El Salvador	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
63	Guatemala	Vicious	Vicious	Vicious	Demlopsided**	Vicious	Demlopsided	Demlopsided
68	Honduras	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
103	Mexico	Vicious	Vicious	HDlopsided	HDlopsided	Virtuous	Virtuous	Virtuous

112	Nicaragua	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided	Demlopsided
118	Panama	Vicious	Vicious	Vicious	Demlopsided	Virtuous	Virtuous	Virtuous
120	Paraguay	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
121	Peru	Vicious	Demlopsided	Demlopsided	Demlopsided	Vicious	-	Virtuous***
160	Uruguay	HDlopsided	HDlopsided	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
162	Venezuela	Demlopsided	Demlopsided	Demlopsided	Virtuous	Virtuous	Virtuous	Virtuous
Eastern Europe and Central Asia								
2	Albania	-	-	Vicious	Vicious	Demlopsided	Demlopsided	Virtuous
6	Armenia	-	-	-	-	Demlopsided	-	Virtuous
9	Azerbaijan	-	-	-	-	-	-	Vicious
14	Belarus	-	-	-	-	HDlopsided	HDlopsided	HDlopsided
23	Bulgaria	-	HDlopsided	HDlopsided	Virtuous	Virtuous	Virtuous	Virtuous
39	Croatia	-	-	-	-	HDlopsided	Virtuous	Virtuous
41	Czech Rep.	-	-	Vicious	Vicious	Vicious	Demlopsided	-
51	Estonia	-	-	-	-	Virtuous	Virtuous	Virtuous
81	Kazakhstan	-	-	-	-	Vicious	Vicious	HDlopsided
89	Latvia	-	-	-	-	Virtuous	Virtuous	Virtuous
94	Lithuania	-	-	-	-	Virtuous	Virtuous	Virtuous
104	Moldova	-	-	-	-	Demlopsided	Demlopsided	Demlopsided
126	Romania	-	-	-	HDlopsided	Virtuous	Virtuous	Virtuous
127	Russia	-	-	-	HDlopsided	Virtuous	-	Virtuous
136	Slovenia	-	-	-	-	Virtuous	Virtuous	Virtuous
146	Tajikistan	-	-	-	-	Vicious	Vicious	Vicious
156	Ukraine	-	-	-	-	Virtuous	Virtuous	Virtuous
Africa								
17	Benin	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
21	Botswana	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
24	Burkina Faso	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
25	Burundi	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
27	Cameroon	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
29	C.A.Rep.	Vicious	Vicious	Vicious	Vicious	Demlopsided	-	Vicious *
30	Chad	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
36	Congo	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
52	Ethiopia	-	-	Vicious	Vicious	Vicious	Vicious	Vicious
60	Ghana	Vicious	Demlopsided	Vicious	Vicious	Vicious	Demlopsided	Demlopsided
65	Guinea-Biss.	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
82	Kenya	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Demlopsided
91	Lesotho	Vicious	Vicious	Vicious	Vicious	Demlopsided	Vicious	Demlopsided
97	Madagascar	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
98	Malawi	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
100	Mali	Vicious	Vicious	Vicious	Vicious	Demlopsided	-	Demlopsided
101	Mauritania	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
113	Niger	Vicious	Vicious	Vicious	Vicious	Demlopsided	Vicious	Vicious

114	Nigeria	Vicious	Demlopsided	Vicious	Vicious	Vicious	-	Vicious
128	Rwanda	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
130	Senegal	Vicious	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided
138	South Africa	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
141	Sudan	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
149	Togo	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
164	Zimbabwe	Vicious	Demlopsided	Vicious	Vicious	Vicious	Vicious	Vicious
The Caribbean								
13	Barbados	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided
66	Guyana	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
78	Jamaica	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Virtuous	Virtuous
151	Trin. & Tob.	Demlopsided	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
East Asia and the Pacific								
32	China	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
53	Fiji	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Virtuous	Virtuous
72	Indonesia	Vicious	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided
85	Korea, South	Vicious	Vicious	HDlopsided	Virtuous	Virtuous	Virtuous	Virtuous
99	Malaysia	Demlopsided	Demlopsided	Demlopsided	Vicious	HDlopsided	HDlopsided	HDlopsided
122	Philippines	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	-	Virtuous+
134	Singapore	Vicious	HDlopsided	HDlopsided	HDlopsided	HDlopsided	-	HDlopsided
148	Thailand	Demlopsided	Vicious	Vicious	Demlopsided	Demlopsided	-	Virtuous
Middle East and North Africa								
3	Algeria	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
48	Egypt	Vicious	Vicious	Vicious	Vicious	Vicious	-	Vicious
73	Iran	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
86	Kuwait	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided	HDlopsided
106	Morocco	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
116	Oman	Vicious	Vicious	Vicious	Vicious	HDlopsided	HDlopsided	HDlopsided
117	Pakistan	Demlopsided	Vicious	Vicious	Demlopsided	Demlopsided	-	Vicious
129	Saudi Arabia	Vicious	Vicious	Vicious	Vicious	Vicious	HDlopsided	HDlopsided
145	Syria	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
152	Tunisia	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious	Vicious
157	U.A.E.	Vicious	HDlopsided	HDlopsided	HDlopsided	HDlopsided	-	HDlopsided
South Asia								
12	Bangladesh	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Demlopsided
71	India	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided
109	Nepal	Vicious	Vicious	Vicious	Vicious	Demlopsided	Demlopsided	Vicious
140	Sri Lanka	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided	Demlopsided

* CAR had a CID score of .579 in 2000 but .479 in 2002 (within margin of error).

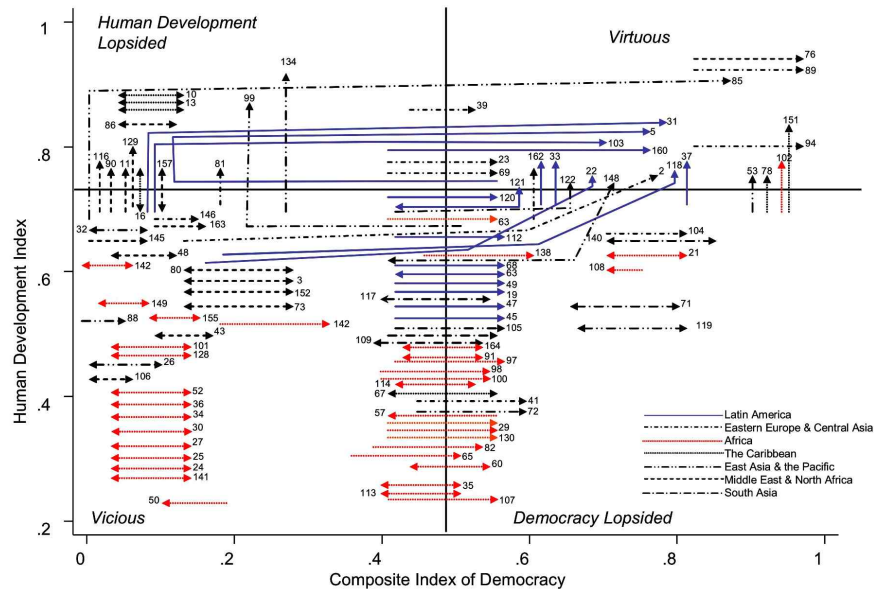
** GUA had a CID score of .515 in 1990 (within margin of error).

*** PER had a HDI score of .752 in 2002, very close to the value threshold of .750.

+ PHL had a HDI score of .753 in 2002, very close to the value threshold of .750.

Source: Author's own elaboration for illustrative purposes.

Figure 2. Countries HD - Democracy Quadrant Changes Over Time (1975-2002)



Note: The country movements indicate the quadrants in which countries have moved over time, and do not necessarily indicate their actual location relative to the axes

Source: Author's own elaboration for illustrative purposes

Latin America experienced movement in four quadrants. This is the region with the most changes as no Latin America country remained in the same quadrant throughout. One country (Argentina) began in the virtuous circle category in 1975, but returned to the HD lopsided quadrant in 1980, when democracy collapsed and the military took power. Of the 13 countries that began in the vicious category in 1975, only three (Dominican Republic, Ecuador and Peru) moved to the democracy lopsided category in 1980. Argentina and Uruguay have never been in a Southern quadrant. Costa Rica moved from the democracy lopsided quadrant in 1975 to the virtuous quadrant in 1980 and remained there, along with Argentina and Uruguay. Colombia followed Costa Rica, joining the virtuous quadrant in 1995. El Salvador stayed in the vicious circle quadrant between 1975 and 1980, moving to

the democracy lopsided quadrant in 1985, one year after the 1984 presidential election and amidst its civil war. Of the ten countries in the vicious quadrant in 1980, two (Chile and Mexico) moved North to the HD lopsided category. Chile moved to the virtuous quadrant in 1985, with Mexico joining in 1995. Four remained in that category (Guatemala, Nicaragua, Panama and Paraguay). The last country to move out of the vicious quadrant was Paraguay which moved to the democracy lopsided quadrant in 1995. Peru reverted from the democracy lopsided quadrant in 1990 to the vicious quadrant in 1995, but bounced back in 2002 as the only country in the world that moved from vicious to virtuous, although, it had an HDI score of .752 in 2002, very close to the threshold value of .750.

East Asian and the Pacific countries also experienced movements in the four quadrants. In 1975 five out of eight countries were in the vicious quadrant. The remaining three (Fiji, Malaysia and Thailand) were in the democracy lopsided quadrant. Thailand moved to the vicious quadrant as early as 1980 before, in 1990, returning to the democracy lopsided quadrant. Fiji remained in the SE quadrant until 2000 when it moved to the virtuous quadrant. Only China remained in the same category (vicious circle) throughout. South Korea leaped from the vicious circle in 1985 to the virtuous circle in 1990, after a brief outing in the HD lopsided quadrant.

South Asian countries moved along the Southern quadrants only. The four South Asian countries sampled have never moved into the HD lopsided or virtuous circle categories. India and Sri Lanka have remained in the democracy lopsided pattern throughout. Bangladesh and Nepal stationed in the vicious circle from 1975 to 1990 moved into the democracy lopsided quadrant in 1995. The exception was Nepal, which returned to the vicious circle quadrant in 2002.

Middle Eastern and North African countries have moved between three quadrants, but none have yet entered the virtuous quadrant. Six out of ten countries remain in the vicious circle category. Kuwait is the only country in the world to have remained in the HD lopsided circle

throughout, followed by the UAE which moved from the vicious quadrant in 1975 to the HD lopsided quadrant in 1980. Pakistan flirted with democracy in 1975, 1990 and 1995, but reverted to the vicious quadrant in 1980-1985 and 2002. Oman and Saudi Arabia moved from the vicious circle to the HD lopsided pattern, the former as early as 1995 while the latter in 2000.

Although there is not enough information and data available to cover the three decades of this study, data suggests that Eastern European and Central Asian countries tend to remain in the same quadrant. Bulgaria, with the longest data availability, shows a transition from the HD lopsided quadrant in 1980 and 1985 to the virtuous quadrant after 1990. Albania and Czech Republic moved from a vicious circle to a democracy lopsided pattern. The former made the transition in 1995, and the latter in 2000.

The analysis shows that it has been extremely unusual to move to the virtuous circle directly via the vicious pattern, and countries have deviated to either one of the lopsidedness circles. The exploration of country movements suggests that only three countries have moved from the vicious circle quadrant to the HD lopsidedness quadrant to later move into the virtuous quadrant (South Korea, Chile and Mexico), as opposed to six countries that moved from the vicious quadrant, to the democracy lopsidedness quadrant and the virtuous quadrant (Panama, Albania, Thailand, Brazil, Philippines and Peru). Four countries moved from HD lopsidedness to the virtuous quadrant (Croatia, Bulgaria, Hungary, Uruguay), but three made the transition from the advantage point of Eastern Europe and currently two are members of the European Union and the third has the status of candidate country. Surprisingly, the majority of countries in the virtuous quadrant moved there from the democracy lopsided quadrant: in addition to the six mentioned earlier are Trinidad and Tobago, Mauritius, Jamaica, Fiji, Costa Rica, Colombia and Venezuela.

The democratic gains of the past three decades should not be taken for granted. As the exploration of country movements suggests, new democracies are constantly at risk at lower levels of HD. Movements

from democracy lopsided back to the vicious circle are not seen. It is the democratic practice over time that guaranteed the sustainability of HD.

Conclusions

The empirical findings of this paper have macro policy implications for sequencing priorities. The evidence suggests the existence of iterative processes between improvements in HD and expansion of opportunities via democratic means. Moreover, by investigating the relative importance of various partial links connecting HD and democracy, this paper has identified the direction policy might take to strengthen such links and move countries towards a virtuous circle of development. The exploration of country movements showed countries can move into the virtuous circle either from the HD or the democracy-lopsided categories. However, of the 22 country movements into the vicious circle category 14 were made from the democracy-lopsided pattern, and eight from the HD-lopsided circle. Of these eight horizontal movements, one had previously been in the virtuous circle.

The analysis has shown that the relationship between democracy and HD runs in both directions, consistent with this paper's suggestion that both processes are compatible and complementary and also supportive of the "elective affinities" stance. This gives rise to virtuous or vicious circles, with good or bad performance on HD and democracy reinforcing each other cumulatively. In this sense, one important conclusion concerns the desirable phasing of macro policy reforms. It has been argued that "economic and social policy has tended to focus priority on getting the economic fundamentals "right" as a necessary precondition for EG, while arguing that HD improvement must await such EG".³⁹ Stewart and colleagues did not deny the importance of

³⁹ Stewart et al (2000:213).

economic reforms, but found the emphasis must be on HD from the beginning of any reform period, and that EG will not be sustained unless preceded by HD improvements. In short, they found that HD should be given sequencing priority over EG where a choice is necessary.

This paper conveys a suggestion on the linkages between democracy and HD. Over the long run, democracy as a political system persists in influencing HD levels positively and more strongly than HD influences democracy. This paper consequently found that democratization has precedence over HD. Therefore, logically it follows that if democratization has precedence over HD and HD should be given priority over EG, democracy should be given sequencing priority over EG as well (sequence i from figure 1). The chief lesson may well be that democracy and HD may be considered twin pillars on which to build prosperity and sustainability. All the above discussion is even more relevant in lieu of ongoing debates about post 2015 Millennium Development Goals in regards to governance and democratization.

References

- Acemoglu, Daron; Johnson, Simon; Robinson, James and Yared, Pierre. (2005). Income and Democracy. *Unpublished Manuscript*. October version.
- Acuña-Alfaro, Jairo (2005) Measuring Democracy in Latin America. (1972 – 2002). *Working Paper No. 5. Committee on Concepts and Methods (C&M). International Political Science Association (IPSA)*. August.
- Barro, Robert J. (1997). *Getting It Right: Markets and Choices in a Free Society*. Cambridge, Mass.: MIT Press.
- Barro, Robert J. and Sala-i-Martin, Xavier. (2004). *Economic Growth*. Second edition. The MIT Press. Cambridge, Massachusetts and London.
- Beck, Nathaniel and Katz, Jonathan. (1995). *What to Do (and not to Do) with Time-Series Cross-Section Data. American Political Science Review. Vol 89, No.3 (September) pp.634-647.*
- Boix, Carles. (2002). *Democracy and Redistribution*. Cambridge University

Press.

- Casper, Gretchen and Tufis, Claudius. (2003). Correlation versus Interchangeability: The Limited Robustness of Empirical Findings on Democracy using Highly Correlated Datasets. *Political Analysis*. Vol. 11, No. 2. 1-11.
- Dahl, Robert A. (1971). *Polyarchy: Participation and Opposition*. Yale University Press. New Haven.
- Drazen, Allan. (2000). *Political Economy in Macroeconomics*. Princeton University Press.
- Foweraker, Joe and Landman, Todd. (2004). Economic Development and Democracy Revisited: Why Dependency Theory is Not Yet Dead? *Democratization*. Vol. 11. No.1, February, pp.1-20.
- Gerring, John; Bond, Philip; Barndt, William T., and Moreno, Carola. (2005). Democracy and Economic Growth: A Historical Perspective. *World Politics*. Vol. 57. No. 3 (April) pp. 323-364.
- Halperin, Morton H., Joseph T. Siegle & Michael M. Weinstein. (2005). *The Democracy Advantage: How Democracies Promote Prosperity and Peace*. Routledge. New York and London.
- King, Gary, Robert O. Keohane and Sidney Verba. (1994). *Designing Social Inquiry. Scientific Inference in Qualitative Research*. Princeton University Press.
- Lipset, Seymour Martin. (1959). Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *The American Political Science Review*. Vol. 53, No. 1. (March) pp. 69-105.
- Mainwaring, Scott and Perez-Liñan, Anibal. (2005). Latin American Democratization since 1978: Democratic Transitions, Breakdowns, and Erosions. In Mainwaring, Scott & Hagopian Frances (eds.) *The Third Wave of Democratization in Latin America: Advances and Setback*. Cambridge University Press. pp.14-62.
- Nussbaum, Martha. (2000). *Women and Human Development: The Capabilities Approach*. Cambridge University Press. Cambridge.
- O'Donnell, Guillermo. (1973). *Modernization and Bureaucratic Authoritarianism: Studies in South American Politics*. University of California Press. Berkeley.
- Przeworski, Adam; Michael E. Alvarez; Jose Antonio Cheibub, and Fernando Limongi. (2000). *Democracy and Development: Political Institutions*

- and Well-Being in the World, 1950-1990*. Cambridge Studies in the Theory of Democracy. Cambridge University Press.
- Robinson, James. (2006). Economic Development and Democracy. *Annual Review of Political Science*. Vol. 9 (June) pp. 503-527.
- Sen, Amartya K. (1989). Development as Capability Expansion. *Journal of Development Planning*. Vol. 19. pp.41-58.
- Sen, Amartya K. (1997). Human Capital and Human Capability. *World Development*. Vol. 25, No. 12. pp. 1959-1961.
- Sen, Amartya K. (1999a). Democracy as Universal Value. *Journal of Democracy*. Vol.10. No.3. pp. 3-17.
- Sen, Amartya K. (1999b). *Development as Freedom*. Oxford University Press. Oxford and New York.
- Smith, Peter. (2005). *Democracy in Latin America: Political Change in Comparative Perspective*. Oxford University Press. New York and Oxford.
- Stewart, Frances; Ranis, Gustav and Ramirez, Alejandro. (2000). Economic Growth and Human Development. *World Development*. Vol. 28. No.2. pp.197-219.
- United Nations Development Programme (UNDP). (2006). *Human Development Report 2006: Beyond Scarcity*. Oxford University Press. Oxford and New York.