

Does democracy improve human development? Evidence from former socialist countries

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Abstract

Between the end of the 80s and the beginning of the 90s, the changes in the political regimes in the Eastern European countries have enabled millions of people to have access to new political, economic and civil liberties. According to several economists, political and social sciences, the transition from a dictatorship to a democratic political regime has positive effects on Human Development (HD). However, recent studies do not provide strong empirical evidence in favour of this hypothesis. Therefore, the debate about the relationship between democracy and HD is still open. Considering the case of former Socialist countries, the aim of this paper is to empirically analyse whether and to what extent democracy affected the level of HD in these countries during the transition period. Using data on Polity IV and Human development index for 18 former Socialist countries from 1990 to 2014, we find evidence of a positive relationship between democracy and HD. Also, the results were robust when we checked for a set of control variables as growth rate, the degree of trade openness and log population.

Keywords: democracy, human development, Eastern European Countries, panel data

Introduction

The political changes that occurred in former Socialist countries at the end of the 1980s were unexpected (Bandelj and Radu, 2006) and, at least initially, the transition period was very costly and difficult. The need to create a new democratic political system and the transition towards a market economy required both policymakers and the population to deal with new political and economic challenges (Ekiert *et al.*, 2007). In the first phase of transition, the economy of these countries

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was characterized by a low growth rate, high inflation, and a strong increase in unemployment (Brada, 2001). However, the stock of human capital was also strongly affected during the transition period. Popescu (2016), for example, analysing the modifications in the structure of the human capital determined by the change of the socio-political environment in Central and Eastern European countries, finds a deterioration of the human capital stock that compromised the development in the first phase of transition. However, despite the initial difficulties, the implementation of economic and political reforms generated – mainly in the second half of the 1990s – improvements in the living conditions.

The idea of a positive relationship between democracy and development is not new in political science and economic theory literature (Lipset, 1959; Huntington, 1968, Buchanan and Tullock, 1962). However, it is worth to stress that, at least in the first stage of analysis, scholars mainly focused on the economic effects of the political regime (Knack and Keefer, 1995; Acemoglu and Robinson, 2001; Przeworski, 2004; Rodrik and Wacziarg, 2005; Persson and Tabellini, 2006). In this context, the word “Development” was considered as synonymous to economic growth or national wealth.

The idea of evaluating human life by only using economic indices was deeply criticized (Costanza *et al.*, 2009). One of the major criticisms to the exclusive use of economic indices was that they could not provide complete information about the situation of less advantaged people if, in the analysis of the relationship between democracy and development, non-monetary aspects of human life (e.g. education, health) are excluded (Sen, 1991; 1999a, 1999b; UNPD, 2003; Philipsen, 2015). The concept of Human Development - introduced by Amartya Sen - including multidimensional aspects of human life, allows overcoming the limits of “Development” in an economic sense. According to this new concept of Human Development, several authors (Brown and Mobarak, 2009; Boix, 2001; Franco *et al.*, 2004) have highlighted the importance of considering how a democratic regime can increase the wellbeing of the population by mainly acting on the non-monetary aspects of Development. Improvements in the people’s wellbeing (understood as improvements in public health, education, income, and so on) correspond to a country’s higher level of human development (HD).

The mechanisms through which a democratic political regime leads to higher human development – compared to dictatorship - are intrinsic to the characteristics of democracy. First, in democracy - unlike dictatorial regimes - governments are accountable towards citizens. This means that policymakers - mainly in the electoral period (Downs, 1957; Castro and Martin, 2017) - need to get public support to hold political power. This encourages policymakers to adopt policies that guarantee both a more balanced distribution of resources and a wider range of public services to improve people’s quality of life. Second, according to Sen, democracy allows the participation of different social classes in the government of society. This determines the possibility of bargaining on the distribution of wealth among social classes with

the interest of the poorest also represented to a certain extent. Therefore, democracy provides a set of political, social and economic conditions for extending the individual capability space (Sen, 1999a, 1999b) and improving the population's living conditions (Muller, 1988; Dreze and Sen, 1989; Przeworski *et al.*, 2000). However, some authors have rejected these conclusions, raising doubts on the existence of a positive effect of democracy on HD (Gauri and Khaleghian, 2002; McGuire, 2004; Jacobsen, 2015). In our opinion, the transition from dictatorship to democracy in former Socialist countries offers us a very useful opportunity to study whether and how the political regime affects HD.

To be more specific, in this paper, we empirically test the hypothesis that transition from dictatorship to democracy produces a positive and relevant effect on HD. Moreover, we also investigate whether the differences in HD among former Socialist countries can be explained by the differences in the level of democracy. This point is important as, since not all former Socialist countries were able to complete the transition towards a consolidated democracy (the transition process failed in some countries leading to new forms of authoritarian regimes, while in others it was incomplete only leading to partial democracy), we could suppose that the low level of HD in some former Socialist countries depends on a low level of democracy.

The main results of this paper are that a) the transition towards a democratic political regime led to improvements of human development in former Socialist countries and, b) the differences in HD among former Socialist countries depend on differences in democracy.

The paper is organized as follows: in first section, we provide the literature review on the relationship between democracy and HD. In the second section, we offer a theoretical argument in which we explain how democracy affects HD. In the third section, the data, empirical strategy, and econometric results are illustrated. Finally, in the fourth section, the main conclusions are drawn.

1. A short literature review about the effect of democracy on HD

The idea of a positive relationship between the level of democracy and HD has been investigated both theoretically and empirically (Sen, 1999a, 1999b; Ming-Chang Tsai, 2006; Gerring *et al.*, 2012; Gerring *et al.*, 2016). According to Sen's theory, democracy can be considered the final step in a political process which allows the participation of different social classes in the government of society and, at the same time, promotes an increase in the people's wellbeing (Sen, 1999a, 1999b).

One of the most used indexes to measure the impact of democracy on HD, as a proxy of human development, is the infant mortality rate. Gerring *et al.*, (2012, 2016) showed that the reduction in the infant mortality rate depends both on the stock of democracy accumulated by countries in past years and on the level of electoral

competition, motivating policymakers to increase the public goods supplied to the population. For this reason, countries with a long democratic tradition generally show a higher level of HD. The problem in using the infant mortality rate as a proxy of HD is that this index enables us to capture only one dimension of human development, neglecting other dimensions that contribute to people's wellbeing. Ming-Chang Tsai (2006) analyses the effect of democracy on six HD indices: he found that democratic countries favouring political competition show a higher level of HD than autocratic ones, even though the relationship is less robust when using the rate of change in HD as a dependent variable.

However, on the other side, other authors raise doubts about both the validity of a relationship between democracy and HD (Gauri and Khaleghian, 2002; McGuire, 2004) and the mechanism through which a higher level of democracy corresponds to a higher level of HD. Ross (2006), for example, highlighted that, even though under a democracy regime, the amount of government spending in health and education is greater than in a nondemocratic regime, they do not contribute to improving the living conditions of people belonging to lower-income groups.

Furthermore, other criticisms concern the lack of a robust correlation between democracy and HD or the fact that people can pay more attention to economic performance than to improvements in human development in a Senian sense (Harding and Stasavage, 2014). Mansfield and Snyder (2005) highlight that social conflicts can also arise under democracy, thus jeopardizing human development. Acemoglu and Robinson (2001) also underline that it is possible that – in a democracy – an elite may take control of the political process, with the consequences that the redistribution of *de jure* of resources is not followed by a redistribution *de facto*, leading to a higher concentration of national wealth and compromising human development. Therefore, despite theoretical and empirical analyses, the debate on the relationship between democracy and HD remains open and deserves to be investigated empirically.

In the past years, the relationship between democracy and HD in former Socialist countries was also analysed by other scholars (Cassani *et al.*, 2014). However, our paper differs from them for several reasons: first, we use all components (Economic, Health and Education) of Human development index, while other papers (Cassani *et al.*, 2014) tend to use a disaggregate HDI, taking only the last two variables as dependent variables. Second, the time span covered by our paper (1990-2014) is longer than that used in other papers analysing the same relationship (Cassani *et al.*, 2014). Finally, unlike Cassani *et al.* (2014), in order to avoid the endogeneity problem, we adopt a different empirical methodology (GMM estimation), thus making our results robust.

However, some authors have rejected these conclusions, questioning both the existence of a positive effect of democracy on HD and the presence of a reverse

causality problem between the two variables (Gauri and Khaleghian, 2002; McGuire, 2004; Ross, 2006; Jacobsen, 2015; Houweling *et al.*, 2005; Miller, 2015).

2. Democracy and human development: theoretical argument

As said in the previous section, an important issue in the analysis of the relationship between democracy and HD regards the possible presence of a causality problem (Shandra *et al.*, 2004; Ross, 2006) between democracy and HD. Does an increase in democracy positively affect HD? Or vice-versa, is the increase in HD to lead to a higher level of democracy? There are two opposing views: on the one hand, Spaiser *et al.* (2015) argue that over the past decades many countries have experienced rapid changes in their economies, their democratic institutions and in the values of their citizens. They show that the level of Human Development Index (HDI) in a country first drives democracy and then, higher emancipation of citizens. However, this change occurs once the countries pass a certain threshold in HDI. On the other hand, vice-versa, other authors claim that it is the democracy that affects human development (Dahl, 1998). Indeed, according to Inglehart and Welze (2005), a democratic political system, guaranteeing individual rights and civil and political freedoms, creates the conditions for fostering human development through the increase of people's capability space. However, this disregards the fact that changes in civil society's behaviour require changes in political society: changes are reciprocal (Choup, 2003). Therefore, the debate about the causality effect is still open.

In this section we dealt with the issue of reverse causality considering the case of former socialist countries. Our analysis on this issue does not pretend to solve the problem of reverse causality and our reflections are limited to the specific case of former socialist countries.

Starting from a theoretical point of view, the political transition towards a new political system allowed citizens of former socialist countries to enjoy civil liberties and political rights, which represent two important characteristics of each electoral democracy. Civil liberties and political rights are important not only because they "*are recognized as an essential element of democracy in terms of protection of individual right*" (BenYisha and Betancourt, 2014, p. 555), but because they also allow reducing the distance between policymakers and citizens, creating a link between the former and the latter. Therefore, each transition towards democracy implies that, on the one side, through a representative political system, citizens can choose politicians that can better represent their own "needs". On the other side, policymakers, being accountable of their own policies towards citizens during the electoral period, should be motivated to implement social and economic reforms that meet population's "needs". In economic terms, these measures tend to protect the individual property system, and this implies the possibility for each individual to

carry out their own economic activities and compete on the market by contributing to the growth of national wealth.

Regarding the social sphere, democracy allows the freedom of association, and hence, it gives civil society the possibility to fight against corruption and the possibly abusive power. Therefore, the set of political, social and economic changes due to the transition from dictatorship to democracy create the necessary conditions to enable individuals to improve their own living conditions. Moreover, the hypothesis that democracy precedes human development seems to be confirmed by data. Indeed, in the next section we will see that, at the end of Socialism, the level of HD in almost all socialist countries was low, but with the start of the transition period, human development increased quickly. If HD started to increase after the birth of democracy, it is reasonable to assume that the implementation of political and economic reforms created by the new political system created the favourable conditions for economic and social growth indispensable for increasing human development. Therefore, our hypothesis that democracy drives HD is based on a two-step analysis. Indeed, if we consider a set of homogeneous countries, we can suppose that:

1. Starting from the same level of democracy, it is expected that the increase in the level of democracy improves the value of HD. In other words, we assume that the derivative of democracy of HD $\frac{\partial HD}{\partial Dem} > 0$, that is, the derivative of democracy on HD is positive. In other words, we assume that democracy drives human development,
2. The differences in the value of HD depend on the differences in the level of democracy. In other words, we assume that countries that did not complete the transition towards a “consolidated” democracy (i.e. with lower level of democracy) should show a lower HD value.

In the next paragraph, we present data about democracy and HD, explaining how we tried to measure them, and then, we show the econometric results.

3. Data

In the analysis of the evolution of HD over time, a fundamental problem concerns the choice of the index to use. What kind of index should be used to measure the level of HD? Unlike previous studies, in order to evaluate the trend of HD in 18 former Socialist countries¹ from 1990 to 2014², we used the Human

¹ Countries included in the analysis are: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Slovakia and Slovenia.

² There are missing data regarding 1990 for some countries.

Development Index (HDI) drawn by the Human Development Program³. This index considers three different dimensions (economic, health, and education) of human development. In the past, the use of this index has been strongly criticized (Kovacevic, 2011). Authors such as Lind (1992), Dasgupta and Weale (1992), and Srinivasan (1994) claimed that the HDI would be unable to reflect the human development idea as accurately as its founder thought. Indeed, this index tends to oversimplify the concept of HD as it only considers few variables, often drawn from low quality data (Murray, 1993⁴; Srinivasan, 1994). Moreover, additional critics have argued that there would be a strong correlation among variables used to calculate the HDI (McGillivray, 1991) and, hence, many doubts regarding the utility of this index to capture people's wellbeing occurred.

These criticisms have been rejected by several authors (Sagar and Najam, 1998; Al-Hilani, 2012) who claim that the HDI represents - in any case - a fruitful index and enables us to step forward with respect to studies that focus on human development based solely on an economic approach. Furthermore, Noorbakhsh (1998) rejected the criticism about the possible presence of the multicollinearity problem, because the level of correlation among the variables that compose the HDI was very low. Moreover, Booyen (2002) concluded that, despite criticisms levelled at the HDI, this index can still be considered a useful instrument in trying to explain countries' development.

Therefore, we believe the HDI is a useful instrument for understanding how the multidimensional aspects of human life have evolved over time in former Socialist countries. Because changes in HDI from year to year are very small, we decided to only take into account HDI data for every five years. This gap enabled us to capture the changes in HDI in the medium term due to the implementation of public policies that usually take time to produce their effects.

Concerning the measure of democracy, several indices have been proposed in literature. The most popular are: Freedom House Index⁵, Democracy Index⁶ and Polity IV index. For data on the level of democracy, we chose one of the most used indices, Polity IV⁷. The reason why we use Polity IV index is due to the fact that, even though Freedom House index is very often used to measure democracy, it is closer to the concept of freedom rather than to the concept of democracy (Högström, 2013). Meanwhile, regarding the Democracy Index, the problem is that data start in

³ Read more at <http://hdr.undp.org/en/indicators/137506#>.

⁴ Murray, C.J.L. (2004), *The Future of Public Health* (Presentation), Center for the Study of Population and Development, Harvard University (March 18).

⁵ Read more at <https://freedomhouse.org/>.

⁶ Read more at <https://infographics.economist.com/2018/DemocracyIndex/>.

⁷ Read more at <https://www.systemicpeace.org/polity/polity4.htm>. The Polity conceptual scheme is unique in that it examines concomitant qualities of democratic and autocratic authority in governing institutions, rather than discrete and mutually exclusive forms of governance.

2006 and consequently, the time span does not match with the aim of the paper. Moreover, the Polity IV conceptual scheme is unique in that it examines concomitant qualities of democratic and autocratic authority in governing institutions, rather than discreet and mutually exclusive forms of governance.

This index ranges from -10 (autocracy) to 10 (full democracy), and enables us to capture the difference in the level of democracy among countries. Just as with the HDI, the level of democracy changes slowly over time and we therefore decided to calculate the mean Polity IV value for each five-year period for each country. Because we had six observations⁸ for HDI for each country (for some countries, there were some missing data), the first observation available regarding the level of democracy was its mean value for the period between 1985 and 1989. This means that, in each of the six periods, the mean Polity IV value was calculated according to the following equation:

$$LD_{i,T} = \sum X_T / 5 \quad (1)$$

where $LD_{i,T}$ is the mean level of democracy in the country i and $t = 1, 2, \dots, 6$ represents the six periods. To avoid reverse causality problem, the mean Polity IV value associated with HDI presents a lag. For example, the mean LD in 1989 that we associated to the HDI value in 1990 is given by the sum of variables X in the period from 1985 to 1989 divided by 5 (i.e. divided by the years of observations). Table 1 provides descriptive statistics (mean, standard deviations, min and max) about HDI and the level of democracy in former Socialist countries.

Table 1. Summary statistics

Columns	HDI				DEM	
	(1)	(2)	(3)	(4)	(5)	(6)
Country	Mean	Min	Max	Mean	Min	Max
Albania	0.674	0.619	0.733	4.208	-9	9
Armenia	0.672	0.605	0.733	4.360	0.6	6.2
Azerbaijan	0.685	0.609	0.751	-6.080	-7	-2.8
Belarus	0.746	0.683	0.794	-7	-7	-7
Bulgaria	0.734	0.695	0.782	6	-7	9
Croatia	0.753	0.670	0.818	4.466	-3.8	9
Czech Rep	0.824	0.761	0.870	9.60	9	10
Estonia	0.796	0.719	0.890	7.760	6	9
Georgia	0.718	0.672	0.754	5.540	4.2	6.5
Hungary	0.777	0.703	0.828	7.541	-4.75	10

⁸ The time span is divided in six periods with a lag of five years for each. This means that we have the observations for 1990, 1995, 2000, 2005, 2010, and 2014.

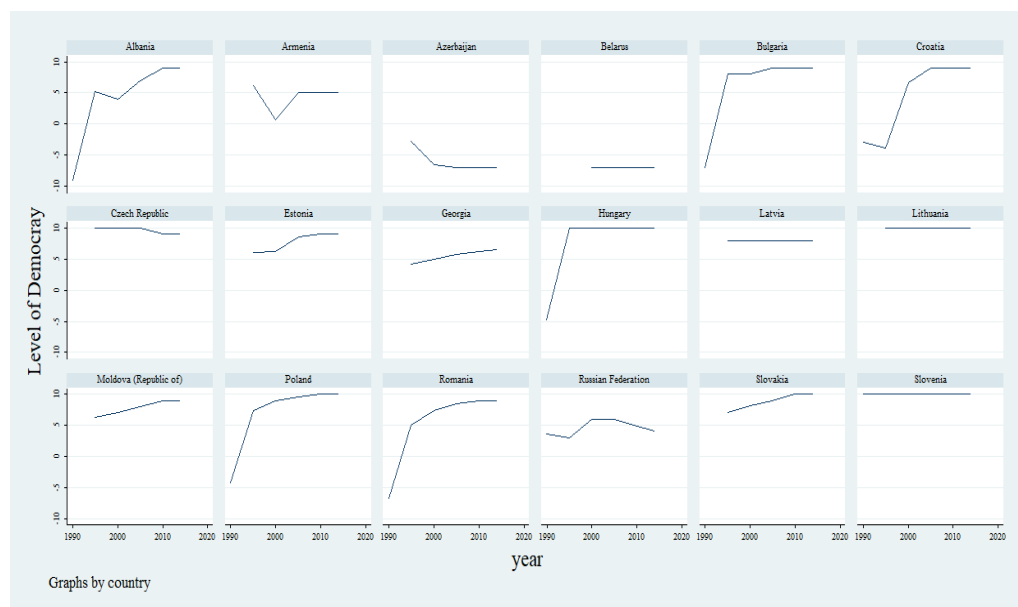
Latvia	0.754	0.670	0.819	8	8	8
Lithuania	0.776	0.701	0.839	10	10	10
Moldova	0.642	0.594	0.693	7.840	6.2	9
Poland	0.786	0.713	0.843	6.966	-4.2	10
Romania	0.738	0.690	0.793	5.333	-6.8	9
Russian Fed	0.744	0.697	0.789	4.577778	3	6
Slovakia	0.785	0.738	0.844	8.840	7	10
Slovenia	0.830	0.766	0.880	10	10	10

Source: UNDP, 2003⁹. Authors' calculation based on HDI data.

From this table, we can note that almost all former Socialist countries were able to complete the transition towards democracy. Indeed, looking to the max value of democracy (column 6), we see that only five countries (Armenia, Azerbaijan, Belarus, Georgia and Russian Federation) showed a level lower than eight.

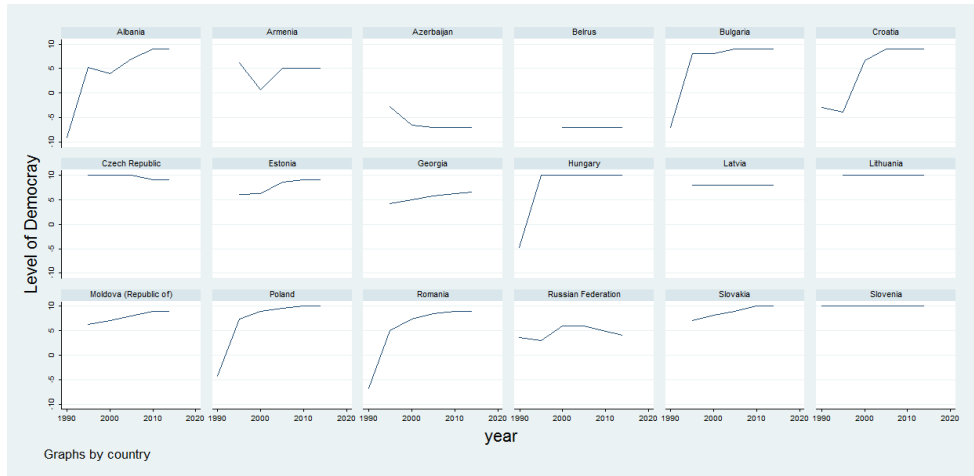
Figures 1 and 2 show the evolution of human development and democracy in former Socialist countries during the periods considered.

Figure 1. HDI in Former Socialist countries from 1990 to 2014



Source: own representation

⁹ UNDP (United Nations Development Programme), (2003), Human Development Report 2003. Millennium Development Goals: A Compact among Nations to End Human Poverty. New York: Oxford University Press.

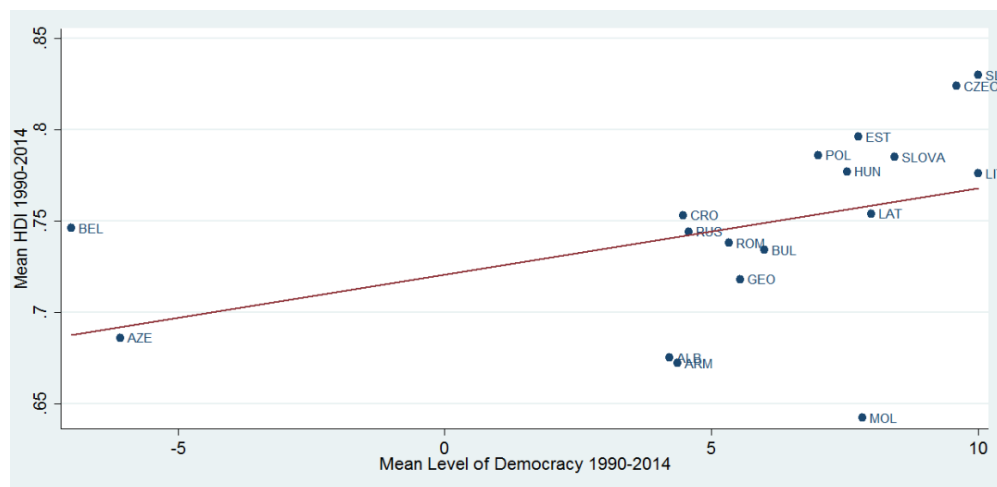
Figure 2. Level of democracy in Former Socialist countries from 1990 to 2014

Looking at these two figures, it is possible to note two things. First, in the period 1990–2014, there was a strong increase in the level of HD in many countries; in particular, taking the differences between the last (2014) and first observations (for some countries it is in 1990, while for others it is in 1995), the increase in HDI was evident in countries such as Croatia (+0.148), Estonia (0.164), Hungary (0.125), and Poland (+0.130), while in countries such as Moldova, Romania, and the Russian Federation, the rate of change was very slow. Regarding the democracy, figure 2 shows opposing results: while on the one side, many former Socialist countries were able to complete the political transition, on the other side, in the former Soviet Republics – with the exception of Estonia, Lithuania and Latvia – the democratization process did not start (Azerbaijan and Belarus) or was only partially carried out (Russia and Georgia).

Second, although some countries (e.g. Albania, Estonia, Latvia, Lithuania, the Russian Federation, and Moldova) showed a reduction in the quality of life during the first phase of the transition (due to social and economic difficulties caused by the end of socialism), the increase in the level of HD was mainly concentrated in the period between 1990–2005; after that, the slope flattened out. This could lead one to think that there is a threshold effect, i.e. in the first phase of transition to democracy, the effect of democracy on HD is stronger and then, when the country becomes a consolidated democracy, other economic and social variables are likely to have a higher impact on HD. The link between democracy and HD can also be analysed by correlating the mean values of the two variables for the considered period. Figure 3 describes the relation between the mean HDI and the mean level of democracy for 1990–2014. In general, we note that countries having a consolidated democratic political system enjoyed a higher level of HD. If we exclude some outlier countries

such as Belarus and Moldova, we can see that countries that showed higher level of democracy are associated with a higher level in HD. In particular, the Czech Republic, Estonia, Slovenia, Slovakia, and Lithuania are countries in which this relationship seemed to be robust.

Figure 3. Relationship between HDI and level of Democracy



This result suggests a relationship between the level of democracy and HD that is worth being investigated empirically, taking into account a set of control variables that have contributed to the increase of HD.

Econometric analysis

We use a panel approach to estimate the impact of democracy on HD in former Socialist countries. The main hypothesis is that the level of HD in time t is correlated both with the past values of HD and with the past values of the level of democracy. The use of the lagged dependent variable is useful because it is probable that a good part of the HDI value at time t depends on its value in the previous period. On the other hand, the use of the lag regarding the level of democracy is important to solve the causality problem. According to this, the basic model is an ARDL (1, 1):

$$HDI_{i,t} = \alpha_i + \beta_1 HDI_{i,t-1} + \beta_2 LD_{i,t-1} + \sum_{p=0}^1 \rho_{ij} X_{i,t-p} + \varepsilon \quad (2)$$

where i represents the country and t the time, X is the set of control variables, ρ_{ij} are the scalars, β_j are the coefficients, α_i is country fixed effect, and ε is the error term.

The use of fixed effects allows us to capture all unobserved time-invariant country heterogeneity.

In the model, we use the following control variables: growth rate, openness to trade, and log of total population. It was expected that the growth rate would positively affect HD as growth is assumed to increase the population's wellbeing (McGillivray, 1991; Srinivasan, 1994; Ravallion, 1997) through the increase of income per capita.

Openness to international trade is a phenomenon that has characterized the economic sectors of many former Socialist countries for all of the 1990s (Musila and Yiheyis, 2015; Pilinkiene, 2016). If this is true, the degree of international trade should indirectly improve the economic conditions of the population (and hence the HDI) and it therefore cannot be excluded from the model as a control variable. The last control variable we chose was the log of population because, it is hypothesized? that the size of the population affects the capacity of governments to provide all facilities necessary for the improvement of populations' wellbeing (Ross, 2006).

Because countries exhibit cross-sectional dependence among entities due to common unobserved factors (De Hoyos and Sarafidis, 2006), and given that the number of entities is greater than the panel time dimensions, the standard errors of regression were corrected following the method proposed by Driscoll and Kraay (1998).

We started with a simple unbalanced panel regression between HD and the level of democracy and then, through the recursive method, we added further control variables. As shown in column 1 of table 2, both the coefficients of HDI_{t-1} and past values of democracy positively affect the level of HD. Because the level of HD changes slowly, the positive impact of its lagged value was expected. In particular, the coefficient of level of democracy on HDI is 0.0018, and it is statistically significant. Regarding the level of democracy, the implementation of political reforms allows the participation of citizens in the democratic life of a country and therefore, political choice through free elections. This creates a link between policymakers and people's needs (through the provision of public goods and services) and leads to improvements in the level of HD.

To check the validity of previous results, we added a set of control variables to the basic model through recursive estimation. In column 2 (table 2), we add the lagged values of growth rate as regressors. The results confirm that the level of HD depends on both HD at $t-1$ and on the level of democracy at time $t-1$. Moreover, the magnitude of the effect of democracy on the HDI increase ranges from 0.0018 to 0.0025. Another important result is the positive effect of growth on HDI. This result, however, is not surprising as a large part of literature shows that the growth rate also plays an important role in the increase of human development. Column 3 and 4 present the results when other control variables (openness and log pop) are included in the model. In column 5, we show the results when the whole model is estimated. All results confirm the positive effect of democracy on HD, and at the same time,

show that openness trade and log population have a negative impact on HDI. The negative effect of Openness on HDI allows us to reject the initial assumption of a positive relationship between the two variables. This surprising result could depend on the fact that the advantages due to the international trade have not been distributed in a homogeneous way across all former Socialist. On the other hand, the effect of log population on HDI is also negative and confirms the results of previous literature. Moreover, it is worth to note that the r-squared is very high (more than 80 percent) for all five estimated models.

Table 2. The impact of democracy on HDI in former Socialist countries

Dependent Variable: HDI	(1)	(2)	(3)	(4)	(5)
<i>HDI</i> _{<i>t</i>-1}	0.7172*** (0.0524)	0.5201*** (0.0216)	0.5215*** (0.0234)	0.4838*** (0.0181)	0.4837*** (0.0180)
<i>Democracy</i> _{<i>t</i>-1}	0.0018*** (0.0003)	0.0025*** (0.0002)	0.0029*** (0.0001)	0.0024*** (0.0002)	0.0028*** (0.0001)
<i>Growth rate</i> _{<i>t</i>-1}		0.0016*** (0.0003)	0.0015*** (0.0003)	0.0016*** (0.0003)	0.0016*** (0.0004)
<i>Openness</i> _{<i>t</i>-1}			0.0000 (0.0000)		-0.0001** (0.0001)
<i>log Pop</i> _{<i>t</i>-1}				-0.0546*** (0.0168)	-0.0362*** (0.0581)
Observations	78	72	65	72	65
Fixed Effects	YES	YES	YES	YES	18
Discroll- Kraay	YES	YES	YES	YES	YES
R-squared	0.8621	0.9097	0.8969	0.9125	0.8979

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In conclusion, the econometric analysis shows that the transition from an autocratic regime towards a democratic political system – in which policymakers' choices are subject to the judgment of voters – leads to improvements in the population's wellbeing.

Sensitive analysis

However, one of the major problems in estimating the model (2) is the presence of endogeneity, which can bias the coefficient of lagged dependent variable because it could be correlated with error terms (Yishay and Betanvourt, 2014). Therefore, in order to deal with the endogeneity problem, a first solution consists in using the Difference Generalized Method of Moments (DGMM) (Arellano and Bond

1991). Following this method, we estimate an equation using the first differences and two lags of dependent variables as instruments:

$$\Delta HDI_{i,t} = \Delta\beta_1 HDI_{i,t-1} + \Delta\beta_2 LD_{i,t-1} + \Delta\rho_{ij} X_{i,t-p} + \varepsilon \quad (2)$$

Following (BenYishay and Betanvourt, 2014), this method produces invalid results in the presence of the first order serial correlation in the error terms of the level equations. A solution is represented by System Generalized Method of Moments (SGMM) proposed by Arellano-Bover (1995): with this method, the level equation is added, using the first differences as instruments for the levels. It is possible to note that in all estimated hypotheses, the existence of a second order serial correlation is rejected, and this shows the validity of our estimation. Moreover, the Sargan test of over-identifying restrictions confirms the validity of the model.

Table 3 shows the results for SGMM where, for each estimate, two lags were used as instruments.

Table 3. SGMM. The impact of democracy on HDI in former Socialist countries

Dependent Variable: HDI	(1)	(2)	(3)	(4)	(5)	
<i>HDI</i> _{<i>t</i>,1}			0.6095*** (0.0316)	0.6792*** (0.0208)	0.6558*** (0.0324)	
<i>Democracy</i> _{<i>t</i>-1}	0.8168*** (0.0130)	0.6706*** (0.0198)	0.0034*** (0.0003)	0.0016*** (0.0003)	0.0024** (0.0004)	
<i>Growth rate</i> _{<i>t</i>-1}		0.0012*** (0.0000)	0.0015*** (0.0001)	0.0009*** (0.0000)	0.0008*** (0.0001)	
<i>Openness</i> _{<i>t</i>-1}			-0.0000 (0.0000)		-0.0001*** (0.0000)	
<i>log Pop</i> _{<i>t</i>-1}				-0.019*** (0.0036)	-0.023*** (0.0044)	
Observations		76	72	65	65	
Groups		18	18	18	18	
Instruments		14	14	15	16	
AR	(2)	0.0701	0.8102	0.5983	0.3905	0.1550
Prob>z						
Sargan test		0.1000	0.1666	0.1627	0.1480	0.1940

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: own calculations.

Looking at the results, we can note that the GMM system estimation confirms the existence of a positive relationship between democracy and HDI. In general, these new estimations confirm previous results. In column 1, we simply estimate the effect of democracy at time t and $t-1$ on HDI, without control variables. From column 1 we note that the coefficient of democracy at time $t-1$ is 0.018 and that it is statistically significant. In column 2, it is possible to note how growth rate at time $t-1$ has positive effects on HDI. Despite the presence of growth rate in the equation, the effect of democracy on HDI is still positive. The positive effect of democracy also does not change when we introduce Openness (column 3) and Log pop (column 4) as control variables. In column 5, the whole model is estimated and also, in this case, we can conclude that the level of HDI at t time mainly depends on its past values, on the level of democracy and on the growth rate, while the negative effects of Openness trade and Log Pop on HDI are confirmed. However, in conclusion, two important outcomes emerge from the econometric results:

1. The results show strong evidence about the positive effect of democracy on HDI. In this case, econometric results tend to support our hypothesis, that is, democracy had a positive effect on the level of HDI for former Socialist countries during the transition period.
2. The differences in HDI can be explained by the differences in the level of democracy among former Socialist countries. Countries with a higher level of democracy also show a higher level of HD.

A corollary of econometric analysis is that Growth rate is also a key variable of HDI, confirming the results of previous literature about the relationship between these two variables.

Concluding remarks

Over time, scholars have tried to study the impact of democracy on human development. Although it seems logical to suppose – from a theoretical point of view – that a positive relationship between democracy and HD exists, empirical analysis has yielded discordant results. In this study, we tried to investigate whether, and to what extent, democracy contributed to an increase in human development in the former Socialist countries. This group of countries which, during the 1990s, adopted political reforms to establish a democratic political system offer a useful example for this field of study. The theoretical mechanism through which democracy should lead to improvements in the wellbeing of the population consists of a democratic political system that makes policymakers responsible for their political choices towards citizens, who can punish them in the electoral period by not re-electing them. Obviously, the means by which the government can improve the welfare of the population is by increasing the supply of public goods and by making a certain range of social services accessible to the poor.

On the one hand, descriptive analysis showed that in all former Socialist countries, the level of human development grew during the period from 1990 to 2014. In particular, the relationship seemed to be strongest in the first phase of transition after which, once the democratic system reached a certain level, the effect was less evident. It is likely that, when a country becomes a consolidated democracy, other economic and social factors affect the level of HD.

On the other hand, the econometric analysis – using a panel data approach and a SGMM – showed a positive relationship between democracy and HD. The empirical results showed that the level of HD mainly depends on current and past levels of democracy. The results were confirmed when we added the control variables of growth rate, unemployment, openness to trade, and log of population to the basic model.

Finally, it is possible to draw some important conclusions from this study. The first is that the level of democracy contributes to an increase in the level of HD in former Socialist countries. This result confirms Sens' theory that having a consolidated democratic political system is vital to expanding the people's space of capability. The second is that the differences in the level of democracy explain the differences in HDI among Socialist countries. Moreover, according to data analysis, it seems that there is a threshold effect of democracy on HD, i.e. while during the first transition phase democracy strongly affects HD, when a country becomes a consolidated democracy this relationship tends to be less robust.

In terms of policy implications, adopting a democratization system seems a reasonable strategy in order to increase HD in the less mature economies; in fact, when the level of human development is lower, democracy has a strong impact on it. However, democracy is a dynamic phenomenon that changes according to the values and development of each country and once democracy has achieved the threshold effect - this happens mostly in the more mature economies- it no longer has any effect on HD; the policies in this second case should focus mostly on the cultural values of the society in order to increase the HD level or at least to maintain ethical awareness among citizens.

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