Annals of the Fondazione Luigi Einaudi
Volume LIV, December 2020: 00-00

DEMOCRACY AND STATE CAPACITY AS DETERMINANTS OF LIFE EXPECTANCY: EVIDENCE FROM LATIN AMERICA

Davide Grassi ⋆
Vincenzo Memoli ⋆⋆

ABSTRACT

Does democracy improve life expectancy? Our study analyzes quantitatively and qualitatively the relationship between democracy, state capacity and life expectancy in Latin America, between 1970 and 2010: by conflating the findings of political scientists, sociologists and public health experts, we outline the ways, both direct and indirect, through which this impact unfolds; discuss how these processes developed or failed to develop, in a series of cases; and control this relationship by introducing additional political, economic and social variables. Our findings suggest that both democracy and state capacity improve health conditions: however, the introduction and initial strengthening of democracy lessen the positive impact of state capacity on life expectancy. These conclusions are of consequence: if stronger democracies provide some of the same functions supplied by state capacity, democracy and state capacity act as substitute for each other. Democratization reduces the need for a stronger state in addressing challenging health objectives, as increasing life expectancy, a favorable perspective for developing countries.

Keywords: Democracy, State Capacity, Life Expectancy, Latin America.
JEL codes: H11, I18, N36 e O54.

Introduction

In this paper, we analyze the bearing of democracy and state capacity on life expectancy in Latin America. We ask whether and how, between

⋆ Università degli Studi di Torino. Address for correspondence: davide.grassi@unito.it.
⋆⋆ Università degli Studi di Catania. Address for correspondence: memoli@unict.it.

ISSN: 2532-4969
doi: 10.26331/1066

1970 and 2010, the presence and level of a democratic form of government have been associated with redressing health-related problems and abating diseases; with making the physical condition of Latin Americans better and more secure; and with improving health outcomes by increasing life expectancy. We also intend to ascertain the role of state capacity, and verify whether successful health regimes are the result of stronger and more capable states, rather than democratic regimes; whether these factors combine to produce beneficial health effects; and, if so, how.

Previous investigations of the association between democracy, state capacity and life expectancy have been global or more limited in scope, covering most world countries (Hanson 2015, Cingolani *et al.* 2015); or individual nations (Ewig 2016, Fairfield and Garay 2017). Also, the empirical indicators through which state capacity has been operationalized have often been partial and incomplete: by employing a new and more rigorous dataset (Hanson and Sigman 2013), we provide stronger empirical grounds to our research.[1] Finally, although positive health outcomes are highly valued, we need to know more on the processes and mechanisms that are relevant to this result. We outline a few ways (both direct and indirect; and derived from both the sociological and political science literature and from public health studies), through which this impact has unfolded in the region and proceed to discuss how these processes developed, or failed to develop, in a group of key Latin American countries. Our findings suggest that both democracy and state capacity improve health status, while the impact of state capacity on life expectancy decreases with the introduction of democracy and its initial strengthening. These conclusions are valuable: if stronger democracies provide some of the same functions supplied by state capacity, democracy and state capacity act as substitute for each other. Democratization reduces the need for a stronger state in addressing challenging health objectives, as increasing life expectancy: a particularly promising prospect for many developing countries.

The paper is organized as follows. First, we collect the relevant literature on the topic, and discuss how previous studies have hypothesized and empirically measured the impact of both democracy and state capacity on health. In the second section, we detail and operationalize our main variables: life expectancy; democracy; and state capacity; and outline our major hypotheses. In the central part of our paper we develop an empirical analysis, by regressing life expectancy against our independent variables

[1] In addition, many analyses on the political determinants of public health failed to add state capacity as a control variable (among many, Siverson and Johnson 2014, Holmberg and Rothstein 2011, Ross 2006). These studies run the risk of mis-specifying and underestimating the role of democracy in the process (Hanson 2015).

and their interaction, adding in each case control variables to correctly specify the model. Results are discussed and the implications of our study for the field are finally put forth and reviewed. Conclusions, as usual, wrap up the investigation.

1. Literature

The effects of democracy on people's health have been researched only inconclusively. A first group of researchers found generally supportive evidence: Franco and others observed that "free" and partially "free" rather than "non-free" countries were often associated with longer life expectancies (2004). Lena and London (1993) also found that, in a sample of peripheral nations, regime type had an influence on population health and mortality rates. In short, they noticed that high levels of democracy were associated with positive health outcomes. These results were confirmed by later studies, expanded to more OECD countries between 1950 and 2000 (see Navarro *et al.* 2004). Investigating the indirect and direct consequences of democracy on health outcomes in a large sample of more and less developed countries, Safaei (2006) finds that democracy shows a direct and positive influence on various indicators of population health. In addition, Besley and Kudamatsu (2006) suggest the existence of a robust correlation between democratic institutions and health, ensuring greater life expectancy in democracies. They also submit that a key feature is prolonged exposure to democracy: countries that have been continuously democratic since 1956 have enjoyed a longer life expectancy (about five years) than countries that have been autocratic throughout.

Likewise, Navia and Zweifel (2003) suggest that democracies significantly outperformed dictatorships between 1950 and 1999, a period characterized by a sharp decline in infant mortality worldwide (see also Zweifel and Navia 2000). This thesis has been embraced by Lake and Baum (2001), who underline that democratic governments have significant consequences on the daily lives and health of individuals around the globe. They notice that democracy is positively related to the presence and quality of public services, such as clean water access, and to an overall advance in life expectancy; and negatively related to death and infant mortality. Finally, for Bueno de Mesquita and others (2003: 194), changing from the most despotic to the most democratic regime entails, after controlling for income, substantial gains in life expectancy and a drastic reduction in death and infant mortality rates. Thus: "Infants have a vastly better prospect of surviving and going on to live a long, prosperous life if they are born in a democratic society than if they are born anywhere else".

Other scholars, however, found no evidence that democracy has a bearing on the material conditions of daily life. Shandra and others (2004) analyze infant mortality rates between 1975 and 1999 in a series of developing countries, and claim that the separate role of political democracy is neither statistically significant nor empirically conclusive. Likewise, McGuire (2010) argues that short-term democracies have no effect on multiple measures of basic health care provision and under-five mortality.[2] Nelson and Ross also question the existence of an association between democracy and social welfare, irrespective of whether the latter is assessed through outputs, such as immunizations, or through outcome measures, like infant mortality (Nelson 2007: 80, Ross 2006).[3] In short, while electoral pressures may intensify social spending, they do not always influence institutional reforms or resource reallocations: these may also be altered by factors like bureaucratic resistance to executing reforms, or citizens' lack of concern, information or ability to evaluate changes. Additional elements are called upon in these cases to explain public health outcomes. Scholars often undervalue the concentration of social and economic power and the results of political hegemony, especially in newly democratized countries: indeed, even though in most countries income allocation is markedly skewed to the right, drastic redistribution is the exception rather than the norm (Harms and Zinka 2003).[4]

The impact of state capacity on health has been analyzed in detail, especially recently. In general terms, state capacity has been identified as a crucial factor for achieving desirable economic and social outcomes and (Hanson 2015, Cingolani *et al.* 2015), more specifically, better health (Holmberg and Rothstein 2011). Significant quantitative evidence indicates that state capacity affects various health outcomes, such as infant and maternal mortality (Majeed and Gillani 2017, Farag *et al.* 2012); child mortality (Daw-

---

[2] However, he finds that "long-term democratic experience" is significantly associated with lower infant mortality. This finding is confirmed in a following and more sophisticated time-series cross-sectional analysis (McGuire 2013).

[3] Ross's widely cited conclusions appear to be fragile. A replication study (Martel Garcia 2014) found that if Ross had computed *centered* rather than *forward* quinquennial averages of the democracy variable, allowing for an effective lag time closer to five rather than three years, democracy would have had a statistically and substantively significant beneficial effect on under-5 mortality rates.

[4] Only recently, finally, studies on the relationship between democracy and social welfare, covering Western developed nations especially in Europe, were extended and adjusted also to other regions of the world, including Latin America, Africa and Asia (for instance, Haggard and Kaufman 2008). The historical experiences in Asia and Eastern Europe alert us to the fact that democratization may be accompanied by an increase of economic and social inequality, while a certain social equality may also be reached before a political transition to democracy.

son 2010); and healthy life expectancy (Siverson and Johnson 2014), among others. Kaufmann *et al.* (1999), finally, conducted initial tests of the relationship between infant mortality and state capacity, using the Worldwide Governance Indicators published by the World Bank (also Kaufmann *et al.* 2009). Their research found strong and negative associations between each governance indicator and infant mortality. Similar conclusions are reached in more qualitative-oriented researches: Brieba (2018), for instance, argues that infant and maternal mortality reduction in Argentina and Chile over the last half century was due mainly to the policies of state strengthening, especially Chile's investment in health specific state capacities. The World Health Organization (2007) has warned that the power of existing health interventions is not matched by the power of health systems to deliver them to those in greatest need, in a comprehensive way and on an adequate scale. States are key in providing good health services; a well-performing health work force; a well-functioning health information system; an equitable access to essential medical products, vaccines and technologies of assured quality; and an efficient health financing system. Thus, the number of maternal deaths will not fall significantly until more women have access to skilled attendants at birth and to emergency obstetric care (*ibid.*). This literature has significantly suggested that state capacity (or, to name a few, quality of government, control of corruption, governance etc.) affects outcomes independently of other factors, such as democracy, economic development, demography and culture. States and state organization, in other words, seem to autonomously matter for development.

2. Dependent, independent and control variables

We will focus our attention especially on health-related results: our measure of health outcomes is life expectancy at birth, which indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout his or her life. Because data on the incidence and prevalence of diseases are frequently unavailable, mortality rates are often used to identify vulnerable populations. And they are among the indicators most frequently used to compare socioeconomic development across countries.[5] Overall, data show that life

[5] Life expectancy at birth is a basic health indicator adopted by the United Nations, the World Health Organization, and the Organization for Economic Co-operation and Development. It is also a component of the Human Development Index, which itself has become a core indicator of social development and wellbeing, and is used widely in development planning and health research. We chose life expectancy at birth over alternative measures, like in-

expectancy has been growing steadily in Latin America, passing from 53,9 years in 1970 to 74,9 years in 2010. Inter-country levels, however, are vastly different, ranging in 2010 from 63 years in Haiti to 80 in Chile.[6]

Let us clarify now what we mean by democracy. A democratic government is characterized by the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders; by the existence of institutionalized constraints on the exercise of power by the executive; and by the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. Conversely, authoritarian regimes severely restrict or suppress competitive political participation; choose chief executives through standardized procedures of selection within the political elite; and, once in office, leaders exert power with few institutional restrictions (Marshall, Gurr and Jaggers 2019a: 14-15). We measured democracy through the Polity IV scale that goes from –10 (full autocracy) to +10 (full democracy); and discriminate among "autocratic regimes"; and "democracies" (Marshall, Gurr and Jaggers 2019b).[7] Following the indications by the curators of the dataset, we consider autocratic those regimes whose values range between –10 and –6, and democracies those with a value of 6 or larger.[8]

State capacity, our second independent variable, is a thorny concept, arduous to define and operationalize: definitions of state capacity often rest on the ability of state institutions to effectively implement official goals (Sikkink 1991). A second recurring theme has to do with Mann's (2008) "infrastructural power" concept, i.e. "the institutional capacity of a central

---

fant or under-5 mortality rates, since these latter not always are an adequate summary measure for monitoring trends and differentials in population health. In Latin America, for instance, increases in adult mortality, especially among young males, are mostly due to high homicide and traffic accidents rates, which significantly reduce overall life expectancy (González-Pérez *et al.* 2017).

[6] Data on life expectancy were drawn from the World Development Indicators (WDI), edited by the World Bank (2018).

[7] We omit other measures of democracy, as Mainwaring *et al.* (2007: 7): their index rates key features of state capacity, as political order, which are then used to identify the presence and strength of democracy. For instance, these authors classify Colombia (1980s to the present) and Peru (1980s and early 1990s) as undemocratic, given the government's and paramilitaries' campaigns against guerrillas and drug trafficking carried out during these periods. This operationalization, accordingly, calls into question the independence of our explicatory variables.

[8] Aside from democracies and autocracies there are "anocracies", i.e. regimes distinguished by political volatility and ineffectiveness and by an "incoherent mix of democratic and autocratic traits and practices" (Marshall, Gurr and Jaggers 2019a: 9). They are further differentiated among "closed" and "open" kinds: the former display values comprised between –5 and 0; the latter values ranging from 1 to 5. We omit these regimes from our analysis, since there is little conceptual similarity among the members of this category, other than their residual status as being neither fully authoritarian nor democratic.

state, despotic or not, to penetrate its territories and logistically implement decisions". In addition, many authors also typically indicate state capacity through at least one of three constituent elements: the ability of a state to impose a degree of internal political order, by way of an exclusive control over the means of coercion; the proper workings of a basic administrative apparatus; and the capacity to extract revenue from its citizens.[9] The operationalization of the concept is equally controversial: the ideal data should be based on time-series cross-national measurements of stateness that ensure wide-ranging geographic and temporal coverage, enabling researchers to take advantage of variations across space and time. Based on these reflections, we decided to use the State Capacity Dataset (1960-2010) elaborated by Hanson and Sigman (2013), which covers up to 174 countries for the period 1960-2010. The dataset rests on the three main components examined above: coercive, administrative and extractive capacities, which are measured in turn by 24 main indicators.[10] By way of latent variable analysis, finally, the authors identify a series of underlying factors that signify overall state capacity.[11]

---

[9] Enforcing political order entails securing frontiers, preserving domestic peace and restraining violence, i.e. to control the territory by both crushing and avoiding internal strife and protecting the borders from external threats. An administrative system is working properly when a professional and politically shielded bureaucracy plans and enforces policies, and supplies public goods and services; which entails technical skills, competent personnel, restrained public corruption, and an effective reach across state territory. Extractive capacity, lastly, implies the ability of the state to levy resources from society, mainly in the form of tax, and involves a series of vital skills and instruments: tools to access the population; means to gather and systematize complex information; law-abiding civil servants; and ways to secure popular compliance with tax policies (Hanson and Sigman 2013: 4).

[10] Coercive capacity is based firstly on military personnel and expenditures. A large military force, however, may denote war or domestic insecurity, both of which diminish state capacity. Thus, further data have been added: the monopoly on the use of force enjoyed by the state; the extent to which the state is directly involved in committing violence; and the degree of its presence in the territory (by looking at how mountainous, and therefore arduous to reach, is the land). Administrative capacity is evaluated by the ICRG Bureaucratic Quality Index; an appraisal of census frequency, which signifies both the capacity to collect data and effective territorial control; the extent of contract intensive money, standing for the capacity to regulate economic exchange; and further indexes related to administrative capacity and civil service values, as the Weberianness Index, elaborated by Rauch and Evans (2000). Extractive capacity, lastly, is measured by tax revenues as a percentage of GDP. To discriminate between policy choices and extractive capacity, however, the authors of the dataset added more measures, as the proportion of tax revenues coming from income, domestic consumption, and property taxes compared with revenues coming from international trade, as custom duties. When the proportion of the former, which require a more structured bureaucratic apparatus, is higher, the expected level of extractive (and administrative) capacity of the state will be greater. Further indicators, finally, show the relation between actual revenue collection and the expected tax yield, given per capita GDP, mineral production, exports and additional relevant factors.

[11] Unfortunately, the dataset is currently available only in aggregate form (based on the

The literature suggests that our two main variables are somehow related. On the one hand, democracy may affect state capacity by reducing violence and corruption and increasing administrative efficacy. It lowers violent struggles by providing institutionalized communication channels with political rivals, by including them into the debate and by acceding to some of their requests. Also, accountable governments make citizens more likely to identify with democracy and the state and reduce the reasons for violent opposition. By making elected officials and administrators responsible, democratic processes and sanctions potentially contain incompetence, arbitrariness and the dissemination of bribery. Finally, independent civil society groups may supervise and appraise state functioning and collaborate with the state to recommend new policy ideas (Carbone 2013).

As for the opposite effect, of state capacity on political regimes, the prevailing view contends that state strength ensures political stability and the survival of both democratic and authoritarian regimes: therefore, more capable states promote freedom under democracy, but oppression under authoritarianism (Way 2016, Levitsky and Way 2010, Huntington 1968). These assertions imply that the state is an instrument that may be exploited by both democratic and authoritarian leaders: stronger states safeguard civil and political rights under democracy, but suppress such rights in an equally effective way in despotic regimes (Slater 2010, Way 2005, Bellin 2004).

Second, we added further control variables representing economic development (yearly GDP growth and GDP per capita based on Purchasing Power Parity). Higher GDP per capita, and GDP growth, tend on average to be associated with higher private incomes and with more resources for state provision of life expectancy: more affluent citizens usually demand a higher level of welfare services and richer countries, in turn, can more readily afford to provide them (Lake and Baum 2001).[12] Gini Indexes are added to the regression because, while mortality differentials among countries are enormous, such inequalities also appear within each country, including rich or developed ones. The public health literature offers evidence in support of the thesis that domestic inequality and social distance undermine social cohesion, by encouraging mistrust, feelings of inferiority and insecurity that could lead to violence, disrespect, shame, and depression: psychosocial factors that contribute to ill health and premature death include low social status, poor social affiliations, and negative childhood ex-

---

combined values of coercive, administrative and extractive state powers): therefore, no separate analysis on the specific role of each constituent part has been possible.

[12] Data on economic development were derived from the World Bank (2018).

periences (Safaei 2006).The issue of redistribution is also central for Huber, Mustillo, and Stephens (2008), who acknowledge that, even if democracy is usually associated with higher social spending, it is not always related to better social policy performance (Huber *et al.* 2016). Likewise, Ross (2006) accepts that democracies spend more on healthcare: however, he claims that the benefits of additional spending bypass the poor, accruing instead to middle- and upper-income groups.[13]

We also introduced land size, since establishing functioning administrations and providing efficient health care may be particularly difficult in large states. Sizeable territories may prove hard to penetrate administratively and to establish institutionalized services on (Herbst and Mills 2006: 9-11). Functioning local care providers have been key in the overall performance patterns of Latin American health systems, as in Chile: their absence or weakness, more likely when the state is large, prevents effective health care delivery.[14] Similarly, ethnic fractionalization may favor the emergence of local and regional challenges to central state authority, and thus political turmoil, as well as encourage patronage and corruption-oriented politics, diverting efforts from the building and consolidation of a valuable administrative apparatus and well-organized social welfare and health systems (Alesina *et al.* 2003).

Finally, as several Latin American countries are oil producers (especially Venezuela, Brazil and Mexico) we test the impact of this factor, measured as oil revenues as a percentage of GDP, on life expectancy. The revenues generated by oil extraction have not been conducive to achieving relevant development goals, as political democratization or better health, mainly because of increasing levels of corruption and accrued political autonomy from the electoral bases, which considerably lessened vertical accountability and weakened the ties between governments and the general interest (Karl 2007, Ross 2006).[15] Only recently, the appearance in the region of new left governments has convoyed extra resources coming from oil revenues to pay for expanding social expenditures and reducing poverty and inequality (Hogenboom 2012).

---

[13] Data on inequality were drawn from the World Inequality Database (2019). For the methodology used to measure this variable, see: https://wid.world/methodology/.

[14] Data on land size were drawn from the World Bank (2018).

[15] Data on oil production were also obtained from the World Bank (2018). Oil dependence is negatively correlated with health care expenditures: paradoxically, the more countries are dependent on oil, the less they spend on health as a percentage of gross domestic product (Karl 2007: 664).

3. Data analysis and discussion

Eighteen Latin American countries were finally included in the regression.[16] We chose Latin America to ensure comparability within a most similar research design: in this region, democracy has been a common political regime during the period of analysis, unlike in the Middle East and Northern Africa. In addition, compared to other regions of the world, such as Sub-Saharan Africa, Asia, and Eastern Europe, Latin America boasts an exceptionally high proportion of full and partial democracies, which makes it an ideal candidate for our analysis, based on the impact of these political regimes on life expectancy. As for our investigation, missing data problems forced us to consider country-years as our unit of analysis. Thus, we used a pooled data for which we employed random-effects regression models (Table 1).[17]

In our first model (Table 1, R. sq. = 0.95), the relationship between democracy and life expectancy is positive and statistically significant (beta = 0.067); the same negative sign is found for all control variables, except GDP growth which is not significant. Against expectations, GDP per capita is negative: a possible explanation for this relationship is that scientific understanding and technological progress have made some public health interventions, such as vaccinations, along with hygiene and public health measures, cheaper and brought these more and more into the reach of populations with lower incomes. More generally, if at the individual level it is reasonable to assume that richer people have better health, because they can afford better medical care, this relationship is certainly not assured at the aggregate level. Developing countries, such as Costa Rica and Cuba, are judged to have high health status. On the other hand, the USA is among the wealthiest industrialized countries in terms of GDP per capita, but it is ranked to have lower health outcomes compared to many others (Hassan *et al.* 2017). The considerable variation in life expectancy for a given level of income suggests that life expectancy is influenced by other determinants.

The relationship between democracy and life expectancy, as illustrated in the literature, is complex. Some scholars, for instance, suggest that if it were possible to conduct a natural experiment, i.e. to compare the social

---

[16] We analyze all Latin American countries with a population above 2,000,000: Cuba was omitted for missing data. The countries finally included are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela.

[17] To make the results comparable in terms of effects, all variables have been standardized. Although the two principal independent variables (democracy and state of capacity) are (moderately) correlated (r = 0.603), we do not find collinearity problems among the regression models: the average variance inflation factor (VIF) across all predictors is substantially low (1.86).

contract in a given country under authoritarian rule, with the social contract in the same country under democratic rule, all else held constant, we might expect democracy to be more responsive to the interests of the poor and the most vulnerable (Haggard and Kaufmann 2008: 361-362). Thus, we might expect democracy to have a positive effect on life expectancy overall, when compared with autocracies. However, not only such natural experiments are very difficult, but the 'ceteris paribus' conditions are crucially important to understand the effects of regime type. In short, the consequences of democracy are conditional on further economic and social conditions: Haggard and Kaufman, for instance, underline the relevance of state capacity, in particular its ability to extract resources to offset market risks (*ibid.*).

Yet, political scientists have underlined a few mechanisms that explain how democracy may promote life expectancy. On the one hand, in authoritarian governments there are fewer procedures that would promptly expose popular needs and make politicians responsive: democratic incentives for re-election motivate politicians to listen. In politically closed societies, censorship prevails, no real debate develops on important issues and, in general terms, most public policies reflect the interests of the inner circles of power and the dominant classes.[18] Furthermore, democracies usually demand accountability to a broader set of citizens, while dictatorships are mostly accountable to smaller groups, as the military, mainly defending the interests of rich and privileged elites. This may lead to massive misallocation of scarce resources that are vital to the well-being of the population. Democracies, finally, may count on more effective mechanisms for selecting competent and honest leaders, than under authoritarian governments. If health policies are implemented by capable and less corruptible leaders, health outcomes are likely to be better.[19]

---

[18] We acknowledge that authoritarian governments may favor the less advantaged, as with the Velasco regime in Peru or with semi-authoritarian regimes in Brazil and Mexico. However, in Latin America, dictatorships have been less inclined than democracies to extend welfare policies to new sectors of the population. Thus, under Velasco (1968-1975), the welfare system was consolidated, but not expanded. In Brazil (1971-1985) and Mexico (1970-1982), semi-competitive political regimes somewhat extended social protection. Yet, in Brazil welfare policies were implemented mostly in order to prevent a revival of social unrest in the countryside and to fuel patronage politics in favor of the government-backed Arena party. In Mexico, social policies were even less resolute and intensified only as political challenges from competing parties became more acute. In both cases results were limited, well below those of sustained democracies, while social inequality remained enormous (Haggard and Kaufman 2008: 16).

[19] Also, for economists as Nobel Prize winning Amartya Sen, democracies tend to break underdevelopment traps and invest more than dictatorships in social services (2001). Governments that invest in this way typically have lower infant mortality rates, and longer life expectancies, than nondemocratic governments with otherwise similar societies.

Table 1. Impact of democracy and state capacity on public health in LA (1970-2010)

		Model 1			
		Beta	Sig.	Std. Err.	
Democracy		0.067	****	0.011	
State capacity					
State capacity*Democracy					
Oil		–0.017		0.014	
Gdp growth		–0.001		0.008	
Natural Log Gdp per capita		–0.098	***	0.030	
Natural Log Land		–4.157	****	1.135	
Natural Log Gini		–0.420	****	0.029	
Natural Log Fractionalization		–2.340	****	0.605	
Years		@		@	
Countries		@		@	
Constant		3.717	***	1.163	
Sigma_u	0				0
Sigma_e	0.184				0.186
Rho	0				0
R-square	0.949				0.948
Wald test (sig.)	0.000				0.000
Number of countries	18				18
Number of observation	708				708

Note: *p<0.10, **p<0.05, ***p<0.01, ****p<0.001. In the first three model we have applied a random effects regression, while in the last one a fixed effects regression. All variable have been standardized. @ stands for all the value related to the countries and years of the study.

Source: Polity IV, World Bank, State Capacity Dataset.

Model 2				Model 3				Model 4		
Beta	Sig.	Std. Err.		Beta	Sig.	Std. Err.		Beta	Sig.	Std. Err.
				0.061	****	0.012		0.053	****	0.022
0.094	***	0.020		0.176	****	0.023		0.188	****	0.011
				–0.121	****	0.009		–0.123	****	0.009
–0.013		0.014		–0.032	**	0.012		–0.023	**	0.012
0.002		0.009		0.005		0.008		0.004		0.008
–0.111	****	0.031		–0.070	**	0.027		–0.078	***	0.027
–2.313	**	1.117		–2.370	**	1.040				
7.750	****	0.421		6.637	****	0.384		6.716	****	0.383
–1.341	**	0.593		–1.309	**	0.554				
@		@		@		@		@		
@		@		@		@				
2.019	*	1.143		2.225	**	1.062		–0.499	****	0.055
			0				0.525			
			0.164				0.165			
			0				0.910			
			0.960				0.520			
			0.000				0.000			
			18				18			
			708				708			

On the other hand, there are other, more direct, mechanisms. Public health scholars highlight a series of medical processes that are overlooked by political scientists and sociologists. Safaei (2006), for instance, notes that: "political oppression […] may enhance mental depression and other negative psychosocial experiences, through the suppression of people's rights, hopes and aspirations. Negative psychosocial experiences, in turn, may initiate physical illnesses, such as adult diabetes, hypertension, atherosclerosis, autoimmune disorders and coronary artery diseases." On the contrary, to the extent that citizens' rights and dignity are warranted, democracy promotes mutual respect and a supportive environment, which breeds positive feelings of self-worth, optimism and hopefulness, which contribute to preserve good health.

Free governments have been related historically to better health care, as shown by the policies implemented by one of the more robust regional democracy, Chile. In this country, health policies applied under the military dictatorship were geared towards the scaling back and restructuring of the welfare state. Although only partially successful, the military were able to impose a drastic reduction of social spending and a reallocation of funds towards the poorest (Segura-Ubiergo 2007: 179-191).[20] The new health system tended to reproduce or exacerbate inequalities in the social structure: while middle class families gravitated towards private health plans, the very poor were forced to remain within the public sector (Haggard and Kaufman 2008: 109). Democratic governments, on the other hand, have been associated to greater advances towards health efficiency and equality (Huber and Stephens 2010). Significant efforts to expand health coverage came in the 1960s and early 1970s, under pressure from the unions and from both the Socialist and Christian Democratic party: a basic health program was launched in 1964 and later expanded under Presidents Frei and Allende.[21] More recently, this was the case with president Lagos' Plan de Acceso Universal con Garantías Explícitas (Universal Access with Explicit Guarantees Plan), labeled "Plan AUGE" from its acronym. The plan en-

[20] Life expectancy at birth soared under Pinochet, thanks to a plunge in infant mortality rate, although the gain in life expectancy at age 1 was considerably less impressive. For Drèze and Sen, these policies raise the intriguing question of why a government that had no hesitation in resorting to the most brutal political repression to protect the privileges of the dominant classes, was so interested in looking after child health and extreme poverty (Drèze and Sen 1989: 238). They hint that Chile's long history of democracy may have contributed in various ways.

[21] Under military rule, consequently, life expectancy growth drastically slowed down: its expansion passed from 0.99% in 1973 to 0.42% in 1989. During the previous democratic phase, on the contrary, growth had accelerated, rising from 0.65% in 1950 to 1% in 1972 (U.N., 2019).

hanced the quality and access to public health services, especially for the least privileged, and offered universal medical assistance to patients suffering from a list of specific diseases (initially 25, currently 80). Additionally, it established new and more stringent standards for both the quality and quantity of the services provided, which were considered specific social rights to which all citizens were entitled, and ensured by the state both legally and financially. The plan also set maximum waiting times for the delivery of medical treatment and guaranteed that the required procedures and technologies were offered by qualified health professionals (Missoni and Solimano 2010).

In the second model (Table 1, R. sq. = 0.95), state capacity improves life expectancy (b = 0.094) and all control variables, except GDP growth, are statistically significant. Contrary to expectations, the Gini index is significant and positive. A positive Gini sign may be due to the combination of a regional trend towards longer life expectancies, on the one hand, and the fluctuation of inequality values over the period of observation, which increases slightly in the long run, on the other. While democracy has been important in expanding the coverage and reducing the fragmentation of health insurance in Latin America, in the long run health outcomes do not depend merely on such condition, but also on aspects of state capacity. Even if health systems are equitable, magnanimous, and comprehensive in their coverage, they could still show deep territorial imbalances in doctors' quality, in organization and coordination, and invest money in hospitals rather than in more effective primary health centers. Consistent with these premises, Brieba (2018) argues that, compared to Argentina, Chile's superior performance in infant mortality rates in the last decades was due mainly to the minor corruption, better meritocratic recruitment, and relative autonomy from high-level politicization of its health bureaucracy.[22] Chile's state capacity was enhanced by new fundamental laws on integrity (2003) and transparency (2009) in the Public Administration; by a cut in the number of civil servants selected by the Executive; and by the launching of a Senior Management Service System, whose entry was regulated by competitive public exams, which increased the professionalization of the civil service. A 2005 reform increased the autonomy and jurisdiction of the Constitutional Court: thus, the Court was able to stop governments' decrees and to protect citizens' rights against powerful private health groups (Bertelsmann Stiftung 2010). In

[22] Data on life expectancy at birth show that, in 1960, Argentina outperformed Chile by almost 8 years. In 2016, however, the figures for the two countries were, respectively, 76,6 and 79,5 years (World Bank 2018).

addition, state penetration was effective, with better logistics of information gathering, coordination, enforcement and control. The primacy of these criteria goes back to the establishment of a National Health Service (Servicio Nacional de Salud) in 1952, which has been maintained in the country during the military period. The ongoing action of the SNS was a key point in the history of public health in Chile and represented a crucial investment in state capacity: "By unifying organizations, standardizing protocols, centralizing policies and decision-making, monitoring compliance, and sustaining policies over time, it allowed for a decided, coherent and persistent drive for infant and maternal mortality reduction in a way not seen in Argentina" (Brieba 2018: 49). As a consequence, in Chile the health system was able to prosper on a regional basis and on preventive primary health. On the contrary, locating health centers and hospital staffing were often determined in Argentina at the provincial level, on the basis of electoral and clientelistic considerations, which explains their poor outcomes.[23]

In our third model (Table 1, R. sq. = 0.96), we find that state capacity (beta = 0.18) produces an effect on the dependent variable which is three times as intense as the effect of democracy (beta = 0.06). The interaction between the two principal independent variable is negative and significant (b = –0.12), while control variables, except GDP growth, are all negative and statistically significant. A more detailed analysis of the interaction (Figure 1) shows that growing state capacity is associated to increasing life expectancy: this effect, however, lessens when levels of democracy increase. This implies that across the countries in the region a positive impact on life expectancy has been assured both by semi-democratic and authoritarian governments in capable states, and by democracies approaching full political development in weaker states.

On the one hand, democratization may reduce the need for a stronger state in increasing life expectancy. Thus, the introduction of democracy may be appropriate to reach this goal, even when state capacity is low. This situation is common in developing countries, where higher levels of

---

[23] It should also be noted that Argentina's labor movement was much more powerful than Chile's, and Argentine union leaders put up ferocious resistance to successive attempts to extend better health care to poor people in rural areas and urban shantytowns. More generally, in the last decades, parties of the Left and the local labor movement struggled to expand and uphold the rights and wages of workers within the formal and more protected sector of the economy. This came at the expense not only of more privileged strata, but also of less protected workers in the informal sectors and of the poor. Thus, more recently social welfare provisions, especially pensions, have exercised a regressive influence on the overall redistribution of income, reinforcing, rather than mitigating, long-standing patterns of inequality (Grassi 2014).

democracy can help compensate for low levels of state capacity when it comes to improving development outcomes. On the other hand, the data also underline that the favorable role of state capacity in increasing life expectancy decreases when countries become more democratic: this may be due to an overlap on the flow of information regarding public needs. Both democratic regimes and stronger states collect information about public needs, which in turn make reaching development goals easier and more effective: accurate knowledge about public needs may arise from a well-ordered data collection effort by capable public agencies, as well as from a free press and safeguards for political expression. If stronger democracy provides some of the same functions supplied by state capacity, democracy and state capacity would substitute for each other: when democracy develops, information on public needs is collected more extensively and completely, and state capacity becomes, from this point of view, less crucial (Hanson 2015: 11-12).

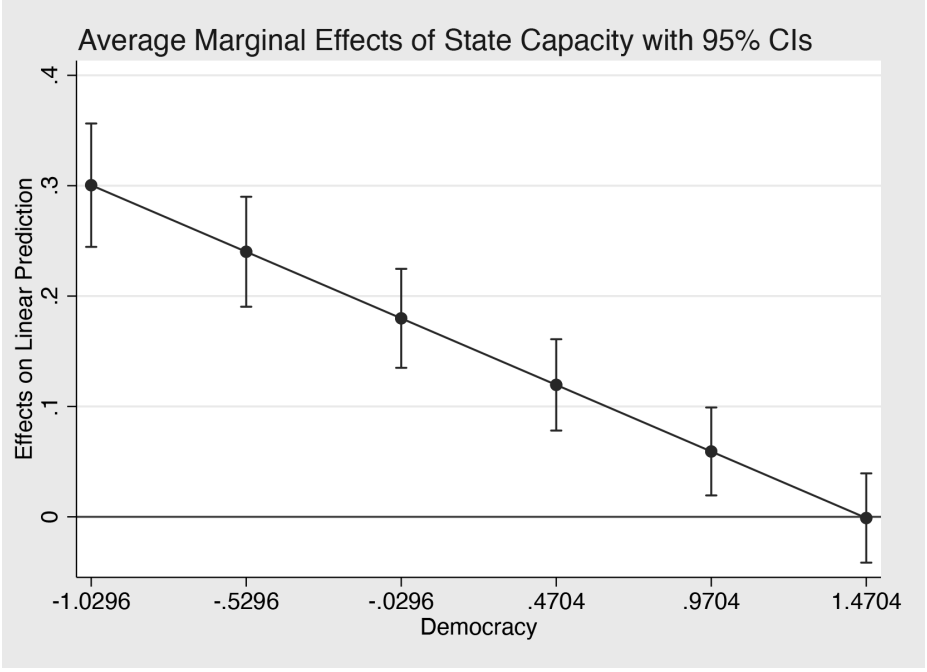

Figure 1. Average Marginal Effects of State Capacity.

To check for robustness of results, we have applied a fixed random effect regression to our dataset. As known, this technique is an efficient robust test that allows to net out all time invariant characteristics correlated with our dependent and independent variables, both observed (as Log Land and Log Fractionalization) and unobserved. As reported in tab. 1 (model 4; R. sq. = 0.52), the results confirm previous empirical results and reinforce our conclusions, which remain largely unchanged, since both the original and the new estimated effects are significant at least at the 5% level. A final remark on the direction of causality: improvements in life expectancy may be construed as advancement in human capital, which are usually responsible for increasing productivity and wealth. Wealth, in turn, has been associated to more democratic regimes, as in modernization theory (Lipset 1959), and in a series of additional studies (among many, Przeworski *et al.* 2000, Boix and Stokes 2003). This association, however, has been called into question, for instance by O'Donnell (1973) and Przeworsi *et al.* (2000), on both empirical and theoretical grounds: for not applying to authoritarian regimes in Latin America in the 1970s and 1980s, in the former case; and for being appropriate only to the survival of democracy, but not to its inauguration, in the latter. In other cases, finally, scholars have found that statistical tests show that the direction of causality runs from democracy to economic development, not in the opposite sense (for example, Baum and Lake 2003).

Hereafter, we discuss the cases of Mexico (1970-1997) and Venezuela (1970-1999), as an illustration of these combinations of factors.[24] State capacity affects public health by way of competent health personnel; a well-organized information system; easy access to critical and good quality medicines and technologies; and an efficient financing system. In the 2000s, public civil service in Mexico was relatively autonomous from political influence and competent, and service provision to the poor was effective, favored also by a stronger than average rule of law. Overall, at the end of its authoritarian phase, Mexican state capacity was comparable to that of Uruguay, Costa Rica or Colombia (Centeno 2009, Table 2: 28). This capacity had been built by a ruling authoritarian party as a means of retaining power, especially when serious challenges against the stability of the undemocratic regime materialized. At least until the 1980s, the PRI was

[24] In Mexico, the period 1970-1997 corresponds to the presence of an authoritarian and semi-authoritarian government; in Venezuela the period 1970-1998 refers to a democracy approaching full development and then decaying. The countries discussed are meant to represent instances of typical cases (low-residual cases, or inliers, in large-N technique jargon), which focus on examples that illustrates a stable, cross-case relationship. Specifically, the researcher wants to find a typical instance of some phenomenon, so that he or she can better explore the causal mechanisms at work in a general, cross-case relationship (Seawright and Gerring 2008: 299).

able to manage government successfully, providing the political, ideological, and organizational resources that allowed the state to facilitate policy formation and implementation; maintain legitimacy; mobilize support; and control popular organizations. Through these mechanisms, the PRI has come to develop programs and strategies that, although not always linear nor univocal, had a bearing on the complex course of state formation and change (Collier and Collier 2002: 581-585).

Health policies bear witness to these underlying processes. Over the post-war period, the PRI became increasingly non-ideological and patronage-oriented: social plans intensified as challenges became more acute. Student protests in the late 1960s and rural land invasions in the early 1970s prompted greater attention to the demands of the domestic left and the rural sector, and significant progress was made in extending health services into rural areas: in 1977, President López Portillo (1977-1982) introduced the General Coordinated National Plan for the Deprived Zones and Marginal Groups (COPLAMAR), the first major effort to expand health care to lower-income sectors, making significant progress in extending services into rural areas. Other initiatives were undertaken by presidents Salinas (1988-1994) and Zedillo (1994-2000) to counter the threat of renewed social disruptions: their National Program of Solidarity (PRONASOL) and Education, Health and Alimentation Program (PROGRESA), respectively, were extensive anti-poverty programs which also covered health concerns. In short, in Mexico, an authoritarian and later partially democratic country was able to modulate a remarkable state capacity, following fundamentally political strategies, in order to provide better health services that made the lives of citizens longer and healthier.[25]

At the end of the 1990s, the state in Venezuela was as weak as in Paraguay or in Bolivia. The autonomy and qualification of the national bureaucracy stood below regional average; violence was widespread and corruption rampant; and the administration was uncapable of enforcing laws (Centeno 2009, Table 2: 28). Venezuela's democratic regime (1958-1998), on the other hand, rested on informal agreements among two major parties, Acción Democrática (AD) and Comité de Organización Política Electoral Independiente (COPEI); and on oil rents that were distributed to business elites, the middle-class and unionized blue collar workers (Myers 2006). The close relations between the dominant parties and unions encouraged new and more generous social policies: in 1966 the government of AD president Leoni (1964-1969) extended social security coverage to a

[25] Life expectancy in Mexico grew spectacularly from 1950 to 2000, going from 47.9 to over 74 years. In 2018, however, it still stood at 74.98 years (U.N. 2019).

broader set of workers in the formal private sector. Social demands from below and a mounting electoral pressure from AD induced the other major party, COPEI, to reach out to unionized blue collar workers, as well. In the second half of the 1960s and in the 1970s, due also to the boom in oil prices, both government of President Leoni and President Caldera (COPEI, 1969-1974) invested heavily in health services, such as hospitals for middle-class and blue-collar groups, at the expense of the unorganized. Malaria, however, was eradicated and child mortality declined (Márquez and Acedo 1994: 163-164).

With the crisis of oil prices in the mid-1980s, a neoliberal attempt to restructure the economy, led by president Andrés Pérez (AD, 1989-1993), caused an abrupt drop in social investments; the privatization of insurance and provisions; and the transfer of healthcare responsibilities to state governors (Haggard and Kaufmann 2008: 274).[26] The deterioration in social services, however, was not mainly the result of resource restrictions: investments continued to pour, but the capacity of state institutions to deliver services was severely hampered by mismanagement, dishonesty and political inflated bureaucracies (Naím 2013, Levine 1998: 190). Thus, many hospitals were short of basic medicines and supplies, while the system encouraged high expenditures on technologically advanced curative treatment in urban centers (Angell and Graham 1995: 212-213). In addition, the economic predicament facilitated a new democratic deterioration and the downfall of the traditional two-party system, that put an end to the processes that had favored positive health outcomes in previous decades: namely, party cooperation with powerful trade unions, essential to promote successful social policies under democracy; and an accrued responsiveness towards social demands for better and more complete health care, although limited by a party system based on multiclass patronage networks and a political practice that somehow constrained pluralism (Haggard and Kaufmann 2008: 93-4, McCoy and Myers 2006: 3).[27]

Our thesis, that democracy in Venezuela contributed to better health outcomes in spite of limited state strength, must confront, finally, a sensible objection: the role of oil in the political and economic life of the country has been decisive, powerfully affecting the fortunes of both po-

---

[26] His successor and major critic, president Caldera (1994-1999), eventually adhered to similar market-oriented stabilization policies.

[27] Life expectancy rose, during the democratic period, from 53.7 years in 1950 to 71.6 in 1998. Figures were especially positive until 1985, when life expectancy had already reached 69.6 years. Results worsened in the following semi-democratic and authoritarian phase: life expectancy barely advanced, moving from 71.8 years in 1999 to 72.1 years in 2018 (U.N. 2019).

litical regimes and social welfare policies. In this view, oil bonanza was at the basis of the Punto Fijo arrangement (1958-1998) and of the generous health policies that were implemented thru this period: when oil prices collapsed, both democracy and expansive health measures entered into a major crisis. While not denying the critical role played by oil in the political, economic, and even cultural life of Venezuela, however, we claim there are reasons to believe that democracy matters for health beyond the cycles of oil revenues.

First, precipitous drops in oil revenues under democratic and non-democratic regimes have triggered drastically different life expectancy outcomes. Thus, between 1980 and 1986, oil revenues (expressed in 2000 dollars) collapsed from 45 to 10 billion. In 2009, revenues dropped from more than 50 to 30 billion, recovered in 2011 to reach a historical peak of 61 billion, and declined again to below 50 billion in 2015 (U.S. Energy Information Agency 2019). In spite of the more severe decline, during the democratic period life expectancy increased by approximately 1 year and 3 months while, during the undemocratic 2009-2015 phase, it declined by about 6 months (World Bank 2018). Although these raw data do not warrant causal inference, they suggest that additional factors, other than oil, were at play. It is also revealing that the recent decline in life expectancy has been due mainly to rising homicide rates, especially affecting young males (García and Aburto 2019).[28] A significant part of this violence has been fed by the steady militarization of the police and by police brutality; by extrajudicial killings in military operations against street crime; by weapons illegally supplied by the Army and the Police to control political opposition; and by the inconsistent attitude of the government, which sponsored violence against political enemies. The role of politics and political regimes on life expectancy seems, therefore, conspicuous. Second, the direct effects of democracy illustrated above are independent of particular policies and expenditure levels: it is reasonable to assume that they would act on life expectancy irrespective of fluctuations in oil revenues. Finally, our statistical model incorporates a specific control (Oil revenues as a percentage of GDP) to capture the effect of this variable on the relations and interactions among our main variables. Thus, we expect that the influence of oil would not affect our main statistical findings.

---

[28] Homicides rates increased from 32.9 to 61.9 per 100.000 people between 2000 and 2014 (García and Aburto 2019: 3).

Concluding remarks

To sum up, we find that in Latin America, between 1970 and 2010, democratic governments and stronger states have contributed, both independently and in conjunction, to improve public health outcomes, by way of mechanisms outlined by both political scientists and health policy experts. The interaction of our two main variables, in addition, suggests that the positive effect of state capacity tends to decline when democracy increases, so that improved life expectancy may be gained both in strong authoritarian states and weaker democratic ones. These conclusions are of consequence: if stronger democracies provide some of the same functions supplied by state capacity, democracy and state capacity act as substitute for each other. Democratization reduces the need for a stronger state in addressing challenging health objectives, as increasing life expectancy: a favorable prospect for many developing countries.

Since state capacity generally requires extended periods of time to accrue, countries with weaker states are often struggling to provide citizens with effective social services: these, in turn, are essential to consolidate the legitimacy of political regimes. In the developing world, including Latin America, states tend to be notoriously weak, so that their perspectives of satisfying citizens' social and political expectations are generally poor. However, democratic transitions (be they partial, from a semi-democratic regime or complete, from a fully authoritarian one) and the strengthening of new democratic regimes, offer an alternative path. By introducing and deepening democracy, these countries ensure a positive impact on life expectancy, even when state institutions are weaker. Yet, the effects of democracy are contingent on further additional factors, as illustrated by the comparison between the cases of Argentina and Chile: the choice of rearranging health services at a regional, rather than provincial, basis and the focus on preventive primary health, rather than on traditional curative hospitals, explain the success of health policies in the latter country.

We have outlined some of the mechanisms that potentially aid democratic systems in the provision of health care: a better exposure of popular needs, electoral accountability, the choice of more competent and honest leaders and a firmer rule of law ensure, in general terms, a more generous allocation of resources for health services than in authoritarian settings, driven by a broader social interest rather than by restricted elites' gains. The qualitative discussion of Venezuela illustrates the point: with important limitations, as dependence on oil and the restriction of political competition promoted by the two main parties, the democratic system developed after 1958 established more representative and responsive politi-

cal institutions, and was able to ensure significant progress in health care and life expectancy. We should not underestimate, finally, the direct effects illustrated by public health experts: often overlooked by political scientists and sociologists, these effects are empirically solid and should be treated in any analysis of political determinants of public health. Thus, democracy affirms citizens' rights and dignity which, in turn, breed positive feelings of self-worth, optimism and hopefulness that are related to better health conditions and longer lives. On the contrary, political oppression causes depression and negative psychosocial experiences, through the suppression of people's rights, hopes and aspirations, which initiate a series of physical illnesses that are likely to compromise health and shorten lives.

A few warnings, in conclusion, are necessary. First, reverse causality issues should be taken into consideration: the literature on the possible effects of health conditions on political regimes, although inconclusive, challenges in part our conclusions. More theoretical and empirical research needs to be carried out to this purpose. Second, our qualitative analysis shows that good health outcomes develop through very complex combinations of multiple factors. Thus, more in-depth investigation, and additional explicative variables, are necessary to refine the mechanisms we sketched out in this paper: each country combines in unique ways the elements that allow democracy and state capacity to influence public health, in particular the history and features of each national health scheme; the characteristics and dynamics of their political systems; the nature and variations of their internal electoral competition; the relations with key social actors, as trade unions, and so on. Especially important will also be to ascertain why democratic and relatively strong states failed to generate good health outcomes, or why these outcomes have been substantially worse than in comparable countries. Further inquiries, in conclusion, are needed to cover additional world regions and to establish if the relationships we have investigated here configure a general rule, or whether regional variants are at play.

References

Alesina A., Devleeschauwer A., Easterly W., Kurlat S. and Wacziarg R. 2003, "Fractionalization", *Journal of Economic Growth*, 8 (2): 155-194.

Angell A. and Graham C. 1995, "Can Social Sector Reform Make Adjustment Sustainable and Equitable? Lessons from Chile and Venezuela", *Journal of Latin American Studies*, 27 (1): 189-219.

Baum M.A. and Lake D.A. 2003, "The Political Economy of Growth: Democracy and Human Capital", *American Journal of Political Science*, 47 (2): 333-347.

Bellin E. 2004, "The Robustness of Authoritarianism in the Middle East: Exceptionalism in Comparative Perspective", *Comparative politics*, 36 (2): 139-157.

Bertelsmann Stiftung 2010, *Chile Country Report*. Avitable at https://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2010/pdf/BTI_2010_Chile.pdf.

Besley T. and Kudamatsu M. 2006, "Health and Democracy", *The American Economic Review*, 96 (2): 313-318.

Biggs B., King L., Basu S. and Stuckler D. 2010, "Is Wealthier always Healthier? The Impact of National Income Level, Inequality, and Poverty on Public Health in Latin America", *Social Science & Medicine*, 71 (2): 266-273.

Boix C. and Stokes S.C. 2003, "Endogenous Democratization", *World politics*, 517-549.

Brieba D. 2018, "State Capacity and Health Outcomes: Comparing Argentina's and Chile's Reduction of Infant and Maternal Mortality, 1960-2013", *World Development*, 101: 37-53.

Bueno de Mesquita B., Smith A., Siverson R.M. and Morrow J.D. 2003, *The Logic of Political Survival*, Cambridge: MIT Press.

Carbone G. 2013, "Democratization as a State-building Mechanism: A Preliminary Discussion of an Understudied Relationship", *Political Studies Review*, 13 (1): 11-21.

Centeno M.Á. 2009, "El Estado en América Latina", *Revista CIDOB d'afers internacionals*, 85-86: 11-31.

Cingolani L., Thomsson K. and De Crombrugghe D. 2015, "Minding Weber more than ever? The Impacts of State Capacity and Bureaucratic Autonomy on Development Goals", *World Development*, 72: 191-207.

Collier R.B. and Collier D. 2002, *Shaping the Political Arena: Critical Junctures, the Labor Movement, and Regime Dynamics in Latin America*, Collier, Ruth Berins, and David Collier.

Dawson A. 2010, "State Capacity and the Political Economy of Child Mortality in Developing Countries Revisited: From Fiscal Sociology towards the Rule of Law", *International Journal of Comparative Sociology*, 51 (6): 403-422.

Drèze J. and Sen A. 1989, *Hunger and Public Action*, Clarendon Press.

Ewig C. 2016, "Reform and Electoral Competition: Convergence toward Equity in Latin American Health Sectors", *Comparative Political Studies*, 49 (2): 184-218.

Fairfield T. and Garay C. 2017, "Redistribution under the Right in Latin America: Electoral Competition and Organized Actors in Policymaking", *Comparative Political Studies*, 50 (4): 1871-1906.

Farag M., Nandakumar A.K., Wallack S., Hodgkin D., Gaumer G. and Erbil C. 2012, "The Income Elasticity of Health Care Spending in Developing and Developed Countries", *International Journal of Health Care Finance and Economics*, 12 (2): 145-162.

Franco A., Álvarez-Dardet C. and Ruiz M.T. 2004, "Effects of Democracy on Health: Ecological Study", *British Journal of Medicine*, 329 (7480): 1421-123.

García J. and Aburto J.M. 2019, "The Impact of Violence on Venezuelan Life Expectancy and Lifespan Inequality", *International journal of epidemiology*, 48 (5): 1953-1601.

González-Pérez G., Vega-López M.G., Romos de Souza E. and Pinto L.W. 2017, "Violence Deaths and Its Impact on Life Expectancy: A Comparison between Mexico and Brazil", *Ciência & Saúde Coletiva*, 22 (9): 2797-2809.

Grassi D. 2014, "Democracy, Social Welfare and Political Violence: The Case of Latin America", *Journal of International Relations and Development*, 17 (2): 242-273.

Haggard S. and Kaufman R.R. 2008, *Development, Democracy and Welfare States*, Princeton: Princeton University Press.

Hanson J.K. 2015, "Democracy and State Capacity: Complements or Substitutes?", *Studies in Comparative International Development*, 50 (3): 304-330.

Hanson J.K. and Sigman R. 2013, *Leviathan's Latent Dimensions: Measuring State Capacity for Comparative Political Research, Manuscript*, Maxwell School of Citizenship and Public Affairs, Syracuse University.

Harms P. and Zinka S. 2003, "Limits to Redistribution in a Democracy: A Survey", *European Journal of Political Economy*, 19: 651-668.

Hassan F.A., Minato N., Ishida S. and Nor N.M. 2017, "Social Environment Determinants of Life Expectancy in Developing Countries: A Panel Data Analysis", *Global Journal of Health Science*, 9 (5): 105-117.

Herbst J. and Mills G. 2006, "Africa's Big Dysfunctional States: An Introductory Overview", in C. Clapham, J. Herbst, and G. Mills (eds.), *Big African States*, Johannesburg: Wits University Press: 1-16.

Hogenboom B. 2012, "Depoliticized and Repoliticized Minerals in Latin America", *Journal of Developing Societies*, 28 (2): 133-158.

Holmberg S. and Rothstein B. 2011, "Dying of Corruption", *Health Economics, Policy and Law*, 6 (4): 529-547.

Huber E., Stephens J.D., Mustillo T. and Pribble J. 2016, *Latin America and the Caribbean Political Dataset, 1945-2001*, University of North Carolina. Available at http://www.unc. edu/jdsteph/common/data-common. html.

Huber E. and Stephens J.D. 2010, "Successful Social Policy Regimes? Political Economy, Politics, and Social Policy in Argentina, Chile, Uruguay, and Costa Rica. Democratic Governance in Latin America, 155-209", in S. Mainwaring and T.R. Scully (eds.), *Democratic Governance in Latin America*, Stanford CA: Stanford University Press: 155-209.

Huber E., Mustillo T. and Stephen J. 2008, "Politics and Social Spending in Latin America", *The Journal of Politics*, 70: 420-436.

Huntington S.P. 1968. *Political Order in Changing Societies*, New Haven: Yale University Press.

Karl T.L. 2007, "Oil-led Development: Social, Political, and Economic Consequences", *Encyclopedia of Energy*, 4 (8): 661-672.

Kaufmann D., Kraay A. and Zoido-Lobatón P. 1999, "Governance Matters", *World Bank Policy Research Working Paper* No. 2196.

Kaufmann D., Kraay A. and Mastruzzi M. 2009, "Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008", *World Bank Policy Research Working Paper* No. 4978.

Lake D.A. and Baum M.A. 2001, "The Invisible Hand of Democracy: Political Control and the Provision of Public Services", *Comparative Political Studies*, 34 (6): 587-621.

Levine D. 1998, "Beyond the Exhaustion of the Model: Survival and Transformation of Democracy in Venezuela", in D. Canache and M. Kulisheck (eds.), *Reinventing Legitimacy: Democracy and Political Change in Venezuela*, Wesport, Connecticut: Greenwood Press: 187-214.

Levitsky S. and Way L.A. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*, Cambridge University Press.

Lena H.F. and London B. 1993, "The Political and Economic Determinants of Health Outcomes: A Cross-National Analysis", *International Journal of Health Services*, 23 (3): 585-602.

Lipset S.M. 1959, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy", *American Political Science Review*, 53 (1): 69-105.

Majeed M.T. and Gillani S. 2017, "State Capacity and Health Outcomes: An Empirical Analysis", *Pakistan Journal of Commerce & Social Sciences*, 11 (2): 671-697.

Mainwaring S., Brinks D. and Pérez-Liñán A. 2007, "Classifying Political Regimes in Latin America, 1945-2004", in G. Munck (ed.), *Regimes and Democracy in Latin America: Theories and Methods*, Oxford University Press, New York: 123-160.

Mann M. 2008, "Infrastructural Power Revisited", *Studies in Comparative International Development*, 43 (3-4): 355-365.

Márquez G. and Acedo C. 1994, *The Social Insurance Crisis in Venezuela. Social Security Systems in Latin America*, Washington, DC: Inter-American Development Bank.

Marshall M.G., Gurr T.R. and Jaggers K. 2019a, *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2018, Dataset Users' Manual*, Center for Systemic Peace. Available at http://www.systemicpeace.org/inscr/p4manualv2018.pdf (accessed September 19, 2019).

Marshall M.G., Gurr T.R. and Jaggers K. 2019b, *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2018, Polity IV Annual Time-Series, 1800-2018*, Center for Systemic Peace. Available at http://www.systemicpeace.org/inscr/p4manualv2018.pdf (accessed September 19, 2019).

Martel García F. 2014, "Democracy is Good for the Poor. A Procedural Replication of Ross (2006)", *Research and Politics*, 1 (3): 1-10.

Mccoy J.L. and Myers D.J. (eds.) 2006, *The Unraveling of Representative Democracy in Venezuela*, JHU Press.

McGuire J.W. 2010, *Wealth, Health, and Democracy in East Asia and Latin America*, Cambridge: CUP.

— 2013, "Political Regime and Social Performance", *Contemporary Politics*, 19 (1): 55-75.

Missoni E. and Solimano G. 2010, "Towards Universal Health Coverage: The Chilean Experience", *World Health Report, Background Paper* No. 4: Switzerland, Geneva: World Health Organization.

Myers D.J. 2006, "The Normalization of Punto Fijo Democracy", in J.L. McCoy, and D.J. Myers (eds.), *The Unraveling of Representative Democracy in Venezuela*, Baltimore, M.D: Johns Hopkins University Press: 11-32.

Naím M. 2013, *Paper Tigers and Minotaurs: The Politics of Venezuela's Economic Reforms*, Brookings Institution Press.

Navarro V., Borrelle C., Benach J., Muntaner C., Quiroga A. and Rodrigues-Sanz M. 2004, "The Importance of the Political and the Social in Explaining Mortality Differentials among the Countries of the OECD, 1950-1998", in V. Navarro (ed.), *The Political and Social Context of Health*, Amityville NY: Baywood: 11-86.

Navia P. and Zweifel T.D. 2003, "Democracy, Dictatorship, and Infant Mortality Revisited", *Journal of Democracy*, 14 (3): 90-103.

Nelson J. 2007, "Elections, Democracy and Social Services", *Studies in Comparative Development*, 41 (4): 79-97.

O'Donnell G. 1973, *Modernization and Bureaucratic-Authoritarianism: Studies in South American Politics. Berkeley: Institute of International Studies*, University of California, Berkeley.

Przeworski A., Alvarez R.M., Alvarez M.E., Cheibub J.A. and Limongi F. 2000, *Democracy and Development: Political Institutions and Well-being in the World, 1950-1990*, vol. 3, Cambridge University Press.

Rauch J.E. and Evans P.B. 2000, "Bureaucratic Structure and Bureaucratic Performance in Less Developed Countries", *Journal of Public Economics*, 75 (1): 49-71.

Ross M. 2006, "Is Democracy Good for the Poor?", *American Journal of Political Science*, 50 (4): 860-874.

Safaei J. 2006, "Is Democracy Good for Health?", *International Journal of Health Services*, 36 (4): 767-786.

Seawright J. and Gerring J. 2008, "Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative", *Political Research Quarterly*, 61 (2): 294-308.

Segura-Ubiergo A. 2007, *The Political Economy of the Welfare State in Latin America: Globalization, Democracy, and Development*, Cambridge University Press.

Shandra J.M., Nobles J., London B. and Williamson J.B. 2004, "Dependency, Democracy, and Infant Mortality: A Quantitative, Cross-National Analysis of Less Developed Countries", *Social Science & Medicine*, 59 (2): 321-333.

Sikkink K.1991, *Ideas and Institutions: Developmentalism in Brazil and Argentina*, Ithaca: Cornell University Press.

Siverson R.M. and Johnson R.A. 2014, "Politics and Parasites: The Contribution of Corruption to Human Misery", *International Studies Quarterly*, 58 (1): 199-206.

Slater D. 2010, *Ordering Power: Contentious Politics and Authoritarian Leviathans in Southeast Asia*, Cambridge University Press.

U.N. 2019, *World Population Prospects*, Washington DC: United Nations.

U.S. Energy information Agency. Avitable at https://www.eia.gov/beta/international/country.php?iso=VEN, accessed 10/7/.

Way L.A. 2016, "Pluralism by Default: Weak Autocrats and the Rise Of Competitive Politics", *International Affairs*, 95 (5): 1279-1280.

— 2005, "Authoritarian State Building and the Sources of Regime Competitiveness in the Fourth Wave: The Cases of Belarus, Moldova, Russia, and Ukraine", *World Politics*, 57 (2): 231-261.

WHO 2007, *World Health Statistics*, Geneva: WHO.

World Inequality Database. Available at https://wid.world/data/ (accessed October 1, 2019).

World Bank 2018, *Worldwide Governance Indicators (WGI)*, The World Bank, Washington DC, USA.

— 2019, *World Development Indicators (WDI)*, The World Bank, Washington DC, USA.

Zweifel T.D. and Navia P. 2000, "Democracy, Dictatorship, and Infant Mortality", *Journal of Democracy*, 11 (2): 99-114.