The Health Cost of Authoritarian Backsliding

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Abstract

Are democratic crises also human crises? While the determinants of the erosion of democracy have been extensively scrutinized in the literature, their public policy consequences remain relatively unexplored. In a novel attempt to navigate this uncharted terrain, we analyze the effect of autocratization on health outcomes. We conceptualize autocratization as the relative decline of 'vertical' and 'horizontal' accountability. 'Vertical accountability' is threatened in the absence of regular free and fair elections as well as restricted political participation. A decline in vertical accountability lowers citizens' capacity to ensure governmental responsiveness to public demands. 'Horizontal accountability' is reduced when the executive branch undermines the other branches of government. Limited electoral competition further strengthens the executive branch relative to other branches. We argue that such a movement away from democracy—autocratization—has a detrimental effect on public health outcomes. We present empirical evidence supporting this argument in within- and cross-country contexts using regression discontinuity designs as well as panel data analysis.

Keywords: democratic backsliding; public health; executive competition; political participation; authoritarianism

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1. Introduction

Venezuela is in a state of political crisis today and has been for the past few years. President Maduro stripped Venezuela's opposition-dominated parliament of its powers in 2015 and replaced it with an alternative "Constituent Assembly" stacked with his supporters (Nebehay 2018). Maduro's re-election in May 2018 after accusations of vote rigging was widely criticized as illegitimate (Latouche 2018). Consider another country, Turkey, where democracy is at risk. President Erdogan has been consolidating presidential powers at the expense of the legislative and judicial branches, reducing oversight on the executive branch (Hacaoglu 2018). Similarly, in Hungary, since 2010, Prime Minister Orbán has increasingly cracked down on the media to entrench his hold on power by silencing his critics (Gorondi 2018). The three countries made unequivocally authoritarian turns.

They are not independent incidents. The 2020 Freedom in the World reports that global democracy has been in decline for the 14th consecutive year with 64 countries in 2019 exhibiting decline in civil and political rights, continuing the trend of democratic crisis (Freedom House 2020). In fact, Lührmann and Lindberg (2018) suggest that many of the democracies around the world are undergoing a democratic 'recession' while autocrats tighten their grips on power. They find that the "third wave of autocratization" is currently unfolding.

Political scientists have responded to this trend promptly. A body of literature quickly mushroomed in recent years to explain this trend (Dresden and Howard 2016; Kaufman and Haggard 2018; Levitsky and Ziblatt 2018; Waldner and Lust 2018). The ontological importance of this line of research rests on the normative significance of democracy: democracy is desirable and, thus, a move away from it is undesirable. As agreeable a premise as this might be, we believe that this literature can be complemented by identifying a practical problem that autocratization creates, i.e. an under-provision of public goods, particularly

public health. We move beyond the argument that autocratization is concerning because it undermines principles of democratic politics and demonstrates that it physically hurts the populace as well.

We highlight two features of autocratization to delineate the ways in which it affects public health outcomes: restrictions on horizontal and vertical accountability. 'Horizontal accountability' is reduced when the executive branch undermines the other branches of government. Limited electoral competition further strengthens the executive branch relative to other branches. 'Vertical accountability' is threatened in the absence of regular, free and fair elections as well as by restricted political participation, more generally. Reduction in vertical accountability undermines dissemination of information about societal needs to the government and, consequently, cripples citizens' capacity to ensure governmental responsiveness. We argue that the erosion of accountability in these two dimensions disincentivizes political leaders to provide public goods such as public health. We test this argument in the context of 1) cross-national comparisons utilizing panel data on national health spending and health outcomes and 2) within-country, regression discontinuity analyses of three cases (India, Venezuela, and South Korea). In so doing, we present multi-faceted evidence of the negative effect of autocratization on public health.

This article makes three distinct contributions to existing research. First, we advance the literature on political regimes and public goods provision by accounting for the consequences of *changes* within and between political regimes, namely, autocratization. We highlight the public policy consequences of a dynamic political process (autocratization) as opposed to a temporal snapshot of political institutions (regime types). The effect of decays in democratic institutions or consolidation of authoritarian powers has been under-examined in a systematic manner.

Second, we take a two-level empirical approach to ameliorate the methodological challenges in studying the consequences of autocratization, a problem well-documented in the literature (Lueders and Lust 2018). We present within-country evidence to alleviate the concerns about the confounders in the effect of political shocks and public policy outcomes whereas our panel data analysis addresses the issue of external validity that might arise from within-country studies. Third, the paper documents the tangible public costs of autocratization, namely, negative public health outcomes. It therefore departs from the literature on autocratization and democratic backsliding that is concerned predominantly with the causes of autocratic turns of a polity or its instantaneous effect on political processes.

The next section highlights the theoretical significance of analyzing the public health consequences of autocratization and presents our theoretical framework linking autocratization to health outcomes. The theory section is followed by the data and methods section, after which our primary findings in cross-country and within-country contexts are presented. The paper concludes with a brief discussion of our findings and their implications.

2. Autocratization and Public Health Outcomes

There is a large body of literature that links political regime-type to health outcomes. The bulk of this research argues that democracies perform better than non-democracies due to greater electoral competition, public participation, accountability, and less rent-seeking among democracies (Przeworski et al. 2000; Lake and Baum 2001; McGuire 2010; Gerring, Thacker, and Alfaro 2012; Wang, Meckova, and Andersson 2019), although Ross (2006) questions the link between democracy and health outcomes. Recent research has taken the debate beyond the regime type approach and brings our attention to the role of political institutions as well (Gerring, Thacker, and Moreno 2005; Wigley and Akkoyunlu-Wigley 2011*b*; Miller 2015).

In this paper, we identify two areas—one theoretical, the other empirical—where these two strands of literature can be further advanced. First, whereas the differential effect of regime-type on public health outcomes is well documented theoretically and empirically, the literature is rather lean on an explicit theorization of a dynamic process such as autocratization. We are particularly agnostic about *which aspect* of autocratization affects public health outcomes. Second, the empirical strategies that the literature on political regimes, institutions, and health outcomes employs do not satisfactorily capture dynamic political processes like autocratization as most of these studies focus on yearly observations of regime or institutional attributes. An autocratization event can either be a short-lived hiatus or persistent erosion of relatively democratic principles stretched over a long duration, neither of which can be fully accounted for by traditional panel data analysis.

As such, this research aims at 1) explicitly theorizing the effect of autocratization on public health and 2) offering multi-faceted evidence to test the theory that can address the shortcomings of the empirical strategies that the extant literature employs.

2.1. Conceptualizing Autocratization

We begin our discussion on autocratization by highlighting the growing number of studies on democratic backsliding. There has been an explosion of research on democratic political processes and norms at peril in recent years with considerable attention devoted to its theoretical characterization and empirical identification. The literature dubs this phenomenon 'democratic backsliding.' For instance, Dresden and Howard (2016) refer to backsliding as concentration of executive powers at the expense of other governmental and societal actors. This may entail manipulating the electoral process and can also include restrictions placed on the opposition, civil society, or the press. Similarly, Kaufman and Haggard (2018) point to, as symptoms of backsliding, an executive's attempts to influence legislative elections or

strengthen themselves at the expense of other branches and civil society actors. Levitsky and Ziblatt (2018) highlight that backsliding entails executive takeover, attacks on democratic norms, and using existing institutional rules to entrench executive power. In a similar vein, Waldner and Lust's (2018) definition of backsliding focuses on three democratic attributes that are on decline: competition, participation, and accountability.

Most of these studies, implicitly or explicitly, employ Dahl's (1971) monumental work as an analytical foundation to delineate the concept of backsliding. They commonly posit that the ideal status of democracy, polyarchy, is identified by two attributes, contestation and inclusion, which capture horizontal and vertical accountability of a democratic government, respectively. Backsliding unfolds when a polity drifts away from polyarchy through weakened contestation and/or limited inclusion.

Similar to the extant literature, this paper builds on the theoretical tenets of the traditional Dahlian approach; but we depart from the literature that seems to primarily focus on the erosion of an otherwise democratic regime (hence the name 'backsliding'), which excludes the cases that do not come close to polyarchy in the first place as well as those of abrupt democratic collapse (see Figure A1). As recent studies on comparative authoritarianism implies, vertical (e.g., Miller 2015) and horizontal (e.g., Lü and Landry 2014) accountability also exists in non-democracies, though at lower levels. As seen in the cases of Venezuela, Russia, or Kazakhstan in recent years, further encroachment in the two dimensions of accountability even in the least democratic parts of the world is certainly possible.

We instead join the growing body of studies on autocratization (most notably, Lührmann and Lindberg 2018) that generalizes the concept of democratic backsliding beyond democracies and captures *any* movement away from polyarchy. Autocratization bears a parallel to democratic backsliding as they both include reduction in vertical and/or horizontal

accountability but autocratization can also happen in non-democratic regimes. As Arugay and Slater (2019, 124) summarize, vertical accountability is a matter of "inclusion of the populace" into politics whereas horizontal accountability refers to "constraints against excessive concentrations of executive power." When an episode of autocratization unfolds—be it a gradual backsliding of a democracy (e.g., Hungary in the 2010s) or a sudden collapse of a competitive authoritarian system by a coup (e.g., Myanmar in 2021), we should be able to observe significant symptoms of political exclusion of the populace and/or excessive concentrations of executive power. This way, we utilize a more generalized—or "overarching" (Lührmann and Lindberg 2018, 8)—concept than democratic backsliding.

2.2. The Effect of Autocratization on Public Health Outcomes

Our central argument is that autocratization undercuts public goods provision of governments, thereby producing detrimental effects on public health conditions. Health outcomes are a particularly important empirical domain to the current paper because public health is a public good delivered through deliberate government actions motivated by political incentives. Previous research contends that democracy offers such incentives. A move to democracy—democratization—is therefore shown to drive governments to deliver public health goods and improve their performances in such areas as infant mortality (Kudamatsu 2012; Pieters et al. 2016; Ramos, Flores, and Ross. 2020) and life expectancy (Bollyky et al. 2019). These findings imply that when governments move away from democracy—autocratization, they are inclined to offer private, exclusionary goods and public health conditions are likely to be undermined. However, a clear theorization and empirical testing of this straightforward implication is rare in the literature as these studies focus on the effect of democratization rather than autocratization. One important exception is Wigley et al.

(2020) who find the negative effects of autocratization on health coverage, life expectancy, and health spending.

In this section, we advance our argument by pointing out that each of the two underpinnings of autocratization—reduction in horizontal and vertical accountability—can lead to under-provision of public goods. The shortage of public goods, in turn, has direct detrimental effects on public health.

2.2.1. Horizontal Accountability

Reduction in horizontal accountability is one of the characteristics of autocratization and can be compromised substantively as well as procedurally. The executive branch can take measures to *substantively* eclipse other branches of government, be it the judiciary or legislature. Such a shift in power renders horizontal accountability substantially less consequential. One way such a shift happens frequently is a 'rule by decree' by presidents, effectively nullifying the law-making functions of parliaments (Santiso 2003). Likewise, incumbent governments may take de facto control of the legislative branch over time and gradually stack loyalists in the judiciary. For instance, in Hungary, between 2010 and 2014 all the judges to the Constitutional Court were appointed by the Fidesz government and subsequent rulings in recent years have been in favor of the government (Freedom House 2019). More recently, Prime Minister Orban further consolidated his power by suspending the parliament to rule by decree (Baume and Bayer 2020) and the coronavirus was used as a rationale to justify the non-democratic move.

As Deacon (2009) formally demonstrates, this shift in de facto distribution of political power has direct implications for nonexclusive public health goods and services. When the legislative branch is sidelined and weakened, two consequences ensue: 1) the primary role of the legislature, checks on the executive branch which would otherwise cater to only minimal

winning coalitions, is eased; 2) the representation and influence of minorities in policy making through the legislature is limited. Health policies the government pursues, accordingly, may not be as comprehensive to meet the diverse health needs of the populace.[1]

The executive branch can also reduce horizontal accountability *procedurally* via the electoral mechanism. Elections themselves can be rigged in ways that heavily favor the incumbent candidates.[2] Moreover, the promise of free and fair elections for the foreseeable future, or "contestability" (Lake and Baum 2001), motivates all competitors to attend to the needs of the public. Greater electoral competition drives political leaders to appeal to a wider audience (Barrilleaux, Holbrook, and Langer 2002), thereby making public goods provision more likely.

On the other hand, weakening electoral competition implies the shrinking size of constituents that determines whether the incumbent government stays in power (Bueno de Mesquita et al. 2003). With a smaller constituency, the political leaders' investment in public good provision does not have as much political return as before. They are instead more interested in providing particularistic goods for their immediate allies (Keefer and Khemani 2005). This is likely to be realized by diversion of resources away from public goods such as health spending, which eventually worsens public health outcomes.

Weakening electoral competition can occur in democratic as well as in non-democratic regimes. Uncompetitive elections in non-democracies can become even less competitive. Consider Russia, for instance, where presidential elections have been unfree, unfair, and generally uncompetitive for quite a while. The further weakening of electoral competition in Russia is well underway and signs of under-provision of public health goods are emerging. The burdens of the post-crisis austerity programs (2014-7) in Russia, for example, were unequally distributed across sectors and regions such that Putin's personalist rule could be protected from public blame. Sub-par public health outcomes ensued eventually

(Matveev 2020). In the end, lower levels of horizontal accountability of the executive branch to other governmental branches adversely affects provision of public goods and hurts health outcomes.

2.2.2. Vertical Accountability

Autocratization also entails reduction in vertical accountability and this in turn leads to under-provision of public health goods in two distinctive ways. First, it restricts the information channels for societal needs between citizens and governments. Second, it cripples citizens' capacity to ensure governmental responsiveness between elections.

A participatory society is the cornerstone of a vibrant democracy. One of the most important aspects of a participatory society is transmission of information between citizens and the government that enables the government to effectively identify what the public goods to be provided are and tailor public policies accordingly. Elections provide a relatively low-cost opportunity for citizens to participate in a polity and reward or penalize officials at the ballot box. They enable citizens to choose the candidate who is best suited to satisfy the needs of the masses by presenting alternative policy platforms to citizens (Wang, Mechkova and Andersson 2019). Lack of free and fair elections curtails the ability of citizens to communicate their policy preferences to government officials, reduces alternative electoral options for citizens and takes away the incentive of the incumbent to propose comprehensive public policies—including public health policies—that benefit large swaths of society.

Lack of societal participation reduces the bottom-up flow of information from citizens to government officials. This negative effect of limited information is particularly pronounced in the areas of public health where optimal policies are usually constructed through public engagement (Thurston et al. 2005) and governments may not otherwise have established knowledge about what is necessary (Balla 2012). For instance, the literature demonstrates that mechanisms such as participatory budgeting is associated with higher

levels of health spending and lower levels of infant mortality (e.g., Touchton and Wampler 2014). Participatory budgeting enables citizens, civil society actors, and government officials to deliberate collectively on what kind of policies are important to meet the health needs of the citizens. Health policies devised while public voices are silenced, are likely to be ineffective.

It is worth noting here that societal participation also takes place in non-democracies. Consider Rwanda, for instance. Rwanda is a non-democracy but the federal government works closely with local government bodies and local organizations to inform citizens about the country's community health insurance program and engages societal groups in the oversight and management of health funds (Chemouni 2018). Actions taken by governments in both democracies *and* non-democracies that adversely affect opportunities for societal participation are likely to hurt health outcomes. Not only in democracies, but also in non-democracies, therefore, restrictions on participation can lead to undesirable public health outcomes by disrupting the flow of information.

Dissemination of information in a participatory society also enhances the capacity of citizens to hold the government accountable both during elections as well as on a regular basis between elections. The presence of a proactive citizenry, civil society actors, and free press overseeing governmental performance in between elections signals the presence of a vigilant populace (Hollyer, Rosendorff and Vreeland 2018). This motivates political leaders to keep the general interests of citizens in mind as they create and implement public policies. Health outcomes, in particular, are conspicuously salient issues and public access to the information revealing the policy performance of governments keeps incumbent politicians committed to effective provision of public health goods. The absence of a participatory polity reduces the incentive of leaders to (continue to) provide public health goods or services as the

dearth of information emboldens them to forgo public interests and instead pursue their particularistic interests.

As in the case of the corrosion of horizontal accountability, reduced vertical accountability also leads to a high likelihood of diversion of resources from public to private goods. With weakened oversight from the society, autocratizing political leaders can more easily carve out public health expenses for projects serving the interests of their allies such as military expenditures. Likewise, with the voice of resistance silenced, authorities' limiting public access to healthcare (e.g., closing local public clinics) to appeal to corporate interest groups becomes politically feasible.

Overall, autocratization, either through reduced horizontal or vertical accountability, is likely to result in under-provision of public goods such as public health, thereby hurting the populace. The simple empirical expectation we glean from this discussion can be written as follows:

Hypothesis: Autocratization results in poor health outcomes of the populace.

3. Empirical Strategies and Results

We examine the effect of autocratization on public health outcomes at two different levels: cross- and within-country. We expect that the panel-data approach provides external validity of our argument by documenting a statistically significant association between autocratization and health outcomes whereas the within-country analysis brings us closer to the causal effect of autocratization on health outcomes. Neither of these two approaches is a sufficient test of our argument on its own and, together, they complement each other. This way, we depart from the previous research on the politics of public health that employs either a single-country case study or time-series cross-national analysis.

3.1. Panel Data Approach

We first analyze panel data on countries' healthcare spending. Examining healthcare spending data offers an important test of our theoretical framework as it offers a comprehensive and cross-national look into how resources are shifted away from public health. Although types and characteristics of government health interventions may eventually make significant differences in public health outcomes (McGuire 2010), the ways in which such effects operate are highly context-specific. This poses a significant challenge to cross-national comparisons. For instance, malnutrition would be most susceptible to health policy changes in countries that rely heavily on imported food whereas environmental deregulation might have the most detrimental effects on public health conditions where rapid industrialization is taking place. Autocratization's effect on public health would be observed in very different areas across countries.

By highlighting an immediate representation of the government's intention for the public goods provision, namely, overall healthcare spending of a society, we alleviate this problem of the heterogeneous treatment effect of autocratization. It is reasonable to assume that shifts in any government policy involve (re)allocations of resources from one realm to another. Such resource reallocations should be reflected in a country's overall health spending through adjustments in government health expenditures as well as policy changes in the areas of insurance, welfare, regulations, and/or education. A government might, for example, divert revenues from public health to defense spending to cater to the military, deregulate health insurance market for businesses, or shut down public clinics for commercial ones (Mintz and Huang 1991). In these cases of resource reallocation away from public health aiming at serving particularistic interests, the public's accessibility to healthcare declines and the society's health spending, would shrink. If our expectation that autocratization leads to weaker government interests in public health programs holds

empirically, we are likely to observe reductions in overall health spending following autocratization episodes.

We draw on health spending data from the World Development Indicators (World Bank 2018) on a sample of up to 183 countries for our dependent variable. Specifically, we use "Current Health Expenditure" which records all the health goods and services consumed in each country-year as a percentage of Gross Domestic Product (GDP). We expect that the various ways in which resources are redistributed away from public health goods are eventually reflected in the general health spending pattern. We take natural logarithm values of this variable as the distribution of the observations for healthcare spending, albeit percentages of GDP, is strongly skewed (see Figure A3).

We utilize the 'Electoral Democracy Index' (EDI) of the V-Dem project (Coppedge et al. 2018) to identify autocratization episodes. Specifically, we follow Lührmann and Lindberg's (2018) measure of 'autocratization' to construct our primary independent variable. We understand autocratization as a process that takes place over a certain period of time that can be either shorter or longer than a year. When a country experiences a decline in EDI that is 0.1 or larger within one year or over a period of *continuous* years, it is identified as an autocratization episode. As Lührmann and Lindberg (2018, 10) explain, the 0.1 threshold, which is 10% of EDI, is "demanding" enough to ward off possible measurement errors while allowing the inclusion of a wide variety of autocratization cases.

EDI captures our conceptualization of autocratization as it draws on both of the two dimensions of autocratization—horizontal and vertical accountability (Lindberg et al. 2014, 161), albeit not completely analogously. As summarized in Table 1, each of the five components of EDI concerns vertical and horizontal accountability either directly or indirectly. Horizontal accountability, for example, would indirectly reflect freedom of association or expression: when anti-government protest is prohibited, the government might

have an easier time packing the court or intimidating lawmakers although protests do not directly translate into an erosion of judicial or legislative oversight of the executive body. On the contrary, the government can steal an election by intimidating opposition candidates and by resorting to violence ('clean election' component of EDI). A president might also promulgate martial law to avoid being voted out of power ('elected officials' component of EDI). In these cases, horizontal accountability is immediately compromised as the government in effect tries to gain control of the legislature through illegitimate means. At the same time, by violating people's voting rights, vertical accountability is also directly limited.

It is important to note here that while it is possible to *conceptualize* autocratization as a process unfolding in terms of either predominantly horizontal or vertical accountability, these two dimensions of autocratization are usually inseparable in the *empirical* domain. Any erosion of vertical accountability may render a reduction in horizontal accountability likely. This empirical inseparability makes EDI a suitable measure. All five components of EDI capture the simultaneous nature of autocratization unfolding in the dimensions of vertical and horizontal accountability as Table 1 implies. We nonetheless show below that an alternative measure of autocratization that attempts to separate these two dimensions still leads to a result similar to the benchmark.

To estimate the effect of autocratization, we employ an ordinary least squares (OLS) model with unit- and time- fixed effects combined with a trend variable and panel-corrected standard errors and panel-specific first-order autoregressive terms (PSAR1). By resorting to this empirical approach, we assume that autocratization, a binary variable, is a 'treatment' that affects the entire society. As recent research on panel data repeatedly reveals (Kropko and Kubinec 2020; Imai and Kim 2019), applying fixed effects is an effective methodological approach to revealing the effect of the treatment variable over time by controlling for unobserved panel-specific confounders.

For macroeconomic covariates, we make use of the natural log of gross domestic production (GDP) and GDP per capita as well as GDP growth rates (%) to isolate the effect of autocratization from that of the supposedly exogenous economic conditions. We also control for three sociopolitical variables that might affect public health outcomes, namely, gender quota in the legislature ('v2lgqugen' in V-Dem), leftist government (multiplication of 'v2exl_legitideolcr_1' and 'v2exl_legitideol'), and a natural logarithm of democratic legacy with a 1% annual depreciation rate following Edgell et al. (2020).

Column 2 of Table 2 reports the result of the fixed effect model. The significantly negative coefficient of the autocratization variable indicates that when an autocratization episode takes place, the overall volume of a country's healthcare expenditure shrinks by about 2.6 percent. Given the generally stable nature of the health expenditure with the average annual change of about 0.56 percent, this is a substantial effect. Column 1 reports the result of the baseline model where all the covariates other than the fixed effects are excluded. The coefficient almost identical to that of Column 2 suggests that the result reported in Column 1 is not a statistical artifact driven by the inclusion of the control variables.

Given that our theoretical reasoning rests on autocratization occurring in terms of vertical and/*or* horizontal accountability, 'vertical-' and 'horizontal autocratization' should each have an effect similar to the benchmark. To test this, we first re-classify the episodes of autocratization into vertical and horizontal ones drawing on the measure of Lührmann et al. (2020). Second, we run the fixed effect regression models replacing the original autocratization variable with the vertical and horizontal autocratization variables, respectively. Here, any autocratization episode that did not coincide with a reduction in the vertical (horizontal) accountability index is re-coded as non-autocratization. Columns 3 and 4 of Table 2 lend further support to our hypotheses. The vertical and horizontal autocratization variables are very much similar to the original autocratization variable in detrimentally

affecting public health.[3] The autocratization variable is significantly negative whether it is re-identified by vertical or horizontal accountability.

We use healthcare spending as our dependent variable because it is causally prior to health outcomes in our argument. A further test of our argument is to see if we find a result similar to the benchmark when actual public health outcomes are used as the dependent variable. To this end, we use infant mortality rates as well as female life expectancy from WDI as public health outcome variables, which are the policy areas where the effects of changes in healthcare spending are most readily observable (Brunson 2010). In effect, women and children in low and middle-income countries are likely the most vulnerable groups as they "often bear a triple burden of ill-health related to pregnancy and childbirth" (The Partnership for Maternal, Newborn and Child Health 2011).

Columns 5 and 6 of Table 2 report the result of using these alternative dependent variables. Consistent with our hypothesis, the result indicates that autocratization generates negative public health consequences. The significantly positive and negative coefficients of the autocratization variable in Columns 5 and 6, respectively, indicate that when an autocratization episode unfolds, infant mortality spikes up and female life expectancy is reduced. The result of these two models also indicates that when the temporal coverage of the analysis is expanded, we still obtain a result similar to the benchmark.

We supplement these primary analyses with robustness checks. In particular, we check if the benchmark results remain robust to alternative measures for the independent and dependent variables. As discussed in detail in Appendix B, we experiment with using strictly government health expenditure as a dependent variable, Dresden and Howard's (2016) 'democratic backsliding' as an independent variable, and focusing only on civil society participation in politics and freedom of association in measuring autocratization. We also look at the variations of infant mortality rates focusing on babies of same mothers that were

born before and after an autocratization episode, drawing on the empirical strategy used by Kudamatsu (2012). The result is detailed in Appendix C. None of these altered the benchmark result significantly, adding confidence to our finding that autocratization negatively affects public health.

However, the result of our panel data analysis should be read with caution. Perhaps as in any observational panel data analysis, the confoundedness in our research design might not be completely addressed. In fact, as Figure A2 indicates, it is plausible that an unobserved time-invariant confounder such as history, culture, public infrastructure, or geography drives the effects of autocratization on public health outcomes in opposite directions simultaneously, making these variables appear to be negatively related. While employing unit-fixed effect with panel specific time trend is expected to address some of this confoundedness, Imai and Kim (2019, 473) warn that it would not be always enough. As such, we expect the result of our panel data analysis to demonstrate a *reasonably* clear before-and-after difference in healthcare spending but also highlight the need for a complementary analysis to address the potential confoundedness, which we provide below.

3.2. Regression Discontinuity Design

We use regression discontinuity designs in the context of selected countries to demonstrate that autocratization has a direct detrimental effect on health outcomes. While the panel data approach offers a reasonable approximation of the causal effects of autocratization on public health, one can consider a number of confounders not captured in the panel data such as culture and history. Likewise, autocratization might not be randomly happening and factors driving democratic decay—e.g., weak state capacity—might also bring about public health problems.

To address these methodological issues and complement the panel data analysis, we make use of individual-level survey data. We note that the public health literature firmly establishes a causal relationship between early childhood healthcare experience, particularly those affected by socioeconomic events, and life-long health outcomes (e.g., Kuh and Shlomo 2004; Brandt, Deindl and Hank 2012). Newborns are the population group most heavily and directly affected by changes in public health policies (Daoud et al. 2017) and the effect of such a negative intervention should manifest itself throughout their lifetime.

Such an effect on health outcomes, we believe, can be effectively estimated by regression discontinuity designs. RDD is a particularly useful analytical tool as it is a nonparametric method that focuses on a strictly *local* effect (Cattaneo, Idrobo and Titiunik 2020): it compares the birth cohorts of the autocratization years with those immediately preceding them. These two birth cohorts, then, share almost all structural properties that we need to randomize, particularly the sociocultural environment they grew up in. The only difference between them therefore—the 'treatment'—would be whether they were born during the autocratization period and thus the medical care they received were affected by the public health policies of an autocratizing government. We can confidently conclude, therefore, that the difference we find between these two birth groups in their health conditions, or the 'discontinuity,' is the effect of autocratization. To this end, we employ the 'bias-corrected' estimators proposed by Calonico et al. (2014), which offers a more robust inference.

Three country cases are selected given the following three considerations. As Lueders and Lust (2018) note, the identification of backsliding (autocratization) cases is highly sensitive to the democracy index it is based on. Thus, we first choose autocratization cases that oft-cited democracy indicators such as Freedom House Index and Polity can identify so as to avoid false positive cases. Second, in some countries, different autocratization episodes

take place with a close temporal proximity, rendering causal identification challenging. We circumvent this problem by simply avoiding these cases. Finally, relatively recent autocratization episodes are excluded because in these cases, the individuals born at the time of autocratization were not old enough to be the respondents of the survey we utilize.[4] These case selection criteria leave us three cases, namely, India, Venezuela, and South Korea. Figure 1 illustrates the trend of EDI of these three cases that identify the timing and duration of the autocratization episodes.

We use the World Value Survey data where a questionnaire directly asking the respondent's subjective health conditions is available for the respondents. The question has four possible answers ranging from "Poor" to "Very Good." We re-code this variable such that "Very good" and "Good" are coded as one and zero otherwise. Dichotimizing a subjective self-evaluation of health on an ordinal scale is common in the literature to mitigate idiosyncratic inter-personal differences (e.g., Garcia-Williams, Kaslow, and Moffitt 2014). The outcome variable, therefore, is a dichotomous variable identifying whether the individual reports that their own subjective health condition is good or not. We exclude the individuals from the sample who belong to the top two income strata in each society given that shifts in public health policy might not alter the health conditions of rich individuals although including them in the sample does not alter our result.

The running variable is birth-year. The cutoffs are 1974 (India), 1950 (Venezuela), and 1974 (South Korea). The three cases we focus on capture different degrees of autocratization. In India, we witnessed a brief (21-month) 'autocratization' episode in an otherwise stable democracy, in Venezuela the autocratization event was essentially a regime change from a democracy to a non-democracy through a coup, and South Korea presents a case of decreasing competitiveness within an authoritarian regime. If we obtain results comparable across all three episodes, we can be more confident in our decision to opt for a

generalized concept of autocratization that includes *any* movement away from democracy (Lührmann and Lindberg 2018). Before presenting the empirical results, we first briefly discuss the backgrounds of autocratization for each case.

3.2.1. India

India's experience with autocratization can be traced from 1975 to 1977 when the then Prime Minister, Indira Gandhi, declared a national emergency (Kozicki 1975). The inception of the crisis goes back to the 1975 ruling by the judiciary where she was found guilty of corrupt electoral practices to win her 1971 reelection. Pressure from the opposition started mounting with calls for her to step down. The government declared an emergency in June, 1975 on grounds of internal disturbances threatening the security of the country and led to the suspension of civil liberties such as freedom of speech, repression of press freedom, as well as imprisonment of opposition figures as well as journalists.

We see both elements of autocratization in India during this period: weakening of horizontal and vertical accountability from suspension of elections during the emergency, restrictions on political participation with suspension of civil liberties, and crackdown on the opposition and free press. In the name of addressing poverty, the Indira Gandhi government implemented a national family planning policy during the emergency, which primarily focused on sterilization. While family planning had been on the national agenda prior to the emergency, it was implemented coercively often using repressive tactics during this period where millions of people were sterilized (Williams 2014; Scott 2017). This was carried out during a time when both horizontal and vertical accountability was noticeably weakened, making it difficult for the opposition or citizens to voice their concern about the way the policy was being implemented. Given the "significant physical and psychological effect" (Nair 2010, 225) forced sterilization usually has, the Indian case illuminates the immediate and short-term adverse effect of autocratization on societal health.

3.2.2. Venezuela

Although much attention in recent years has been given to threats to democracy posed by Chavez-Maduro in Venezuela, the country is not new to autocratization. The country had a brief stint with democracy from 1945--1948, which was also the first democratic government led by Accion Democratica (AD) (Neuhouser 1992). AD was largely supported by labor groups in the country. The party pursued pro-labor policies that included redistribution of income, wage increases, better benefits, and emphasis on broader social welfare policies. However, these policies threatened the elites in the country such as landowners due to increasing costs of labor.

This led to a coup by the military in 1948. Not only was the coup a leadership change, but it entailed a significant retrenchment of a wide swath of public policies. AD and labor unions were banned, social welfare programs were discontinued, and other pro-labor policies were overturned. The exclusion of the opposition party directly undermined horizontal accountability and the prohibition of labor unions effectively restricted a viable channel for public participation or vertical accountability in politics. The military government under General Marcos Perez Jimenez imprisoned political opponents, squandered millions from oil revenue to corruption or projects with no public benefits such as investing in extravagant clubs and skyscrapers (Kantor 1959). The autocratization lasted for about a decade (the middle panel in Figure 1), leaving ample room for the policy changes to take substantial effects in the society.

3.2.3. South Korea

Autocratization in South Korea started in October 1972 when President Park Chunghee declared the 'Revitalizing Reforms (*Yushin*),' which entailed dissolution of the legislature and a nation-wide martial law. Compared to the other two episodes of autocratization, the

South Korean experience was less swift and more comprehensive and institutionalized as the goal was to consolidate the Park's rule into a termless "generalissimo" (Baker 2014, 66). It was the end of 1973 and early 1974, however, by which time much of the institutional arrangements and political processes undergirding the Yushin system—such as an assassination attempt of the opposition leader, a legislation banning almost all assembly, prosecuting civilians on the military tribunals, and a comprehensive restriction on media activities— really took shape (Lee 1990).

Both aspects of autocratization were palpably present in this case. The electoral competitiveness that had been maintained to a limited degree since the coup in 1961 was now entirely compromised. The general election was replaced by a facade voting by national delegates selected by the president himself. This also meant the effective end of party politics, which deprived opportunities of citizen participation in formal politics. Furthermore, a series of executive decrees ('Emergency Measures') were issued to prohibit any public speech and political activities in addition to the imposition of a dusk-to-dawn curfew. The violators were severely punished, often leading to forceful disappearances. Political participation was formally and effectively prohibited as a result. In short, with significant decline in vertical and horizontal accountability, the previous competitive authoritarianism was now converted into a full-fledged dictatorship.

During this period, the public health conditions, particularly those of the socially vulnerable, were put in peril. In the name of 'medical modernization,' the government encouraged large hospitals to replace small clinics, which pushed up prices of medical services drastically. The Yushin government slashed out social security revenues during this time, systematically increasing the poor's access to medical care. Although the Yushin government eventually adopted public health insurance in 1977, it had extremely limited coverage and, more importantly, was largely understood as a social response to the changing

industrial structure, rather than a deliberate government action to promote public health (e.g., Kim 2002). Hwang (2011, 435-6) points out that the government lacked the "will" to fiscally commit itself to a national health insurance system and delayed the necessary reforms to the 1980s.

3.2.4. RD Estimates

The RDD columns in Table 3 report the result of our RD estimates. In all three cases, we find a significant 'discontinuity' between the age groups born around autocratization and the groups born immediately before that. Consistent with our hypothesis, the coefficients are negative, indicating the autocratization episodes caused significant health damage on the birth cohorts of the autocratization years, who would otherwise have had health conditions hardly different from those who immediately preceded them. Figure 2 graphically represents these discontinuities. The overall upward trends in the cases of South Korea and Venezuela imply that the younger birth cohorts are generally healthier, a fact that further highlights the significance of the abrupt negative effect of autocratization (the opposite of the general trend) on public.

We note that the estimate for the Indian case is relatively weak ($p=0.085$) and attribute this to the relatively short period of autocratization (three years). As suggested by the sharp, but narrow, dive during the early 1970s in first panel of Figure 1, EDI quickly recovered after this short deviation. We suspect that this prompt recovery might have countered some of the detrimental health effect of the autocratization episode here (Wigley et al. 2020, 6).

We implement two robustness checks for the RDD estimates. First, given that the running variable, birth year, is technically discrete, rather than continuous, it is worth investigating if a local randomization analysis yields a result similar to the benchmark. As Cattaneo, Idrobo and Titiunik (2020) suggest variables such as birth years create 'mass

points' (multiple observations with same exact values of the running variable), which might not lend themselves directly to a simple RDD when the number of such points is not substantially large. Local randomization analysis is recommended as an alternative test to address this concern. The 'LR' columns in Table 3 report these estimates. While the size of the effects of autocratization changes slightly, their directions and the level of significance are not altered, suggesting the robustness of the benchmark estimates.

Second, a 'Placebo test' for each of these estimates is also implemented following Cattaneo, Idrobo and Titiunik (2020). The test is simply to check if applying an alternative birth cutoff year produces a similarly significant result as the benchmark. If our results hold robust to the test, there should not be a significant discontinuity found using an alternative cutoff. Figure 3 reports the RD estimates using the same model with the benchmark, only altering the cutoffs. The result indeed suggests that our benchmark result is robust to the Placebo test. Across all three countries, changing the cutoff year yields estimates with confidence intervals that are statistically not distinguishable from zero, suggesting that there is no significant difference even if we change the birth cutoff year.

4. Conclusion

Recent developments in Venezuela reflect the two attributes of autocratization that we emphasize in this paper: weakening horizontal and vertical accountability. President Maduro has weakened the opposition-dominated legislature (Casey and Torres 2017; Nebehay 2018) and cracked down on opposition actors (Reuters 2018) in recent years. The health consequences of autocratization have been severe. Government's expenditure on public health-care spending has declined from about 9% in 2010 to 5.8% in 2014 (Lancet 2018) and infant mortality increased by 30% from 2015 to 2016 (Fraser 2017). Although cases like Venezuela aptly capture the relationship between autocratization and health outcomes that we

focus on in this paper, an explicit theorizing and systematic test of this relationship in the literature has been rare.

We formulate a theoretical relationship between autocratization and public health drawing on the literature on public goods and subject the relationship to a systematic analysis in both within-country and cross-national contexts. Our analysis demonstrates that the erosion of democratic accountability is not only normatively concerning but it also does physical harm to the public.

Our findings lend support to the larger literature on regime-type and welfare outcomes that emphasizes the benefits of democratic regimes as compared to non-democratic regimes (Gerring, Thacker, and Moreno 2005; Wigley and Akkoyunlu-Wigley 2011*a*). We differ from the literature, however, by focusing on a change in (autocratization) rather than the status of (regime type) democracy. Furthermore, we adopt a two-fold approach to the empirical test of our argument such that the cross-national validity of our evidence is not sacrificed for our attempt to address possible confoundedness.

The policy implications of this article are relevant and important. Given the global trend in autocratization today, this article sheds light on specific attributes of autocratization, namely lack of electoral competition and political participation, that are especially likely to hurt citizens' health outcomes. This suggests that particular attention needs to be paid to political events characterized by these attributes. The findings are of particular relevance to citizens and opposition leaders in countries that are on the brink or early phases of autocratization. Autocratization is often a gradual and discrete process (Lührmann and Lindberg 2018) and a vigilant opposition and citizenry becomes crucial to ensuring well-being of citizens and democracy. Our finding also offers a possible explanation for the seemingly high correlation between backsliding democracies and their high Covid-19 cases (Edgell et al. 2021). The policy failures responding to the pandemic palpable in countries like

Brazil, India, and the United States might be closely related to their declining levels of democratic accountability.

Endnotes

[1] Because in terms of checks and representation, the role of an authoritarian legislature would be similar (though much limited) to a democratic one (Gandhi 2008), we do not expect the effect of substantive reduction in horizontal accountability to be limited only to democracies.

[2] This primarily relates to vertical accountability but has implications for horizontal accountability as well in so far as it reduces the ability of challengers to hold incumbents accountable.

[3] In about 70% of cases horizontal and vertical autocratizations overlap. In fact, as shown in Appendix Table A5, all measures used in this paper are highly correlated. This should not be surprising given the empirical inseparability of vertical and horizontal accountability—where one is compromised, the other is also very likely to be limited.

[4] We note one caveat in applying the result of our case studies to more recent autocratization cases. As Boese et al. (2021, 6) demonstrate, the post-Cold War autocratization cases involve significantly more gradual declines in EDI than others did. This aspect of autocratization is not directly accounted for in any of our three cases although we believe that our panel data analysis, where the autocratization measure reflects cumulative decline in democracy over time, does shed light on it.

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Table 1. Changes in the components of Electoral Democracy Index (EDI) and how they are reflected in vertical and horizontal accountability

	Vertical accountability	**Horizontal accountability**
Freedom of association	*Direct*	*Indirect*
Freedom of expression	*Direct*	*Indirect*
Clean election	*Direct*	*Direct*
Elected officials	*Direct*	*Direct*
Suffrage	*Direct*	*Indirect*

Table 2: The Health Cost of Backsliding: panel data analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	No covariates	Benchmark	Horizontal	Vertical	Infant Mortality	Female life exp.
Autocratization	-0.024**	-0.026**	-0.033**	-0.028**	0.004**	-0.411**
	(0.011)	(0.013)	(0.014)	(0.014)	(0.002)	(0.090)
Leftist Govt		0.004	0.005	0.004	-0.002	0.378**
		(0.013)	(0.013)	(0.013)	(0.004)	(0.118)
Gender Quota		0.011**	0.011**	0.011**	-0.003**	0.166**
		(0.004)	(0.004)	(0.004)	(0.001)	(0.074)
Democratic Legacy		0.087	0.085	0.086	-0.043**	-0.291
		(0.068)	(0.067)	(0.068)	(0.014)	(0.301)
Growth Rates		-0.000	-0.000	-0.000	0.000**	0.013**
		(0.001)	(0.001)	(0.001)	(0.000)	(0.004)
ln(GDP)		-0.250**	-0.249**	-0.250**	0.109**	6.762**
		(0.099)	(0.099)	(0.099)	(0.021)	(0.958)
ln(GDP per capita)		-0.139	-0.139	-0.138	-0.212**	-3.476**
		(0.089)	(0.089)	(0.089)	(0.022)	(0.812)
Country-fixed	✔	✔	✔	✔	✔	✔
Year-fixed	✔	✔	✔	✔	✔	✔
trend	✔	✔	✔	✔	✔	✔
N	2460	2424	2424	2424	4155	4006
Years	2000-2015	2000-2015	2000-2015	2000-2015	1990-2017	1990-2016
R^2	0.940	0.949	0.950	0.950	0.994	0.995

*$p < 0.10$, ** $p < 0.05$. OLS estimates with panel-corrected standard errors in parentheses. A panel- specific first-order autocorrelation (PSAR1) is applied.

Table 3: Regression Discontinuity and Local Randomization Estimates

	(1) India		(2) Venezuela		(3) South Korea	
	RDD	LR	RDD	LR	RDD	LR
coefficient	-0.157*	-0.156	-0.202**	-0.279	-0.182**	-0.227
SE / *p-value*	(0.084)	*(0.091)*	(0.095)	*(0.011)*	(0.076)	*(0.000)*
Total Obs	1236	1236	1173	1173	1103	1103
Effective Obs L of C / R of C	196/300	18/75	140/278	16/52	136/183	19/44

* $p < 0.10$, ** $p < 0.05$. In 'RDD' columns, regression discontinuity estimates with standard errors in parentheses. The p-values are computed using the robust confidence intervals (Cattaneo, Idrobo and Titiunik 2020). In 'LR' columns, local randomization estimates are reported with 'large sample' p-values in the parentheses. Covariates used to adjust RDD estimates are two dichotomous variables, 'urban' and 'male.' Bandwidth selection is based on MSE-optimal. Triangular Kernel functions are used. The bottom raw reports the effective number of observations that fall in the left and right of the cutoff.

Figure 1. Backsliding in India, Venezuela, and South Korea

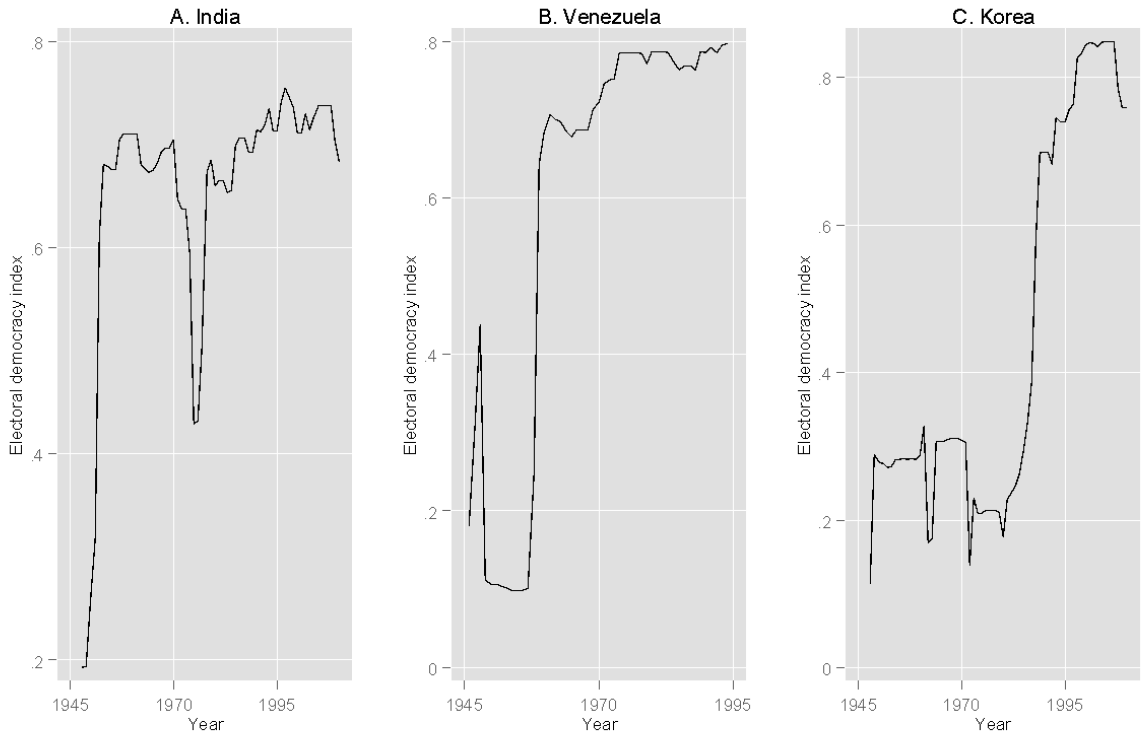
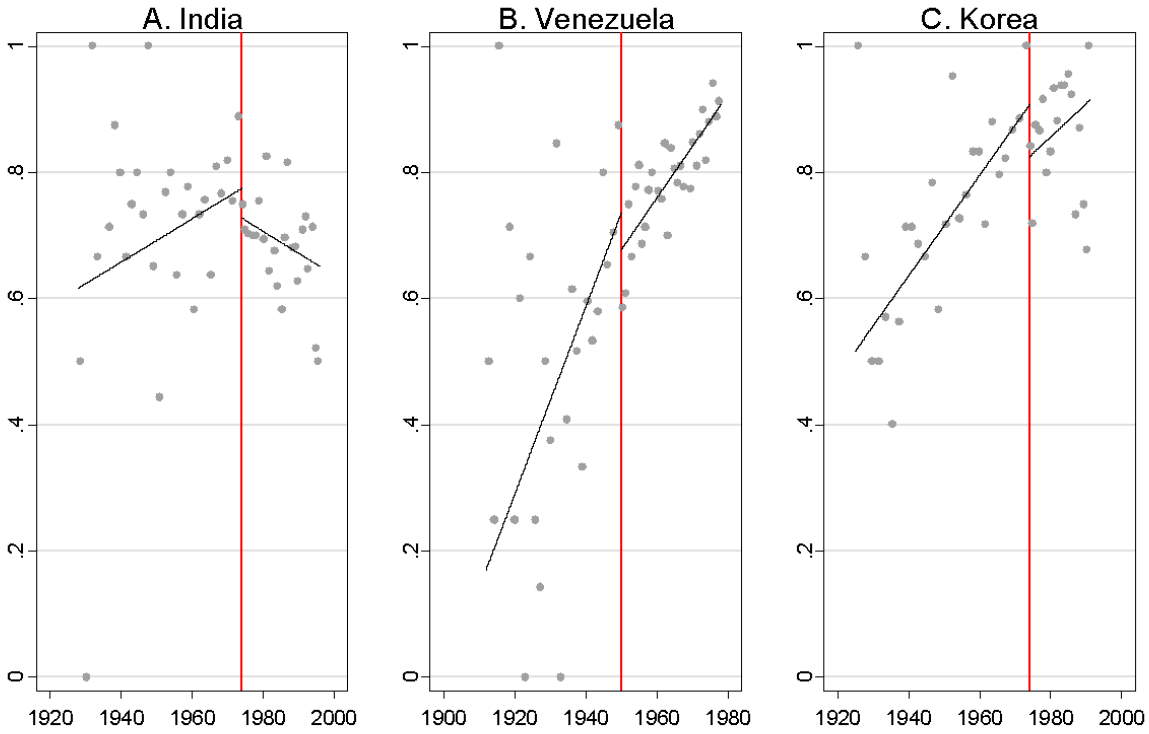
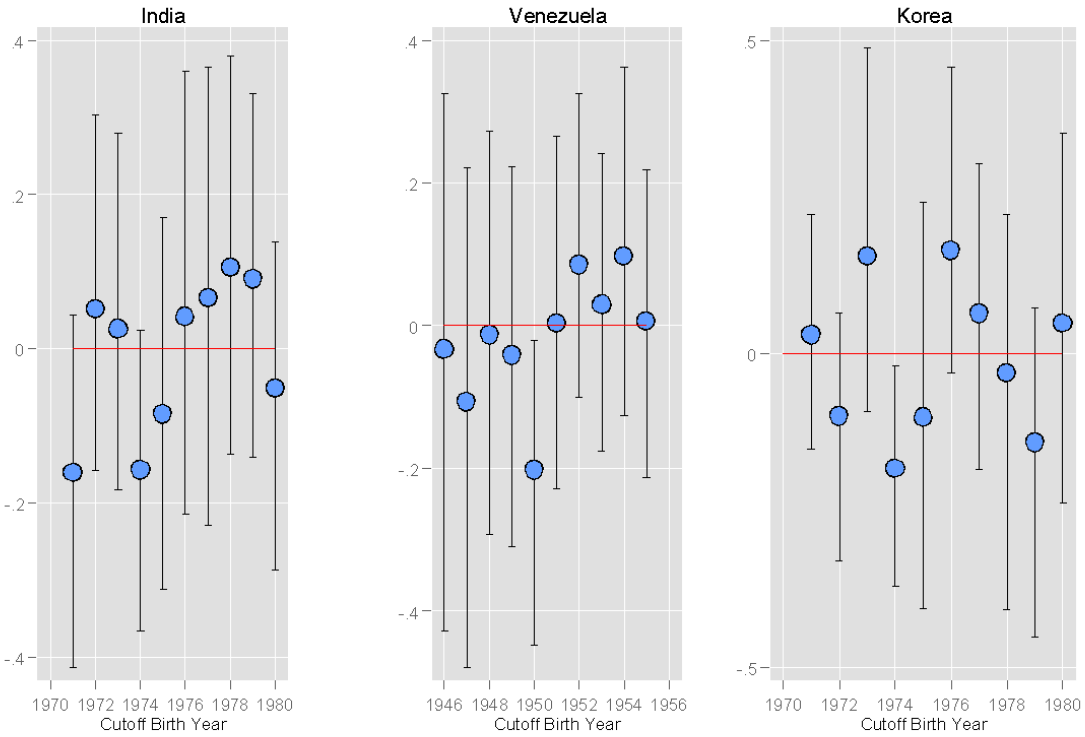


Figure 2: Regression Discontinuity



Based on the result reported in Table 3. Solid vertical lines indicate the cutpoints. The horizontal axis represents the running variable, birth years, while the vertical axis indicates the probability of survey respondents reporting that their health conditions are either "good" or "very good." Dots are means of this probability at each age bin.

Figure 3: RDD Robustness Check: alternative Cutoff points



Reported are regression discontinuity estimates with robust 90% confidence intervals for alternative birth year cutpoints for each country case. Circles are point estimates.