Electoral Authoritarianism and Human Development

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Abstract

Do autocratic institutions matter for the welfare of average citizens? Despite the large literature comparing democracies and autocracies, we know little about how human development outcomes differ among autocratic types. Using an instrumental variables setup, this paper shows that the presence and history of multiparty autocratic elections predict significantly better outcomes on health, education, gender equality, and basic freedoms relative to non-electoral autocracy. In fact, the effects on health and education often exceed the effects of democracy. Even when they are manipulated, contested autocratic elections promote state accountability and capacity. In contrast, legislatures and parties without multiparty elections produce slightly negative outcomes, as these institutions chiefly concern elite cooptation. The results have major implications for the study of autocracy, the political economy of development, and the welfare effects of international election promotion.

1 Introduction

Which political institutions promote responsive policy-making and positive outcomes in areas like health and education? An extensive literature has focused on democracy as syn-

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onymous with political accountability and, in turn, social welfare provision. Indeed, there is overwhelming evidence that democracies produce higher levels of social spending (e.g., Kaufman and Segura-Ubiergo 2001; Stasavage 2005; Haggard and Kaufman 2008) and human capital (e.g., Sloan and Tedin 1987; Lake and Baum 2001; Gerring et al. 2012).

However, this binary distinction between democracy and dictatorship obscures a great deal of variation, as many autocracies have pursued expansive social welfare programs. Perhaps the best-known example is Bismarck's proto-welfare state in 19th century Prussia, but this is far from a unique case. The Asian Tigers and Eastern European Communist regimes strongly invested in education and basic health (Haggard and Kaufman 2008). Brazil's military regime extended health insurance and social security to the rural population in 1971, a reform that failed to pass under previous democratic governments (Falleti 2009). In fact, about two-thirds of countries' first adoptions of old age, disability, and health insurance have occurred under authoritarianism (Mares and Carnes 2009).

Can political institutions account for this within-autocracy variation? Despite a growing literature on the causes and consequences of autocratic parties, legislatures, and elections (e.g., Geddes 1999; Brownlee 2007, 2009; Gandhi 2008b; Svolik 2012), there has surprisingly been no work comparing human development outcomes across these institutions. What makes this oversight especially significant is that international actors frequently push regimes to adopt autocratic elections and other forms of limited pluralization (Goldsmith 2008; Levitsky and Way 2010). For instance, although the country remains autocratic, Burma's liberalizing project of expanded civil liberties and multiparty elections has been met with widespread international acclaim, culminating with the first-ever visit by an American president. In large part due to international pressure, about two-thirds of autocracies over the last 20 years have allowed multiparty elections. Yet a critical question remains unexplored: Is this a good thing for these countries' citizens?

Using an instrumental variables setup, this article shows that *electoral authoritarianism* (EA) indeed has a positive causal effect (relative to non-electoral autocracy) on a wide range of human development outcomes, including infant mortality, literacy, gender balance in schooling, and civil liberties. EA regimes are defined as autocracies with legal multiparty compe-

tition in legislative elections. Although these elections are contested, they are distinguished from the democratic type by unfree and unfair conditions that favor the regime. Yet even when they are severely manipulated, I argue that autocratic elections can contribute to popular accountability and governmental capacity. Surprisingly, EA's effects on health and education often exceed those of democracy. As a result, this article suggests that the critical social welfare divide among regimes is not democracy, but the presence of contested elections.

In further results, I find that legislatures and ruling parties in the absence of multiparty competition predict slightly *negative* human development outcomes. The recent literature on autocratic institutions has shown that legislatures and parties promote regime durability (Magaloni 2006, 2008; Brownlee 2007; Svolik 2012) and certain policy concessions (Gandhi 2008b), but the focus has instead been on elite cooptation. This paper complements this work by showing that social welfare policies are only promoted when citizens and an opposition are granted voice, muffled as it may be.

For outcomes, I focus on four areas of human development: health, education, gender equality, and basic freedoms. These outcomes are emblematic of capable and responsive governance, and reflect a special concern with human capital and long-run prosperity. As this article is the first to relate autocratic institutions to several of these outcomes, the findings have important implications for the political economy of development and the welfare effects of international election promotion. Further, this paper is empirically innovative in distinguishing the short- and long-term effects of institutions and employing an instrumental variables setup that leverages the regional diffusion of regime types to account for the endogeneity of EA.

The following section overviews recent work on the policy and development effects of democracy and autocratic institutions. Section 3 argues that EA regimes should have superior human development outcomes compared with closed (non-electoral) autocracies, based on three of the mechanisms commonly associated with democracy. Section 4 lays out the endogeneity challenge in testing autocratic institutions and defends my instrumental variables approach. The remaining sections overview the data and empirical setup, followed by the empirical findings and a discussion of their implications.

2 Past Work on Democracy and Autocratic Institutions

2.1 Democracy and Human Development

An enormous literature has developed on the association between democracy and human development, as well as with economic growth, inequality, and countless other outcomes.[1] The central logic is that democracy provides incentives for politicians to improve citizen welfare. Democracies are also more effective at implementing policies, as democracy predicts higher ratings of quality of government and lower corruption (Adserà et al. 2003; Humphreys and Bates 2005; Stockemer forthcoming).

There is strong evidence that democracy leads to greater public investment in human capital, especially in health and education (Lake and Baum 2001; Brown and Hunter 2004; Stasavage 2005; Haggard and Kaufman 2008; but see Mulligan et al. 2004). Suffrage extensions, particularly for women and the poor, have also been shown to increase social spending (Husted and Kenny 1997; Lindert 2004).

In turn, this spending translates into a positive association between democracy and various measures of human development, including infant mortality (Zweifel and Navia 2000; Lake and Baum 2001; Besley and Kudamatsu 2006; Gerring et al. 2012), other measures of public health (Sloan and Tedin 1987; Lake and Baum 2001; Gerring 2011; Wigley and Akkoyunlu-Wigley 2011), educational attainment (Sloan and Tedin 1987; Brown 1999; Halperin et al. 2010), and gender equity in human development (Baum and Lake 2003; Brown 2004; Beer 2009). However, the link between democracy and outcomes is more often disputed (Ross 2006; Nelson 2007; Carbone 2009). For instance, Ross (2006) argues that after accounting for missing data problems, democracy increases health spending targeted at the middle class, but is unrelated to infant mortality.

[1] For more thorough overviews of this literature, see Haggard and Kaufman (2008), Carbone (2009), and Halperin et al. (2010).

2.2 Autocratic Institutions

Despite the extensive literature comparing democracies and autocracies, there exists little work distinguishing human development outcomes among autocratic types. This is a major oversight given the global spread of autocratic institutions traditionally associated with democracy, such as legislatures, parties, independent courts, and elections (Schedler 2006; Gandhi 2008b). Figure 1 shows the prevalence of closed autocracy, EA, and democracy in each year from 1946–2007 (measured from Cheibub et al. 2010; Boix et al. forthcoming). Again, EA regimes are defined as autocracies with legal multiparty competition for the legislature (e.g., Russia, Malaysia, and Singapore). Closed autocracies either lack any electoral institutions (Saudi Arabia, UAE) or feature single- or no-party elections (North Korea, Swaziland), which are largely ceremonial in nature. EA regimes distinguish themselves from democracies by manipulating electoral competition to below democratic standards. As seen, EA is not entirely new, but has recently become the large majority among autocracies.

This diffusion has stimulated a growing literature on the causes and consequences of autocratic institutions (Geddes 1999; Schedler 2006; Levitsky and Way 2010; Svolik 2012). A dominant theme in this work is the strategic value of institutions for regime survival, either through coopting elites (Geddes 1999; Magaloni 2006, 2008; Blaydes 2011; Svolik 2012) or extending control over citizens (Lust-Okar 2006; Magaloni 2006). Autocratic elections, for instance, allow regimes to signal dominance (Magaloni 2006; Simpser 2013) and gather information on opponents (Magaloni 2006; Gandhi and Lust-Okar 2009).

Less work has been done on how autocratic institutions influence policy. The most thorough study in this vein is Gandhi (2008b), which argues that autocratic legislatures serve as forums for policy compromises with elites. To test this, Gandhi shows that legislatures are associated with greater civil liberties and lower levels of military spending.[2] Elsewhere, she relates legislatures to workers' wages and strike behavior (Kim and Gandhi 2010). A separate current of work focuses on the power of legislatures and parties to constrain the arbitrary

[2] In empirical testing, Gandhi (2008b) uses a three-valued measure where 0 = no legislature, 1 = a single-party legislature, and 2 = a multiparty legislature. However, her theory focuses on the existence of a legislature.

rule of dictators. This allows rulers to make credible promises, leading to more investment and economic growth (Gandhi 2008a; Wright 2008; Gehlbach and Keefer 2011; Jensen et al. forthcoming).[3]

It is less clear that legislatures and parties by themselves will influence social welfare policies. Within closed autocracies, these institutions primarily involve deal-making among elites. To the extent that they succeed at this cooptation, legislatures and parties magnify regime power and may actually reduce the need to appeal to average citizens (Wright and Escribà-Folch 2012; Jensen et al. forthcoming). Perhaps for this reason, Gandhi (2008b) does not find a relationship between legislatures and social spending. Further, the literature on legislatures and parties has focused on the capacity of dictators to compromise on policy rather than their incentives, which limits the causal significance of these institutions. Critically, Gandhi's (2008b) theory is that legislatures *enable* policy concessions by providing a forum for bargaining and information-sharing. The *motivation* to compromise in her theory stems from other factors, particularly the threat of armed revolt (see Pepinsky forthcoming).

In contrast, I argue below that multiparty autocratic elections both motivate regimes to improve social welfare *and* improve their capacity to do so. As a result, contested elections are the critical institutions within autocracies for generating human development. Past work has linked autocratic elections to patronage (Lust-Okar 2006; Blaydes 2011) and budget cycles (Magaloni 2006; Blaydes 2011), which are among the array of tricks that ruling parties use to control elections. However, many scholars remain skeptical that these elections matter for substantive policy outcomes. Lust-Okar (2006: 459), for instance, contends that patronage "trumps by far any role of elections as arenas for contests over the executive or critical policies." Yet evidence is growing that multiparty autocracies are associated with distinct policy choices. Conrad (2011) predicts calorie consumption and civil liberties based on the legalization of opposition parties. Hankla and Kuthy (forthcoming) show that multiparty legislatures predict free trade, which they argue serves as a public good. Lastly, a number of studies ar-

[3] Scholars have also related autocratic institutions to democratization (Geddes 1999; Brownlee 2009; Wright and Escribà-Folch 2012), torture (Vreeland 2008), terrorism (Aksoy et al. 2012), civil war onset (Regan and Bell 2010), and conflict behavior (Lai and Slater 2006; Weeks 2008; Kinne and Marinov forthcoming).

gue that Chinese local elections encourage public goods provision and greater responsiveness (O'Brien and Li 2000; Wang and Yao 2007; Martinez-Bravo et al. 2012).

This study extends this analysis to human development outcomes, the clearest indicators of citizen welfare and policy responsiveness. Despite the centrality of the subject to work on democracy, surprisingly no previous study on autocratic institutions has looked at core measures of human development. The closest is work on public spending (Desai et al. 2008; Gandhi 2008b) and calorie deprivation (Blaydes and Kayser 2011; Conrad 2011). I demonstrate a strong causal effect of EA on infant mortality, literacy, gender balance in schooling, and other outcomes.

This article presents several further empirical advances. First, I differentiate multiparty elections from other distinct, but correlated, institutions. Gandhi (2008b) focuses on autocracies with legislatures, but only 66% of these regimes qualify as EA by my definition. Following Geddes (1999), other studies compare military, party-based, and personalist regimes (Lai and Slater 2006; Weeks 2008; Wright 2008). Finally, several studies analyze countries at middle values of the Polity democracy score, often called anocracies (Desai et al. 2008; Regan and Bell 2010; Blaydes and Kayser 2011), but this is an imperfect indicator that lumps together highly disparate regimes.[4] For a fuller picture of which institutions matter, I compare the effect of multiparty elections to that of legislatures, parties, and the Geddes (1999) categories.

Second, I test both a country's current regime type and its regime type history. Particularly for health outcomes, Besley and Kudamatsu (2006), Gerring (2011), and Gerring et al. (2012) find that democracy yields its influence cumulatively over time rather than immediately. For instance, Gerring et al. (2012) shows that infant mortality is negatively related to the historical stock of democracy, but not to the current level of democracy. I extend this analysis to the history of EA and other autocratic institutions.

[4] For instance, only 42% of the anocracies identified by Blaydes and Kayser (2011) are EA regimes. Some studies test Polity (Marshall and Jaggers 2010) as a linear term (e.g., Ross 2006; Gerring et al. 2012), but this conflates variation in autocratic institutions with the difference between democracy and autocracy. Still another approach is Bueno de Mesquita et al.'s (2003) selectorate theory, which argues that larger winning coalitions predict public goods provision. However, it's unclear whether an EA regime's winning coalition is large (the electoral majority) or small (the party's inner circle).

Third, to identify the causal effect of autocratic elections, I employ the prevalence of regime types in a country's region and neighborhood as a novel set of instruments for EA. Because EA diffuses across borders much like democracy, these instruments are strongly predictive of EA and plausibly satisfy the required exclusion restrictions. As discussed below, previous work has either ignored the endogeneity problem or used inadequate instrumental variables.

3 Electoral Authoritarianism and Human Development

This section explains why EA regimes should display superior human development outcomes relative to closed autocracies. This follows from three of the primary mechanisms commonly associated with democracy: *electoral accountability*, *political openness*, and *governmental capacity*. The underlying theory is that regimes promote human development when they combine the *motivation* to provide for basic needs and build human capital with the *capacity* to do so. Under EA, both electoral accountability and political openness provide such a motivation, even relative to legislatures and parties alone. In addition, institutionalized autocracies are more effective at implementing policies.

Electoral Accountability

Democracy promotes responsive leaders by tying their political power to electoral support. EA regimes also tolerate electoral competition, but on a highly uneven playing field (Magaloni 2006; Schedler 2006). Because most autocratic elections are won by large margins, it is tempting to make the faulty inference that these elections cannot motivate regimes to provide public services. However, this is akin to arguing that because a champion boxer easily wins his fights, he must not feel the need to train very hard. Unfair competition in EA regimes does not eliminate uncertainty or occasional electoral turnover. As Levitsky and Way (2010: 12) argue, "Government officials fear a possible opposition victory (and must work hard to thwart it)... In competitive authoritarian regimes, incumbents are forced to sweat."

Even when they control elections in the present, autocrats are constantly reminded that complacency risks defeat in the future. Contrary to what many assume, autocratic elections

feature dramatic and often unexpected swings in support. In each legislative election under EA, a one-standard-deviation shift in the ruling party's seat share is about 19%, slightly *higher* than within democracies.[5] Examples of unanticipated electoral shocks under EA include Mexico in 1988, Singapore in 1991, Morocco in 2007, and Russia in 2011. As a result, electoral turnover is a real threat. Using Hyde and Marinov's (2012) data, I find 51 elections since 1946 in which an EA regime's incumbent party lost. In turn, this frequently results in democratization, as in Benin in 1991, Guyana in 1992, and Mexico in 2000. Besides the fear of losing, ruling parties also seek to maximize their winning majorities to deter elite defections (Magaloni 2006; Simpser 2013).

Further, near-term electoral security is a double-edged sword. On one hand, highly secure ruling parties feel less pressure to immediately deliver on public demands. On the other hand, they face longer time horizons and so may be more inclined to invest in education and long-term development (Olson 2000; Wright 2008; Gehlbach and Keefer 2011). The more stationary the bandit, the more she is willing to invest. Ruling parties can also benefit from successful development even after democratization, as most remain electorally competitive post-transition (Wright and Escribà-Folch 2012). For instance, the ruling legacies of Mexico's PRI and Taiwan's KMT were central to their regaining power under democracy.

Finally, when constructing electoral coalitions, EA regimes are naturally drawn to the poor as they are more easily coopted by state assistance (Gandhi and Lust-Okar 2009; Blaydes 2011). Reversing the democratic pattern, the poor are often more likely to vote in autocratic elections and to support the ruling party (Magaloni 2006; Blaydes 2011). This typically results from an informal bargain in which public services are contingent on electoral support.[6] Given the strategic focus on the poor, we should expect EA regimes to emphasize social assistance and basic development outcomes. In comparison, democratic leaders often direct the greatest attention to the middle class (Ross 2006; Kosack forthcoming).

[5] Of course, this partly reflects the smaller margins of party control within democracies. The data is taken from Keefer (2010) and covers 1975–2010.

[6] For instance, Blaydes (2011) finds that opposition-supporting areas in Mubarak's Egypt were less likely to receive connections to sewer and water lines.

In sum, even minimally competitive elections motivate EA regimes to improve social welfare.[7] Nelson (2007) points to a positive effect of competitive elections on education reform in autocratic Malawi, Uganda, Tanzania, Kenya, and Mexico. In several detailed case studies, Haggard and Kaufman (2008) identify autocratic elections as key to increased public goods provision and social assistance in Taiwan, Brazil, Mexico, Peru, and Venezuela. We can also find evidence of within-regime policy shifts: In a study of 86 EA regimes, Miller (2012) finds that electoral declines for ruling parties predict increases in education and social spending and decreases in military spending immediately following the elections.

A clear example of autocratic electoral pressure promoting human development is Taiwan's path to universal health care in 1995. As late as 1980, only 16% of Taiwanese were insured and they spent a miniscule $78 per capita on health care (Chiang 1997: 227). After the ruling Kuomintang (KMT) party legalized opposition parties in 1986, the newly born Democratic Progressive Party (DPP) strongly emphasized social welfare reform and garnered unexpected support in elections in 1986 and 1989. The KMT quickly pivoted to an expansion of social programs due to this newfound political pressure (Chiang 1997; Son 2001; Haggard and Kaufman 2008). In particular, the KMT moved to nullify one of the DPP's chief policy demands by forming a planning commission for health reform, which initially proposed a National Health Insurance (NHI) system by 2000.[8] After passing insurance for farmers in 1988, the KMT still faced mounting pressure to deliver on social demands. Although the KMT remained electorally dominant, the DPP was steadily gaining support, creeping up to 31% of votes in 1992. Anticipating the rematch in 1995, the KMT fast-tracked the NHI, passing it in 1994 and implementing it nine months before the election (Son 2001). By February 1996, 92% of the population was insured, with a big expansion in health care utilization (Chiang 1997: 232-5).

[7] The accountability of EA regimes should not be overestimated, either. These regimes routinely violate norms of free and fair competition and employ state resources and outright coercion to retain power. However, the same violations are only multiplied in closed autocracies, and the present argument is relative to closed regimes, not democracies.

[8] This was in conjunction with an increased emphasis on primary education and a general reorientation of spending toward average citizens (Kosack forthcoming).

Civil Liberties and Political Openness

An alternative theoretical perspective is that direct popular engagement with politicians is more effective at engendering responsive policies than electoral pressure (Verba et al. 1995; Cleary 2007). Protests, strikes, personal appeals, and civil society movements all motivate governments in parallel with elections by providing information on policy demands and threatening to develop into electoral or violent challenges if left unaddressed. Cleary (2007) also argues that social pressure can play a role when legislators are tied to constituents through personal networks.

The ability of citizens to effectively pressure the government depends on a number of political factors, often termed the "political opportunity structure" (Kitschelt 1986). I focus on two such factors: individual civil liberties and the openness of the political space to rival groups. Although democracies provide the freest environments by far, I argue that EA regimes are at least freer than closed autocracies.

First, protected rights to speech and association are critical to popular pressure.[9] Here, the evidence is clear that EA regimes lie between closed autocracies and democracies. Figure 2 displays averages for the three regime types on the Freedom House (2011) rating of civil liberties and the CIRI dataset's rating of freedom of speech (Cingranelli and Richards 2010). Both are re-scaled to range from 0 to 1, with 1 highest in freedom. The displayed freedom advantage of EA over closed autocracy is confirmed in the empirical section, which further shows that legislatures and parties by themselves are *negatively* related to civil liberties.

Second, political openness gives room to rival organizations that can pressure the ruling party or help to provide social services themselves (Lake and Baum 2001; Gerring et al. 2012). By definition, EA regimes allow opposition parties, and they tend to also tolerate outside groups like unions, NGOs, and civil society movements, albeit begrudgingly. Although various forms of harassment ensure that opposition remains costly, these costs are not as significant as under closed autocracy.

[9] Wigley and Akkoyunlu-Wigley (2011: 651-3) also argue that rights protections promote health outcomes directly (*i.e.*, not through policy) by increasing autonomy, self-esteem, and social capital.

Political openness can particularly influence development outcomes, as popular challenges in EA regimes often focus on the inadequate delivery of public services. In 1970s Brazil, for instance, an ideational movement within the state bureaucracy known as the *sanitaristas* coalesced around the goal of decentralizing and modernizing public health care (Falleti 2009). In Russia, civil society groups such as Health Care for Children have organized around public health grievances, prompting a $900 million government initiative to improve health care delivery (Englund 2011).

Governmental Capacity

It is not enough for leaders to want to improve citizens' lives—they must have the capacity to do so. A government's ability to translate policy goals into outcomes encompasses a range of political qualities, including bureaucratic capacity, the rule of law, corruption, and territorial control by the state.

Whereas democratic systems necessitate a variety of political institutions that can effectively implement policies (Adserà et al. 2003; Humphreys and Bates 2005; Stockemer forthcoming), closed autocracies often exercise power through personal ties, military hierarchies, or ruling families. In particular, closed regimes often invest little in professionalized bureaucracies, which are costly and potentially threatening. As a result, their ability to deliver public services may be limited, even when so motivated.

By definition, EA regimes establish a similar set of formal institutions as democracies. Even when manipulated, they contribute to bureaucratic development, specialization, and information-sharing, thereby promoting governmental effectiveness in the long run (Charron and Lapuente 2011). Looking at Malaysia, Indonesia, and the Philippines, Slater (2008) concludes that autocratic elections often spur institutional capacity by forcing regimes to develop competent parties and extend state control to marginal populations. EA may also help to select more skilled and technocratically competent leaders, who at least are required to rise through a party hierarchy (or found it) and win contested elections (Svolik 2012). Other autocrats remain in power by virtue of birth or military leadership, which has little connection to governing ability.

Lastly, EA regimes have an advantage in that autocracies are typically less constrained in implementing their policy goals. Democratic leaders face strong incentives for social reform, but can be stymied by powerful interest groups (such as unions and bureaucracies) and legislative gridlock (Olson 1984; Brown and Hunter 2004; Nelson 2007). In contrast, ruling parties in EA regimes usually dominate the legislature and face limited opposition from within the state and the public sector (Magaloni 2006; Levitsky and Way 2010). Thus, EA regimes advantageously combine electoral incentives with political centralization.

4 Determining the Causal Effect of Autocratic Elections

4.1 The Endogeneity Problem

The central problem with testing the effect of EA is the endogeneity of regime type. Electoral institutions are adopted and sustained by autocratic rulers who simultaneously decide on governing strategies and policies. A variety of factors could influence both of these decisions. For instance, strong opposition movements may lead autocrats to accept controlled elections and to make strategic policy concessions. Simple correlations cannot therefore determine the causal effects of autocratic institutions. Unfortunately, the large majority of work in this area has ignored the endogeneity problem, with Gandhi (2008b) being a notable exception. Although the problem also applies to democracy, it is less severe given that democracy is typically not chosen by the same rulers who determine policies.

Instrumental variables (IVs) provide one way around the endogeneity issue. The IV technique is used to demonstrate that a variable X causes variation in an outcome Y when we believe X is partly endogenous. To recover a causal effect, we employ a set of instrumental variables $\mathbf{W}$ that must satisfy two requirements: (1) They must be sufficiently predictive of X, and (2) Each instrument must satisfy an exclusion restriction whereby it only influences Y through its effect on X. The second requirement, often ignored in empirical research, is critical to the causal interpretation of the IV estimate. It is only because we know for substantive reasons that $\mathbf{W}$ does not directly influence Y that we can infer the causal effect of X.

In at least three studies, Gandhi (2008a, 2008b; Kim and Gandhi 2010) uses IVs to account for the endogeneity of autocratic legislatures. However, as noted in Pepinsky (forthcoming), the choice of instruments is problematic, as none clearly satisfy an exclusion restriction nor do the studies provide such an argument.[10] I now turn to an original IV strategy that more plausibly meets the required exclusion restrictions.

4.2 The IV Strategy: The International Diffusion of Autocratic Elections

Countries are more likely to adopt and sustain democracy if higher fractions of their region and neighborhood are democratic (Starr 1991; Gleditsch and Ward 2006). Miller (2013) demonstrates the same diffusion effect for EA. This implies that the regional and neighborhood prevalence of EA and democracy can be used as exogenous instruments for EA.

Why are autocracies more likely to adopt elections when nearby countries include them? Most simply, neighboring regime types serve as a proxy for region-specific international pressures (Levitsky and Way 2010). However, Miller (2013) also identifies four reasons that EA and democratic neighbors directly influence EA adoption: learning and emulation by autocratic leaders (Simmons et al. 2006), increased popular pressure for elections when citizens witness them in neighboring countries (Gleditsch and Ward 2006; Bratton and van de Walle 1997), a desire by autocrats to avoid looking like illiberal outliers, and support for similar neighboring regimes from powerful closed autocracies (Ambrosio 2010; Levitsky and Way 2010). For instance, China has been a crucial stabilizing force for North Korea, Laos, and (until recently) Burma (Reilly 2013).

Based on this theoretical setup, I employ four instrumental variables for EA: the fraction of democracies and EA regimes in each country's region (excluding the country itself) and

[10] Kim and Gandhi (2008), for instance, use seven instruments to predict the existence of an autocratic legislature: dummies for military and civilian dictatorship, a dummy for resource exports, the size of the manufacturing workforce, counts of leader changes and political purges, and the global share of democracies. They then use the instrumented likelihood of a legislature to predict workers' wages and strike activity. However, resource wealth and the size of the manufacturing workforce could clearly affect wages directly. Military dictatorship and political instability also directly influence policies. The world's share of democracies comes closest to satisfying an exclusion restriction, but may simply be picking up the effect of time (which is omitted from the outcome equation).

among its neighbors.[11] When testing the effect of regime type history, I instead use weighted histories of the four variables as instruments.

As detailed in the results section, diagnostic tests clearly indicate that these variables satisfy the two requirements for instruments. The first stages of the IV regressions show that they are highly predictive of EA and its history, well exceeding standard benchmarks for strong instruments.[12] Additionally, I use the limited-information maximum likelihood (LIML) IV estimator, which is more robust to weak instruments than two-stage least squares (Stock and Yogo 2002).

The exclusion restrictions are also likely to be satisfied. First, it is improbable that external regime types directly influence development outcomes. A possible alternative causal channel is through policy diffusion, whereby external countries' regime types predict their policies and they diffuse to the country's own policies. To account for this possibility, all models control for the regional average of the dependent variable. This effectively blocks the causal pathway through policy diffusion (see Pearl 2009: 113-15), as well as many other potential confounders. Thus, for the exclusion restrictions to fail, there must be an omitted factor that predicts a country's development outcomes and its neighbors' regime types, but *not* it's neighbors' development outcomes, which is unlikely.

Second, because multiple instruments are being used, overidentification tests can provide further evidence that the exclusion restrictions are satisfied. Overidentification tests work by choosing a subset of the four variables as instruments, then calculating whether the residuals from the outcome equation are correlated with the excluded variable. If so, this is evidence that the variable violates the exclusion restriction. For all of this paper's models, the overidentification test supports the validity of all four instruments.

[11] Tests were also run using the regime types of trade partners (weighted by total dyadic trade, from Barbieri and Keshk 2012), but these were not found to be consistently related to a country's regime type. Neighbors are countries that share a land border or are separated by no more than 24 miles of water (Correlates of War Project 2007). The eight regions are Eastern Europe and the Soviet Union, Latin America, North Africa and the Middle East, sub-Saharan Africa, Western Europe and the British settler colonies, East Asia, Southeast Asia and the Pacific, and South Asia.

[12] Miller (2013) shows that neighboring regime types also predict *transitions* to EA.

5 Empirical Approach and Data

Dependent Variables

For outcome variables, I focus on four areas of human development: health, education, gender equality, and basic freedoms. I address infant mortality in the greatest detail, as it is an ideal indicator of inequality, development, and state effectiveness (Ross 2006; Gerring et al. 2012). I then turn to two closely related measures: the mortality of children under 5 and overall life expectancy. For education outcomes, I look at literacy and school enrollment, as well as the gender balance in both these variables. Unless noted otherwise, the measures are taken from World Bank (2011).

All of these variables are directly affected by public policies and indicate responsive governance and general social welfare. Further, they are well-represented in existing work on democracy, facilitating comparisons with this established literature. I focus on outcomes rather than spending for two reasons. First, public spending measures are often unreliable, particularly within autocracies. What goes on the books as education spending may in reality be diverted to patronage or other purposes. Second, regimes vary greatly in their capacity to translate spending into outcomes, which are of course what we ultimately care about.

I also test four measures of political rights, two concerning civil liberties, one women's political rights, and the last an indicator of physical repression by the government. Besides their normative importance, political freedoms are critical to human development and economic productivity. Further, the results on civil liberties can be compared against Gandhi (2008b) and Conrad (2011). Summary statistics are shown in Table 1.

Definitions of Regime Types

Democracy is measured using Boix et al.'s (forthcoming) dichotomous coding, which requires competitive elections and a minimal level of suffrage. While highly correlated with other measures of democracy, this coding is advantageous in that it explicitly differentiates democracies from EA regimes based on the freedom and fairness of elections.

EA regimes are defined as autocracies in which multiple political parties exist and legally compete for legislative elections (measured from Cheibub et al. 2010). This definition fulfills the key theoretical characteristic: the presence of an organized opposition that provides citizens a legal route to pressure the government. It also has the advantage of concreteness, as it's based on a formal legal requirement. Note that the definition is distinct from merely requiring that a legislature or electoral party exists, although both of these alternatives are also tested. The results suggest that the legal existence of multiple parties is the key demarcator of responsive autocracies.

Empirical Setup

I test four distinct panel models for each outcome variable Y. As a baseline, I first run OLS with dummy variables for EA and democracy (lagged by one year):

$$Y_{it+1} = \alpha_0 + \alpha_1 EA_{it} + \alpha_2 D_{it} + \alpha_3 R(Y_{it+1}) + \boldsymbol{\alpha_4 \mathbf{X}_{it}} + \gamma_t + \varepsilon_{it+1} \quad (1)$$

where EA_{it} and D_{it} are indicators of electoral authoritarianism and democracy for country i in year t. Closed autocracy is the omitted category. $R(\cdot)$ stands for the regional average (excluding the country i), $\mathbf{X_{it}}$ is a set of control variables, the γ_t are year fixed effects, and ε is an error term.

Although useful, this approach cannot demonstrate the causal effects of regime type. The second model thus instruments for EA using four measures of external regime types. Democracy is assumed to be exogenous, but violations of this should not affect inference on EA. The first-stage equation is thus the following:

$$EA_{it} = \beta_0 + \beta_1 R(EA_{it}) + \beta_2 R(D_{it}) + \beta_3 N(EA_{it}) + \beta_4 N(D_{it}) + \beta_5 R(Y_{it+1}) + \boldsymbol{\beta_6 \mathbf{X}_{it}} + \gamma_t + \mu_{it} \quad (2)$$

where $N(\cdot)$ stands for the neighbor average and μ is an error term. The IV models are calculated using the `ivreg2` command in Stata (Baum et al. 2010). I use the limited-information maximum likelihood form of the IV, which has attractive robustness properties (Stock and

Yogo 2002). I also check the results using two-stage least squares (2SLS) and the general method of moments (GMM) IV estimator.

The third and fourth models test the cumulative, historical effects of regime types, mirroring the approach in Gerring et al. (2012). For each country, I calculate the weighted average of each regime type back to 1946. As in Gerring et al. (2012), I apply a 1% annual depreciation to the weight. In contrast, I normalize the weighted history to the same scale as an average, so that the three measures sum to 1. This approach captures long-term regime type experience, but unlike a stock variable, avoids conflating it with the time period and the country's years of independence. The third model type replaces the regime dummies in equation (1) with the history measures. The fourth instruments for *EA History* using weighted histories of the four external regime type measures.

In the main results, the sample is limited to 158 countries from 1960–2007, although this varies by dependent variable. The main models use robust standard errors clustered by country. As a robustness check, I use Driscoll-Kraay standard errors, which account for multiple lags of serial correlation and contemporaneous correlation across units.

Control Variables

For each outcome Y, the models control for the regional average of Y (excluding the country itself) in the same year. This accounts for distinct regional characteristics, as well as shocks specific to time and region, such as the diffusion of medical innovations.

The models include a common set of further control variables, which are lagged by one year. First, I account for *Foreign Aid* (official development assistance as a percentage of GNI, from World Bank 2011). While obviously influencing outcomes like infant mortality, aid is often tied to political reform and so represents a potential confounder for the effect of regime type.

Second, I control for five major economic variables: logged *GDP/capita* (in real 2000 dollars, from Haber and Menaldo 2011; World Bank 2011), *Economic Growth* (the percentage change in *GDP/capita*), *Resource Dependence* (revenues from fuel and metals as a percentage of GDP, from Haber and Menaldo 2011), *Economic Inequality* (Gini, from Galbraith and Kum 2003; UNU-WIDER 2005; World Bank 2011), and a *Communist* dummy. The level and

distribution of income strongly condition human development, as do the resources available to the government. Haggard and Kaufman (2008) show that Communist regimes have highly distinct policy platforms.

Third, I control for several socioeconomic characteristics that affect the ease of delivering public services: *Population* (logged, from Heston et al. 2011), *Urbanization* (the percentage living in cities of 100,000+, from Correlates of War Project 2010), and *ELF* (ethnolinguistic fractionalization, from Roeder 2001). Fourth, since domestic conflict can disrupt government services and impede human development, I control for *Political Violence* (a 0-10 rating of domestic civil and ethnic violence, from Marshall 2010).

Lastly, to account for variation across time, I include year fixed effects. I do not include country fixed effects, which would problematically negate the influence of any country that does not vary by regime type. Whereas the purpose of country fixed effects is to account for country-level omitted variables, I rely here on instruments to obtain a causal estimate. However, in robustness checks, I additionally control for region fixed effects and the Geddes autocracy categories (military, party-based, and personalist).

6 Empirical Results

I now present the main results, with the full regressions shown for infant mortality. Full regressions for the remaining outcomes will be presented in an online appendix. I then discuss several robustness checks for infant mortality and literacy, and finally compare the effect of EA to legislatures and parties for several outcomes.

6.1 Main Results

Infant Mortality Table 2 displays results predicting *Infant Mortality* (per 1000 live births). Models 1 and 2 test *EA* and *Democracy*, while Models 3 and 4 test their historical averages. Models 2 and 4 instrument for *EA* and *EA History*, respectively. All four models show superior outcomes under both EA and democracy, with all eight coefficients significantly negative for infant mortality. The results are particularly strong in the IV models, implying a large causal

effect of EA on health. According to Model 4, a long-term EA regime has about 43 fewer infant deaths per 1000 live births compared to closed autocracy. This is equivalent to the estimated effect of shifting from Kenya to Sweden on average income. For democracy, the effect is 36 fewer deaths.

The table also displays the three primary checks for the validity of the instruments. The weak identification test addresses whether the instruments explain a sufficient amount of variance in the endogenous variable (*EA* or *EA History*). The specific test shown is the Cragg-Donald F statistic (measured against the Stock-Yogo critical values), where the common rule of thumb is a threshold of 10 to be considered valid. In both models, the instruments greatly exceed this threshold. The underidentification test (the Kleibergen-Paap χ^2 statistic) confirms that the instruments are jointly significant for the endogenous regressor in both models. Lastly, the overidentification test (the Hansen J statistic) calculates whether the instruments are correlated with the error term in the outcome equation, violating the exclusion restrictions. A rejection of the null questions the validity of the instruments, but the test is non-significant in both models. The three checks are virtually identical for the other dependent variables since the only variation in the first stage is the regional DV average.

Results for the control variables are largely expected. Higher income is strongly negative for infant mortality, whereas a higher regional average of infant mortality is positive. Consistent with Haggard and Kaufman (2008), Communist regimes feature fewer infant deaths. More populated and less urbanized countries have higher rates, reflecting a difficulty in delivering public health services. Surprisingly, no relationship with economic inequality or resource dependence is evident.

Other Health Outcomes Table 3 summarizes results for two other health outcomes and four education outcomes. The four model types are identical to those in Table 2, but results for the controls are omitted to save space. Each pair of coefficients (for *EA* and *Democracy*) represents a separate regression. A total of 24 are shown in Table 3. Again, the third and fourth models test *EA History* and *Democracy History*.

Under-5 Mortality (per 1000 live births) is a slightly broader measure of basic health compared with infant mortality. *Life Expectancy* (in years) is broader still, but heavily influenced by child mortality. For both variables, EA and democracy are strongly associated with better outcomes (although *EA* misses significance at the .05 level for *Life Expectancy* in Models 1–3). According to Model 4, a long-term EA regime produces 88 fewer child deaths per 1000 births and more than 9 additional years of life compared to closed autocracy. For democracy, the effect is 67 fewer deaths and 8 additional years of life.

Education Table 3 also features four measures of education. The first is *Literacy* (as a percentage of adults, from Banks 1976; Norris 2008; World Bank 2011), which is positively related to democracy and EA in the IV tests. The effects are particularly strong for the historical measures, which is sensible given that literacy needs to build up over time within a population. An identical pattern is found for *Schooling*, the percentage of age-appropriate children enrolled in primary and secondary education (called the gross enrollment ratio).

Lastly, I test *Literacy Equality* and *Schooling Equality*, respectively the gender ratio of literacy (UNESCO 2012) and *Schooling*. Higher values indicate more equal outcomes across genders. EA and democracy are significantly positive for both using the historical measures and in the IV tests. This makes sense given that the equal vote women receive in modern electoral regimes substantially boosts their political power relative to closed autocracy.

In sum, EA and democracy yield better outcomes for all seven measures of health and education. Both are significant at the .10 level for every IV model and every regime history model, and at the .05 level for all of the fourth model types. Regime history particularly stands out as consequential, validating the theoretical approach in Gerring et al. (2012).

Political Rights The four dependent variables listed in Table 4 measure basic freedoms and political rights. All are scaled to run from 0 to 1, with 1 highest in freedom. *Civil Liberties* is from Freedom House (2010). Confirming the simple comparison from earlier, democracies are much freer than closed autocracies, whereas EA regimes lie somewhere in between. This also holds true for *Free Speech* (Cingranelli and Richards 2010). Another commonality is that

democracy is positive across all tests, but *EA History* is only weakly related in the IV tests. This may be because long-lived democracies experience a consolidation process of democratic deepening, whereas EA regimes do not—liberties always remain at the mercy of the ruling party's interests.

Women's Rights (Cingranelli and Richards 2010) relates positively to EA and democracy, but not with consistent significance in the IV tests. Therefore, we cannot be confident the effect is causal. Unlike for civil liberties, results are similar in magnitude for EA and democracy. Lastly, EA is unrelated to *Physical Integrity*, a nine-point index of freedom from torture, killings, and physical repression by the government (Cingranelli and Richards 2010), whereas democracy is strongly positive in all four tests. This presents a surprising contrast with EA's positive relationship with civil liberties. A possible reason is that EA regimes feature a high degree of contention relative to closed autocracies. Thus, their legal recognition of civil liberties may be balanced by their needs to suppress opposition activity (Vreeland 2008). In comparison, closed regimes facing quiescent populations do not need to resort to widespread physical repression.

6.2 Robustness Checks

Table 5 summarizes seven sets of robustness checks for the IV results on infant mortality and literacy. The same checks for the other dependent variables are covered in the online appendix. The table shows the IV estimates for *EA* (Models 1 and 3) and *EA History* (Models 2 and 4). Each coefficient represents a separate regression. As clearly seen, the results are highly robust, remaining significant at the .05 level in 27 of 28 models.

The first check includes two alterations taking into account possible spatial dynamics. First, I control for the neighbor average of the dependent variable in addition to the regional average. Second, I use Driscoll-Kraay standard errors, which are robust to three lags of serial correlation and arbitrary correlations across countries. The significance of *EA* increases in all four tests.

The second check controls for the major autocracy categories coded in Geddes et al. (2012). Specifically, for Models 1 and 3, I add dummy variables for military and party-based regimes, with a combination of personalist dictatorships and monarchies as the omitted category. For the regime history models, I instead test their historical averages. The Geddes categories are not significantly related to either outcome, although military regimes are marginally positive for literacy.

In the next two checks, I replace the LIML IV estimator with two-stage least squares (2SLS) and a GMM estimator, with no effect on the findings. The fifth check adds region dummies. The result for *EA History* and infant mortality narrowly misses significance at the .05 level, but remains of a similar magnitude. In the sixth check, I limit the sample to autocracies. The level models necessarily omit *Democracy*, but the history models still include *Democracy History*. In the final check, I remove *Economic Inequality* and *Foreign Aid* as controls, as they have the most missing data. To compare with Table 2, Model 2's sample size increases to 5,683 (with 151 countries). For the literacy models, the sample is expanded to 1946–2007. The IV estimates for *EA* are minimally affected.

6.3 Other Autocratic Institutions

How does EA compare to other institutions that have become widespread in autocracies? Studies of autocracy have focused the greatest attention on legislatures and parties, but there is a shortfall of work explicitly comparing these different institutions.[13] I therefore compare EA to legislatures and parties (measured from Cheibub et al. 2010) in the absence of multiparty competition. Since EA, by my definition, incorporates all three elements, it is not yet clear which is really doing the work.[14] I also compare EA to the presence of a *Multiparty Legislature*, which differs from EA in additionally requiring that multiple parties are seated in the legislature. About 80% of EA regimes satisfy this requirement.[15]

[13] An exception is work on democratization (Brownlee 2009; Wright and Escribà-Folch 2012).
[14] One could also test legislative elections without multiparty competition, but this is redundant as 95+% of legislatures are elected (Norris 2008). Results specific to elected legislatures are indistinguishable from those shown for legislatures as a whole.
[15] In the remaining 20%, either the ruling party wins every seat (e.g., Singapore 1968–83) or the regime is in a period between legalizing competition and seating the election winners.

To make the comparisons, I adapt the third model type discussed above, namely a non-IV test of regime type histories. Ideally, an IV setup would be used, but I lack a reliable set of instruments for legislatures and parties.[16] For each outcome variable, I run four separate regressions, testing historical averages of the four alternative institutions. Each regression includes the standard set of controls and *Democracy History*.

Figure 3 graphically displays the estimated coefficients (with 95% confidence intervals) predicting *Infant Mortality*, *Literacy*, *Literacy Equality*, and *Civil Liberties*. As already discussed, *EA History* produces superior outcomes for all four measures. Results are virtually identical for *Multiparty Legislature*. However, the effects of legislatures and parties by themselves are opposite in direction for all four outcomes, albeit inconsistently significant. Thus, legislatures and parties without multiparty competition are associated with higher infant mortality and lower civil liberties.

This result conflicts with theories, such as Gandhi's (2008b), that legislatures in isolation can induce political concessions. Rather, legislatures and parties by themselves may only serve to increase regime power by coopting elites who would otherwise pressure the government. Multiparty elections, in contrast, motivate regimes to promote citizen welfare. This calls into question many of the empirical findings on legislatures and parties, which may be driven by the large share of regimes with these institutions that additionally feature multiparty competition.

7 Conclusion

Autocratic elections matter. Relative to closed autocracy, EA regimes display better outcomes on health, education, gender equality, and civil liberties. Further, the IV models identify these effects as causal and the regime history models find a particularly strong cumulative effect of EA on health and education. In contrast, legislatures and parties in the absence of multiparty competition display slightly negative outcomes. This points to the acceptance of multiparty elections as the most politically significant feature of autocracy.

[16] I investigated using regional and neighbor averages of these variables, but the resulting instruments were too weak to be considered valid.

The results have a number of important implications. First, the findings contribute to the political economy of development literature. A continuing theme in this field is the importance of institutions, but without a clear picture of which institutions matter. Greater attention should be given to autocratic electoral institutions, including how they interact with specific political models of development. For instance, the general pattern found for EA closely corresponds to the East Asian developmental model associated with Taiwan, Singapore, and South Korea. Like EA regimes generally, the "Asian Tigers" featured large public investments in education and health, middle levels of civil liberties, and low redistribution (Haggard and Kaufman 2008). As the Asian Tigers were EA regimes during their key periods of development, this may suggest a natural affinity between EA and this particular economic model.

Second, several scholars have questioned the welfare effects of democracy promotion given that it often stalls at EA (Lust-Okar 2006; Goldsmith 2008; Regan and Bell 2010). In contrast, this paper implies that the international encouragement of elections is a net positive for citizen welfare, even when the end result is short of democracy. Unexpectedly, EA regimes perform as well as or better than democracy in the IV tests for health and education, although the difference is typically not significant. On balance, however, the results still support democracy as the most advantageous system, since it maintains a clear superiority on civil liberties and physical repression. If anything, the results demonstrate a lack of tension between political freedom and government performance. Thus, the encouragement of contested elections should continue with added vigor.

Lastly, the results provide further evidence that scholars should move beyond the democracy-autocracy dichotomy when predicting political outcomes. Lumping autocracies together as one large group overlooks a great deal of variation due to autocratic institutions. In particular, future work can extend this paper's IV strategy for EA to other outcomes, such as economic growth and conflict behavior. It is critical that we further our understanding of how autocratic regimes choose policies and how elections influence these decisions. Given that the majority of the developing world remains under autocracy, continued insight into how autocratic politics can improve human development bears on the welfare of a large part of the world's population.

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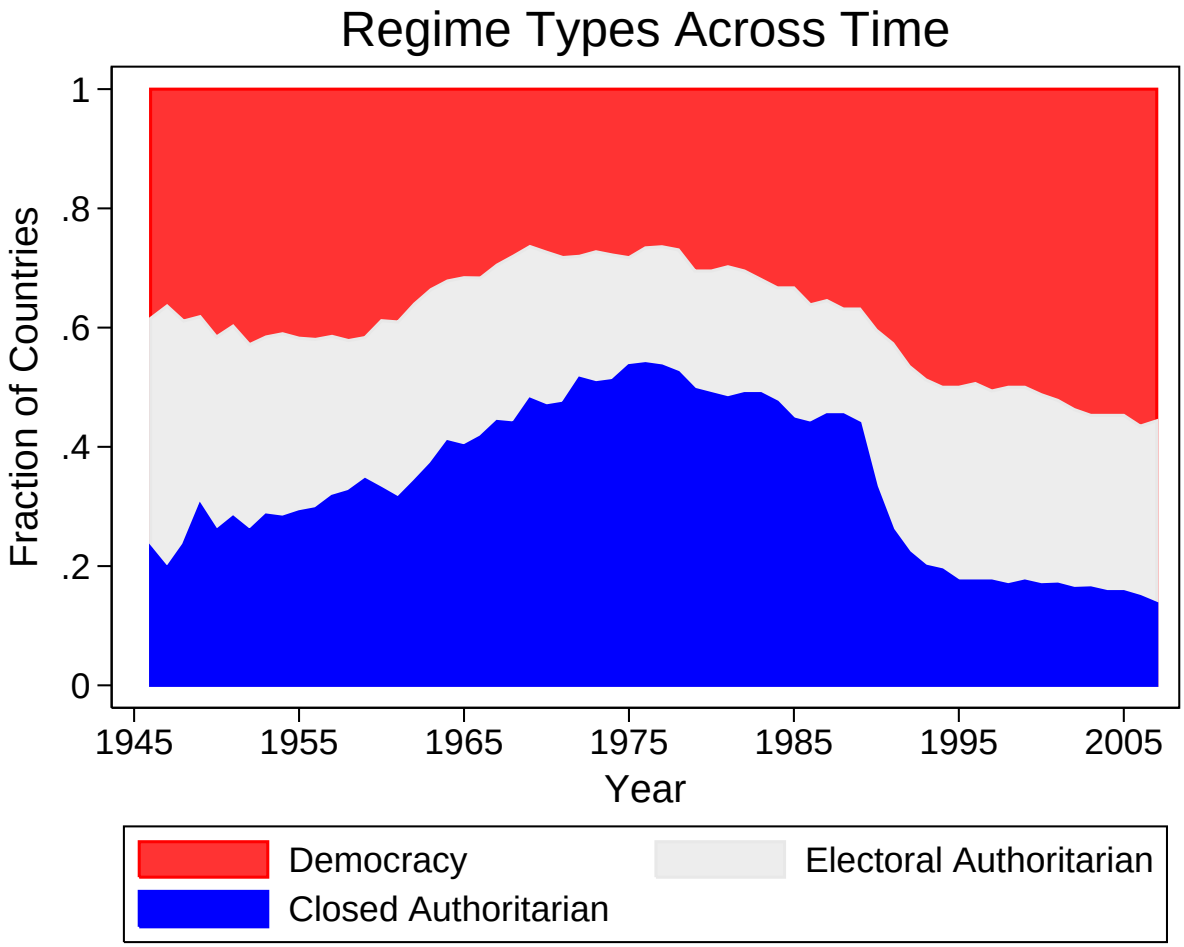

Fig. 1: The figure shows the distribution of three regime types by year from 1946–2007. Electoral authoritarian (EA) regimes allow legal multiparty competition for the legislature (measured from Cheibub et al. 2010). Democracy is measured from Boix et al. (forthcoming). Note the large fraction of EA regimes as far back as 1946 and their sharp rise around the end of the Cold War.

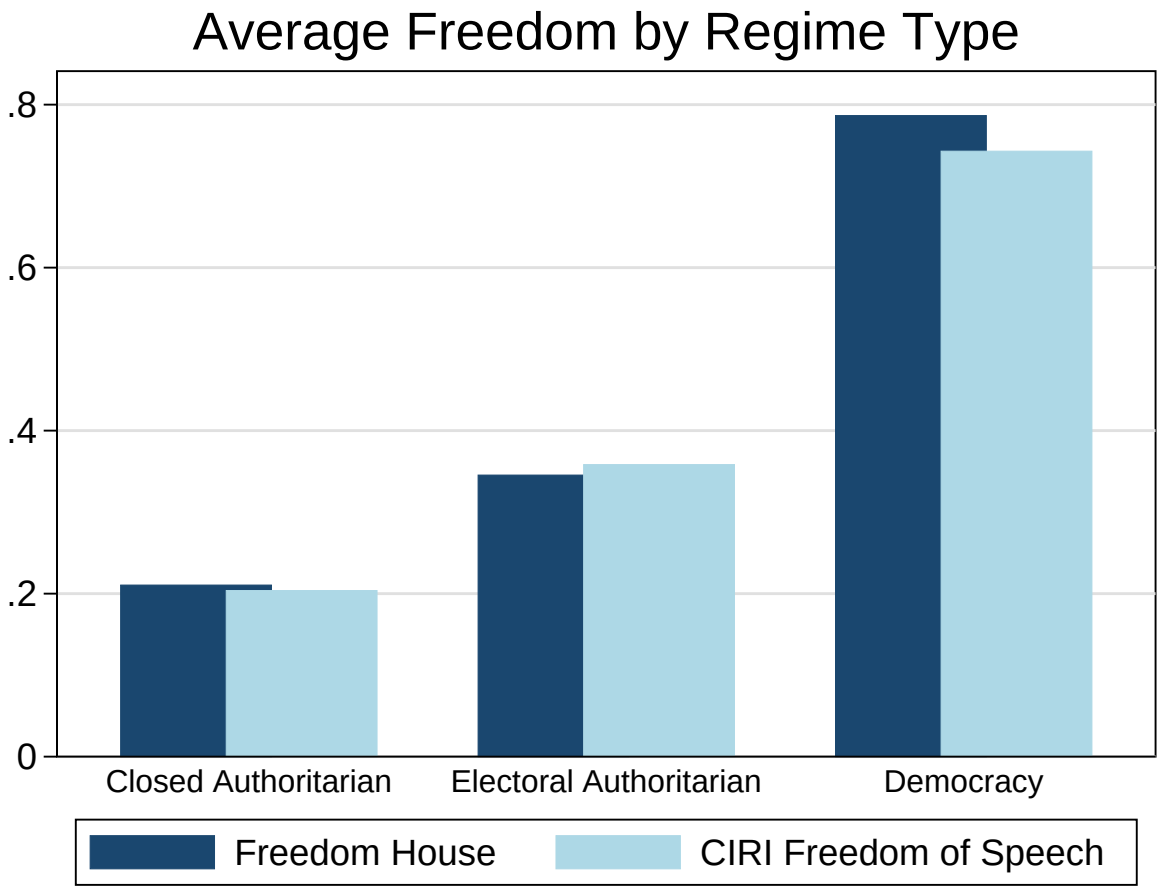

Fig. 2: The figure displays average freedom scores across three regime types. The two freedom measures are Freedom House's (2011) rating of civil liberties and CIRI's rating of freedom of speech (Cingranelli and Richards 2010). Both are scaled to range from 0 to 1, with 1 the freest. As seen, electoral autocracies lie between closed (non-electoral) autocracies and democracies.

Table 1: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
EA	0.261	0.439	0	1	6,773
Democracy	0.394	0.489	0	1	6,773
EA History	0.276	0.346	0	1	6,773
Democracy History	0.334	0.411	0	1	6,773
Legislature Only (History)	0.252	0.338	0	1	6,773
Single Party (History)	0.282	0.340	0	1	6,773
Multiparty Legislature (History)	0.201	0.302	0	1	6,773
Infant Mortality	62.346	47.947	2.2	242.1	6,255
Under-5 Mortality	94.881	82.936	2.8	449.8	6,404
Life Expectancy	61.235	11.834	26.82	82.510	6,565
Literacy	67.295	29.773	0.4	100	6,593
Schooling	73.569	25.902	1.330	134.88	5,028
Literacy Equality	0.809	0.201	0.16	1.16	2,427
Schooling Equality	0.884	0.181	0.054	1.469	4,842
Civil Liberties	0.486	0.317	0	1	5,207
Free Speech	0.501	0.367	0	1	3,872
Women's Rights	0.577	0.216	0	1	3,674
Physical Integrity	0.596	0.290	0	1	3,842
Foreign Aid	4.860	8.840	0	125.17	6,071
GDP/capita (ln)	8.254	1.160	5.234	11.854	6,754
Economic Growth	1.994	6.773	−63.944	125.959	6,673
Economic Inequality	41.110	8.725	16.83	74.33	5,034
Resource Dependence	6.433	13.241	0	100	6,420
Communist	0.071	0.256	0	1	6,773
Urbanization	22.683	17.780	0	100	6,739
ELF	0.465	0.278	0.003	0.984	6,639
Population (ln)	9.013	1.541	4.824	14.086	6,767
Political Violence	0.663	1.627	0	10	6,733
Year	1985.059	13.626	1960	2007	6,773

Table 2: IV and OLS Regressions Predicting Infant Mortality

DV = *Infant Mortality*	OLS (1)	IV (2)	OLS (3)	IV (4)
EA	-7.397^{*}	-47.037^{**}		
	(-2.10)	(-2.92)		
Democracy	-13.348^{***}	-35.125^{***}		
	(-3.59)	(-3.51)		
EA History			-13.863^{*}	-43.132^{*}
			(-2.49)	(-2.52)
Democracy History			-20.889^{**}	-35.810^{**}
			(-3.19)	(-3.20)
Infant Mortality (Regional Average)	0.417^{***}	0.365^{***}	0.411^{***}	0.397^{***}
	(4.73)	(3.81)	(4.72)	(4.11)
Foreign Aid	0.380^{**}	0.392^{*}	0.284^{*}	0.165
	(2.68)	(2.12)	(2.30)	(1.16)
GDP/capita (ln)	-15.205^{***}	-16.592^{***}	-13.899^{***}	-13.613^{***}
	(-6.95)	(-6.34)	(-6.48)	(-5.08)
Economic Growth	-0.148^{*}	-0.052	-0.132^{+}	-0.072
	(-2.08)	(-0.65)	(-1.83)	(-1.05)
Economic Inequality	0.116	0.022	0.106	0.120
	(0.81)	(0.14)	(0.73)	(0.72)
Resource Dependence	0.156	0.137	0.114	0.068
	(1.24)	(0.92)	(0.86)	(0.40)
Communist	-15.072^{***}	-13.660^{+}	-17.077^{***}	-15.651^{*}
	(-4.04)	(-1.79)	(-3.85)	(-2.34)
Urbanization	-0.181^{*}	-0.080	-0.200^{*}	-0.148^{+}
	(-2.26)	(-0.90)	(-2.55)	(-1.66)
ELF	3.399	2.600	5.076	4.181
	(0.51)	(0.38)	(0.76)	(0.60)
Population (ln)	2.571^{**}	3.015^{**}	2.392^{**}	2.278^{*}
	(2.85)	(2.75)	(2.66)	(2.19)
Political Violence	-0.209	0.107	0.067	0.242
	(-0.27)	(0.13)	(0.10)	(0.35)
Year Dummies?	Y	Y	Y	Y
N	4,342	4,153	4,362	4,173
Countries	151	144	152	145
Adjusted R^2	0.798	0.699	0.804	0.772
Weak Identification (F)		81.40^{***}		153.17^{***}
Underidentification (χ^2)		24.54^{***}		16.72^{**}
Overidentification (χ^2)		4.56		5.54

Notes: The table displays models predicting infant mortality from regime type. Model 1 uses OLS to compare EA regimes and democracies to closed autocracies. Model 2 instruments for *EA*. Model 3 uses OLS to test histories of EA and democracy. Model 4 instruments for *EA History*. In each model, both EA and democracy are significantly negative for infant mortality. Years are 1960–2007. t statistics (based on robust standard errors clustered by country) are shown in parentheses.

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Table 3: IV and OLS Regressions for Health and Education Outcomes

		Regime Levels		Regime History	
		OLS (1)	IV (2)	OLS (3)	IV (4)
Under-5 Mortality	*EA*	-14.13^{*}	-82.70^{**}	-26.07^{**}	-88.41^{**}
		(-2.35)	(-3.02)	(-2.66)	(-2.90)
	Democracy	-20.80^{**}	-58.44^{***}	-34.19^{**}	-66.66^{***}
		(-3.28)	(-3.37)	(-3.01)	(-3.32)
Life Expectancy	*EA*	1.19^{+}	7.91^{+}	2.11^{+}	9.70^{**}
		(1.74)	(1.73)	(1.90)	(2.64)
	Democracy	2.68^{***}	6.12^{*}	4.25^{**}	8.10^{***}
		(3.47)	(2.32)	(2.98)	(3.40)
Literacy	*EA*	2.23	38.75^{***}	8.98^{*}	55.88^{***}
		(0.84)	(3.42)	(2.14)	(3.27)
	Democracy	6.05^{*}	27.63^{***}	14.61^{**}	42.41^{***}
		(2.08)	(3.67)	(2.92)	(3.67)
Schooling	*EA*	1.24	16.14^{+}	6.31^{+}	32.73^{**}
		(0.61)	(1.81)	(1.75)	(2.89)
	Democracy	3.17	11.40^{+}	7.75^{*}	21.43^{**}
		(1.41)	(1.95)	(2.01)	(2.82)
Literacy Equality	*EA*	-0.01	0.43^{*}	0.09^{*}	0.45^{*}
		(-0.30)	(2.10)	(2.14)	(2.29)
	Democracy	0.01	0.33^{*}	0.11^{*}	0.34^{*}
		(0.43)	(2.18)	(2.44)	(2.51)
Schooling Equality	*EA*	0.04^{+}	0.32^{**}	0.10^{**}	0.50^{**}
		(1.87)	(3.11)	(2.69)	(3.08)
	Democracy	0.05^{*}	0.22^{**}	0.10^{*}	0.31^{***}
		(2.28)	(3.18)	(2.54)	(3.30)

Notes: The table summarizes models predicting health and education outcomes from regime type. The six dependent variables are listed in the first column. Four models are then shown for each dependent variable. Model 1 uses OLS to compare EA regimes and democracies to closed autocracies. Model 2 instruments for *EA*. Model 3 uses OLS to test histories of EA and democracy. Model 4 instruments for *EA History*. t statistics (based on robust standard errors clustered by country) are shown in parentheses.

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Table 4: IV and OLS Regressions Predicting Political Rights

		Regime Levels		Regime History	
		OLS (1)	IV (2)	OLS (3)	IV (4)
Civil Liberties	*EA*	0.11^{***}	0.36^{***}	0.12^{***}	0.17
		(5.12)	(4.77)	(3.36)	(1.49)
	Democracy	0.38^{***}	0.53^{***}	0.38^{***}	0.41^{***}
		(15.24)	(11.94)	(10.08)	(5.76)
Free Speech	*EA*	0.11^{**}	0.25^{*}	0.08^{+}	0.15
		(3.07)	(2.35)	(1.66)	(1.16)
	Democracy	0.36^{***}	0.45^{***}	0.36^{***}	0.39^{***}
		(9.65)	(5.98)	(6.91)	(4.67)
Women's Rights	*EA*	0.10^{**}	0.10	0.10^{**}	0.13
		(3.19)	(1.06)	(2.68)	(1.12)
	Democracy	0.10^{**}	0.10^{+}	0.12^{**}	0.15^{*}
		(3.46)	(1.86)	(3.25)	(2.38)
Physical Integrity	*EA*	-0.00	0.09	-0.03	0.05
		(-0.02)	(1.13)	(-0.73)	(0.61)
	Democracy	0.11^{***}	0.17^{**}	0.09^{**}	0.14^{**}
		(4.52)	(3.29)	(2.68)	(2.75)

Notes: The table summarizes models predicting basic freedoms and women's rights from regime type. The four dependent variables are listed in the first column. Four models are then shown for each dependent variable. Model 1 uses OLS to compare EA regimes and democracies to closed autocracies. Model 2 instruments for *EA*. Model 3 uses OLS to test histories of EA and democracy. Model 4 instruments for *EA History*. t statistics (based on robust standard errors clustered by country) are shown in parentheses.

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Table 5: IV Robustness Checks for Infant Mortality and Literacy

	Infant Mortality		Literacy	
	Level (1)	History (2)	Level (3)	History (4)
Spatial Dynamics	-22.93^{***}	-27.72^{***}	23.03^{***}	42.31^{***}
	(-5.97)	(-5.70)	(4.69)	(10.91)
Geddes Types Added	-43.88^{**}	-40.97^{*}	41.78^{***}	63.06^{**}
	(-2.72)	(-2.38)	(3.46)	(3.16)
2SLS	-36.24^{**}	-34.46^{**}	36.25^{***}	53.26^{***}
	(-3.23)	(-2.81)	(3.50)	(3.36)
GMM-IV	-33.41^{**}	-27.99^{*}	36.02^{***}	53.08^{***}
	(-3.06)	(-2.40)	(3.54)	(3.36)
Region FE	-52.45^{**}	-32.58^{+}	36.56^{*}	37.88^{**}
	(-2.70)	(-1.81)	(2.24)	(3.11)
Autocracies Only	-46.54^{**}	-45.90^{**}	39.09^{**}	61.07^{**}
	(-3.14)	(-3.05)	(2.86)	(3.47)
Inequality/Aid Omitted	-52.31^{*}	-47.92^{***}	44.06^{***}	49.66^{***}
	(-2.39)	(-3.43)	(3.85)	(4.22)

Notes: The table summarizes several robustness checks for the IV models predicting infant mortality and literacy. Only the results for *EA* and *EA History* are shown. The first column lists the model checks, which are described in the text. Models 1 and 3 instrument for *EA* and test the effect of regime level. Models 2 and 4 instrument for *EA History* and test the effect of regime experience. t statistics (based on robust standard errors clustered by country) are shown in parentheses.

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Fig. 3: The figure compares the effect of electoral authoritarianism (EA) to other autocratic institutions. The dots are regression coefficients (shown with 95% confidence intervals) estimating the long-term effects of different institutions on four development outcomes. EA and legislatures with multiparty representation lead to better outcomes for all four measures. Legislatures and parties in the absence of multiparty elections yield negative effects.