

# Development, Democratization, and Democratic Deepening\*

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## **Abstract**

Existing studies of the relationship between economic development and democracy – whether they find support for a positive association between development and democracy or not – overlook key conceptual and empirical issues. An overwhelming proportion of the literature fails to distinguish between the processes of democratization and democratic deepening. We argue that democratization and democratic deepening must be distinguished analytically and modeled empirically as distinct stages; by conflating the two processes, analysts can miss a significant relationship in one of the stages. We further show that prominent theories of the development-democracy link imply both a relationship between development and democratization and one between development and democratic deepening, although the latter relationship has largely been overlooked as a theoretical implication. We test for both associations empirically by developing a two-stage empirical strategy. Our results reveal a positive relationship between development and democratization, but no significant association between development and democratic deepening. These findings demonstrate the importance of not conflating the two processes and suggest that existing theories that link development and democracy should be revisited.

# 1 Introduction

Beginning with modernization theorists in the post-World War II era, numerous scholars have examined the relationship between economic development and democracy. Despite the sheer volume of studies devoted to the topic, both the conceptual and empirical links between development and democracy are still subject to considerable debate. At the most general level, studies can broadly be divided between those that find a positive causal relationship between development and democracy and those that contest such an association.

Many prominent studies have pointed to a causal relationship between development and democracy. Among the more recent of these, Przeworski et al. (2000) suggest that the incidence of democracy is “undoubtedly related to the level of economic development” (78), arguing that “however they emerge, democracies are much more likely to survive in affluent societies” (137). Boix and Stokes (2003), however, argue that democracy is linked not to development per se but to the income equality that accompanies economic development (see also Acemoglu and Robinson 2000, 2006; Boix 2003; Houle 2009). Meanwhile, Inglehart and Welzel (2005), drawing on earlier theories of modernization, argue that development is accompanied by changes in individual values that lead to pressure for democracy (see also Inglehart 1997; Inglehart and Baker 2000).

In a series of papers, however, Acemoglu et al. (2005, 2008, 2009) contest the validity of the association between development and democracy. Arguing that existing studies fail to control for omitted factors that simultaneously affect both development and democracy, Acemoglu et al. find that the positive correlation between income and democracy disappears once country fixed effects are included.

We argue that both sides of this important debate – whether they find support for a positive association between development and democracy or not – overlook key conceptual and empirical issues. Democracy is not zero-sum: Scholars have noted that some democracies are more democratic than others (e.g., Bollen and Jackman 1989; Collier and

Levitsky 1997; Diamond 1999; Epstein et al. 2006; Hadenius 1992; Mainwaring, Brinks, and Pérez-Liñán 2001) and that gradations of democracy are in fact both conceptually and empirically informative (Collier and Adcock 1999; Elkins 2000). Moreover, levels of democracy vary over time within democratic states, even after democratization, the critical moment of transition from authoritarianism to democracy.

Nevertheless, an overwhelming proportion of studies of the development-democracy link fails to distinguish between democratization and democratic deepening, the changes in the level of democracy over time within a democratic polity.<sup>1</sup> This is despite the fact that many scholars have noted that the processes that lead to democratization may be different from those that result in democratic deepening (e.g., Diamond 1999; Linz and Stepan 1996; Sartori 1987).<sup>2</sup>

We argue that democratization and democratic deepening must be distinguished analytically and modeled empirically as distinct stages. Indeed, we note, the causal mechanisms posited by proponents of the development-democracy link imply both a positive relationship between development and democratization and one between development and democratic deepening, although the latter relationship has largely been overlooked as a theoretical implication. In other words, there is nothing endogenous to these theoretical models to suggest that the causal effect of development on democracy should cease after democratization. Rather, the hypothesis that development also has a positive causal effect on democratic deepening is implied by these models, even though it is not a comparative static explicitly recognized or tested by their authors. When we test for both associations empirically by distinguishing the two stages of democratization and democratic deepening, we in fact find an association between development and

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<sup>1</sup> Previous scholars have variously referred to this broad concept (for which we provide a more precise definition below) as one of *democratic consolidation* (Diamond 1999; Linz and Stepan 1996) or changes to *democratic quality* (Diamond and Morlino 2004). We favor the term *democratic deepening*, used by Heller (2000), for its clarity.

<sup>2</sup> Similarly, in making a distinction between exogenous and endogenous pathways of democratization, Przeworski et al. (2000) implicitly suggest that factors causing democratization or regime change may not be the same as those related to the survival of democracy.

democratization, but no significant association between development and democratic deepening.

As we will also show, conflating democratization and democratic deepening can lead to misleading empirical inferences. Doing so may yield null results that suggest no relationship between development and democracy, as Acemoglu et al. (2005, 2008, 2009) find. In our analysis, however, once we distinguish the two processes, we do in fact find a positive and robust association between development and democratization, even while controlling for country fixed effects as these authors suggest.

Our paper therefore makes three contributions to the extensive literature on the relationship between development and democracy. First, we demonstrate that the failure to distinguish – conceptually and empirically – between the processes of democratization and democratic deepening can lead to misleading inferences. Second, we develop an empirical strategy to overcome these methodological shortcomings using a two-stage Heckman selection model. Finally, and most importantly from a theoretical point of view, we show that prominent theories explaining the development-democracy link imply both a relationship between development and democratization and one between development and democratic deepening. The fact that our empirical results do not reveal evidence of both of these relationships suggests that existing theoretical models of the link between development and democratization should be revisited.

We begin in section 2 with an overview of the extensive literature linking development and democracy, as well as the more recent contributions on democratic deepening that motivate our research agenda. In section 3, we detail our argument, noting both the need to distinguish the processes of democratization and democratic deepening and the implications of previous theoretical models for the effect of development on each of these processes. In section 4 we lay out our two-stage empirical strategy for testing these effects, and discuss our results in section 5. The final section provides our conclusions and their implications for future research.

## 2 Development and Democracy

The relationship between economic development and democracy has spawned an extensive body of research. Yet there is considerable debate on the empirical validity of this association as well as the specific causal mechanism linking these variables.

The earliest evidence and explanation of a relationship between economic development and democracy can be traced to modernization theory (e.g., Deutsch 1971; Lerner 1958; Lipset 1959). Authors in this tradition conceived modernization as a process consisting of various components – including income growth, industrialization, urbanization, social mobilization, education, mass media expansion, and political participation – that were interrelated and self-reinforcing. These economic shifts were expected to culminate in a modern democratic polity. In his seminal work on modernization, Lipset (1959, 1981) indeed finds that indicators of development like average wealth, degree of industrialization, level of education, and urbanization are higher in the “more democratic countries” (75).<sup>3</sup>

Lipset outlines several processes that could account for this positive association between development and democracy, including the development of tolerant values, a growing middle class, a more egalitarian social structure that would mitigate class conflict, and the rise of intermediary associations. In the words of Przeworski et al. (2000), “[d]emocracy thus is said to be secreted out of dictatorships by economic development” (88).

Against this view, Przeworski and his coauthors (Przeworski and Limongi 1997; Przeworski et al. 2000) suggest that a threshold level of development exists beyond which democracies are most likely to survive. These authors distinguish between what they call *exogenous* and *endogenous* forms of democratization and suggest that an observed correlation between democracy and development could theoretically arise due to either

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<sup>3</sup> For criticisms of modernization theory specifically, see Bollen and Jackman (1995), Cardoso and Faletto (1979), Cutright (1963), Huntington (1968), Moore (1966), Muller (1995), O’Donnell (1973), and Valenzuela and Valenzuela (1978).

mechanism. Under the endogenous mechanism, democracies are more likely to emerge as countries develop economically. Under the exogenous theory, democracies emerge for reasons other than economic development but are more likely to survive in countries that are already developed. They find no evidence for endogenous democratization, but do find evidence for exogenous democratization (see also Gasiorowski and Power 1998), noting that “no democracy has ever been subverted. . . in a country with a per capita income higher than that of Argentina in 1975: \$6,055” (98).

Boix and Stokes (2003) challenge this claim on both conceptual and empirical grounds (but see Epstein et al. 2006). They suggest that Przeworski and his coauthors (Przeworski and Limongi 1997; Przeworski et al. 2000) fail to provide a persuasive theory. To make the the exogenous-endogenous distinction, they argue that Przeworski et al. need a theory in which development induces actors in a democracy to sustain the system but does not induce actors in a dictatorship to change to a democracy. Boix and Stokes analyze the relationship between development and democratization over a longer time period and find empirical support for both the exogenous and endogenous forms. Moreover, they suggest that democracy is linked not to development per se but to the income equality that accompanies the process of economic development (see also Acemoglu and Robinson 2000, 2006; Boix 2003; Houle 2009).

Offering a more direct defense of some of the mechanisms originally posited by Lipset, Inglehart and Welzel (2005) affirm modernization’s central insight that economic development is associated with cultural, social, and political changes that lead to greater democratic freedom (see also Inglehart 1997; Inglehart and Baker 2000). They suggest that development gives rise to two major dimensions of cultural change, with industrialization leading to the rise of secular-rational values and post-industrialization leading to those of self-expression. These shifts in values are in turn expected to lead to democratic transitions or to strengthen existing democracies by improving the effectiveness of institutions.

Yet despite their disagreements on the exact nature of the association between

development and democracy and the specific mechanisms involved, these authors nevertheless agree on the basic finding of a positive association between the two variables.<sup>4</sup> On the other hand, Acemoglu et al. (2005, 2008, 2009) argue against the validity of this basic empirical result. They suggest that previous studies testing the relationship between development and democracy suffer from some fundamental flaws. In particular, they point out that existing studies, which are based on cross-country relationships, do not control for potential bias induced by omitted variables. To address this issue, they include country fixed effects in their analyses and find no evidence of a positive relationship between development – measured as either income or education – and democracy.<sup>5</sup>

Many of these studies examine only the relationship between development and democratization – that is, the moment of transition to (and/or away from) democracy. Consequentially, they ignore any changes in the level of democracy that occur after democratization. Other studies conflate the relationship between development and democratization with the association between development and democratic deepening.

Yet scholars have noted that the processes that lead to democratization may be different from those that result in democratic deepening (Diamond 1999; Linz and Stepan 1996; Sartori 1987).<sup>6</sup> Moreover, the rationale for distinguishing between the transition to democracy and post-transition changes in levels of democracy is also supported by studies that have pointed to the growing differences between democratic regimes (e.g., Bollen and Jackman 1989; Collier and Levitsky 1997; Epstein et al. 2006; Hadenius 1992; Huntington 1996; Mainwaring, Brinks, and Pérez-Liñán 2001). Other authors have further argued that

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<sup>4</sup> A partial list of other works that confirm this association includes Barro (1999), Boix (2003), Bollen (1983), Brinks and Coppedge (2006), Brunk, Caldeira, and Lewis-Beck (1987), Burkhart and Lewis-Beck (1994), Coleman (1960), Diamond (1992), Epstein et al. (2006), Gasiorowski (1995), Gasiorowski and Power (1998), Helliwell (1994), Lipset, Seong, and Torres (1993), Londregan and Poole (1996), McClintock and Lebovic (2006), and Rueschemeyer, Stephens, and Stephens (1992).

<sup>5</sup> Similarly, Colaresi and Thompson (2003), Doorenspleet (2004), Krishna (2008b), Landman (1999), and Mainwaring and Pérez-Liñán (2003) arrive at either mixed conclusions or find no evidence of a relationship between development and democracy.

<sup>6</sup> A parallel body of research has also emerged that distinguishes between the processes of liberalization – the incremental decline in levels of authoritarianism – and democratization (e.g., Bunce and Wolchik 2010; Hadenius and Teorell 2007; Pop-Eleches and Robertson 2008).

ordinal measures of democracy are often both conceptually and methodologically better indicators of democracy than dichotomous ones (Collier and Adcock 1999; Elkins 2000).<sup>7</sup>

A growing body of work has therefore emerged to explain post-transition processes, variously referred to as *democratic consolidation* or *democratic deepening*. Although democratic consolidation has come to refer most commonly to the stability or endurance of a democratic regime (see e.g., Boix 2003; Gasiorowski and Power 1998; Pevehouse 2002; Schedler 1998, 2001), Linz and Stepan (1996) originally conceived of it as entailing not only procedural, but also attitudinal and behavioral changes, noting that “[w]ithin the category of consolidated democracies there is a continuum from low to high quality democracies” (6).

Scholars have therefore recently begun to focus on the quality of democracy (e.g., Altman and Pérez-Liñán 2002; Diamond and Morlino 2004, 2005; O’Donnell, Vargas Cullell, and Iazzetta 2004). In Diamond’s (1999) conception, democratic consolidation is a process of achieving broad and deep legitimation such that actors at the mass and elite levels “believe that the democratic regime is the most right and appropriate for their society, better than any other realistic alternative they can imagine” (65). Citing the case of India, Heller (2000) argues that “historically conditioned dynamic relations among broadly constituted social actors drive not only the *making* of democracy but also the *deepening* of democracy” (487).

Existing studies of the development-democracy link – both those that find a positive association between economic development and democracy and those that do not – have nevertheless failed to distinguish analytically and empirically between the two separate processes of democratization and democratic deepening. We argue in the next section that conflating democratization with democratic deepening empirically can mask their relationship with development. We also note that studies offering causal explanations of the link between development and democracy have typically tested their theories with democratization as the dependent variable, overlooking the implied effect of development

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<sup>7</sup> Although he essentially employs a dichotomous measure of democracy, even Lipset discusses his results as showing that economic development is higher among “*more democratic countries*” (75, emphasis ours).

on democratic deepening.

### 3 Democratization and Democratic Deepening

We argue that one overlooked implication of the logic of the theories cited above hypothesizes a positive relationship between economic development and democratic deepening. By democratic deepening we refer specifically to increases in the level of democracy within a democratic regime over time. We define the level of democracy as the extent to which a democratic regime provides and guarantees competitive political institutions, constrains political power, ensures equal and inclusive participation, and protects political and civil rights.

Consider the example of the shifting levels of democracy in India's democratic history. From independence in 1947 until the mid 1960s, India was a relatively stable polity that held free and fair elections based on universal suffrage and provided constitutional guarantees of various political rights and civil liberties. By the early 1970s, slow economic growth, rising electoral participation, growing political opposition, political violence and a decline in the Congress Party's authority led to an increasingly fragile political situation. As direct challenges to her leadership mounted, Prime Minister Indira Gandhi chose to centralize power, subvert democratic institutions and adopt a personalistic style of politics. In 1975, in response to a high-court decision finding her guilty of electoral malpractice, she advised the president to declare a state of internal emergency.

The proclamation suspended elections, the judicial enforcement of fundamental rights and, essentially, allowed Gandhi to rule by decree. Large numbers of opposition leaders and Congress dissidents were arrested, groups were banned from assembling in public areas, and the country's vibrant press was censored. But the Emergency was relatively short-lived, ending with Gandhi calling for elections in March 1977. The subsequent defeat of the Congress for the first time since independence was viewed by

many observers as a signal of the resilience of democracy in the country. Secessionist movements, repressive responses by the state, growing political corruption, and high levels of communal and political violence characterized the 1980s and early 1990s. Declining secessionist demands in Punjab, growing political participation of the lower castes in the populous north, and assertion of independence by regulatory bodies such as the election commission represented democratic improvements in the next decade.

Can theories that link economic development to democratization help explain these vicissitudes of democratic deepening? While empirical tests of the development-democracy link have focused almost exclusively on the question of democratization (and democratic stability), the theoretical models proposed to explain this link imply a more expansive relationship between development and democracy. As democratic countries developed economically post-democratization, these theories imply, the same causal mechanisms underlying democratization should persist. However, scholars have so far failed to test this implication of their theories for democratic deepening.

We argue that this omission is conceptually problematic for two related reasons. First, recent scholarship on the link between development and democracy has altogether failed to distinguish democratization from democratic deepening, despite the growing body of work highlighting the differences between these processes. We therefore develop an empirical strategy that distinguishes these two processes into two stages. Second, there is no reason to think that the causal mechanisms linking development to democracy are regime-specific, meaning that they hold only in nondemocracies until the moment of democratization and not thereafter. Rather, as we will argue in more detail below, the models proposed by previous authors imply an equivalent causal effect of development on both democratization and democratic deepening.

### **3.1 Distinguishing Two Stages**

Sartori (1987: 156) astutely argues that “what makes democracy *possible* should not

be mixed up with what makes democracy *more democratic*. . . unless the two problems are treated in this order, the oxen may well wreck the cart rather than pull it.” He goes on to note that both processes can be addressed in a single model, but in two stages. In the first, regimes must be classified into binary types, as democracies or nondemocracies. Only then can those classified as democratic be assessed in terms of how democratic they are.

This may seem relatively intuitive. In a nondemocratic context, incremental economic changes may lead to increasing democratic demands, but these demands may be staved off for some time until reaching a boiling point or threshold (see Ross 2001). Under democracy, however, incremental economic expansions may translate more quickly into incremental political ones. Thus, it is at least plausible that the relationship between development and democratization is different than that between development and democratic deepening. It is also at least plausible that only one of these two relationships exists at all.

Moreover, the kinds of alternative explanations (for which quantitative analysis should control) that might affect democratization may differ from those we expect to affect democratic deepening. For instance, recent authors have argued that a history of democratic breakdowns affects the likelihood of democratization since “[p]eople know that an overthrow of democracy is possible, how it happens, and how to bring it about” (Przeworski et al. 2000: 127). This effect, however, seems less likely to play a role in democratic deepening. Similarly, scholars have pointed out that the proportion of time a country has been democratic, in other words the country’s experience with democracy, affects the level of democracy it enjoys at a particular point (Gasiorowski and Power 1998). However, the relative length of time that a country has been democratic does seem to be a likely a predictor of democratization itself.

Beginning with Lipset (1959), many analysts of the development-democracy link largely conceived of their dependent variable as dichotomous, distinguishing democracies from nondemocracies. More recently, and with the advent of more nuanced measures of

levels of democracy, some analysts have begun utilizing ordinal indices to operationalize their dependent variable (Acemoglu et al. 2005, 2008, 2009; Barro 1999; Casper and Tufis 2003; Helliwell 1994; Landman 1999; Mainwaring and Pérez-Liñán 2003; McClintock and Lebovic 2006; Ross 2001). Doing so, however, is problematic on two counts. First, to the extent that one wishes to test the relationship between development and democracy, the use of an ordinal dependent variable assumes that the theorized relationship ought to hold with regard to both democratization and democratic deepening, and that this relationship takes the same functional form in both stages.<sup>8</sup> More importantly, this type of analysis also conflates the relationship between development and democratization with the association between development and democratic deepening.<sup>9</sup> By not distinguishing the two processes empirically, we cannot know whether a positive finding means that the relationship in fact holds for both processes or only for one and not the other. Similarly, a null finding could mask a significant association with regard to one process and not the other.

At the very least, then, our tests of the development-democracy link should allow for the possibility of differences in the processes of democratization and democratic deepening. Our own empirical strategy, which we elaborate further below, models the two processes as distinct stages in a Heckman selection model, thereby allowing us both to test the effect of development on democratization and democratic deepening separately and to account for different alternative explanations at each stage.

## 3.2 Implications of Existing Theoretical Models

Our second main contention is that the theoretical models that offer a causal explanation of the link between development and democratization imply an effect of

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<sup>8</sup> We argue that current theories do in fact expect the relationship to hold with regard to both democratization and democratic deepening, but to our knowledge previous authors have not made this expectation explicit.

<sup>9</sup> In cases where the full range of these indices is included, this type of analysis also conflates these processes with authoritarian liberalization, which scholars have argued is not necessarily the same as the process of democratization (e.g., Carothers 2002). Thus these studies in fact conflate the three processes of liberalization, democratization, and democratic deepening, though our focus here is on the latter two.

development on democratic deepening, even though this latter relationship has largely been overlooked as a theoretical implication. Although early work on modernization theory suggested a wide range of causal mechanisms to explain the development-democracy link, more recent scholars have focused primarily on the effects of income and education on democracy.

One set of theories posits that higher levels of education lead to a more democratic political culture and in turn to greater demands for democracy (e.g., Almond and Verba 1963; Dahl 1971; Diamond 1992; Hadenius 1992; Helliwell 1994). A second set of theories argues that increasing wealth is likely to lead to economic or political changes that have implications for democracy. Early theorists suggested that as individuals become richer and more educated, they begin to espouse values that are more rational, tolerant, and acceptant of change, attributes thought to be favorable to democracy (e.g., Lerner 1958; Lipset 1959). More recently, Inglehart and Welzel (2005) note that economic development leads to industrialization, which they argue causes individuals to adopt secular-rational values. With subsequent post-industrial transformation of the economy, these authors note a shift in individual beliefs toward self-expression values. These changes in values are in turn expected to lead to democratic transitions in nondemocracies or strengthen existing democracies by improving the effectiveness of democratic institutions.

A related argument suggests that richer individuals are more likely to value democracy, which is seen as “a sort of luxury good” (Barro 1996: 24). As a result, “relatively richer individuals are expected to have greater concern for democracy, whereas poorer ones are regarded to be more willing to trade off democracy (and other such ‘luxuries’) for greater material consumption at the present time” (Krishna 2008a: 3).<sup>10</sup> Others link increasing wealth with shifts in the balance of class power toward an inherently more pro-democratic middle class (Lipset 1959) or working class (Rueschemeyer, Stephens, and Stephens 1992).

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<sup>10</sup> The chapters in Krishna (2008b), however, offer empirical critiques of this latter hypothesis.

But if any of these theories in fact obtains, then there is no reason to expect its causal mechanism to cease at the point of democratization. If income and education levels continue to change after democratization, so, presumably, should the values of citizens and the kinds of demands they make on their governments. There is nothing regime-specific about the underlying causal mechanism to suggest that it obtains only in nondemocracies. Indeed, Inglehart and Welzel (2005: 299) note that, “[b]eyond a certain point, these changes make democracy increasingly likely to emerge where it does not yet exist, *and to become stronger and more direct where it already exists*” (emphasis ours).

Similarly, if the relative proportion of the middle class grows as societies become wealthier, and the middle class inherently holds more democratic values or is more willing to trade off consumption for democracy, then there is every reason to expect this relationship to hold in democratic settings. That is, as democracies develop, we should expect their citizens to increasingly demand greater democracy, and we should observe a positive effect of development on democratic deepening.<sup>11</sup>

Responding to Przeworski and Limongi (1997), Boix and Stokes (2003) argue that in order to sustain a theory of exogenous democratization “one would need a theory in which development induces actors in democracies to sustain that system but does not induce actors in a dictatorship to change to democracy” (518). Complementarily, we argue that in order to sustain a theorized positive relationship between development and democracy based on the causal mechanisms underlying existing theoretical models, one would need evidence not only of an effect of development on democratization, but also of an effect of development on democratic deepening. Limiting our empirical tests to a

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<sup>11</sup> Boix (2003) offers yet another theoretical model, suggesting that the effect of development on democracy is mediated by inequality. He argues that democracy prevails as a result of elite choices influenced in part by the degree of economic inequality: “the rich find a democratic tax structure to be less expensive for them as their country gets wealthier, and they are more willing to countenance democratization” (Boix and Stokes 2003: 539-40). And economic development is expected to increase equality, as Lipset (1959) suggested. This theory too implies an effect of development on democratic deepening – the rich should be more willing to allow the development of more and more constraints on political power and guarantees of political rights as equality increases. Indeed, Boix himself notes that his theoretical model implies a relationship between economic development and extensions of the franchise Boix (2003: 52-3).

dichotomous comparison between democracies and non-democracies could, therefore, lead us to draw erroneous conclusions.

Our results, which are discussed in greater detail in sections 5 and 6, indeed suggest that income affects only democratization, not democratic deepening. This calls into question the validity of existing theoretical models that posit universal processes such as changes in values, inequality, or an increase in the size of the middle class, causal mechanisms that imply equivalent relationships in both stages of our model. Our results suggest that these theories ought to be revisited, or that scholars ought to generate regime-specific theories of the development-democracy link that holds for the process of democratization but not for that of democratic deepening.<sup>12</sup>

## 4 Empirical Strategy

Our empirical strategy seeks to distinguish the effect of development on democratization from its effect on democratic deepening. To do so, our analysis proceeds as a two-stage Heckman model. Recent studies of democratization have utilized two-stage models to address the issue of sample selection bias in analyses of democratic deepening (e.g., Brinks and Coppedge 2006). As Przeworski et al. (2000: 8-10, Appendix I) point out, democracies are not randomly selected, and performing standard regression techniques on a sample of democracies may lead to biased conclusions. To evaluate the effect of development on democratic deepening, one must therefore first determine the probability that a country is democratic and therefore selected into the sample of democracies. Only then can the analysis proceed to examine the determinants of democratic deepening among democracies. Our Heckman setup allows us to correct for this non-random selection in our

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<sup>12</sup> One could imagine a nonlinear version of existing theoretical models in which the relationship between development and democracy is positive up to the point of democratization and flat thereafter. This would explain an observed positive association between development and democratization, but not between development and democratic deepening. Such an explanation, however, would presuppose that the preponderance of countries democratize at similar levels of development, which is empirically far from the case, as Przeworski and Limongi (1997) note.

analysis of democratic deepening, and to distinguish it from the process of democratization. The two stages of the model also allow us to include a different set of control variables for each process.<sup>13</sup>

In the first stage, the dependent variable is operationalized dichotomously, distinguishing democracies from nondemocracies. We use annual country-level data from two indices, Polity and Freedom House, to measure this variable.<sup>14</sup> Like previous scholars, we consider democracies to be those countries which received a Polity score of six or above or a Freedom House score greater than five.<sup>15</sup> In the second stage, our dependent variable of interest, democratic deepening, is operationalized as the particular score a country received on the Polity or Freedom House indices in a particular year.<sup>16</sup>

By using these measures, our models assume that there is in fact conceptual substance to modeling the level of democracy using ordinal indices. More concretely, this means, for instance, that it makes theoretical sense to consider a country with a Polity score of eight more democratic than one with a score of seven. That such an interpretation is reasonable may be demonstrated by returning to the case of India; the vicissitudes of Indian democratic deepening outlined earlier, are, we believe, well-reflected in its scores on our two indicators. India measures 9 on Polity's 10-point scale from 1950 to 1974 and is rated as 'free' by Freedom House, with a corresponding score of 5.5 between 1972 (when that index begins) and 1974. The Emergency Period of 1975-6 is tracked by both Polity and Freedom House scores. Polity codes these events mainly as a decrease in the competitiveness of political participation and in the openness of executive recruitment, the country's composite score falling to 7. Freedom House moves India from the 'free' to the

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<sup>13</sup> Indeed, as Breen (1996) notes, using all of the same variables in both stages of a Heckman model can lead to identification problems.

<sup>14</sup> The Polity series begins in 1800 (Marshall and Jagers 2002), while the Freedom House series begins in 1972. These two measures are correlated in our data at 0.9.

<sup>15</sup> Our results are robust to substantial variations of these thresholds, which have become a kind of "industry standard." When we reran our analyses (results not shown) defining democracies as having Polity scores of four or above, five or above, or seven or above, or Freedom House scores greater than 4.5 or 5.5, our results were substantively equivalent.

<sup>16</sup> Since these indices have different ranges, we standardize them to range between zero and one for ease of comparison.

‘partly free’ category. Positive shifts in the mid-1990s result in both Polity and Freedom House restoring their composite scores for India to pre-Emergency levels.

Our key independent variables of interest – GDP per capita, literacy, and education – are standard indicators of economic development used in tests of the development-democracy link. Data on GDP per capita (in constant 1990 US dollars) comes from Maddison (2007), who has compiled this data for a wide range of countries beginning in 1850. Our literacy data comes from the Banks Cross-National Time-Series Database. We measure education in two ways. For the longer spans of time for which data is scarce, we use the *index of knowledge development* created by Vanhanen (1997), which is the average of the percentage of literates in the adult population and the number of students per 100,000 inhabitants. For the analyses limited to more recent periods, we use data on primary school enrollment per capita from the World Bank.<sup>17</sup> Many previous authors have specified a nonlinear functional form to test the relationship between development and democracy, so our analyses use logged values of our measures of development. Also like previous authors, we lag each of these variables by one year.

As noted earlier, we include a different set of control variables in each stage of the model. The first stage is a panel probit model in which the dependent variable is a dichotomous variable that distinguishes democracies from nondemocracies. In this stage, we control for the number of previous democratic breakdowns a country has experienced, following Przeworski et al. (2000).

Since our first-stage model uses panel data with a binary dependent variable, our analyses must account for potential temporal dependence. Following Beck, Katz, and Tucker (1998), we therefore control for a time variable marking the number of years that have elapsed between transitions, as well as a natural cubic spline in that variable. Following recent work by Acemoglu et al. (2005, 2008, 2009), we include country fixed effects in both stages of our model to account for potential omitted variables that affect

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<sup>17</sup> All three independent variables are interpolated using simple linear growth rates.

both development and democracy.<sup>18</sup> Both stages of our model also include a lagged dependent variable in order to account for serial correlation.<sup>19</sup>

We study the process of democratic deepening in the second stage, accounting for the selection effect modeled in the first stage. Here we run a panel regression including only democracies and accounting for their non-random selection. In this stage we include a variable measuring the proportion of previous years during which a country was democratic to control for the effect of prior democratic experience on democratic deepening (see Gasiorowski and Power 1998), and again include country fixed effects.<sup>20</sup>

In order to both speak to a variety of previous analyses and as a check of the robustness of our results, we divide our analysis into three time periods: 1850-2000, 1950-2000, and 1972-2000. The 1850-2000 analysis allows us to take advantage of the largest sample available in our data, as Boix and Stokes (2003) rightly suggest. A variety of authors have nevertheless focused their analyses on the postwar period (e.g., Acemoglu et al. 2009; Przeworski et al. 2000) so we also explore models limited to the period 1950-2000. Since the Freedom House measure of democracy is only available beginning in 1972 – and since this measure is preferred by some authors (e.g., Acemoglu et al. 2008) – we also limit our analysis to the 1972-2000 period.

Following Acemoglu et al. (2005, 2008, 2009), we supplement our primary annual panel models with five-year panels for the 1850-2000 and 1950-2000 periods, and ten-year panels for only the longer period. Like these authors, we take the observation for each

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<sup>18</sup> Note that including the country fixed effects means that we need not control for a variety of time-invariant variables included by previous scholars, such as colonial legacies, predominant religion, and region. In supplementary analyses, when we nevertheless exclude country fixed effects and instead control for this set of variables (results not shown), our results remain substantively equivalent.

<sup>19</sup> There is considerable debate among methodologists regarding the combination of lagged dependent variables with unit fixed effects. Given the large time dimension in our data, we follow the advice of Beck and Katz (2004) and Kristensen and Wawro (2007) to include both. Note that this implies that analytical leverage is drawn in our models from variation over time within countries rather than variation across countries.

<sup>20</sup> Ross (2001) has argued that oil-rich countries are less likely to be democratic (but see Dunning 2008). To capture this potential confounding effect, we constructed a time-variant measure of oil revenue per capita for 1965-2000 based on the BP *Statistical Review of World Energy*. However, including this variable in our models (results not shown) did not change our results substantively.

country every fifth or tenth year rather than averaging over the five- or ten-year period since the latter method is likely to introduce additional serial correlation.<sup>21</sup>

## 5 Results

We arrange our results by sample period, beginning with those reported in Table 1 for the 1850-2000 sample. For this period, we report our main results using annual data, but also replicate these analyses with five- and ten-year panels. Our results are remarkably consistent, regardless of the measure of development we use or the temporal spacing of the observations in annual, five-year, and ten-year intervals. In the first stage of our models, we find a consistent, significant, and positive effect on democratization.<sup>22</sup> Nevertheless, we find no such consistent effect in the second stage of our models. Here nearly all the measures of development yield insignificant coefficients.<sup>23</sup>

[Table 1 about here]

In other words, development appears to indeed have the hypothesized positive effect on the probability that a country will democratize, even controlling for country fixed effects. On the other hand, we find no consistent evidence of a similarly positive effect of development on democratic deepening, as implied by the theoretical models described above.<sup>24</sup>

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<sup>21</sup> Note also that the lagged variables in these analyses are the five- or ten-year lags of the variable, respectively.

<sup>22</sup> Although our entire sample includes over 150 countries, our analyses appear to include a far smaller number. This is because our inclusion of country fixed effects means that countries with no variation on the dependent variable are dropped from the models. That is, those countries with no transitions during the sample period are dropped from the first stage, and those whose level of democracy does not change during the sample period are dropped from the second stage.

<sup>23</sup> There are two exceptions to this in our second-stage results, one in Table 1 and another in Table 3. Still, the overwhelming finding in 19 of the 21 models we run across all the time periods is of an insignificant association between the two variables in the second stage.

<sup>24</sup> It is interesting to also note the results from our control variables (not shown). Like Przeworski et al. (2000), we find that previous democratic breakdowns make democratization less likely, but we also find that the time since the previous transition has no effect on the likelihood of democratization. In our second-stage models, a country's previous democratic experience does not appear to be positively associated with democratic deepening, unlike the findings of Gasiorowski and Power (1998).

Table 2 reports the results of similar analyses limited to the postwar period, the focus of many previous studies. Here again, we report our main results using annual data and replicate these analyses using five-year panels. Because of the more limited span of time, we do not reanalyze these data using ten-year panels. Again, our results are remarkably consistent – a positive and significant effect of development on democratization, but no such significant effect of development on democratic deepening.<sup>25</sup>

[Table 2 about here]

Our final set of models restricts our sample even further, to 1972-2000, which is roughly the period of the third wave of democratization (Huntington 1991). This is also the period for which Freedom House measures of democracy are available as a comparison with the Polity measure. Table 3 reports the estimates of these models. Our results for this recent period are consistent with those for the two longer periods. As before, economic development is significantly and positively associated with the probability of democratization regardless of the measure of development that we use.<sup>26</sup> And once again there seems to be little evidence of a similar significant effect of development on democratic deepening.

[Table 3 about here]

Taken together, our empirical results suggest a consistent and robust relationship between economic development and democratization, even when we control for fixed effects as Acemoglu et al. (2005, 2008, 2009) suggest. This points to the danger of conflating the processes of democratization and democratic deepening by employing ordinal measures of democracy when testing theories about development and democracy. At the same time, we

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<sup>25</sup> Note that the index of knowledge development is only available up to 1980, so the two models that include this measure in Table 2 are essentially limited to the period 1950-1980. This may explain why the first-stage coefficients in these two models do not quite reach the 95% threshold for statistical significance, and why the five-year panels include only a relatively small number of countries.

<sup>26</sup> Recall that unlike the analyses in Tables 1 and 2, these models measure education using primary school enrollment per capita.

find no evidence of a relationship between development and democratic deepening, an association we have argued is implied by existing theoretical models of the development-democracy link.

## 6 Conclusions

We have argued that the vast literature examining the relationship between economic development and democracy has failed to make the important analytical and empirical distinction between the processes of democratization and democratic deepening. Prominent theoretical models explaining the development-democracy link imply a positive association between development and democratization as well as one between development and democratic deepening. Nevertheless, the implication of a development effect on democratic deepening has rarely been explicitly recognized or tested by the authors of these theories.

In order to test for this overlooked relationship, we employ a two-stage model that distinguishes the processes of democratization and democratic deepening, overcoming some of the methodological shortcomings of previous analyses. We find that development indeed has a consistent, significant, and positive effect in the democratization stage of our model, even when we control for country fixed effects as skeptics of this relationship have recently suggested. However, we find no evidence of a significant effect of development in the democratic deepening stage, a result we see as problematic for existing theoretical models. Both results are remarkably consistent across time-periods and regardless of the measure of development we employ.

The fact that we find differences between the two stages of our empirical model supports the contention made by some previous authors that democratization and democratic deepening should be treated as analytically separate processes. Although the use of ordinal measures of democracy has become increasingly common in analyses of the

development-democracy link, our findings demonstrate that this practice conflates the processes of democratization and democratic deepening, resulting in misleading inferences. Where ordinal measures are used in single stage models, we cannot know whether to make inferences about democratization, democratic deepening, or both processes. Our findings highlight the need to use two-stage models in empirical analyses of this kind.

Our study also draws attention to an important and heretofore under-theorized (and largely unnoticed) implication of existing explanations of the development-democracy link. We showed that despite the variety of existing theories, all have in common causal mechanisms that are universal rather than regime-specific, implying that they should obtain in both nondemocratic and democratic settings. In other words, we see nothing endogenous to these theoretical models to suggest that the relationship between development and democracy should cease after democratization. As a result, existing theories imply an equivalent causal effect of development on both the processes of democratization and democratic deepening.

Our analyses, however, found that development affects only democratization, not democratic deepening. Since existing theories imply both relationships, these results call into question the causal mechanisms that have been proposed to explain the association between development and democracy. To account for our results, theoretical models will need to specify regime-specific mechanisms such that development affects democratization only in nondemocratic settings, ceasing to obtain in democratic settings and thereby failing to affect democratic deepening. This will require scholars to revisit existing theories of development and democracy, or to develop new ways of understanding the important relationship between these two phenomena.

We do not consider these conceptual hurdles insurmountable. Nor do we take our findings to have laid to rest one of the most persistent debates in comparative politics. Rather, we intend our study to raise new questions about the relationship between development and democracy, and to highlight the need for new theoretical work on the

mechanisms behind this association.

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**Table 1. Determinants of democracy, 1850-2000**

	Annual Panels			5-Year Panels			10-Year Panels		
<b>First stage – Democratization</b>									
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	1.648*** (0.225)			3.959*** (0.737)			7.033*** (1.614)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		2.513*** (0.528)			2.422*** (0.773)			6.134*** (2.156)	
Education <sub>t-1</sub> ( <i>ln</i> )			2.399*** (0.581)			2.654*** (0.639)			6.373** (3.141)
Democracy <sub>t-1</sub>	3.014*** (0.198)	3.166*** (0.240)	3.042*** (0.270)	-0.528 (0.334)	-0.306 (0.212)	-0.714* (0.426)	-1.118* (0.674)	-0.589 (0.426)	-2.193*** (0.654)
Constant	-14.54*** (1.766)	-12.69*** (2.404)	-9.429*** (1.678)	-25.12*** (4.861)	-2.771** (1.149)	-6.542*** (1.748)	-47.51*** (11.33)	-14.75*** (4.988)	-13.47* (7.144)
Observations	6,347	4,313	3,703	1,199	773	687	570	350	310
Countries	80	74	43	68	63	36	61	55	30
Pseudo <i>R</i> <sup>2</sup>	0.872	0.833	0.891	0.863	0.782	0.848	0.909	0.900	0.943
<b>Second stage – Democratic deepening</b>									
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	0.00638 (0.00418)			0.0664 (0.0498)			0.0762 (0.121)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		0.0521*** (0.0194)			0.239 (0.148)			0.0173 (0.314)	
Education <sub>t-1</sub> ( <i>ln</i> )			0.00224 (0.00751)			0.00760 (0.0535)			-0.0488 (0.0854)
Democracy <sub>t-1</sub>	0.938*** (0.0190)	0.934*** (0.0183)	0.941*** (0.0221)	0.746*** (0.0849)	0.670*** (0.110)	0.794*** (0.114)	0.486 (0.493)	0.404 (0.393)	0.431*** (0.0693)
Constant	-0.00663 (0.0293)	-0.184** (0.0834)	0.0336 (0.0316)	-0.348 (0.373)	-0.812 (0.612)	0.163 (0.231)	-0.122 (0.855)	0.389 (1.214)	0.604* (0.307)
Observations	1,968	1,430	1,204	226	210	177	62	55	47
Countries	76	70	41	55	50	27	33	26	18
<i>R</i> <sup>2</sup>	0.968	0.959	0.973	0.845	0.828	0.870	0.863	0.876	0.982

\*\* p<0.01, \* p<0.05, \* p<0.1. Robust standard errors (clustered by country) are in parentheses. First-stage models include controls for the number of previous democratic breakdowns, years since last transition, a natural cubic spline, and country fixed effects. Second-stage models include controls for democratic experience and country fixed effects. Education is measured using the index of knowledge development.

**Table 2. Determinants of democracy, 1950-2000**

	Annual Panels			5-Year Panels		
<b>First stage – Democratization</b>						
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	1.358*** (0.313)			4.317*** (1.081)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		2.667*** (0.570)			2.769*** (0.774)	
Education <sub>t-1</sub> ( <i>ln</i> )			2.637* (1.532)			3.012* (1.596)
Democracy <sub>t-1</sub>	3.271*** (0.312)	3.079*** (0.313)	3.084*** (0.495)	-0.282 (0.454)	-0.204 (0.259)	-3.436* (1.991)
Constant	-11.86 (2.573)	-11.80*** (2.389)	-15.10** (5.916)	-28.38*** (8.183)	-11.22*** (3.460)	3.035 (2.554)
Observations	2,821	2,793	717	539	524	135
Countries	67	68	28	56	57	22
Pseudo <i>R</i> <sup>2</sup>	0.790	0.797	0.784	0.797	0.771	0.877
<b>Second stage – Democratic deepening</b>						
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	0.0115 (0.0189)			-0.0226 (0.160)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		0.00371 (0.0204)			-0.0267 (0.158)	
Education <sub>t-1</sub> ( <i>ln</i> )			0.0421 (0.0533)			0.258 (0.603)
Democracy <sub>t-1</sub>	0.869*** (0.0291)	0.866*** (0.0256)	0.902*** (0.0656)	0.462** (0.188)	0.393** (0.165)	1.001** (0.303)
Constant	-0.0335 (0.157)	0.0456 (0.0944)	-0.0982 (0.169)	0.532 (1.203)	0.482 (0.558)	0.00554 (0.211)
Observations	768	816	186	107	124	16
Countries	63	64	26	41	45	9
<i>R</i> <sup>2</sup>	0.932	0.934	0.959	0.791	0.799	0.972

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors (clustered by country) are in parentheses. First-stage models include controls for the number of previous democratic breakdowns, years since last transition, a natural cubic spline, and country fixed effects. Second-stage models include controls for democratic experience and country fixed effects. Education is measured using the index of knowledge development.

**Table 3. Determinants of democracy, 1972-2000**

	Polity			Freedom House		
<b>First stage – Democratization</b>						
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	1.046*			1.523***		
	(0.539)			(0.526)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		6.071***			4.651***	
		(1.618)			(0.952)	
Education <sub>t-1</sub> ( <i>ln</i> )			1.900***			2.010**
			(0.729)			(0.876)
Democracy <sub>t-1</sub>	3.307***	2.856***	3.353***	2.391***	2.393***	2.601***
	(0.441)	(0.390)	(0.449)	(0.287)	(0.325)	(0.302)
Constant	-10.19***	-28.90***	-1.416	-13.10***	-14.78***	-8.926**
	(3.689)	(7.414)	(3.312)	(4.585)	(2.912)	(3.944)
Observations	1,469	1,498	1,482	1,317	1,363	1,389
Countries	56	57	57	50	51	53
Pseudo <i>R</i> <sup>2</sup>	0.752	0.791	0.759	0.685	0.708	0.689
<b>Second stage – Democratic deepening</b>						
GDP per capita <sub>t-1</sub> ( <i>ln</i> )	0.0282			0.261***		
	(0.0415)			(0.0608)		
Literacy <sub>t-1</sub> ( <i>ln</i> )		0.0154			0.0156	
		(0.0592)			(0.108)	
Education <sub>t-1</sub> ( <i>ln</i> )			0.00165			0.0461
			(0.0247)			(0.0903)
Democracy <sub>t-1</sub>	0.805***	0.809***	0.801***	0.628***	0.667***	0.674***
	(0.0424)	(0.0426)	(0.0419)	(0.0467)	(0.0520)	(0.0448)
Constant	-0.155	0.00585	0.0805	-2.057***	-0.0274	-0.157
	(0.337)	(0.263)	(0.107)	(0.503)	(0.463)	(0.408)
Observations	517	478	545	420	472	494
Countries	52	51	53	47	48	50
<i>R</i> <sup>2</sup>	0.937	0.950	0.940	0.818	0.832	0.828

\*\* p<0.01, \* p<0.05, \* p<0.1. Robust standard errors (clustered by country) are in parentheses. First-stage models include controls for the number of previous democratic breakdowns, years since last transition, a natural cubic spline, and country fixed effects. Second-stage models include controls for democratic experience and country fixed effects. Education is measured as primary school enrollment per capita.