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# ***Which Democracies Will Last? Coups, Incumbent Takeovers, and the Dynamic of Democratic Consolidation***

MILAN W. SVOLIK\*

This article develops a change-point model of democratic consolidation that conceives of consolidation as a latent quality to be inferred rather than measured directly. Consolidation is hypothesized to occur when a large, durable, and statistically significant decline in the risk of democratic breakdowns occurs at a well-defined point during a democracy's lifetime. This approach is applied to new data on democratic survival that distinguish between breakdowns due to military coups and incumbent takeovers. We find that the risk of an authoritarian reversal by either process differs both in its temporal dynamic and determinants. Crucially, new democracies consolidate against the risk of coups but not incumbent takeovers, suggesting that distinct mechanisms account for the vulnerability of new democracies to these alternative modes of breakdown.

## I. INTRODUCTION

Which democracies are most likely to consolidate and which to break down? When does democratic consolidation occur, if at all? In addressing these and related questions, existing empirical research on democratic consolidation typically follows one of two strategies. We may call them the 'substantive' and 'prospective' approaches to democratic consolidation. The substantive approach focuses on a set of outcomes that we should observe in a consolidated democracy and then evaluates to what extent a democracy approximates them. Such desirable outcomes frequently include robust political competition, vibrant civil society, and widespread acceptance of key democratic tenets among the public and the elites.<sup>1</sup>

The second, prospective approach primarily associates consolidation with the durability of democracy. According to Schedler, for instance, 'consolidating democracy means reducing the probability of its breakdown to the point where [we] can feel reasonably confident that democracy will persist.'<sup>2</sup> Empirically, questions about

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<sup>1</sup> Almond and Verba 1963; Bernhard and Karakoç 2007; Cleary and Stokes 2006; Grzymała-Busse 2007; O'Donnell and Schmitter 1986.

<sup>2</sup> Schedler 1998, 95. In a similar spirit, according to Gasiorowski and Power (1998, 740) a democracy is consolidated when it is 'sufficiently durable that a return to nondemocratic rule is no longer likely;' and according to Acemoglu and Robinson (2005, 30) 'a democracy is consolidated if the set of institutions that characterize it endure through time.'

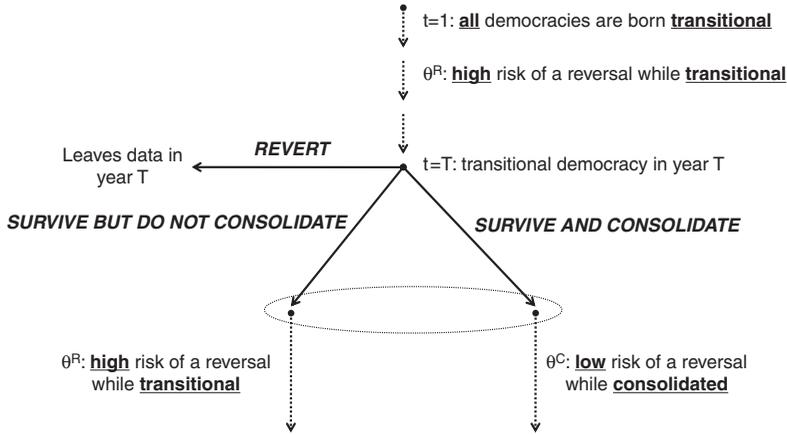


Fig. 1. A change-point model of democratic consolidation

consolidation are addressed by examining what distinguishes democracies that achieve such durability from those that do not. In large- $N$  research, this is frequently accomplished by specifying a temporal criterion that is used to identify consolidated democracies. Prominent examples of such criteria are Huntington's two-turnover test and Gasiorowski's twelve-year threshold.<sup>3</sup>

One difficulty associated with the first, substantive, approach to the study of democratic consolidation is the continuing disagreement about the outcomes that constitute its appropriate indicators.<sup>4</sup> In turn, why and even whether consolidation occurs remains contested, and the difference between plausible causes and consequences of consolidation is often unclear.<sup>5</sup> Meanwhile, one shortcoming of the second, prospective approach is that it presumes that consolidation indeed occurs. By specifying a particular criterion for consolidation – such as the two-turnover test – the prospective approach implicitly assumes that consolidation occurs by a particular time threshold. Yet whether and when consolidation occurs is disputed: Przeworski et al. and Epstein et al. do not find evidence of consolidation while Tilly asserts that 'democratization and de-democratization occur continuously, with no guarantee of an end point in either direction.' Whether and when consolidation occurs should therefore be an outcome that we investigate rather than assume at the outset of any analysis.<sup>6</sup>

In this article, I propose a new empirical approach to democratic consolidation that avoids some of the weaknesses of existing research and leads to new findings about the dynamics and covariates of democratic consolidation and breakdown. Figure 1 outlines its key elements. A democracy's trajectory after a transition is hypothesized to consist of two distinct stages. All democracies are born *transitional* and face a high risk of an authoritarian reversal,  $\theta^R$ . At any later point in time, one of the following three events

<sup>3</sup> Gasiorowski and Power 1998; Huntington 1993.

<sup>4</sup> See e.g. O'Donnell 1996; Schedler 1998.

<sup>5</sup> For instance, there is widespread disagreement about whether pro-democratic civic attitudes and high levels of social trust are the cause or the consequence of democracy (see e.g. Muller and Seligson 1994).

<sup>6</sup> Epstein et al. 2006; Przeworski et al. 2000; Tilly 2007, 24.

may occur: First, a democracy may revert to a dictatorship, which we can observe. Second, a transitional democracy may survive and *consolidate*, in which case it will subsequently face a low risk of an authoritarian reversal,  $\theta^C$ . Finally, a transitional democracy may survive but not consolidate and therefore continue to face a high risk of an authoritarian reversal,  $\theta^R$ . Crucially, whether or when a democracy that survives also consolidates cannot be directly observed and must be inferred.<sup>7</sup>

The key advantage of the present approach to the study of democratic consolidation is its empirical realism. The model outlined in Figure 1 does not require that we directly observe whether a democracy is consolidated or not. Instead, whether the risk of breakdown faced by transitional democracies is indeed higher than the risk faced by consolidated democracies and whether or when the shift between the two occurs are quantities to be inferred from data on democratic survival rather than assumed from the outset.

More precisely, following existing literature, consolidation is hypothesized to take place when a *large, durable, and statistically significant* decline in the risk of authoritarian reversals occurs at a *well-defined point* during the lifetime of a democracy.<sup>8</sup> The present model allows us to attach statistical confidence to the estimated timing of that decline – if it occurs at all – and to assess whether it is substantial, durable, and statistically significant enough to warrant the label ‘democratic consolidation.’ In turn, we need not rely on arbitrary temporal criteria in order to distinguish transitional from consolidated democracies. In fact, the present approach allows us to evaluate whether a particular criterion – such as Huntington’s two-turnover test – is an appropriate indicator of consolidation in the first place.

The results that follow strongly suggest that democratic consolidation indeed occurs: A large and durable decline in the risk of authoritarian reversals is estimated to take place between the seventeenth and twentieth year of a democracy’s existence. Consolidation reduces the annual risk of breakdown from 1 in 33 for transitional democracies to 1 in 200 for consolidated democracies. In other words, consolidation comes close to eliminating the possibility of a return to dictatorship. By combining two of the estimated quantities – the timing of consolidation and the risk of breakdown faced by transitional democracies – we can address a question of considerable theoretical and policy-making importance: Which democracies can we expect to survive long enough to consolidate? I refer to the probability that an existing democracy will survive long enough to consolidate as the *consolidation odds* and find that, on average, only about 1 in 3 democracies can expect to do so at the time of their transition.

These initial results offer guidance to empirical research on democratization that often seeks to restrict attention to a subsample of either ‘new’ or ‘advanced’ democracies. Such distinctions are typically based on ad-hoc geographic or temporal criteria – for instance, by limiting the sample to African democracies when evaluating hypotheses relevant for new democracies or, alternatively, by only including countries that have democratized before 1989 when evaluating hypotheses relevant for ‘advanced’ democracies. Our finding that consolidation occurs after approximately two decades provides a very simple but empirically grounded temporal threshold for the construction of such subsamples, especially when the relevant concern is democratic stability. At the same time, this finding

<sup>7</sup> I borrow from game-theoretic terminology and indicate this unobservability by an information set that contains the two survival nodes in Figure 1.

<sup>8</sup> Gasiorowski and Power 1998; O’Donnell 1996; Schedler 1998.

indicates that some of the criteria for democratic consolidation frequently employed in the empirical literature – such as Huntington’s two-turnover test or Gasiorowski’s twelve-year threshold – may be too optimistic, while Przeworski et al.’s, Epstein et al.’s, and Tilly’s claims that consolidation does not occur at all appear to be too pessimistic.<sup>9</sup>

In fact, the model comparisons based on Bayes’ Factors that I conduct in Section III suggest that the framework outlined in Figure 1 fits the data better than do alternative models that either ignore the possibility of consolidation, allow for de-consolidation, or conceive of consolidation as a multi-stage process. Thus the dichotomous nature of the frequently drawn distinctions between ‘transitional’ and ‘consolidated’, ‘new’ and ‘established’, or ‘partial’ and ‘full’ democracies is indeed empirically warranted.<sup>10</sup>

The inclusion of covariates within the present framework provides for a richer and more precise interpretation of the dynamic of democratic consolidation than is possible using existing techniques. In Section IV, I examine the potentially distinct effects of covariates on the risk of authoritarian reversals in transitional and consolidated democracies. In agreement with extant research, I find that a high level of economic development reduces the risk of authoritarian reversals in transitional democracies while economic recessions, authoritarian neighbors, the Cold War, and a military authoritarian past raise it. These factors however differ in how they affect the risk of reversals once democracies consolidate: The positive effect of economic development persists while none of the remaining factors threaten the survival of consolidated democracies. Put differently, once democracies consolidate they gain resilience to the pernicious effects of economic recessions, an authoritarian neighborhood, or military past, but not to low levels of economic development. Democracies never fully consolidate against the risk of breakdown that is associated with low levels of economic development.

These findings remain significant after accounting for unobserved heterogeneity via country-level random intercepts. That is, we may expect that even after controlling for available covariates, outcomes in democratic spells from the same country will be correlated due to unmeasured, country-specific factors. The inclusion of country-level random intercepts reveals that unobserved heterogeneity indeed accounts for a significant amount of cross-country differences in the risk of breakdown. Countries like Argentina and Thailand are estimated to have reverted to authoritarianism more often than can be accounted for by their measured covariates; by contrast, Switzerland and India exemplify democracies that have survived against the odds implied by their low levels of economic development at the time of democratization. The estimated random intercepts thus affirm our qualitative knowledge of the unusual regime trajectories experienced by these countries and serve as an informal indicator of a good model fit.

In Section V, I apply the approach outlined above to original data on democratic survival that distinguish between the distinct processes by which authoritarian reversals occur. The vast majority of democratic breakdowns occur either after the military seizes power (as in the 1976 Argentine military coup that overthrew Isabel Perón), after a democratically elected incumbent subverts democracy (as in Alberto Fujimori’s 1992 suspension of the Peruvian Congress and constitution), or during a civil war (as in the Republic of the Congo in 1997). The differences in the nature of these processes raise the

<sup>9</sup> Using a different statistical approach, Svobik (2008) finds support for the claim that democratic consolidation occurs but cannot address the question *when* democracies consolidate.

<sup>10</sup> This and related terminology is employed for instance by O’Donnell (1996), Diamond (1999), Acemoglu and Robinson (2005), Epstein et al. (2006), and Kapstein and Converse (2008).

possibility that the occurrence, timing, and determinants of consolidation also differ across these disparate forms of democratic breakdown.

That is precisely what I find when I examine the dynamic of democratic consolidation with respect to military coups and incumbent takeovers separately – two processes that together account for more than 91 percent of all authoritarian reversals. Whereas the risk of a coup almost disappears once a democracy survives for two decades, the risk of an incumbent takeover persists. Therefore, we cannot conclude that democracies consolidate against the risk of incumbent takeovers.

Military coups and incumbent takeovers also differ in their determinants. I find that the Cold War and authoritarian neighbors raise the risk of coups but not incumbent takeovers, that fuel exports and presidentialism raise the risk of incumbent takeovers but not coups, and that a democracy's military past raises the risk of coups but lowers the risk of incumbent takeovers. These findings imply that the prevailing approach in empirical research on democratization – whereby all authoritarian reversals are treated as a homogeneous category – is flawed.<sup>11</sup> When we fail to differentiate between military coups and incumbent takeovers, we miss their distinct consolidation dynamics and confound their unique determinants. The results here call for theoretical explanations that distinguish between the two reversal processes and suggest that different institutions may best guard against these distinct risks to new democracies.

The statistical model that underlies this article's approach to democratic consolidation builds on the Bayesian analysis of hidden Markov change-points models.<sup>12</sup> In methodologically related research, Park applies these methods to data on US military interventions abroad and Hays, Freeman, and Nesseth study exchange rate volatility in new democracies using a classical (rather than a Bayesian) approach to Markov regime switching models.<sup>13</sup> This article's conceptualization of democratic consolidation parallels Coppedge, Alvarez, and Maldonado, Treier and Jackman, and Pemstein, Meserve, and Melton, who conceive of the level of democracy (instead of consolidation) as one of possibly several latent quantities to be inferred rather than directly measured.<sup>14</sup>

## II. A CHANGE-POINT MODEL OF DEMOCRATIC CONSOLIDATION

In order to estimate the empirical model of democratic consolidation that I outline in Figure 1, I build on Chib's approach to hidden Markov and change-point models.<sup>15</sup> Assuming that we cannot directly observe whether or when democratic consolidation occurs, I estimate three key parameters of interest: (i) the timing of democratic consolidation and (ii) the separate risks of an authoritarian reversal while a democracy is transitional and consolidated. I extend Chib's methods to estimate the effect of time-varying covariates on the key parameters of interest as well as to account for the survival nature of the data on democracy, particularly the presence of censoring and multiple democratic spells.

Suppose that a democracy may be in one of two latent, unobservable states: *transitional* ( $R$ ) or *consolidated* ( $C$ ). We denote these latent states by  $s_t \in \{R, C\}$ , where  $t \in$

<sup>11</sup> See Maeda 2010 and Ulfelder 2010 for exceptions.

<sup>12</sup> Especially Chib (1996) and Chib (1998).

<sup>13</sup> Park 2010; Hays, Freeman, and Nesseth 2003. Spirling (2007) reviews the Bayesian approach to change-point problems in political science; see also Western and Kleykamp (2004).

<sup>14</sup> Coppedge, Alvarez, and Maldonado 2008; Pemstein, Meserve, and Melton 2010; Treier and Jackman 2008.

<sup>15</sup> Chib (1996) and Chib (1998).

$\{1, 2, \dots, T\}$  refers to time. At any point  $t$ , we only observe whether a democracy  $i$  survives,  $y_{it} = 0$ , or reverts to a dictatorship,  $y_{it} = 1$ . The outcome  $y_{it}$  is a Bernoulli random variable with the parameter  $\theta_t$  and the states  $R$  and  $C$  correspond to a high and low probability of an authoritarian reversal,  $\theta^R$  and  $\theta^C$ , where  $\theta^R > \theta^C$ .

Consolidation is modeled as the transition from state  $R$  to state  $C$  at some unknown time  $\tau$ . Thus  $\theta_t = \theta^R$  for  $t \leq \tau$  and  $\theta_t = \theta^C$  for  $t > \tau$ . Following Chib, rather than estimate  $\tau$  directly, we will instead let the state  $s_t$  follow a discrete-time, two-state Markov process and estimate the parameters of this process. In order for this Markov process to correspond to the dynamic implied by the concept of democratic consolidation, I assume that all democracies are born transitional,  $s_1 = R$ , and let  $\pi = p(s_t = C | s_{t-1} = R)$  be the probability that a transitional democracy at time  $t - 1$  consolidates at time  $t$ . At first, I do not allow for a consolidated democracy to return a transitional one; later, I extend this basic model and allow for the possibility of *de-consolidation* by specifying the probability  $\rho = p(s_t = R | s_{t-1} = C)$  that a consolidated democracy at time  $t - 1$  returns to being a transitional one at time  $t$ . Building on Chib's Bayesian approach, we obtain consolidation time  $\tau$  indirectly, by estimating an augmented set of parameters  $\theta^R$ ,  $\theta^C$ ,  $\pi$  and the sequence of states  $\{s_t\}_1^T$  using the Gibbs sampler.<sup>16</sup> The time of consolidation  $\tau$  then corresponds to the timing of change-points in the draws of the states  $\{s_t\}_1^T$ . In turn, we can model covariate effects on  $\tau$  through their effects on the transition probability,  $\pi$ .

The estimates for this *change-point consolidation model* are based on data on democratic survival that cover the entire history of modern democracy (1789–2008) and are based on my own data collection as well as an update of the regime type data compiled by Przeworski et al., Boix and Rosato, and Cheibub and Gandhi.<sup>17</sup> The data consist of democratic spells, each of which begins in the year of a country's transition to democracy and ends in either the year of an authoritarian reversal, if one occurred, or in the last recorded year for that country, if no reversal occurred. The complete data contain 5,467 democracy-years with 90 reversals in 223 democratic spells out of 145 countries.

### III. AN ANALYSIS WITHOUT COVARIATES

As an illustration of how the present model sheds light on the dynamic of democratic consolidation, consider first parameter estimates from its simplest formulation, one that ignores any covariate effects. The left column in Table 1 shows the estimated parameters as well as several derived quantities of interest.<sup>18</sup> These results strongly suggest that democratic consolidation indeed occurs and is associated with a large decline in the risk of an authoritarian reversal. The estimated probability that a transitional democracy reverts to a dictatorship is 0.029, whereas the corresponding probability for a consolidated democracy is only 0.005. In other words, the risk of an authoritarian reversal is about *six times greater* for transitional democracies than it is for consolidated democracies. The corresponding median survival ages are 24.38 years for transitional and 154.63 years for

<sup>16</sup> See the online supplementary appendix for details.

<sup>17</sup> Boix and Rosato 2001; Cheibub and Gandhi 2005; Przeworski et al. 2000. In order to avoid conflating authoritarian reversals with a temporary loss of sovereignty, I ignore any short-term losses of sovereignty during interstate and civil wars. See the online supplementary appendix for a summary of the data. The results that follow are qualitatively identical when using the Boix, Miller, and Rosato 2013 dataset, which has a similar coverage.

<sup>18</sup> The priors are *Beta* (4, 0.1) for  $\pi$  and *Beta* (2, 2) for both  $\theta$ s (the results in this and subsequent models are not sensitive to prior specification). See the online supplementary appendix for details.

TABLE 1 *Estimation Results for the Change-Point Consolidation and De-Consolidation Models without Covariates*

Directly estimated parameters <sup>a</sup>	Consolidation model	De-consolidation model
$\theta^R$ (pr. of reversal while transitional)	0.029 [0.026,0.035]	0.030 [0.023,0.035]
$\theta^C$ (pr. of reversal while consolidated)	0.005 [0.002,0.008]	0.005 [0.002,0.008]
$\pi$ (pr. of consolidation)	0.048 [0.000,0.134]	0.056 [0.000,0.155]
$\rho$ (pr. of de-consolidation)	–	0.003 [0.000,0.016]
Derived Quantities of Interest		
Median survival age when transitional	24.38 years [19.07,29.95]	24.42 years [19.52,30.57]
Median survival age when consolidated	154.63 years [76.76,249.87]	159.26 years [86.99,303.44]
Time of consolidation $\tau$	18.10 years [17,20]	20.66 years [15,36]
Consolidation odds	36.32% [31.84,48.43]	31.84% [16.59,56.95]
Country-year observations	5,467	5,467
Spells	223	223
Reversals	90	90

*Note:* Posterior means and 95 percent HPD regions (in brackets) are based on a Gibbs sampler run of 50,000 iterations after a burn-in of 10,000 iterations. See the online supplementary appendix for convergence diagnostics.

<sup>a</sup>Latent states  $\{s_t\}_1^T$  are not listed.

consolidated democracies. The difference between the two survival ages is 130.25 years with the 95 percent highest posterior density (HPD) region of [52.69, 225.61]. Thus we see a large and statistically significant decline in the risk of an authoritarian reversal faced by consolidated democracies.<sup>19</sup>

When does consolidation occur? Using the draws of the latent states  $\{s_t\}_1^T$ , Figure 2 plots the posterior density of consolidation time (top) and the probability that a democracy is consolidated (bottom). We see that with a 95 percent probability, consolidation occurs between the seventeenth and twentieth year, with the estimated time to consolidation of about eighteen years. Thus out of the total of 223 democratic spells in the data, between seventy-one and 108 democracies are estimated to have consolidated with a greater than 95 percent probability.<sup>20</sup>

<sup>19</sup> Because this is a Bayesian analysis, we may say that a parameter significantly differs from a value  $k$  if the 95 percent HPD region does not include  $k$ .

<sup>20</sup> Based on the estimated time of consolidation (eighteen years), eleven consolidated democracies actually reverted to a dictatorship (in 2,651 democracy-years). By contrast, there were seventy-nine authoritarian reversals among transitional democracies (in 2,816 democracy-years).

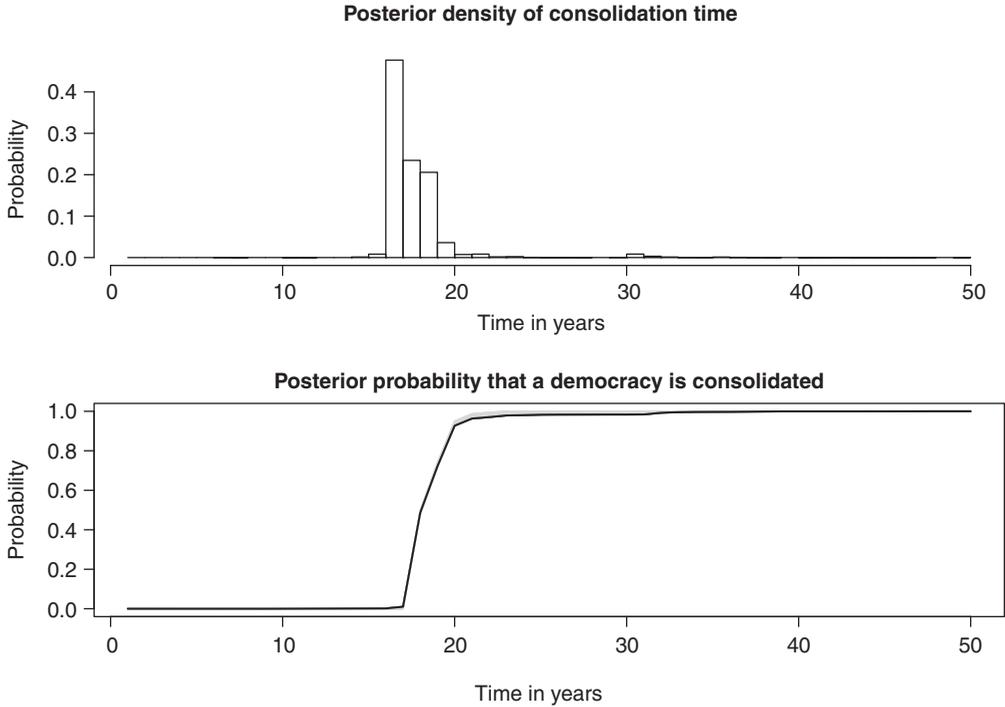


Fig. 2. Posterior density of consolidation time (top) and the probability that a democracy is consolidated (bottom) based on the change-point consolidation model  
 Note: The 95 percent credible interval is shown in gray.

A related question concerns the likelihood that a transitional democracy will survive long enough to consolidate,  $p(T > \tau | s_t = R)$ . We may refer to this quantity as the *consolidation odds* and it depends on both the estimated risk of a reversal for transitional democracies  $\theta^R$  and on the estimated time of consolidation  $\tau$ . According to the draws of the latent states  $\{s_t\}_1^T$ , the consolidation odds for a new democracy are roughly 36 percent. In other words, at the time of their transition to democracy, only about one in three democracies can expect to reach an age after which their breakdown is no longer a serious concern.

Another concern is whether the estimated decline in the risk of authoritarian reversals is durable enough to warrant the term consolidation. In order to address it, we can extend the present model to allow for both consolidation *and* de-consolidation to occur at any given point in time. Thus in addition to the probability of consolidation  $\pi$ , we also estimate the probability of de-consolidation  $\rho = p(s_t = R | s_{t-1} = C)$  and allow for changes in the hazard of authoritarian reversals to occur in both directions. The estimates based on this extension are shown in the right column of Table 1.<sup>21</sup> We see that the estimates for  $\theta^R$ ,  $\theta^C$ , and  $\pi$  are close to identical to those estimated earlier. Crucially, de-consolidation is extremely unlikely: in no year within the time-range of the data does de-consolidation occur with a probability greater than 0.05.

<sup>21</sup> The priors are *Beta* (4, 0.1) for  $\pi$ , *Beta* (0.7, 0.3) for  $\rho$ , and *Beta* (2, 2) for both  $\theta$ s; see the online supplementary appendix for details.

TABLE 2 *Model Comparisons for the Change-Point Consolidation Model without Covariates*

Number of change points $K$	Marginal likelihood $\ln \hat{m}(y)$	Bayes' Factor $2 \log(B_{1,k})$
0 No consolidation model	-107.087	12.872
1 Consolidation model	-92.267	-
1d De-consolidation model	-95.587	2.884
2 Multi-stage consolidation	-98.479	5.395
3 Multi-stage consolidation	-106.409	12.284

*Note:* Larger values of the Bayes' Factor correspond to stronger support for the single change-point consolidation model. Following Jeffrey's scale (Jeffreys 1939), support for model  $j$  versus  $k$  is 'positive' if  $2 < 2 \log(B_{j,k}) \leq 5$ , 'strong' if  $5 < 2 \log(B_{j,k}) \leq 10$ , and 'very strong' if  $2 \log(B_{j,k}) > 10$ .

As a final robustness check, consider the possibility that consolidation occurs in multiple gradual steps instead of a *single* consolidation step, as we have assumed so far. The present framework can account for this possibility by letting the latent states  $s_t$  take  $K + 1$  values corresponding to  $K + 1$  distinct reversal probabilities  $\theta_0$  to  $\theta_K$  and  $K$  change-points  $\tau_k$  for  $k = 1, \dots, K$ . We can formally compare the goodness of fit of these alternative (non-nested) models using Bayes factors. The Bayes factor is the ratio of marginal likelihoods of two competing models and reflects the relative support in the data for the two models.<sup>22</sup> In Table 2, the single change-point consolidation model ( $K = 1$ ) is compared to a no-consolidation alternative ( $K = 0$ ), a single change-point model that allows for de-consolidation ( $K = 1d$ ), and models in which consolidation occurs in multiple stages ( $K = 2, 3$ ). Values of the Bayes factor larger than 5 (on the  $2 \log$  scale) indicate strong support for the single change-point consolidation model.<sup>23</sup> We see that the single change-point consolidation model fits the data significantly better than either the no-consolidation model, the de-consolidation model, or the multi-stage consolidation models.

This preliminary analysis without covariates reveals several important characteristics of democratic consolidation. We found that a *large, durable, and statistically significant* decline in the risk of authoritarian reversals indeed occurs between seventeen and twenty years after a democracy's emergence. The estimated dynamic of democratic survival thus warrants the label 'consolidation.' We also saw that the proposed change-point consolidation model fits the data much better than a number of alternatives that either ignore the possibility of consolidation, allow for de-consolidation, or conceive of consolidation as a multi-step process.

At the same time, these initial findings prompt a number of further questions. The risk of breakdowns in both transitional and consolidated democracies may depend on a number of covariates and these may in turn account for the decline in the risk of authoritarian reversals that I call consolidation. In the next section, I address this concern by incorporating covariate effects on the reversal probabilities  $\theta^R$  and  $\theta^C$ . An alternative source of heterogeneity

<sup>22</sup> Raftery and Kass 1995. The marginal likelihood of a model refers to the probability of the data with all parameters integrated out. Marginal likelihoods are computed using Chib's (1995) method, which is especially appropriate when the Gibbs sampler conditions on augmented latent variables (as in the present framework). The frequentist counterpart to the Bayes factor is the likelihood ratio.

<sup>23</sup> Following Jeffrey's scale (Jeffreys 1939), support for the single change-point consolidation is 'positive' if  $2 < 2 \log(B_{1,k}) \leq 5$ , 'strong' if  $5 < 2 \log(B_{1,k}) \leq 10$ , and 'very strong' if  $2 \log(B_{1,k}) > 10$ .

may be due to the differences in the process by which most authoritarian reversals occur – by a coup as opposed to an incumbent takeover. I examine whether differences between the two types of reversals affect the variation in the nature and timing of consolidation in Section V.

#### IV. AN ANALYSIS WITH COVARIATES

I now extend the change-point consolidation model from the previous section to account for covariates. Specifically, I estimate the effects of covariates on the risk of authoritarian reversals in transitional and consolidated democracies via the reversal probabilities  $\theta^R$  and  $\theta^C$ .<sup>24</sup> As a result, both parameters are now associated with a set of covariates  $X$  and a set of coefficient estimates  $\beta^R$  and  $\beta^C$  for  $\theta^R$  and  $\theta^C$ , respectively. I will refer to models for  $\theta^R$  and  $\theta^C$  as the *reversal model for transitional democracies* and the *reversal model for consolidated democracies*, respectively. The Gibbs sampling algorithm that generates these coefficient estimates is summarized in the online supplementary appendix.

When choosing and interpreting covariate effects, I intentionally follow an exploratory approach. That is, I build on existing research on democratic survival and explore the present model's new implications for our understanding how factors commonly hypothesized to affect democratic survival do so.

I examine the effects of five sets of covariates. The first contains the economic covariates of annual *GDP per capita*, *GDP growth*, and *fuel exports*.<sup>25</sup> The second set of covariates contains contemporaneous and past institutional factors. These include the constitutional foundation for the executive (*parliamentary*, *presidential*, or *mixed*), the type of dictatorship that preceded the transition to democracy (*military*, *civilian*, or *monarchy*),<sup>26</sup> the nature of the last authoritarian transition of power prior to the transition to democracy (*coup*, *election*, or *other*), the number of authoritarian reversals that a country has experienced, the total time that a country has spent as a democracy, potentially over multiple spells of democracy (*time democratic*), and a dummy variable that takes the value 1 if the last *authoritarian legislature* prior to the transition to democracy existed and seated at least one member of the opposition and 0 otherwise.<sup>27</sup>

Finally, I control for international, demographic factors, and temporal factors. I account for diffusion effects by including the fraction of a democracy's *neighbors* that were also democratic in any given year;<sup>28</sup> I use a set of dummies (*Latin America*,

<sup>24</sup> The effect of covariates on each parameter is modeled via the latent variable probit model of Albert and Chib 1993.

<sup>25</sup> The data on *GDP per capita* and *GDP growth* come from Maddison (2008); the dummy *fuel exports* is based on World Bank (2008) and takes the value 1 if a country's fuel production amounted to more than 10 percent of its exports and 0 otherwise. Due to data paucity, I am unable to control for economic inequality, which has been prominently theorized to affect both transitions to democracy (Acemoglu and Robinson 2005; Ansell and Samuels 2010; Boix 2003) as well as their survival and eventual consolidation (Acemoglu and Robinson 2005, Chapter 7). Freeman and Quinn (2012) overcome the lack of data on inequality by combining indicators from multiple sources, Houle (2009) by data imputation, and Ahlquist and Wibbels (2012) by studying the implications of trade openness for income inequality.

<sup>26</sup> The residual category is *not-independent* and refers to democracies that were not an independent country prior to their transition to democracy.

<sup>27</sup> These data come from Cheibub and Gandhi (2005), Keefer (2002) and the author's own data collection.

<sup>28</sup> This is the most frequent way of capturing diffusion effects on regime transitions; Gleditsch and Ward (2006) discuss several alternatives.

*Sub-Saharan Africa, Asia, or Other*) in order to control for region-specific factors; I measure a democracy's involvement in the world economy by *trade openness*;<sup>29</sup> I control for *ethnic* and *religious* fractionalization;<sup>30</sup> and I include the dummy *Cold War*, which takes the value 1 between the years 1945 and 1990 and 0 otherwise.

Because missing data affect the size and composition of the sample significantly, I present several estimates. Models 1 and 2 in Table 3 employ a sample that preserves the largest number of observations while including four covariates that have figured prominently in empirical research on democratic survival: *GDP per capita*, *GDP growth*, a dummy for the *presidential* executive, and a dummy for whether a *military* dictatorship preceded the current democratic spell. After including these covariates, lagging each by one year, and dropping missing observations, the data consist of 4,084 democracy-years with seventy-nine reversals and 177 spells in eleven countries. Nearly all of the missing observations result from the lack of data for some nineteenth-century democracies and for some small contemporary democracies.

A positive coefficient in each of the models in Table 3 implies that an increase in the corresponding covariate raises the risk of a reversal.<sup>31</sup> Consistent with our earlier analysis, we see that the baseline risk of a democratic breakdown – captured by the intercept – is lower in consolidated than in transitional democracies. At mean and modal values of the covariates, transitional democracies face a risk of a breakdown that is six times larger than that of consolidated democracies.<sup>32</sup>

The inclusion of covariates allows for a more nuanced interpretation of how consolidation shapes the risk of authoritarian reversals. In agreement with the influential literature that examines the effect of economic factors on the survival of democracy, we see that both a high level of economic development and economic growth reduce the risk of authoritarian reversals in transitional democracies.<sup>33</sup>

However, the two factors differ in their effect on the risk of breakdown in consolidated democracies. The positive effect of economic development persists (and possibly increases in magnitude) even after a democracy consolidates. Figure 3 illustrates this finding. At the mean/modal levels of the remaining covariates, an interquartile increase in *GDP per capita* (from \$2,573 to \$9,155) lowers the annual risk of a democratic breakdown in a transitional democracy about five-fold (from 1 in 63 to 1 in 333). This positive effect persists after a democracy consolidates, although with a much smaller statistical significance at low levels of *GDP per capita*. This is because few poor democracies have survived long enough to consolidate – in part due to the large effect that the level of economic development exerts on democratic survival.

Economic growth, by contrast, is significantly associated with the risk of breakdown in transitional but not consolidated democracies. An economic recession corresponding to an interquartile drop in *GDP growth* (from 4.5 percent to 0.1 percent) raises the risk of a democratic breakdown by about 20 percent – but only in transitional democracies. Simply

<sup>29</sup> The data are from Alesina et al. (2003).

<sup>30</sup> These data are from Eichengreen and Leblang (2008).

<sup>31</sup> Bernhard, Nordstrom, and Reenock 2001; Gasiorowski 1995; Haggard and Kaufman 1995; Lipset 1959; Przeworski et al. 2000.

<sup>32</sup> Table 3 lists posterior means and the 95 percent HPD region in brackets for each coefficient. Diffuse  $N(0, 100\mathbf{I})$  priors were used for the  $\beta$ s; the prior for  $\pi$  is  $Beta(2, 0.1)$ ; the prior for  $\sigma_7^2$  is  $inverse\text{-Gamma}(1, 1)$ . See the online supplementary appendix for details.

<sup>33</sup> The mean and modal values of the covariates are \$6,674 for *GDP per capita*, 1.95 percent for *GDP growth*, 0 for *presidential*, and 0 for *military*.

TABLE 3 Estimation Results for a Change-Point Consolidation Model with Covariates

	Model 1		Model 2		Model 3	
	Trans.	Cons.	Trans.	Cons.	Trans.	Cons.
<i>Intercept</i>	-2.206***	-3.036***	-2.419***	-3.032***	-2.471***	-3.813***
<i>Log of GDP per capita</i>	[-2.348, -2.048]	[-3.555, -2.631]	[-2.621, -2.232]	[-3.553, -2.584]	[-2.830, -2.108]	[-5.062, -2.681]
<i>GDP growth</i>	[-0.402, -0.229]	[-1.007, -0.048]	[-0.555, -0.325]	[-1.324, -0.131]	[-0.529, -0.193]	[-1.536, -0.114]
<i>Fuel exports</i>	[-0.148, -0.031]	[-0.231, 0.236]	[-0.149, -0.029]	[-0.234, 0.254]	[-0.209, -0.046]	[-0.330, 0.264]
<i>Trade openness</i>	-	-	-	-	0.085	-
<i>Presidential</i>	-	-	-	-	[-0.237, 0.388]	-
<i>Military</i>	-0.004	0.063	-0.026	0.289	0.002	-
<i>Authoritarian legislature</i>	[-0.156, 0.161]	[-1.658, 1.097]	[-0.232, 0.172]	[-1.373, 1.510]	[-0.124, 0.129]	-
<i>Democratic neighbors</i>	0.262***	0.911	0.162*	0.629	0.029	-
<i>Cold War</i>	[0.117, 0.415]	[-0.383, 2.858]	[-0.020, 0.351]	[-0.774, 2.690]	0.406*	-
<i>Ethnic fractionalization</i>	-	-	-	-	[-0.038, 0.814]	-
<i>Religious fractionalization</i>	-	-	-	-	0.075	-
$\sigma_\gamma^2$	-	-	0.228	0.234	[-0.173, 0.329]	-0.490*
	-	-	[0.104, 0.381]	[0.095, 0.403]	[-0.167**]	[-1.060, 0.060]
	-	-	-	-	[-0.303, -0.038]	-
	-	-	-	-	0.352***	-
	-	-	-	-	[0.113, 0.586]	-1.213*
	-	-	-	-	0.095	[-2.520, 0.048]
	-	-	-	-	[-0.065, 0.271]	0.063
	-	-	-	-	0.038	[-0.712, 0.803]
	-	-	-	-	[-0.114, 0.183]	-
<i>Country-year observations</i>	4,084		4,084		2,736	
<i>Spells</i>	177		177		138	
<i>Countries</i>	111		111		93	
<i>Reversals</i>	79		79		58	

Note: All covariates are standardized and lagged by one year; regional and authoritarian exit dummies not shown (and not significant). Posterior means and 95 percent HPD regions (in brackets) are based on a Gibbs sampler run of 10,000 iterations thinned by 100 after a burn-in of 1,000 iterations. Significance levels \*, \*\*, \*\*\* indicate that zero is not covered by the 90 percent, 95 percent, 99 percent HPD region, respectively. See the online supplementary appendix for convergence diagnostics.

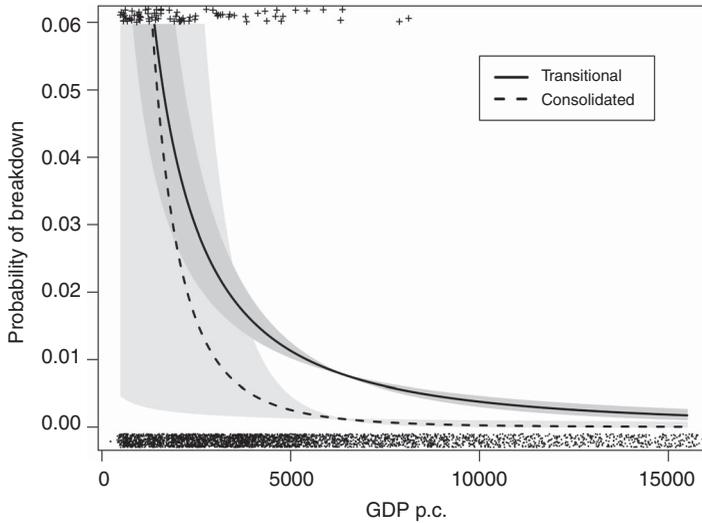


Fig. 3. The association between the level of economic development and the risk of democratic breakdowns in transitional and consolidated democracies

Notes: The 95 percent HPD regions are shown in gray. The bottom and top rugs plot the distribution of GDP per capita and breakdowns, respectively.

put, while economic recessions threaten the survival of transitional democracies, consolidated democracies have become immune to their pernicious effects.

The effect of a past military dictatorship parallels that of economic growth. Consistent with the arguments by Cheibub, Debs, and Lehoucq and Pérez-Liñán, a democracy that was governed by the military prior to its transition is about 50 percent more likely to revert to a dictatorship than a democracy that used to be a civilian dictatorship or a monarchy.<sup>34</sup> Yet as in the case of economic growth, a democracy's military past is no longer relevant for its survival once it consolidates. Meanwhile, consistent with Cheibub's findings, we see that presidential democracies are no more likely to break down than parliamentary or mixed democracies – regardless of whether they are transitional or consolidated.

The key difference between Models 1 and 2 in Table 3 is that the latter includes random effects. Given the limited number of covariates, we may expect that the risk of breakdown in democratic spells from the same country will be correlated due to unmeasured factors. Model 2 accounts for potential estimation bias resulting from such unobserved heterogeneity via country-level random effects. More specifically, we assume that observations from the same country share a common intercept  $\gamma_{j[i]t}$ , that is distributed normally with a mean of 0 and the variance  $\sigma_{\gamma}^2$ ,  $\gamma_{j[i]t} \sim N(0, \sigma_{\gamma}^2)$ , where  $j$  denotes countries,  $i$  democratic spells, and  $t$  the age of democracy. A positive random intercept  $\gamma_{j[i]t}$  implies that democratic spells from country  $j$  are more likely to experience an authoritarian reversal.<sup>35</sup>

<sup>34</sup> Cheibub 2007; Debs 2009; Lehoucq and Pérez-Liñán forthcoming.

<sup>35</sup> See Gelman and Hill (2006) and Jackman (2009, chap. 7) for a discussion of multilevel models and the online supplementary appendix for an outline of the Gibbs sampler.

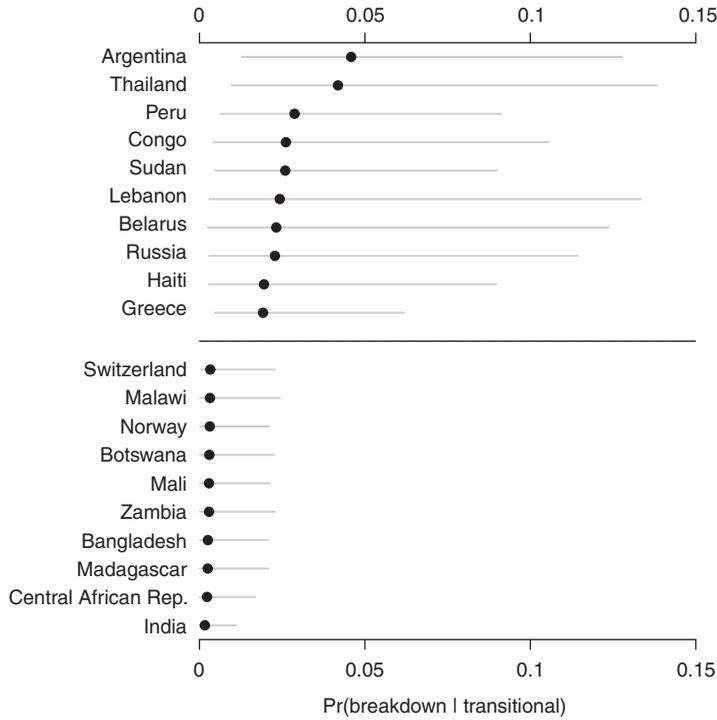


Fig. 4. Probability of a breakdown at mean/modal covariate values for transitional democracies with the ten highest (top) and lowest (bottom) country-level random intercepts  
 Note: The 95 percent HPD regions are shown in gray.

Figure 4 plots the estimated probability of a breakdown (at mean/modal covariate values) for transitional democracies with the ten highest (top) and lowest (bottom) country-level random intercepts (95 percent HPD regions in gray). We see that democracies like Norway, Switzerland, and India are estimated to have survived against the odds implied by their low levels of economic development at the time of democratization, which is in turn attributed to their unobserved, country-specific factors and captured via the low values of their random intercepts. Countries like Argentina and Thailand, by contrast, exemplify democracies that have reverted to authoritarianism more often than can be accounted for by their measured covariates. The estimated random intercepts thus correspond to our qualitative knowledge of the unusual regime trajectories experienced by these countries.<sup>36</sup>

As Figure 4 highlights, unobserved heterogeneity accounts for a significant amount of cross-country differences in the baseline risk of a democratic breakdown: At mean/modal covariate values, a transitional democracy with Argentina’s estimated random intercept faces a risk of breakdown that is twenty-nine times larger than the risk faced by a country

<sup>36</sup> In fact, three out of the ten countries with the lowest country-level random intercepts – i.e. those that have survived during the time frame of the sample against the odds implied by their covariates – have since experienced a democratic breakdown (Madagascar in 2009, Mali in 2012, and Central African Republic in 2013).

with India's random intercept! Nonetheless, the direction and statistical significance of the estimated coefficients in Models 1 and 2 remain comparable.

Accounting for covariates and unobserved country-specific factors also allows for a more informative interpretation of consolidation odds. Recall that consolidation odds denote the probability that an existing transitional democracy survives long enough to consolidate. Consolidation odds now depend on both the estimated time of consolidation and the estimated coefficients and country-level random intercepts in the model for transitional democracies. The difference in *GDP per capita* in a democracy's first year corresponding to the bottom quartile (\$226 versus \$2,573) accounts for an increase in consolidation odds from 1 percent to 67 per cent. Based on covariate values in their first year as democracy and country-level random intercepts, consolidation odds vary from 16 percent for France in 1870 to 99 percent for Czechoslovakia in 1990.

Finally, Model 3 in Table 3 controls for the full set of covariates as well as random effects. Data missingness now reduces the number of observations from 4,084 to 2,736 and the number of democratic breakdowns from seventy-nine to fifty-eight. This prevents us from including dummy variables in the reversal model for consolidated democracies: only between one to six consolidated democracies revert to a dictatorship in 95 percent of Gibbs draws and these tend to be perfectly predicted by the dummy variables employed in the reversal model for transitional democracies. We should therefore be cautious when interpreting coefficients in the reversal model for consolidated democracies.

The most notable findings in Model 3 concern the role of international factors. While Model 3 does not find a statistically significant relationship between trade openness and the likelihood of authoritarian reversals<sup>37</sup>, we see that both the presence of neighboring democracies and the Cold War have a substantial effect on the risk of authoritarian reversals in transitional democracies. At the mean/modal levels of the remaining covariates, a new democracy that is surrounded by dictatorships faces a risk of an authoritarian reversal that is about 60 percent greater than the risk faced by a new democracy that is surrounded only by democracies.<sup>38</sup> This is consistent with previous research that considers regional concentration of democracies or the proximity to the West<sup>39</sup>, although here I focus more directly on the concentration of democracies in a new democracy's neighborhood.<sup>40</sup> Meanwhile, the likelihood of an authoritarian reversal was almost three times greater during the Cold War than at all other times in the history of modern democracy. Thus the Cold War struggle between the United States and the Soviet Union had a destabilizing effect on new democracies.<sup>41</sup> But note that only the effect of democratic neighborhood appears to persist in consolidated democracies.

The key findings concerning the effects of economic development, growth, and military past from the parsimonious Models 1 and 2 are also supported by Model 3. However, we do not see a significant relationship between fuel exports and the likelihood of reversals in transitional democracies. This is contrary to Ross's and Morrison's finding that oil

<sup>37</sup> Cf. Ahlquist and Wibbels 2012; Eichengreen and Leblang 2008; Milner and Mukherjee 2009.

<sup>38</sup> The mean and modal values of the covariates are \$6,404 for *GDP per capita*, 1.95 percent for *GDP growth*, -1.17 for the log of *trade openness*, 0.58 for *neighbors*, 0.32 for *ethnic*, 0.42 for *religious*, 1 for *election*, *authoritarian legislature*, and *Cold War*, and 0 for the remaining dummy variables.

<sup>39</sup> Bernhard, Nordstrom and Reenock 2001; Gasiorowski 1995; Levitsky and Way 2010.

<sup>40</sup> As in Brinks and Coppedge 2006; Gleditsch 2002; Gleditsch and Ward 2006.

<sup>41</sup> See also Boix 2011; Ulfelder and Lustik 2007; Wright 2008.

either hurts or stabilizes democracies, respectively,<sup>42</sup> but it is consistent with research that finds that such negative effect is either absent<sup>43</sup> or conditional on other factors, such as economic inequality and state capacity.<sup>44</sup> Similarly, we do not find a statistically significant relationship between the likelihood of reversals in either transitional or consolidated democracies and the remaining covariates, including the dummy for whether the last authoritarian legislature prior to a transition to democracy seated any opposition – which we took as a measure of the degree of pre-democratic political competition.<sup>45</sup>

## V. COUPS, INCUMBENT TAKEOVERS, AND DEMOCRATIC CONSOLIDATION

So far, our analysis has treated all authoritarian reversals as a single, homogeneous category – as does virtually all existing empirical research.<sup>46</sup> Yet as I pointed out in the introduction, the manner by which democratic breakdowns occur varies considerably. More precisely, democratic breakdowns occur in one of four distinct ways: a military coup, an incumbent takeover, a civil war, or a popular uprising. Among the ninety authoritarian reversals between 1789 and 2008, fifty-five (61 percent) resulted from a military coup, twenty-seven (30 percent) followed an incumbent takeover, six (7 percent) were due to a civil war, and two (2 percent) were due to a popular uprising. The latter two processes – civil wars and popular uprisings – are too rare to be included in a statistical analysis. We can, however, extend the models in previous sections to examine the possibility that the nature and dynamics of consolidation depend on whether the reversal risk in question is that of a military coup or that of an incumbent takeover.

When coding for differences between democratic breakdowns, I say that an authoritarian reversal occurred by a *coup d'état* when the armed or security forces participated in the removal a democratically elected government by employing or threatening violence. Meanwhile, an *incumbent takeover* occurred when a democratically elected incumbent undermined key tenets of democracy, most often by abolishing or manipulating elections. The military overthrow of Salvador Allende's government in Chile in 1973 is an example of a military coup; the collapse of the Weimar Republic under Adolf Hitler's chancellorship is a prominent instance of an incumbent takeover. These two processes account for 91 percent of the ninety authoritarian reversals in the data.

When extending the change-point consolidation model outlined in Section II to allow for the simultaneous risk of coups and incumbent takeovers, I build on competing risks models. These are survival models for processes that may terminate in multiple ways.<sup>47</sup> I follow the 'classical approach' to competing risks, which assumes that individual risks act independently and are associated with distinct latent survival times of which only the earliest is observed.<sup>48</sup> Given these assumptions, we can estimate the models for the risk of coups and incumbent takeovers separately while treating democratic spells that terminate in other reversal processes as right-censored.

<sup>42</sup> Morrison 2009; Ross 2009.

<sup>43</sup> Clark, Golder, and Golder 2012; Haber and Menaldo 2011.

<sup>44</sup> Dunning 2008.

<sup>45</sup> Wright 2008.

<sup>46</sup> See Maeda (2010) and Ulfelder (2010) for exceptions.

<sup>47</sup> See Box-Steffensmeier and Jones (2004, chap. 10) for an introduction to competing risks models.

<sup>48</sup> In order to simplify the estimation, I assume that only one reversal process may occur in any single period. Crowder (2001) and Hougaard (2001) provide an extensive treatment of the 'classical approach;' Gordon (2002) examines the assumption of independence of survival times.

TABLE 4 Estimation Results for a Change-Point Consolidation Model without Covariates that Distinguishes between the Risk of Coups and Incumbent Takeovers

Directly estimated parameters <sup>a</sup>	<i>Coups d'état</i>	Incumbent takeovers
$\theta^R$ (pr. of reversal while transitional)	0.018 [0.013, 0.023]	0.008 [0.005, 0.012]
$\theta^C$ (pr. of reversal while consolidated)	0.002 [0.001, 0.004]	0.003 [0.000, 0.005]
$\pi$ (pr. of consolidation)	0.045 [0.000, 0.127]	0.044 [0.000, 0.136]
Derived Quantities of Interest		
Median survival age when transitional	39.24 years [29.02, 51.03]	89.18 years [51.77, 133.33]
Median survival age when consolidated	364.24 years [96.49, 751.22]	398.13 years [95.35, 970.27]
Time of consolidation $\tau$	20.04 years [17,26]	25.29 years [1,44]
Consolidation odds	31.39% [28.70, 47.98]	27.35% [13.01, 100.00]

Note: Posterior means and 95 percent HPD regions (in brackets) are based on a Gibbs sampler run of 50,000 iterations after a burn-in of 10,000 iterations. See the online supplementary appendix for convergence diagnostics.

<sup>a</sup>Latent states  $\{s_t\}_1^T$  are not listed.

A key question that I will examine is whether and when democracies consolidate against the distinct risks of coups and incumbent takeovers. As in Section III, I first conduct an analysis without covariates, the results of which are presented in Table 4.<sup>49</sup> They reveal that the risk of coups affects democratic survival very differently than the risk of incumbent takeovers. Estimates for the former are very close to the original model examined in Section III. We see strong evidence that a substantial and statistically significant decline in the hazard of coups occurs between the seventeenth and twenty-sixth year of a democracy's existence. Democracies indeed appear to consolidate against the risk of a *coup d'état*.

By contrast, there is less evidence that democracies consolidate against the risk of incumbent takeovers. The difference between the risks of incumbent takeovers in transitional and consolidated democracies is much smaller than in the case of coups (the 95 percent highest posterior density regions overlap) and the time of consolidation is estimated with less precision (the 95 percent HPD region spans forty-four years). This difference in the dynamics of consolidation between coups and incumbent takeovers is apparent in Figure 5.

This analysis without covariates suggests that the change-point consolidation model estimated in Sections III and IV is most appropriate for the risk of coups. Meanwhile, a more appropriate model for studying the dynamics of risk of incumbent takeovers may be either a standard survival model (one that does not anticipate a sharp shift in the hazard of a reversal over a democracy's lifetime) or a change-point model that allows for consolidation

<sup>49</sup> The priors are *Beta* (4, 0.1) for  $\pi$  and *Beta* (2, 2) for both  $\theta$ s; see the online supplementary appendix for details.

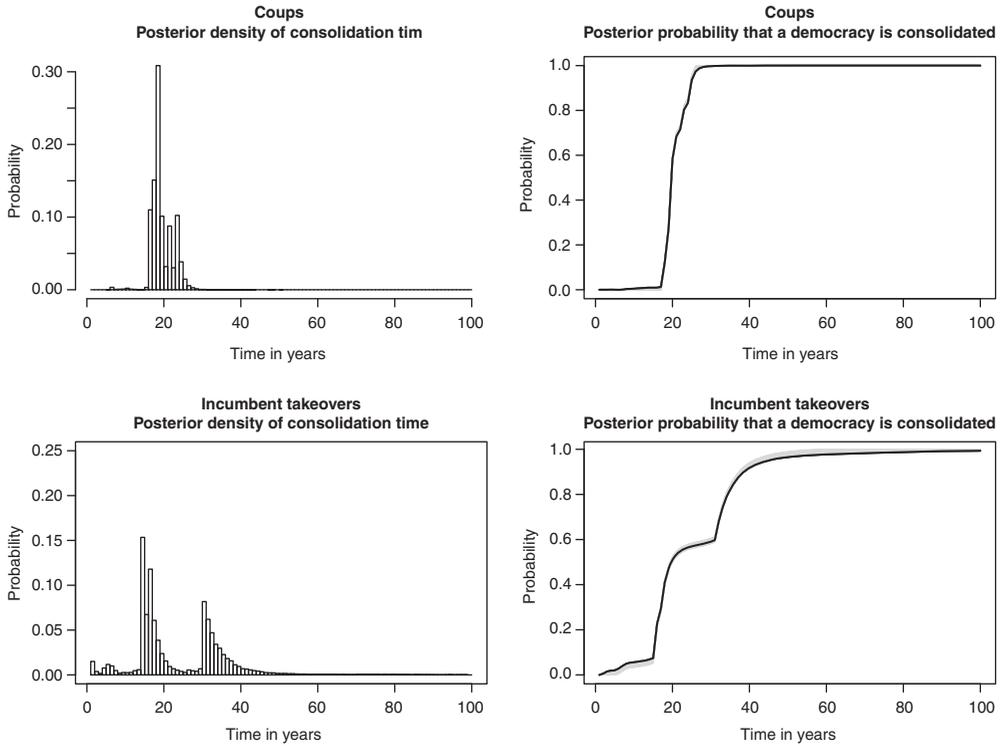


Fig. 5. Posterior density of consolidation time and the probability that a democracy is consolidated based on a change-point consolidation model that distinguishes between the risk of coups and incumbent takeovers. Note: The 95 percent credible interval is shown in gray.

to occur in multiple stages.<sup>50</sup> Therefore, I only consider the risk of coups when I estimate the change-point consolidation model with covariates below; I estimate a separate, discrete-choice survival model for the risk of incumbent takeovers.

The estimates from these models are presented in Table 5. For each type of breakdown, I present model specifications that preserve the largest number of observations (Models 1 and 3) as well as those that include the full set of covariates (Models 2 and 4). All models include country-level random effects.<sup>51</sup> In the change-point consolidation model, which now only considers the risk of coups, most of the estimated coefficients correspond closely to those in the earlier analysis that did not distinguish coups from other reversal processes. We see that economic recessions, authoritarian neighbors, and the Cold War increase the risk of breakdown in transitional but not consolidated democracies. By contrast the positive effect of economic development – and now also the negative effect of a military past – persists (and possibly increases in magnitude) even after a democracy

<sup>50</sup> In fact, a Bayes factor comparison of models for incumbent takeovers favors both the no-change point model and a 2-change-point consolidation model over the single change-point consolidation model, with a stronger support for the no-change point model. By contrast, the single change-point consolidation model for coups fits the data significantly better than any of these alternatives.

<sup>51</sup> Diffuse  $N(0, 100\mathbf{I})$  priors were used for the  $\beta$ s; the prior for  $\pi$  is  $Beta(2, 0.1)$ ; the prior for  $\sigma$  is  $Beta(2, 0.1)$ ; the prior for  $\sigma_{\eta}^2$  is  $inverse-Gamma(1, 1)$ . See the online supplementary appendix for details.

TABLE 5 Estimation Results for a Model with Covariates that Distinguishes between the Risk of Coups and Incumbent Takeovers

	<i>Coups d'état</i>				Incumbent takeovers	
	Model 1		Model 2		Model 3	Model 4
	Trans.	Cons.	Trans.	Cons.		
<i>Intercept</i>	-2.953 <sup>***</sup> [-3.385, -2.555]	-3.224 <sup>***</sup> [-3.758, -2.279]	-3.481 <sup>***</sup> [-4.187, -2.807]	-6.240 <sup>***</sup> [-8.838, -3.170]	-3.017 <sup>***</sup> [-3.298, -2.747]	-3.474 <sup>***</sup> [-4.125, -2.910]
<i>Log of GDP per capita</i>	-0.480 <sup>***</sup> [-0.671, -0.300]	-3.224 <sup>**</sup> [-1.057, -0.174]	-0.396 <sup>***</sup> [-0.633, -0.161]	-0.295 [-1.181, -0.610]	-0.410 <sup>***</sup> [-0.560, -0.255]	-0.453 <sup>***</sup> [-0.712, -0.173]
<i>GDP growth</i>	-0.073 [-0.173, 0.024]	-0.032 [-0.224, 0.161]	-0.086 [-0.201, 0.033]	-0.286 [-0.893, 0.311]	-0.085 <sup>**</sup> [-0.166, -0.003]	-0.126 <sup>**</sup> [-0.246, -0.002]
<i>Fuel exports</i>	-	-	-0.275 [-0.736, 0.189]	-	-	0.571 <sup>**</sup> [0.060, 1.058]
<i>Trade openness</i>	-	-	0.029 [-0.149, 0.214]	-	-	0.001 [-0.245, 0.244]
<i>Presidential</i>	-0.080 [-0.388, 0.259]	-0.135 [-0.769, 0.561]	-0.182 [-0.637, 0.230]	-	0.354 <sup>**</sup> [0.054, 0.639]	0.693 <sup>***</sup> [0.167, 1.190]
<i>Military</i>	0.384 <sup>***</sup> [0.117, 0.655]	0.929 <sup>***</sup> [0.293, 1.657]	0.593 <sup>**</sup> [0.11, 1.113]	-	-0.564 <sup>***</sup> [-0.900, 0.233]	-0.836 <sup>***</sup> [-1.475, -0.220]
<i>Authoritarian legislature</i>	-	-	0.032 [-0.302, 0.369]	-	-	0.115 [-0.303, 0.540]
<i>Democratic neighbors</i>	-	-	-0.291 <sup>***</sup> [-0.509, -0.060]	-1.106 <sup>**</sup> [-2.086, -0.098]	-	0.161 [-0.040, 0.376]
<i>Cold War</i>	-	-	0.711 <sup>***</sup> [0.365, 1.050]	-	-	-0.106 [-0.474, 0.251]
<i>Ethnic fractional'n</i>	-	-	0.118 [-0.099, 0.351]	-0.695 [-2.255, 0.573]	-	-0.203 [-0.471, 0.074]
<i>Religious fractional'n</i>	-	-	-0.091 [-0.290, 0.108]	-2.210 <sup>***</sup> [-4.083, -0.086]	-	-0.119 [-0.401, 0.146]
$\sigma^2_\gamma$	-	-	0.228 [0.104, 0.381]	-	0.316 [0.116, 0.566]	0.483 [0.120, 0.962]
<i>Country-year observations</i>	4,084		4,084		4,084	2,736
<i>Spells</i>	177		177		177	138
<i>Countries</i>	111		111		111	93
<i>Reversals</i>	79		79		23	14

Note: All covariates are standardized and lagged by one year; regional and authoritarian exit dummies not shown (and not significant). Posterior means and 95 percent HPD regions (in brackets) are based on a Gibbs sampler run of 10,000 iterations thinned by 100 after a burn-in of 1,000 iterations. Significance levels \*, \*\*, \*\*\* indicate that zero is not covered by the 90, 95, 99 percent HPD region, respectively. See the online supplementary appendix for convergence diagnostics.

consolidates. Put differently, when it comes to the risk of a *coup d'état*, democracies appear to consolidate against the adverse effects of recessions, authoritarian neighbors, and the Cold War but not against the risks associated with low levels of economic development and a military past.

The most notable difference between the model for coups and the model for incumbent takeovers concerns (i) the irrelevance of international factors, (ii) the relevance of presidentialism and fuel exports, and (iii) the reverse effect of a military past. Neither authoritarian neighbors nor the Cold War are associated with the risk of incumbent takeovers, whereas both are significantly associated with an increase in the risk of coups in transitional democracies. This is consistent with the history of the Cold War, during which the superpowers encouraged *coups d'état* against ideologically adversarial governments.<sup>52</sup> Goemans and Marinov, for instance, observe that military coups typically resulted in the installation of durable authoritarian regimes before the end of the Cold War while they have been increasingly followed by competitive elections after the end of the Cold War.<sup>53</sup>

By contrast, Table 5 shows that presidentialism and fuel exports – two factors that were not relevant for the risk of coups – raise the risk of incumbent takeovers. Compared to parliamentary or mixed democracies, presidential democracies are about ten times more likely to experience an incumbent takeover, whereas democracies in which fuel accounts for more than 10 percent of exports are about seven times more likely to face an incumbent takeover. Note, however, that the baseline probability of an incumbent takeover remains small, despite these large predicted effects: only twenty-three and fourteen democracies in the data with covariates experience an incumbent takeover in Models 3 and 4, respectively.

Finally, we see that a democracy's military past lowers the likelihood of incumbent takeovers – the opposite of its effect on the risk of coups. This finding points to a strategic interdependence between the processes by which coups and incumbent takeovers result in the eventual breakdown of democracy: In a democracy that lacks a history of military rule, an incumbent may succeed in accumulating enough power to subvert democracy, especially if aided by a presidential constitution and natural resources. But in a democracy that was preceded by a military dictatorship, these factors may be insufficient for a successful incumbent takeover because any such attempts will be preempted by a military coup.

Overall, the analysis in this section implies that we need to distinguish between the distinct processes by which authoritarian reversals occur for at least two reasons. First, these processes differ in their dynamics when it comes to consolidation: democracies consolidate against the risk of a *coup d'état*, but there is little evidence that they consolidate against the risk of incumbent takeovers. Second, the two reversal processes also differ in their determinants: fuel exports and presidentialism raise the risk of incumbent takeovers but not coups; the Cold War and authoritarian neighbors raise the risk of coups but not incumbent takeovers; and a democracy's military past raises the risk of coups but lowers the risk of incumbent takeovers. When we fail to differentiate between military coups and incumbent takeovers, we may confound the association between each of these processes and their unique determinants – that is, the distinct ways in which they contribute to the survival of democracy.

<sup>52</sup> Boix 2011; Ulfelder and Lustik 2007; Wright 2008.

<sup>53</sup> Marinov and Goemans 2013.

## VI. CONCLUSION

This article proposes a new, change-point model of democratic consolidation. Building on existing research, I hypothesized that consolidation takes place when a large, durable, and statistically significant decline in the risk of authoritarian reversals occurs at a well-defined point during the lifetime of a democracy. A key advantage of the present approach is that whether such a decline occurs at all, when it occurs, and whether it is large or durable enough to warrant the label ‘democratic consolidation’ are all parameters that are estimated. Democratic consolidation is thus thought of as a latent quality that is most usefully inferred rather than measured directly when working with a large number of observations. From the outset, we saw that a large and durable decline in the risk of authoritarian reversals that was hypothesized to be associated with democratic consolidation indeed occurs, that consolidation ‘takes time,’ and that consolidation essentially eliminates the possibility of a return to a dictatorship.

When I applied this approach to new data on democratic survival that distinguish between *coups d'état* and incumbent takeovers – the two processes by which an overwhelming majority of authoritarian reversals occurs – we found that these two processes differ in both their dynamics and their determinants. While the risk of both reversal processes is lower in more developed and growing economies, the impact of other factors differs across them. Fuel exports and presidentialism raise the risk of incumbent takeovers but not coups; the Cold War and authoritarian neighbors raise the risk of coups but not incumbent takeovers; and a democracy’s military past raises the risk of coups but lowers the risk of incumbent takeovers. Crucially, democracies appear to consolidate against the risk of coups but not against the risk of incumbent takeovers. Put metaphorically, the risk of a coup appears to be a childhood disease: its danger disappears once a democracy survives long enough to consolidate. By contrast, the accumulation of too much power in the hands of an incumbent seems to be a persistent threat to democratic stability.

These findings suggest that the two modes of breakdown represent two distinct vulnerabilities within democracies. In democracies that perish by a coup, elected governments are too weak to retain power in the face of extra-institutional pressures and the threat of violence. In democracies that revert to a dictatorship via an incumbent takeover, elected leaders accumulate enough power to subvert democratic institutions from within. In this latter case, it is the opposition that is too weak to deter authoritarian tendencies that emanate from within the democratic system. Separate theoretical mechanisms are needed, therefore, to explain the vulnerability of new democracies to these alternative modes of breakdown. Meanwhile, empirical research that fails to distinguish between the two reversal processes confounds qualitatively distinct modes of democratic breakdown and overlooks the unique effects that a covariate may have on each type of reversal risk.

## REFERENCES

- Acemoglu, Daron, and James A. Robinson. 2005. *Economic Origins of Dictatorship and Democracy*. New York: Cambridge University Press.
- Ahlquist, John S., and Erik Wibbels. 2012. Riding the Wave: World Trade and Factor-Based Models of Democratization. *American Journal of Political Science* 56 (2):447–64.
- Albert, James H., and Siddhartha Chib. 1993. Bayesian Analysis of Binary and Polychotomous Response Data. *Journal of the American Statistical Association* 88:669–79.

- Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. Fractionalization. *Journal of Economic Growth* 8 (2):155–94.
- Almond, Gabriel A., and Sidney Verba. 1963. *The Civic Culture: Political Attitudes and Democracy in Five Nations*. Newbury Park, Calif.: Sage.
- Ansell, Benjamin, and David Samuels. 2010. Inequality and Democratization: A Contractarian Approach. *Comparative Political Studies* 45 (12):1543–74.
- Bernhard, Michael, and Ekrem Karakoç. 2007. Civil Society and the Legacies of Dictatorship. *World Politics* 59 (4):539–67.
- Bernhard, Michael, Timothy Nordstrom, and Christopher Reenock. 2001. Economic Performance, Institutional Intermediation, and Democratic Survival. *Journal of Politics* 63 (3):775–803.
- Boix, Carles. 2003. *Democracy and Redistribution*. Cambridge: Cambridge University Press.
- . 2011. Democracy, Development, and the International System. *American Political Science Review* 105 (4):809–28.
- Boix, Carles, and Sebastian Rosato. 2001. A Complete Dataset of Political Regimes, 1800–1999. Dataset.
- Boix, Carles, Michael Miller, and Sebastian Rosato. 2013. A Complete Data Set of Political Regimes, 1800–2007. *Comparative Political Studies* 46 (12):1523–54.
- Box-Steffensmeier, Janet M., and Bradford S. Jones. 2004. *Event History Modeling*. New York: Cambridge University Press.
- Brinks, Daniel, and Michael Coppedge. 2006. Diffusion Is No Illusion: Neighbor Emulation in the Third Wave of Democracy. *Comparative Political Studies* 39 (4):463–89.
- Cheibub, JoséAntonio. 2007. *Presidentialism, Parliamentarism, and Democracy*. New York: Cambridge University Press.
- Cheibub, José Antonio, and Jennifer Gandhi. 2005. Classifying Political Regimes: A Six-Fold Measure of Democracies and Dictatorships. Unpublished manuscript, University of Illinois and Emory University.
- Chib, Siddhartha. 1995. Marginal Likelihood from the Gibbs Output. *Journal of the American Statistical Association* 90 (432):1313–21.
- . 1996. Calculating Posterior Distributions and Modal Estimates in Markov Mixture Models. *Journal of Econometrics* 75 (1):79–97.
- . 1998. Estimation and Comparison of Multiple Change-Point Models. *Journal of Econometrics* 86 (2):221–41.
- Clark, William Roberts, Matt Golder, and Sona Golder. 2012. The Balance of Power Between Citizens and the State: Democratization and the Resource Curse. Unpublished manuscript, the University of Michigan and the Pennsylvania State University.
- Cleary, Matthew R., and Susan C. Stokes. 2006. *Democracy and the Culture of Skepticism: Political Trust in Argentina and Mexico*. New York: Russell Sage Foundation.
- Coppedge, Michael, Angel Alvarez, and Claudia Maldonado. 2008. Two Persistent Dimensions of Democracy: Contestation and Inclusiveness. *Journal of Politics* 70 (3):632–47.
- Crowder, Martin J. 2001. *Classical Competing Risks*. Boca Raton: Chapman & Hall.
- Debs, Alexandre. 2009. Living by the Sword and Dying by the Sword? Leadership Transitions in and out of Dictatorships. Unpublished manuscript, Yale University.
- Diamond, Larry. 1999. *Developing Democracy: Toward Consolidation*. Baltimore, Md.: Johns Hopkins University Press.
- Dunning, Thad. 2008. *Crude Democracy: Natural Resource Wealth and Political Regimes*. New York: Cambridge University Press.
- Eichengreen, Barry, and David Leblang. 2008. Democracy and Globalization. *Economics and Politics* 20 (3):289–334.
- Epstein, David L., Robert Bates, Jack Goldstone, Ida Kristensen, and Sharyn O'Halloran. 2006. Democratic Transitions. *American Journal of Political Science* 50 (3):551–69.
- Freeman, John R., and Dennis P. Quinn. 2012. The Economic Origins of Democracy Reconsidered. *American Political Science Review* 106 (1):58–80.

- Gasiorowski, Mark J. 1995. Economic Crisis and Political Regime Change: An Event History Analysis. *American Political Science Review* 89 (4):882–97.
- Gasiorowski, Mark J., and Timothy J. Power. 1998. The Structural Determinants of Democratic Consolidation: Evidence from the Third World. *Comparative Political Studies* 31 (6): 740–771.
- Gelman, Andrew, and Jennifer Hill. 2006. *Data Analysis Using Regression and Multilevel/Hierarchical Models*. New York: Cambridge University Press.
- Gleditsch, Kristian Skrede. 2002. *All International Politics is Local: The Diffusion of Conflict, Integration, and Democratization*. Ann Arbor: University of Michigan Press.
- Gleditsch, Kristian, and Michael D. Ward. 2006. Diffusion and the International Context of Democratization. *International Organization* 60 (4):911–33.
- Gordon, Sanford C. 2002. Stochastic Dependence in Competing Risks. *American Journal of Political Science* 46 (1):200–17.
- Grzymala-Busse, Anna. 2007. *Rebuilding Leviathan: Party Competition and State Exploitation in Post-Communist Democracies*. New York: Cambridge University Press.
- Haber, Stephen, and Victor Menaldo. 2011. Do Natural Resources Fuel Authoritarianism? A Reappraisal of the Resource Curse. *American Political Science Review* 105 (1):1–26.
- Haggard, Stephan, and Robert R. Kaufman. 1995. *The Political Economy of Democratic Transitions*. Princeton, N.J.: Princeton University Press.
- Hays, Jude C., John R. Freeman, and Hans Nesseseth. 2003. Exchange Rate Volatility and Democratization in Emerging Market Countries. *International Studies Quarterly* 47:203–28.
- Hougaard, Philip. 2001. *Analysis of Multivariate Survival Data*. New York: Springer.
- Houle, Christian. 2009. Inequality and Democracy: Why Inequality Harms Consolidation But Does Not Affect Democratization. *World Politics* 64 (1):589–622.
- Huntington, Samuel P. 1993. *The Third Wave: Democratization in the Late Twentieth Century*. Norman, Okla.: University of Oklahoma Press.
- Jackman, Simon. 2009. *Bayesian Analysis for the Social Sciences*. Chichester, W. Sussex: Wiley.
- Jeffreys, Harold. 1939. *Theory of Probability*. Oxford: The Clarendon Press.
- Kapstein, Ethan B., and Nathan Converse. 2008. *The Fate of Young Democracies*. New York: Cambridge University Press.
- Keefer, Philip. 2002. *Database of Political Institutions*. Washington, D.C.: Development Research Group, The World Bank.
- Lehoucq, Fabrice, and Aníbal Pérez-Liñán. Forthcoming. Breaking out of the Coup Trap: Political Competition and Military Coups in Latin America. *Comparative Political Studies*. Published online before print May 29, 2013, doi: 10.1177/0010414013488561
- Levitsky, Steven, and Lucan A. Way. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*. New York: Cambridge University Press.
- Lipset, Seymour M. 1959. Some Social Requisites for Democracy: Economic Development and Political Legitimacy. *American Political Science Review* 53:69–105.
- Maddison, Angus. 2008. Statistics on World Population, GDP and Per Capita GDP, 1–2006 AD. Dataset.
- Maeda, Ko. 2010. Two Modes of Democratic Breakdown: A Competing Risks Analysis of Democratic Durability. *Journal of Politics* 72 (4):1129–43.
- Marinov, Nikolay and Goemans, Hein. 2013. Coups and Democracy. *British Journal of Political Science*, available on CJO2013. doi:10.1017/S0007123413000264
- Milner, Helen V., and Bumba Mukherjee. 2009. Democratization and Economic Globalization. *Annual Review of Political Science* 12:163–81.
- Morrison, Kevin. 2009. Oil, Non-Tax Revenue, and the Redistributive Foundations of Regime Stability. *International Organization* 63 (1):107–38.
- Muller, Edward N., and Mitchell A. Seligson. 1994. Civic Culture and Democracy: The Question of Causal Relationships. *American Political Science Review* 88 (3):635–52.
- O'Donnell, Guillermo. 1996. Illusions About Consolidation. *Journal of Democracy* 7 (2):34–51.

- O'Donnell, Guillermo, and Philippe C. Schmitter. 1986. *Transitions from Authoritarian Rule: Comparative Perspective*. Vol. 4. Baltimore, Md.: Johns Hopkins University Press.
- Park, Jong Hee. 2010. Structural Change in the US Presidents' Use of Force Abroad. *American Journal of Political Science* 54 (3):766–82.
- Pemstein, Daniel, Stephen A. Meserve, and James Melton. 2010. Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type. *Political Analysis* 18 (4): 426–449.
- Przeworski, Adam, Michael E. Alvarez, Jose Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development: Political Institutions and Well-Being in the World, 1950-1990*. New York: Cambridge University Press.
- Raftery, Adrian E., and Robert E. Kass. 1995. Bayes Factors. *Journal of the American Statistical Association* 90 (430):773–95.
- Ross, Michael. 2009. Oil and Democracy Revisited. Unpublished manuscript, UCLA.
- Schedler, Andreas. 1998. What is Democratic Consolidation? *Journal of Democracy* 9 (2):91–107.
- Spirling, Arthur. 2007. Bayesian Approaches for Limited Dependent Variable Change Point Problems. *Political Analysis* 15 (4):387–405.
- Svolik, Milan. 2008. Authoritarian Reversals and Democratic Consolidation. *American Political Science Review* 102 (2):153–68.
- Tilly, Charles. 2007. *Democracy*. Cambridge: Cambridge University Press.
- Treier, Shawn, and Simon Jackman. 2008. Democracy as a Latent Variable. *American Journal of Political Science* 52 (1):201–17.
- Ulfelder, Jay. 2010. *Dilemmas of Democratic Consolidation: A Game-Theory Approach*. Boulder, Colo.: First Forum Press.
- Ulfelder, Jay, and Michael Lustik. 2007. Modeling Transitions to and from Democracy. *Democratization* 14 (3):351–87.
- Western, Bruce, and Meredith Kleykamp. 2004. A Bayesian Change Point Model for Historical Time Series Analysis. *Political Analysis* 12 (4):354–74.
- World Bank. 2008. *World Development Indicators*. Washington, D.C.: The World Bank.
- Wright, Joseph. 2008. Political Competition and Democratic Stability in New Democracies. *British Journal of Political Science* 38 (2):221–45.