

**Survival and Accountability:  
An Analysis of the Empirical Support for “Selectorate Theory”**

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Abstract: This note re-examines the empirical support for one of the most influential explanations of leadership tenure, “selectorate theory,” by testing for consistency across key regime categories. I find that the measure used for winning coalition size is correlated with the destabilization of leaders in democracies and the stabilization of leaders in non-democracies. I also find that the measure of selectorate size is dependent on two factors: (1) the effect of military regimes; and (2) the timeframe being analyzed. When these are included in the study, the measure of selectorate size produces contradictory results. These findings question the current measures of selectorate theory concepts, and redirect further studies on leadership survival. They also have interesting implications for the study of legislatures and military involvement in authoritarian regimes.

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Recently, political science has seen a surge of studies using large-N analysis to develop a baseline model of leadership stability. The interest in explaining the survival or fragility of leaders is not surprising, given the well-developed literature on the effects of leadership tenure in almost every sub-discipline of political science. For comparative politics, political survival affects a number of actors, “including opposition parties, citizens, interest groups, revolutionaries, foreign governments and international organizations.”<sup>1</sup> Yet the literature has remained primarily focused on the stability of political regimes, executives in parliamentary democracies, or leadership survival in particular countries.<sup>2</sup> In the study of international political economy, many theories of economic growth, public goods provision, and liberalization rely directly or indirectly on leadership tenure to explain the time horizons and incentives for policy-makers.<sup>3</sup> In international relations, where much of the recent work on leadership survival has occurred, studies connect leadership vulnerability to international conflict behavior.<sup>4</sup>

Of the institutional explanations for political survival, “selectorate theory,” developed by Bueno de Mesquita, Morrow, Siverson and Smith (hereafter Bueno de Mesquita et. al.), is one of the most influential. They argue that two institutional factors are especially important to leadership tenure and behavior: (1) selectorate size – the set of people who have the right to participate in the selection of the leader; and (2) winning coalition size – the number of individuals whose approval is necessary for the leader to claim office. Their theory uses very few institutional factors to explain a wide variety of phenomena and provides an elegant logical basis for studying politics across nominal regime categories, which makes it very attractive.

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<sup>1</sup> Laver and Shepsle 1998, 28-29; see also Bienen and Van De Walle 1991.

<sup>2</sup> On political regime survival see e.g. Gasiorowski 1995; Przeworski and Limongi 1997. On parliamentary executives see e.g. Warwick 1994; King et. al. 1990. Examples of discussions in particular countries include Nathan 1998 on Malaysia; Snitwongse 1994 on Thailand; and Ahn 2002 on North Korea.

<sup>3</sup> On economic growth, see McGuire and Olson 1996; Bueno de Mesquita et. al. 1999a; Bueno de Mesquita et. al. 2003; and Barro 1997. On public goods provision, see Lake and Baum 2001; Bueno de Mesquita et. al. 2003. On liberalization, see Przeworski 1991; Hellman 1997.

<sup>4</sup> Fearon 1994; Bueno de Mesquita et. al. 1999b; Goemans 2000; Bueno de Mesquita et. al. 2003; Chiozza and Goemans 2004; Colaresi 2004.

The robustness of the relationship between the selectorate theory variables and length of leadership tenure, although far from the only empirical implication of their theory, is especially important. Yet studies testing the robustness of this finding are surprisingly lacking. This study takes another look at the operationalization of selectorate theory concepts, and finds that their relationship with leadership tenure across nominal regime categories is not as robust as the authors claim. This suggests that either there is a problem with measurement of the selectorate theory concepts, or there is some other underlying difficulty in applying the theory to empirical data of leadership tenure.

### **An Overview of Selectorate Theory**

I begin with a short introduction to the logic underlying selectorate theory.<sup>5</sup> The explanation begins with the leader and an opposition making offers to form a coalition large enough to keep or take power. Both appeal to two groups. The first group, the selectorate ( $S$ ), are those who “have a government-granted say in the selection of leaders.”<sup>6</sup> The current executive must assemble a coalition of enough individuals to make a winning coalition ( $W$ ), “a subset of the selectorate of sufficient size such that the subset’s support endows the leadership with political power over the remainder of the selectorate as well as over the disenfranchised members of the society.”<sup>7</sup>

To form a winning coalition, the executive uses revenues to distribute two types of goods, private and public. Private goods are enjoyed by a particular individual, to the exclusion of others. In contrast, Public goods are non-divisible, they can not be apportioned by contribution,

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<sup>5</sup> For the interested reader, formal layouts of the theory are available in Bueno de Mesquita et. al. 2002 and Bueno de Mesquita et. al. 2003.

<sup>6</sup> Bueno de Mesquita et. al. 2003, 42.

<sup>7</sup> Ibid., 51.

and non-excludable, meaning that individuals cannot be prevented from enjoying the benefits.<sup>8</sup> To minimize costs, the current leader chooses members of the selectorate with the highest affinity for her in order to minimize costs. When the required winning coalition size is small, distribution of private goods is more efficient, because their excludability increases the relative benefits of membership in the winning coalition. When the size of the winning coalition becomes large, however, revenue constraints make distribution of private goods inefficient or impossible. Larger winning coalitions, then, should provide more public goods.

The goods demanded by members of the selectorate to join the winning coalition depend on both the size of the winning coalition and the size of the selectorate. When a government consists of a small winning coalition and a large selectorate ( $W/S$  is small), being a member of the winning coalition is highly valuable, since a multitude of other individuals can join the winning coalition if an individual defects. In a democracy, both the selectorate and winning coalition are large ( $W/S$  larger), with the selectorate usually consisting of the entire adult population and a winning coalition which can be as large as 50 percent plus one of the population that votes in an election. In this case, allocating private goods to such a large portion of the population while excluding the others would be difficult. Individuals can defect from the winning coalition without too much fear of a significant utility loss, since they will still derive benefit from the public good.

In the game Bueno de Mesquita et. al. propose, all actors behave in an optimal manner and the incumbent is always returned to office.<sup>9</sup> Opposition leaders have difficulty making credible commitments to supporters, since individual affinity for the opposition is not revealed until after the decision on leadership occurs. The opposition offers large incentives to encourage defection, but it can not guarantee that they will continue to do so in the future. Incumbents, on

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<sup>8</sup> See e.g. Olson 1965.

<sup>9</sup> Bueno de Mesquita et. al. 2002.

the other hand, have a history of distribution from which individuals can infer their probability of being in the winning coalition in the future.

While the incumbent never loses in this game, the resources an incumbent expends to remain in office varies substantially.<sup>10</sup> In small winning coalition/large selectorate states, leaders do not need to make large expenditures, both because there is a large pool of individuals from which to fill few positions and because the likelihood of being included in an opposition coalition is small. In cases where the winning coalition is larger and the selectorate smaller, individuals can hold out for larger payoffs, since their ability to threaten defection and their probability of being included in an opposition coalition are higher. Thus, executives with institutions that promote loyalty will have more resources in reserve after each play of the game. This reserve is the mechanism for stability, since it provides resources for dealing with future crises.

### **Applying Selectorate Theory**

Bueno de Mesquita et. al. construct simple measures for selectorate size and winning coalition size using the Polity II, III and IV datasets.<sup>11</sup> Selectorate size ( $S$ ) is measured by the breadth of membership in each country's legislature, coded as 0 if there is no legislature, 1 if the legislature is appointed by heredity, ascription or by the executive, and 2 if it is directly or indirectly selected by popular election.<sup>12</sup>

Size of the winning coalition ( $W$ ) is operationalized using several variables from Polity II

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<sup>10</sup> Bueno de Mesquita et. al. 2003, p. 311-319, elaborate on this further, suggesting that performance on policy provisions, as well as a number of extra-political risks also contribute to deposition.

<sup>11</sup> Bueno de Mesquita et. al. 1999a; Bueno de Mesquita et. al. 2003. For documentation on the Polity datasets, see Jagers and Gurr 1996 and Marshall and Jagers 2002. This study relies more on the Polity IV dataset than Bueno de Mesquita et. al. 1999a. This consistent with Bueno de Mesquita et. al. 2003 and is the first time that Polity includes the transition variables, which are utilized later in the paper.

<sup>12</sup> In Bueno de Mesquita et. al. 2003 and in the replication data on the internet,  $W$  and  $S$  are standardized to a range of 0-1. This was reversed for this analysis for consistency of comparison between these results and Bueno de Mesquita et. al. 1999a.

and IV. These variables are *Regtype*, *Xrcomp*, *Xropen*, and *Parcomp*. *Regtype* distinguishes military from non-military regimes. Military regimes tend to have lower winning coalition size, so regimes with codes not equal to 2 (military/civilian) or 3 (military) were assigned one point in the Bueno de Mesquita et. al. coding scheme. *Xrcomp* categorizes the competitiveness of executive recruitment. If the country's executive recruitment is either by election or in the process of transition towards election, then another point was assigned. *Xropen* measures the openness of executive recruitment, so that *W* gets another point if the country used a dual system of ascription and election or a system of election for executive recruitment. Finally, *Parcomp* looks at the competitiveness of political competition. A point is added if *Parcomp* shows "relatively stable and enduring political groups which regularly compete for political influence at the national level."<sup>13</sup> The resulting measure of winning coalition size ranges from 0 to 4.

The ability to measure selectorate and winning coalition size with reasonable accuracy is vital for several reasons. First, measurement is necessary to test implications of any theory. Formal models quickly produce diminishing returns without empirical testing.<sup>14</sup> Second, measurement provides the ability to expand the theory to other contexts, whether as the primary variable of interest or as a control for institutional differences.<sup>15</sup> Finally, measurement is at the heart of application. Application of selectorate theory by policy-makers and scholars to cases of interest relies on the ability to make accurate classifications. Bueno de Mesquita et. al. say that their theory "remains a primitive theory in need of enrichment with more institutional details and improved measurement."<sup>16</sup> This study responds to their call for the intellectual community to follow-up on their findings, and is part of a larger project on how institutions

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<sup>13</sup> Marshall and Jaggers 2002, 18.

<sup>14</sup> Findlay and Wellisz 1983, 480.

<sup>15</sup> For an example of the latter, see Colaresi 2004, 561.

<sup>16</sup> Bueno de Mesquita et. al. 2003, 11-12.

affect the length of leadership tenure.<sup>17</sup> Several problems are identified with these measures: (1) the measure of winning coalition size produces opposite results for competitive and non-competitive political regimes; (2) the effect of selectorate size is primarily due to the relationship between military regimes and the absence of a legislature; and (3) the effect of selectorate size is inconsistent over time, reflecting the different bases of authoritarian legitimacy post-World War II.

I use a Cox proportional hazard framework to re-test the relationship between the selectorate theory variables and leadership survival. The advantages and robustness of these models are well known.<sup>18</sup> Because the Cox model does not specify a parametric form for the baseline hazard, it will produce unbiased results under a variety of specifications. It is also the most common method used in previous analyses of leadership survival across countries and regime types.<sup>19</sup> The use of the Cox model is in accordance with Bueno de Mesquita et. al.'s 1999a article, but with a few changes that will be noted below. These changes are made to reflect the updating and correction of the dataset, as well as the latest formulation of selectorate theory. For the interested reader, analogous analyses of their 2003 findings (using parametric models of  $W$ ), as well as analysis of the ratio of  $W$  to  $S$ , are available in online Appendices on the author's website.<sup>20</sup> The substantive results are invariant to approach

Dates of leadership tenure were collected by Bueno de Mesquita et. al. and are available in their replication dataset.<sup>21</sup> This article utilizes the latest data available from the authors, which

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<sup>17</sup> The second part of this project, which looks at variables from the comparative politics literature, will be presented at the 2007 American Political Science Association meeting.

<sup>18</sup> See Box-Steffensmeier and Jones 1997; 2004. Cox models do have some tradeoff in efficiency compared with their parametric counterparts, but these are so minor that they will very rarely affect the results in a substantive manner.

<sup>19</sup> Four of the six large-N studies of leadership survival utilize the Cox model. See Bienen and Van De Walle 1991; Bueno de Mesquita et. al. 1999a; Chiozza and Goemans 2004; Colaresi 2004. Bueno de Mesquita et. al. 2003 uses a rather unusual specification of the Weibull model. This change does not change the substantive results of this paper and substantially complicates interpretation of the model.

<sup>20</sup> [Author's website]

<sup>21</sup> <http://www.nyu.edu/gsas/dept/politics/data/bdm2s2/Logic.htm>. The dates were derived primarily from Spuler,

has been updated to 2001, and is stset according to their specifications.<sup>22</sup> The resulting dataset encompasses 2,689 leaders from 192 countries between 1816 and 1999.

Table 1 replicates the results of Bueno de Mesquita et. al.'s 1999a analysis. These results do have some variance from the original results. Primarily this is due to two factors: (1) the addition of observations since the original dataset was developed, and (2) adjustments for multiple data entries for the same subject. When these differences are taken into account, the results are nearly identical.<sup>23</sup> Despite these differences, the core variables are properly signed, and only selectorate size, which the authors drop from the analysis in their book, loses statistical significance ( $p = .240$ ).

**[Table 1 About Here]**

The above model makes a subtle assumption that must be modified to reflect the current state of selectorate theory. Cox proportional hazard models assume that the effect of the independent variables is the same over time -- that the relationship is proportional. However, Bueno de Mesquita et. al. argue that the selectorate variables have both their standard impact and a variable impact over time.<sup>24</sup> From a theory standpoint, they argue that the effect of these institutions should be stronger over time, as individuals become socialized into the institutional setting. To test whether their variables behave in this manner, the global test of proportionality, based on Schoenfeld residuals, was run on the replication model.<sup>25</sup> The results do show some level of disproportionality ( $p = .000$ ), as the authors predict.<sup>26</sup> The Harrell's rho test on the individual covariates suggests that, in this model, selectorate size and winning coalition size have

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Allen and Sunders 1977 and extended and checked using Langer 1972; Bienen and van de Walle 1991; Crystal 1990; and Cook 1992. In the dataset itself, the leader's name is given, as well as the year and month of their entry and exit from office.

<sup>22</sup> Stata command from e-mail correspondence with Alastair Smith. Command available on author's website.

<sup>23</sup> An earlier version of this paper confirmed that the differences were due to these adjustments and not to differences in modeling.

<sup>24</sup> Bueno de Mesquita et. al. 2003, p. 298.

<sup>25</sup> See Box-Steffensmeier and Zorn, 2001; Box-Steffensmeier and Zorn, 2003.

<sup>26</sup> No disproportionality is detected, however, when W is run by itself.

a changing impact over time ( $p < .05$ ).

Because of this, Model 2 includes the interaction of both variables with the natural log of time in time in office.<sup>27</sup> The non-interacted variables represent the intercept (base likelihood of a leader losing office), while the interacted variables show the change in the leader's hazard of losing office over time. These results are still consistent with Bueno de Mesquita et. al.'s theory. Larger winning coalitions are initially associated with slightly more stable leadership tenures, although the result is not statistically significant ( $p = .136$ ), but its interaction terms suggest that after 1.35 years in office larger winning coalitions become destabilizing for leaders. Similarly, selectorate size is initially associated with 14 percent less stable leaders, but after about 3.07 years in office the presence of a legislature is stabilizing. Figure 1 gives a visual representation that is very similar to what the theory would predict. All of this is consistent with the contentions of the selectorate theory authors and suggests that the replication has been successful.

**[Figure 1 About Here]**

Now that the baseline model for selectorate theory has been established, the next section turns to analyzing the effect of the selectorate theory variables across nominal regime categories.

### **Winning Coalitions or Competition**

Bueno de Mesquita et. al. highlight the importance of inter-category (i.e. between democracies and non-democracies, as well as across sub-types of the two) comparison for the validity of their theory when they state that their approach is "intended to offer an integrated explanation of the differences that persist across nominal regime types."<sup>28</sup> They also argue that

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<sup>27</sup> The proportionality test for *WoverS* does not reveal any violations of the assumption (global test  $p = .674$ ). Neither the inclusion of an interaction with time, nor running *W* as an ancillary parameter in a Weibull model changes the main conclusions of this study (see online appendix II).

<sup>28</sup> Bueno de Mesquita et. al. 2003, 10, also 42.

"large winning coalitions are a part of, but are not equivalent to, democracy. Likewise, small winning coalitions with large selectorates are expected to be correlated with, but are not themselves equivalent to, autocracy."<sup>29</sup> Yet they control for democracy using the residuals from regressing  $W$  and  $S$  on a slightly modified Polity scale of democracy, which they label  $WS:DemRes$ , and even this measure is not utilized in any models of leadership survival.<sup>30</sup> This removes any relationship between democracy and the selectorate theory variables prior to including them in the model. Essentially this assumes, rather than tests, that the correlation between measures of democracy and the selectorate theory variables is *solely due* to the concepts of selectorate theory. This assumption is difficult to sustain, however, given the correlation between  $W$ ,  $S$ , and various measures of human and civil liberties.<sup>31</sup>

The distinction between different levels of democracy is important. In more democratic states, where competition for leadership is more regular and open, leadership removal costs are minimal. Reminding the reader that ballots are cheaper than bullets may seem hyperbolic, but the higher obstacles to organization and leadership replacement in less democratic/authoritarian regimes are well-known and significant. Zielinski's point about democratic transitions applies more generally to changing most leaders in non-democratic regimes: "A critical problem of transition is to get to democracy without being killed."<sup>32</sup> Groups, especially opposition groups, are also, by definition, organized and capable of operating in more democratic states, increasing competition and choice. Additionally, term limits are an almost exclusive characteristic of democratic regimes, with Mexico being a notable exception.<sup>33</sup>

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<sup>29</sup> Ibid., 137.

<sup>30</sup> See *ibid.*, 137. See models of leadership survival in chapter 7.

<sup>31</sup> See *ibid.*, 180-184.

<sup>32</sup> Zielinski 1999, 213. Bueno de Mesquita et. al. 2003, 32 discuss this repression cost, but also contend that it is not enough to explain differences, since this leaves the leadership's ability to repress unaccounted for. They contend, "Oppression is a byproduct of the political arrangements that ensure longevity." My point has less to do with high repression costs in relationship to executive survival, and more to do with the extremely low costs and regularity of opportunity in a democracy.

<sup>33</sup> Bueno de Mesquita et. al. also note this relationship. See *ibid.*, 313.

Bueno de Mesquita et. al. argue that the presence of elections is not a sufficient explanation of leadership tenure or rent-seeking.<sup>34</sup> They also argue that it does not explain the differences in single-member district parliamentary systems, presidential systems, and proportional-representation or multiple-member district systems. While these criticisms are correct, they do not obviate the need for testing competition as a hypothesis. These arguments also stress the importance of checking whether the selectorate theory variables really provide a reasonable foundation for comparison of systems within the electoral and non-electoral categories.

Table 2 looks at a variety of measures to test the selectorate theory variables while controlling for level of democracy. *Polity2*, which uses institutional characteristics to assign an authoritarian/democracy score on a scale from -10 to 10, is the only measure that covers the entire period being studied. More democratic institutions have substantially higher baseline hazards than less democratic institutions.<sup>35</sup> While several of the variables used to operationalize  $W$  are drawn from this dataset, the correlation is far from perfect.<sup>36</sup> Just to be certain, however, that the results are not overly influenced by the use of similar variables, a threshold for whether or not the country has elections is also used. *Election* indicates if the leader is chosen in regular, competitive (although not necessarily democratic) elections as defined in the Polity dataset. This variable explicitly captures the effect of lowered removal costs in electoral systems. Figure 2 demonstrates that elections substantially increase the probability of leadership removal and that this effect increases quickly over time.

**[Figure 2 About Here]**

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<sup>34</sup> Ibid., p.33-34.

<sup>35</sup> Baseline hazards are recovered from stratified versions of Model 1.

<sup>36</sup> Ibid., 139 also note this. The correlation is highest at the extremes of democracy or autocracy and drops significantly in the interior. More formally, the VIF scores between  $W$  and *Polity2* is 2.84. This is high enough for some concern, but well below the score of 10 that is usually considered critical. In none of the models presented here do the collinearity scores come close to a level that would normally be seen as catastrophic for inference.

Outside of the Polity dataset, two measures of democracy are commonly used. Freedom House provides yearly measures of political rights and civil liberties since 1970. These scores range from 1, most free, to six, least free, and are calculated using surveys of regional experts. Finally, Przeworski et. al. (2000) utilize a binary measure of democracy from 1950 to 1990, *ACLP Regime Type*, indicating whether the party of power can lose office through elections. A score of 1 indicates authoritarian governance, and 0 indicates competitive elections. The inclusion of these alternative measures should reassure the reader that the use of Polity data in both the measure of democracy and the selectorate theory concepts is not driving the results.<sup>37</sup>

Table 2 presents some problematic findings for the measures of selectorate theory. Predictably, including Bueno de Mesquita et. al.'s original control for level of democracy, *WS:DemRes*, in Model 3 does not substantively change the results for *W* and *S*, since the covariance between these variables has already been ameliorated. All of other models, however, suggest that the relationship between the selectorate theory variables and leadership tenure is due primarily to the differences between democratic and non-democratic regime types. In Models 4 and 5, the relationship between size of the winning coalition and leadership tenure is the *opposite* of that predicted by selectorate theory. When either the level of democracy or elections are included in the equation, larger winning coalitions *increase* the stability of leadership tenure and this effect becomes stronger over time. The effect of selectorate size remains in the predicted direction and is generally consistent with the findings from the replication models. All of these models indicate a strong correlation between democracy (whether measured in a continuous or binary manner) and the removal of political leaders.

Models 6 and 7 also show the reverse relationship for winning coalition size. The hazard ratios suggest that larger winning coalitions initially make leaders 12.6 to 20.1 percent more

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<sup>37</sup> All of the threshold and alternative measures for democracy have less correlation with *W* than the *Polity2* measure, with VIF scores ranging from 2.25 to 3.11.

likely to lose office, but after ten years in Model 6 and seven years in Model 7 larger winning coalitions are more stable. This direction is the exact opposite of the time trend predicted by Bueno de Mesquita et. al. Selectorate size also has an interesting relationship in these models. The stabilizing effect of legislatures is much stronger in these models than in previous models. As will be demonstrated later, this is because both Freedom House and ACLP do not start measurement until after World War II. This suggests that the effect of elected legislatures, especially in authoritarian regimes, is temporally bounded, with different effects pre- and post-World War II.

**[Table 2 About Here]**

These results suggest that the relationship between the operationalization of selectorate theory and the length of leadership tenure is surprisingly tenuous. The measures appear to have substantial difficulties when controlling for the competitiveness and openness of the political system. The argument that the primary difference captured in these variables is the difference between competitive and non-competitive political regimes hardly seems out of line. These results do not mean, however, that the only important distinction is between democracy and non-democracy. Forthcoming work on this project elucidates some of these additional institutional characteristics.

So why does the winning coalition variable have a different relationship with leadership stability when the electoral/non-electoral distinction is included? Table 3 takes a deeper look into why this variable perform inconsistently when controls for political competition are introduced. The results demonstrate that the variable for winning coalition size has different effects when comparing within nominal categories of political competition, something the authors of selectorate theory explicitly say should not happen. Model 8 stratifies the equation by election. This method allows the baseline hazards to vary between electoral and non-electoral

systems, although it still assumes that the covariates will have a consistent relationship across strata. Models 9 and 10 eliminate the latter assumption by running the selectorate variables in only the electoral or non-electoral context.

Divergences from theory are immediately apparent. Unlike what the theory predicts, there is no disproportionality in the effect of winning coalition size. The Harrell's rho for  $W$  is not near substantial levels of statistical significance in any of these models ( $p > .7$ ). An explanation for this can be found by looking back at Table 2. In all of these models, measures of democracy have a disproportional effect over time. That winning coalition size loses its disproportionality suggests that the primary reason for the changes over time was due to changes in the effect of democracy over time. In other words, because of set terms in electoral systems, leaders become more likely to lose office the longer they are in power. This, not actors adjusting to institutions, is what was driving the disproportionality in Model 2.

In Model 8, the effect of winning coalition size is the opposite that predicted by selectorate theory. The hazard ratio suggests that a one point increase in winning coalition size results in a 10.5 percent decrease in the likelihood of a leader surviving an additional year. Model 9, which only looks at non-electoral systems, shows why this is the case. Leaders are 17.4 percent more likely to survive with larger winning coalitions in non-electoral states. In model 10, which only looks at electoral states, the opposite is the case. Leaders with larger winning coalitions are 8.7 percent more likely to lose office in electoral systems. Interestingly, selectorate size also does not have the same impact in electoral and non-electoral systems, although the disparities are less pronounced. Leaders in electoral systems without legislatures are substantially more stable, by about 36.6 percent. This confirms the conventional wisdom, that active legislatures in democratic regimes decrease leadership tenure.<sup>38</sup> In the non-electoral

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<sup>38</sup> Mishler and Hildreth 1984, 39.

setting, however, it takes over eight years before legislatures become stabilizing.

**[Table 3 About Here]**

All of these results suggest that the measures of selectorate theory are not consistent across nominal regime categories. Figure 3 summarizes these findings. Clearly, the relationship that is predicted, shown in blue, is very different from what the actual relationship is within electoral and non-electoral systems. In fact, the measure of winning coalition size have the opposite effect of what is predicted by selectorate theory in the non-electoral context.

**[Figure 3 About Here]**

### **Legislatures and Legitimacy**

The measure of selectorate size, whether or not the country has a legislature and whether that legislature is popularly elected, also has some difficulties, although they are less obvious. Closer inspection of the cases without elected legislatures reveals that many of them are experiencing either military or transition politics. In fact, 717 of the cases with no legislature (43 percent) and 64 of the cases with appointed legislatures (13.6 percent) had military regimes.

Military regimes have an ambiguous relationship to leadership survival. On one hand, many military regimes label themselves as "transition governments" justified as a "temporary suspension" of constitutional rule to ensure the stability and security of the country. There are several reasons to expect that leadership tenure in these regimes will be relatively short-lived. First, limited goals, such as preventing a left-wing party from coming to power or improving the pay and treatment of the military are relatively easily accomplished, and it is difficult to justify remaining in office after these goals have been achieved. Second, close relations with the military, especially after the individual leaves office, reduces the likelihood of retribution. This, in turn, reduces the costs of stepping down in authoritarian regimes, making a leader more likely

to leave office.<sup>39</sup> Finally, the lack of electoral or hereditary legitimacy makes them especially susceptible to loss of support when economic problems arise.<sup>40</sup>

Not all military regimes, however, justify their rule in temporary terms. Some come to power with larger goals of social transformation, especially the implementation of a particular economic agenda, such as Augusto Pinochet in Chile. Others may start their rule as a temporary suspension of regular politics, but attempt to institutionalize their hold on power later, as Pervez Musharraf in Pakistan. This distinction between military regimes that have ambitions to hold power and those that are whose goals are limited to the establishment of security is very important in predicting the stability of leaders.<sup>41</sup> This raises a simple, but important, question. Given the high overlap between the lack of legislatures and the presence of military regimes, is selectorate size just picking up on the difference between these military regimes? The distinction above would suggest that military regimes with legislatures would have much longer leadership tenures, since the legislature suggests an attempt to institutionalize the regime. To code whether a leaders serves under a military regime, I use the *RegimeType* variable from Banks, which codes regimes as civilian (1), military-civilian (2), or military (3).<sup>42</sup> For simplicity, this is collapsed into a two point scale indicating military involvement.

The first three models in Table 4 evaluate this hypothesis. Model 11 adds a control for military regimes into the equation. Selectorate size still has the predicted relationship, but it is much weaker. It now takes twice as long before legislatures are stabilizing, about 6.55 years. The relationship between military regimes and stability is interesting in its own right. Bueno de Mesquita et. al. argue that military regimes have smaller winning coalitions and should, therefore, be more stable. Model 11 demonstrates that the opposite is generally the case.

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<sup>39</sup> Geddes 1999; Geddes 2002.

<sup>40</sup> See e.g. on Brazil, Markoff and Baretta 1990.

<sup>41</sup> Stepan 1988.

<sup>42</sup> Originally from Banks 1996.

Military leaders start off less stable than their non-military counterparts and become less stable with time. Models 12 and 13 look at the relationship between legislatures and stability in only military and non-military regimes. Model 12 demonstrates that, when only non-military regimes are analyzed, the effect of legislatures is severely weakened. The direction of the relationship is still as selectorate theory would predict, but it now takes more than forty four years before they become stabilizing, then the stabilizing effect increases extremely slowly. When only military regimes are analyzed, in Model 13, the stabilizing effects are very strong. Figure 4 demonstrates what is happening. It is clear that a large part of what is driving the predicted effect, in blue, is the difference between military regimes without legislatures, in red, and those with legislatures, in green.

**[Figure 4 About Here]**

Models 14 and 15 build on a suggestion made earlier, that the effect of legislatures seems to be much stronger in models that only include years after World War II. To understand why this would be the case, one needs to ask why a non-democratic regime would establish an elected legislature. Legislatures are a dilemma for non-democratic regimes. While some argue that legislatures offer an outlet for popular discontent, which should be stabilizing for non-democratic leaders, others argue that legislatures are dangerous because they are an area for anti-regime organization.<sup>43</sup> The comparative politics literature offers two very different conclusions. Those who analyze politics and transitions prior to World War II argue that legislatures are usually established as a compromise for taxation.<sup>44</sup> From this perspective, legislatures are a response to the weakness of leaders in their inability to gain revenue without taxation. A similar argument is still being made regarding governments with access to large resource rents.<sup>45</sup> Analysts looking at the post-War period argue that the bases of leadership legitimacy shifted significantly.

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<sup>43</sup> Mishler and Hildreth 1984, 32-33.

<sup>44</sup> See e.g. Moore, 1966.

<sup>45</sup> See e.g. Ross, 2001; 2004.

Bendix, for example, argues that regimes, even non-democratic regimes, had to justify their rule as a representation of popular will.<sup>46</sup> It is at this time that party-based non-democratic regimes are established. As such, legislatures are institutions that provide leaders with a much-needed source of institutional legitimacy.<sup>47</sup> It is also in the Cold War period that military regimes, established to prevent Communist parties coming to power, become a regular aspect of political life. The importance of these regimes in explaining the selectorate size relationship has already been noted above.

**[Table 4 About Here]**

Models 14 and 15 look at the relationship between the selectorate theory variables and leadership survival pre- and post-1945. The results clearly show that the relationship between legislatures and stability is time-bounded. Pre-1945, in Model 14, a leader with an elected legislature is initially 68.6 percent more likely to lose office than a leader in a country without any legislature, and this increases with time. Post-1945, in Model 15, leaders in countries with elected legislatures are 19.4 percent more stable, and this relationship quickly builds with time. Figure 5 shows that the relationship between selectorate size diverges substantially pre-1945, in blue, and post-1945, in red.

**[Figure 5 About Here]**

Neither the effect of military regimes, nor the temporal disparity in the relationship between selectorate size and leadership stability are consistent with the predictions of selectorate theory. These findings raise questions about how effectively the presence of elected legislatures captures the concept of selectorate size. They also have interesting implications for the literature on the effects of legislatures in authoritarian regimes.

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<sup>46</sup> As Bendix 1978, 4 states, "In our time, not only democracies, but military regimes, dictatorships, and even constitutional monarchies are legitimized by claims of popular mandate. Indeed, other ways of justifying authority have become inconceivable."

<sup>47</sup> See e.g. Huntington, 1968.

## Conclusions

These results demonstrate that Bueno de Mesquita et. al.'s measurements of selectorate theory have an inconsistent relationship across specifications, but several patterns are clear. The measure used for operationalizing winning coalition size is inconsistent across regime types. When the level of competition is entered into the equation, the relationship between winning coalition size and leadership survival reverses direction and/or fails to reach acceptable levels of statistical certainty. More troubling still, all of this measure appears to have opposite effects in electoral and non-electoral systems, something that explicitly contradicts the predictions of the theory.

The effect of the measure of selectorate size, whether the country has an elected legislature, is mostly due to the difference between temporary and institutionalizing military regimes. Legislatures in non-military regimes have a generally destabilizing effect on leadership tenure and this only slowly dissipates. At the same time, legislatures in military regimes are stabilizing for leaders as they reflect an attempt to institutionalize power. Legislatures also have very different impacts depending on the time period being studied. Pre-World War II legislatures are destabilizing for legislatures, but post-World War II they are stabilizing. This relationship is not predicted by selectorate theory, which has no temporal limitations in its application, and suggests that the presence of an elected legislature is an inaccurate measure of selectorate size.

These findings also have implications for the study of legislatures in non-democratic regimes. Comparative politics has long asked about the effect of legislatures on stability, but this study demonstrates the importance of answering the related question of why non-democratic regimes would choose to establish a legislature. While more development of theory is necessary,

the results suggest that legislatures are a signal of intention by military leaders trying to institutionalize their hold on political power. It also suggests a fundamental shift in the patterns of authoritarian leadership after World War II.

This paper only deals with one aspect of selectorate theory – the effect on leadership survival – but it suggests that empirical testing of this theory is far from complete. Bueno de Mesquita et. al.’s theory is elegant and compelling, and the applications they present for the theory are vast, but this study suggests that more work is needed in establishing the boundaries of its application and in developing measurements for empirical application.

## Works Cited

Author (xxxx).

Banks, Arthur S. 1996. *Cross-National Time-Series Data Archive*. Binghamton, NY: Center for Social Analysis, State University of New York at Binghamton, Electronic File.

Barro, Robert. 1997. *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge, UK: Cambridge University Press.

Bendix, Reinhard. 1978. *Kings or People: Power and the Mandate to Rule*. Berkeley, CA: University of California Press.

Bienen, Henry and Nicholas van de Walle. 1991. *Of Time and Power*. Stanford, CA: Stanford University Press.

Box-Steffensmeier, Janet M. and Bradford S. Jones. 1997. Time is of the Essence: Event History Models in Political Science. *American Journal of Political Science* 41(4): 1414-1461.

Box-Steffensmeier, Janet M. and Bradford S. Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge, UK: Cambridge University Press.

Box-Steffensmeier, Janet M. and Christopher Zorn. 2001. Duration Models and Proportional Hazards in Political Science. *American Journal of Political Science* 45(4): 972-988.

Box-Steffensmeier, Janet M., Dan Reiter and Christopher Zorn. 2003. Nonproportional Hazards and Event History Analysis in International Relations. *Journal of Conflict Resolution* 47(1): 33-53.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson, and Alastair Smith. 1999. Policy Failure and Political Survival: The Contribution of Political Institutions. *Journal of Conflict Resolution* 43(2): 147-161.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson, and Alastair Smith. 1999. An Institutional Explanation of Democratic Peace. *American Political Science Review* 93(4): 791-807.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson, and Alastair Smith. 2002. Political Institutions, Policy Choice and the Survival of Leaders. *British Journal of Political Science* 32(4): 559-590.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson, and Alastair Smith. 2003. *The Logic of Political Survival*. Cambridge, MA: MIT Press.

Chiozza, Giacomo and H.E. Goemans. 2004. International Conflict and the Tenure of Leaders: Is War Still 'Ex Post' Inefficient? *American Journal of Political Science* 48(3): 604-619.

Colaresi, Michael. 2004. When Doves Cry: International Rivalry, Unreciprocated Cooperation,

- and Leadership Turnover. *American Journal of Political Science* 48(3): 555-570.
- Cook, Chris. 1992. *Facts on File World Political Almanac*, 2nd ed. New York: Facts on File.
- Crystal, David. 1990. *The Cambridge Encyclopedia*. Cambridge, UK: Cambridge University Press.
- Fearon, James D. 1994. Domestic Political Audiences and the Escalation of International Disputes. *American Political Science Review* 88(3): 577-592.
- Findlay, Ronald and Stanislaw Wellisz. 1983. Some Aspects of the Political Economy of Trade Restrictions. *Kyklos* 36(3): 469-481.
- Geddes, Barbara. 1999. *Paradigms and Sandcastles: Theory Building and Research Design in Comparative Politics*. Ann Arbor, MI: University of Michigan Press.
- Geddes, Barbara. 2002. The Effect of Foreign Pressure on the Durability of Dictatorship. Presented at the Annual Meeting of the American Political Science Association, August, Boston, MA.
- Goemans, H.E. 2000. Fighting for Survival: The Fate of Leaders and the Duration of War. *Journal of Conflict Resolution* 44(5): 555-579.
- Hellman, Joel S. 1998. Winners Take All: The Politics of Partial Reform in Postcommunist Transitions. *World Politics* 50(2): 203-234.
- Huntington, Samuel P. 1968. *Political Order in Changing Societies*. New Haven, CT: Yale University Press.
- Jagers, Keith and Ted Robert Gurr. 1996. *Polity III: Regime Type and Political Authority, 1800-1994*. Available at: <http://ibs.colorado.edu/~ksg/polity/polity3.codebook>.
- Lake, David and Matthew A. Baum. 2001. The Invisible Hand of Democracy: Political Control and the Provision of Public Services. *Comparative Political Studies* 34(6): 587-621.
- Langer, William L. 1972. *Encyclopedia of World History*. Boston: Houghton-Mifflin.
- Laver, Michael and Kenneth A. Shepsle. 1998. Events, Equilibria, and Government Survival. *American Journal of Political Science* 42(1): 28-54.
- Markoff, John and Silvio R. Duncan Baretta. 1990. Economic Crisis and Regime Change in Brazil: The 1960s and 1980s. *Comparative Politics* 22(4): 421-444.
- Marshall, Monty G. and Keith Jagers. 2002. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002*. Available at: <http://www.cidcm.umd.edu/polity/>
- McGuire, Martin and Mancur Olson. 1996. The Economics of Autocracy and Majority Rule. *Journal of Economic Literature* 34(1): 72-96.

Mishler, Willian and Anne Hildreth. 1984. Legislatures and Political Stability: An Exploratory Analysis. *Journal of Politics* 46(1): 25-59.

Przeworski, Adam. 1991. *Democracy and the Market*. Cambridge, UK: Cambridge University Press.

Ross, Michael. 2001. Does Oil Hinder Democracy? *World Politics* 53(3): 325-361.

Ross, Michael. 2004. Does Taxation Lead to Representation? *British Journal of Political Science* 34: 229-249.

Spuler, Bertold C., G. Allen and Neil Saunders. 1977. *Rulers and Governments of the World*, vol. 3. London, UK: Bowker.

Stepan, Alfred. 1988. *Rethinking Military Politics*. Princeton, NJ: Princeton University Press.

Zielinski, Jakub. 1999. Transitions from Authoritarian Rule and the Problem of Violence. *World Politics* 43(2): 213-228.

## Tables

**Table 1: Testing the Robustness of Bueno de Mesquita et. al.'s Findings**

	Model 1: Replication	Model 2
W	1.066 (.001)	.970 (.136)
W x ln(t+1)	---	1.100 (.000)
S	.975 (.240)	1.140 (.009)
S x ln(t+1)	---	.875 (.000)
Observations	13,382	13,382
Subjects	2,689	2,689
Failures	2,424	2,424
Log-likelihood	-16677.186	-16665.663
Wald-test	11.82 (.003)	34.86 (.000)

Note: Reported statistics are hazard ratios with p-values in parentheses. All tests are 1-tailed, except the p-value for the Wald-test.

**Table 2: Testing Selectorate Theory Variables, Controlling for Democracy/Election Indexes**

	Model 3	Model 4	Model 7	Model 8	Model 9
W	1.022 (.216)	.696 (.000)	.900 (.015)	1.126 (.104)	1.201 (.014)
W * ln(t+1)	1.086 (.000)	.983 (.298)	.993 (.431)	.946 (.155)	.898 (.026)
S	1.112 (.032)	1.099 (.049)	1.153 (.007)	.926 (.261)	.673 (.001)
S * ln(t+1)	.900 (.002)	.907 (.004)	.892 (.001)	.819 (.002)	.865 (.022)
WS:DemRes	1.083 (.000)	---	---	---	---
WS:DemRes * ln(t+1)	1.024 (.000)	---	---	---	---
Polity2	---	1.085 (.000)	---	---	---
Polity2 * ln(t+1)	---	1.022 (.000)	---	---	---
Election	---	---	1.229 (.040)	---	---
Election * ln(t+1)	---	---	1.458 (.000)	---	---
FHPR	---	---	---	1.096 (.125)	---
FHPR * ln(t + 1)	---	---	---	.891 (.013)	---
FHCL	---	---	---	.978 (.390)	---
FHCL * ln(t + 1)	---	---	---	.932 (.093)	---
ACLP	---	---	---	---	.916 (.324)
ACLP * ln(t + 1)	---	---	---	---	.512 (.000)
Observations	12,520	12,520	12,520	4,619	4,793
Subjects	2,570	2,570	2,570	873	919
Failures	2,315	2,315	2,315	716	786
Log-likelihood	-15615.659	-15616.502	-15760.043	-3955.479	-4454.253
Wald-test	410.67 (.000)	408.98 (.000)	121.90 (.000)	130.11 (.000)	179.97 (.000)

Note: Reported statistics are hazard ratios with p-values in parentheses. All tests are 1-tailed, except the p-value for the Wald-test.

**Table 3: Effects of Selectorate Variables Accounting for Election**

	Model 14	Model 15	Model 16
W	.895 (.001)	.824 (.000)	1.087 (.086)
S	1.134 (.010)	1.271 (.000)	.634 (.000)
S * ln(t+1)	.903 (.001)	.871 (.000)	---
Election	Stratified	Election = 0	Election = 1
Observations	12,586	8,098	4,422
Subjects	2,689	1,460	1,270
Failures	2,424	1,228	1,087
Log-likelihood	-14365.978	-7609.263	-6579.599
Wald-test	4.65 (.098)	37.99 (.000)	14.01 (.001)

Note: Reported statistics are hazard ratios with p-values in parentheses. All tests are 1-tailed, except the p-value for the Wald-test.

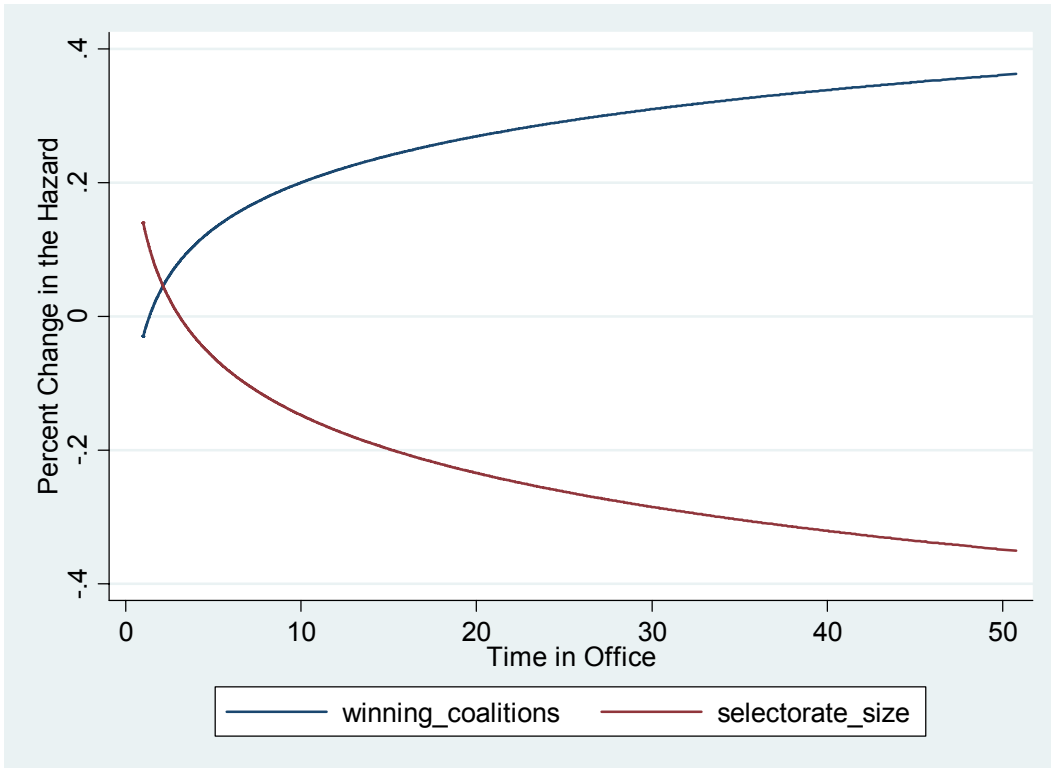
**Table 4: Effect of Selectorate Variables Accounting for Military Regimes and Time**

	Model 10	Model	Model	Model 11	Model
W	.997 (.461)	1.007 (.410)	.985 (.451)	1.189 (.310)	1.072 (.077)
W * ln(t+1)	1.155 (.000)	1.135 (.000)	1.094 (.156)	1.063 (.000)	1.140 (.000)
S	1.282 (.000)	1.288 (.002)	1.363 (.000)	1.343 (.001)	.903 (.106)
S * ln(t+1)	.850 (.000)	.924 (.053)	.696 (.000)	1.027 (.329)	.777 (.000)
Military_regime	1.299 (.014)	Military = 0	Military = 1	---	---
Military_regime * ln(t+1)	1.489 (.000)	---	---	---	---
Time	---	---	---	Year < 1945	Year ≥ 1945
Observations	13,377	11,814	1,563	5,174	8,208
Subjects	2,689	2,449	520	1,217	1,488
Failures	2,424	2,053	371	1,115	1,309
Log-likelihood	-16611.717	-13847.775	-1720.2568	-6744.395	-8177.419
Wald-test	141.61 (.000)	88.44 (.000)	34.83 (.000)	56.27 (.000)	105.31 (.000)

Note: Reported statistics are hazard ratios with p-values in parentheses. All tests are 1-tailed, except the p-value for the Wald-test.

## Figures

**Figure 1: Effect of Selectorate Theory Variables in Non-Proportional Model**



**Figure 2: Effect of Elections on the Baseline Hazard of Losing Office**

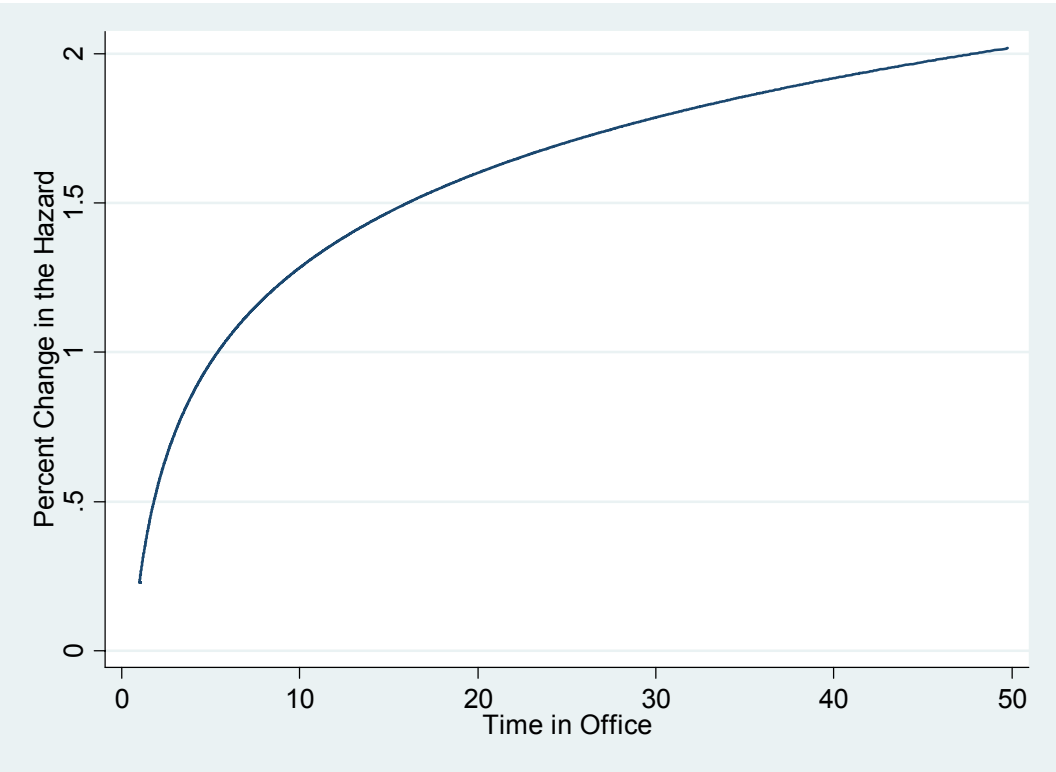
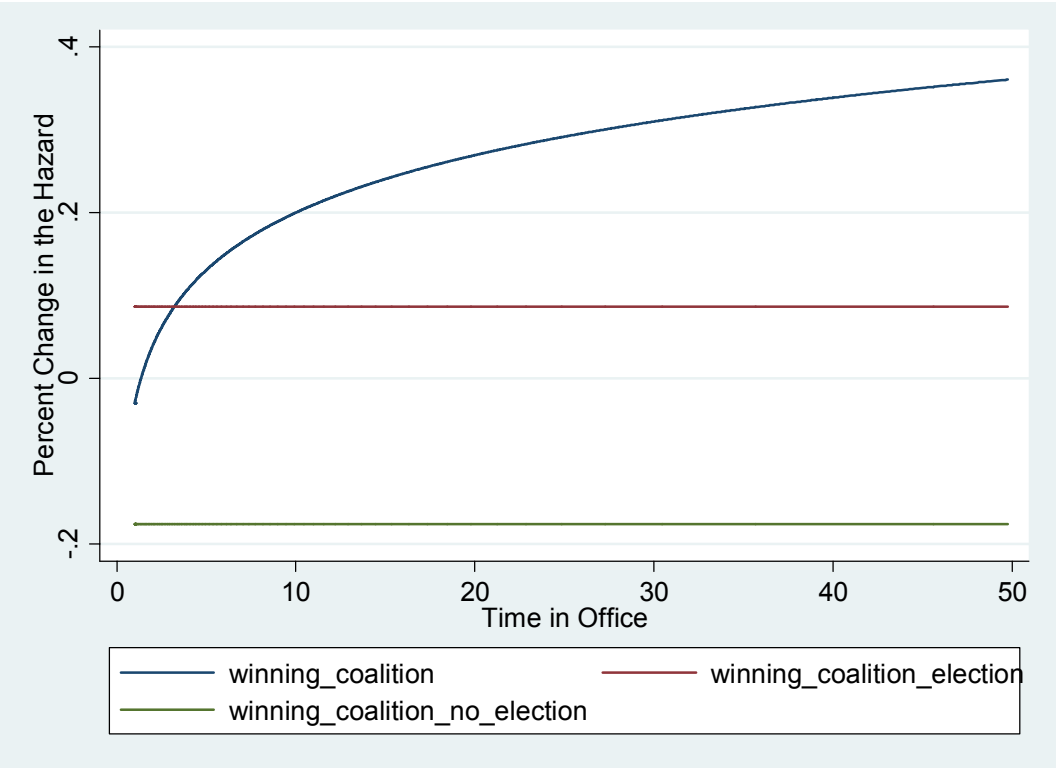
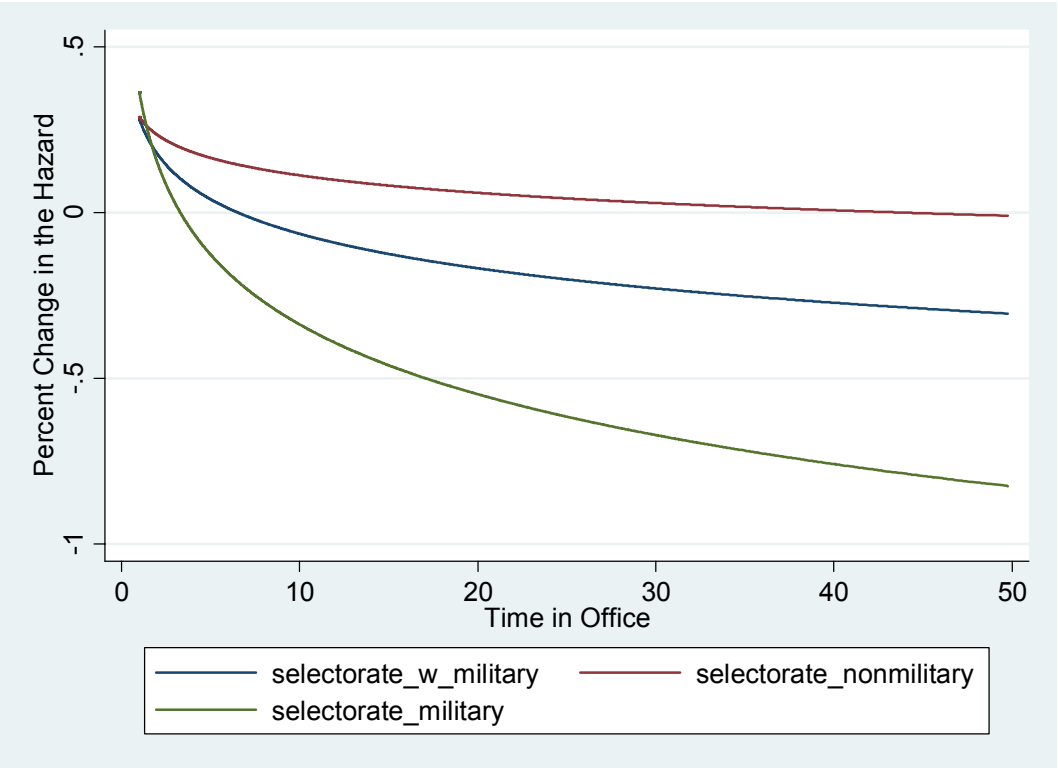


Figure 3: Effect of Winning Coalition Size When Controlling for Elections.



**Figure 4: Effect of Military Regimes on Selectorate Size Outcomes.**



**Figure 5: Effect of Selectorate Size Pre- and Post-1945.**

