# **Supporting Information**

This file contains additional Supporting Information for: "Reassessing Schoenfeld Residual Tests of Proportional Hazards in Political Science Event History Analyses."

# A Content Analysis

As explained in the text, in order to demonstrate the increasingly important role of proportional hazards event history analysis in the political science literature, we performed a content analysis of the *American Journal of Political Science*, *American Political Science Review*, and *Journal of Politics* for all articles using proportional hazards models between 1990 and 2012. Table SI.A.1 presents the results of this content analysis.

Table SI.A.1: Articles Using Proportional Hazards Models in Major Political Science Journals, 1992–2012

Year	Author, Journal (Model Used)
1992	Bienen and van de Walle, <i>JOP</i> (exponential, Gompertz); Warwick, <i>AJPS</i> (Cox, Gompertz); Warwick, <i>APSR</i> (Cox); Warwick and Easton, <i>AJPS</i> (exponential, Weibull)
1995	Bueno de Mesquita and Siverson, APSR (Weibull)
1996	Bennett and Stam, $APSR$ (Weibull); Box-Steffensmeier, $AJPS$ (Cox); Kessler and Krehbiel, $APSR$ (Cox)
1997	Bennett, $AJPS$ (Weibull); Box-Steffensmeier and Jones, $AJPS$ (Cox, Weibull) <sup>†</sup> ; Box-Steffensmeier, Arnold, and Zorn, $APSR$ (Cox)
1999	Diermeier and Stevenson <sup>§</sup> , $AJPS$ (Cox); Hammons, $APSR$ (Cox); McCarty and Razaghian, $AJPS$ (Weibull)
2000	Simmons, APSR (Cox)
2001	Bernhard, Nordstrom, and Reenock, $JOP$ (Weibull); Box-Steffensmeier and Zorn, $AJPS$ , $(Cox)^{\dagger,\$}$ ; Hegre et al., $APSR$ (Cox); Reiter, $JOP$ (Weibull); Spriggs and Hansford, $JOP$ (Cox)
2002	Benesh and Reddick, <i>JOP</i> (Weibull); Box-Steffensmeier and Zorn, <i>JOP</i> (Cox); Co- laresi and Thompson, <i>JOP</i> (Cox); Gordon, <i>AJPS</i> (Weibull); Lewis, <i>JOP</i> , (Cox); Martinek, Kemper, and Winkle, <i>JOP</i> (Weibull); Pevehouse, <i>AJPS</i> (Cox, Weibull); Strøm and Swindle, <i>APSR</i> (Cox)
2003	Hartzell and Hoddie, $AJPS$ (Cox, Weibull); Kadera, Crescenzi, and Shannon, $AJPS$ (Weibull); Langer et al., $JOP$ (Cox); Ruhil, $AJPS$ (exponential, Gompertz, Weibull); Senese and Quackenbush, $JOP$ (Cox) <sup>§</sup> ; Tir, $JOP$ (Cox)

. Table continued on next page.

Table SI.A.1: Articles Using Proportional Hazards Models in Major Political Science Journals, 1992–2012 (continued from previous page)

Year	Author, Journal (Model Used)
2004	Chiozza and Goemans, $AJPS$ (Cox) <sup>§</sup> ; Colaresi, $AJPS$ (Cox); Martin, $AJPS$ (Cox); Martin and Vanberg, $AJPS$ (Weibull); Simmons and Elkins, $APSR$ (Cox, Weibull); Stone, $APSR$ (Weibull)
2005	Colaresi and Thompson, JOP (Cox)
2006	Boehmke, Morey, and Shannon, $AJPS$ (Cox, exponential, Weibull) <sup>†</sup> ; Epstein et al., $AJPS$ (Cox)
2007	Crescenzi, $AJPS$ (Cox) <sup>§</sup> ; Murillo and Martínez-Gallardo, $AJPS$ (Cox) <sup>§</sup> ; Chapman and Roeder, $APSR$ (Cox); Leeds and Savun, $JOP$ (Cox) <sup>§</sup> ; Long, Nordstrom, and Baek, $JOP$ (Cox) <sup>§</sup>
2008	Beardsley, $AJPS$ (Cox); Gartner, $APSR$ (Cox); Huber and Martinez-Gallardo, APSR (Cox); Kittilson, $JOP$ (Cox); Maltzman and Shipan, $AJPS$ (Cox) <sup>§</sup> ; Smith and Fridkin, $APSR$ (Cox); Svolik, $APSR$ (Weibull); Treier and Jackman, $AJPS$ (Cox)
2009	Schleiter and Morgan-Jones, $APSR (Cox)^{\S}$
2010	Ahlquist, $JOP$ (Cox); Berlinski, Dewan, and Dowding, $JOP$ (Cox) <sup>§</sup> ; Berry, Burden, and Howell, $AJPS$ (Cox) <sup>§</sup> ; Bueno de Mesquita and Smith, $AJPS$ (Weibull); Debs and Goemans, $APSR$ (Cox) <sup>§</sup> ; Gibler and Tir, $AJPS$ (Cox) <sup>§</sup> ; Koch and Sullivan, JOP (Cox) <sup>§</sup> ; Lyall, $APSR$ (Weibull); Maeda, $JOP$ (Cox) <sup>§</sup> ; Mattes and Savun, $AJPS(Cox)§$
2011	Cunningham, APSR (Cox)
2012	Carpenter et al., AJPS (Cox); Golder, Golder, and Siegel, JOP (Cox)

Note: AJPS=American Journal of Political Science; APSR=American Political Science Review; JOP=Journal of Politics.

<sup>†</sup>Primarily expository article on methodological considerations in event history analysis. <sup>§</sup>Employs Grambsch-Therneau tests for violations of proportional hazards assumption.

### B Estimators and Test Statistics for Grambsch-Therneau Tests

In the main text we presented the test statistics for the covariate-specific and global tests of proportional hazards suggested by Grambsch and Therneau (1994). Space considerations prevented us from providing full derivations of these test statistics from first principles. Here we provide a brief sketch of one such derivation. Readers interested in fuller treatments are directed to Grambsch and Therneau (1994) and Therneau and Grambsch (2000), whose developments are rooted in earlier work by Schoenfeld (1980), Breslow, Edler, and Berger (1984), Moreau, O'Quigley, and Mesbah (1985), Harrell (1986), and Chappell (1992). The sketch we present here follows very closely the presentation of Therneau and Grambsch (2000, ch. 6). For explanations of our notation, refer to the main text.

To derive the test statistic for evaluation of the proportional hazards assumption, Therneau and Grambsch (2000) appeal to a heuristic approach rooted in generalized least squares. Following this logic, we first parameterize the form of the nonproportionality as a regression of each  $\beta_j(t)$ on  $g_j(t)$ :

$$\beta_j(t) = \beta_j + \theta_j \left( g_j(t) - \bar{g}_j \right),$$

where  $\bar{g}_j$  is the mean of the  $g_j(t_k)$  values. Therefore, the null hypothesis of proportional hazards implies that  $\theta_j = 0$  for each of the *j* coefficients. To test this restriction, let  $\theta$  be the  $p \times 1$ vector of  $\theta_j$  values, let  $G_k$  be a  $p \times p$  diagonal matrix whose (j, j)th element is  $g_j(t_k) - \bar{g}_j$ , let  $\hat{V}_k = V(\hat{\beta}, t_k)$ , and let  $Q = \sum_{k=1}^d G_k \hat{V}_k G'_k - \left(\sum_{k=1}^d G_k \hat{V}_k\right) \left(\sum_{k=1}^d \hat{V}_k\right)^{-1} \left(\sum_{k=1}^d G_k \hat{V}_k\right)'$ . Then, assuming that  $\hat{\beta}_j$  is a desirable estimator for  $\beta$ , so that  $E(s_{kj}^*) \approx G_k \theta_j$ , and using the result that  $\operatorname{Var}(s_k^*) \approx V^{-1}(\beta, t_k)$  (Grambsch and Therneau 1994), an estimator for  $\theta$  is given by

$$\tilde{\theta} = Q^{-1} \sum_{k=1}^{d} G_k s_k$$

 $\tilde{\theta}$  is similar to the generalized least squares estimator,  $\hat{\theta} = \left(\sum_{k=1}^{d} G_k \widehat{V}_k G'_k\right)^{-1} \sum_{k=1}^{d} G_k s_k$ , except that Q adds a correction to  $\sum_{k=1}^{d} G_k \widehat{V}_k G'_k$  to account for covariance among  $s_k^*$  values induced by the relationship that  $\sum_{k=1}^{d} s_k = 0$ .

A test of the proportional hazards assumption is therefore equivalent to a test of the null hypothesis that  $\theta = 0$ . And a standard test statistic is given by

$$T(G) = \tilde{\theta}' Q \tilde{\theta} = \left(\sum_{k=1}^{d} G_k s_k\right)' Q^{-1} \left(\sum_{k=1}^{d} G_k s_k\right),$$
(SI.B.1)

where  $T(G) \sim \chi^2(p)$  and  $Q^{-1}$  is a consistent estimator of the variance of  $\theta$  under the null hypothesis that  $\theta = 0$ , i.e., the assumption of proportional hazards (Therneau and Grambsch 2000).

In practical applications, researchers must implement this theoretical result while attending to certain practical realities. First, survival times do not vary according to the specific covariate under consideration, and therefore the researcher will likely want to let  $g_1 = g_2 = \cdots = g_k = g$ . We can therefore replace  $G_k$  with the scalar  $g(t_k) - \bar{g}$ . Second, late in the observation time of the study, the  $\hat{V}_k$  values can become relatively unstable because the number of units in the risk set approaches p. Based on this potential instability, and noting that  $\sum_{k=1}^d \hat{V}_k = \mathcal{I}(\hat{\beta}) \equiv \mathcal{I}$ , Grambsch and Therneau (1994) and Therneau and Grambsch (2000) suggest substituting  $\sum_{k=1}^d \hat{V}_k$ with  $\overline{V} = \mathcal{I}/d$ , and therefore Q with  $Q^* = d^{-1} \sum_{k=1}^d G_k \mathcal{I} G_k$ . Letting S be the  $d \times p$  matrix of unscaled Schoenfeld residuals,  $S^* = dS\mathcal{I}^{-1}$  the matrix of scaled Schoenfeld residuals, and  $g^*$  the  $d \times 1$  vector whose kth element is  $g(t_k) - \bar{g}$ , and substituting Q with  $Q^*$  and  $G_k$  with  $g(t_k) - \bar{g}$ in (SI.B.1) leads to the following:

$$T = \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)' Q^{*-1} \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)$$
  

$$= d \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)' \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})\mathcal{I}(g(t_k) - \bar{g})\right)^{-1} \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)$$
  

$$= \frac{d \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)' \mathcal{I}^{-1} \left(\sum_{k=1}^{d} (g(t_k) - \bar{g})s_k\right)}{\sum_{k=1}^{d} (g(t_k) - \bar{g})^2}$$
  

$$= \frac{dg^{*}S\mathcal{I}^{-1}S'g^{*}}{\sum_{k=1}^{d} (g(t_k) - \bar{g})^2}$$
  

$$= \frac{g^{*}S\mathcal{I}S^{*}\mathcal{I}S^{*}g^{*}}{d\sum_{k=1}^{d} (g(t_k) - \bar{g})^2},$$
  
(SI.B.2)

which is the test statistic for the global test given in (4) of the main text. Furthermore, letting  $\mathcal{I}^{jk} = \mathcal{I}_{jk}^{-1}$  be the (j,k)th element of  $\mathcal{I}^{-1}$ . Then the test statistic for the univariate test for proportional hazards becomes

$$T_{j} = \frac{\left[\sum_{k=1}^{d} (g(t_{k}) - \bar{g}s_{kj}^{*})\right]^{2}}{d\mathcal{I}^{jj} \sum_{k=1}^{d} (g(t_{k}) - \bar{g})^{2}},$$
(SI.B.3)

which was given in (3) of the main text.

#### C Determination of Outlier Survival Times

In Figure 1 of the main text, we used two examples from published political science research to demonstrate that long-tailed survival distributions are common in political science data. But the mere visualization of a survival distribution with a long tail does not necessarily indicate the presence of outlier survival times. To aid in decision making about whether to employ a transformation of the time scale during diagnostic testing for the proportional hazards assumption, we advocate the use of formal statistical tests for the presence of outliers. However, we want to stress that the use of formal tests does not preclude the subjective judgment of the researcher. In fact, the choice of an appropriate test is itself a matter of judgment, and the literature on outlier and influence diagnostics is too vast to cover here (interested readers are referred to Cook 1979; Cook and Weisberg 1982; Weisberg 2005). We simply note that using a well known formal test for outlier observations provides an *a priori* criterion that can act as a decision-making tool.

For example, following Weisberg (2005), we might define an outlier using the so-called mean shift outlier model. In the case of scaled Schoenfeld residual tests, we can consider the conditional mean function of all but the *i*th survival time to be  $E(T|S = s^*_{-ij}) = s^*_{-ij}\gamma$ , but for the *i*th survival time we model the conditional mean as  $E(T|S = s^*_{ij}) = s^*_{ij}\gamma + \delta$ , where  $s^*_{.j}$  is the scaled Schoenfeld residual for the *j*th covariate. In other words, we conjecture that the expected survival time for the *i*th case is shifted by an amount  $\delta$ , and perform a hypothesis test for  $\delta = 0$  as a means of determining whether the *i*th case is an outlier.

Figure SI.C.1 presents one such formal test, using the so-called studentized residuals of a linear regression of scaled Schoenfeld residuals on survival times from the examples in Figure 1. Associated with each studentized residual is a *p*-value obtained via comparison of each residual value with a *t* distribution with n - 3 degrees of freedom, using the Bonferroni adjustment for multiple comparisons. Using this method, each of the illustrative examples would be deemed to have cases with outlier survival times using the criterion of p < .05.

It should be noted that the mean shift model is only one model of what constitutes an outlier. And operating within the mean shift framework, t-tests of studentized residuals embody only one idea of what constitutes a large value of  $\delta$ . We remain agnostic about the appropriate means of

Figure SI.C.1: Outlier Tests of Relationship Between Scaled Schoenfeld Residuals and Time from Published Political Science Research



Note: In each column, the upper panel presents the set of studentized residuals for the regression of survival times on the scaled Schoenfeld residuals for the relevant covariate (see Figure 1 of the main text). The lower panel presents p-values for the associated two-sided t-tests using the Bonferroni correction for multiple comparisons. Case numbers are arbitrary identifiers for the units that experience the event. Schoenfeld residuals are not defined for censored cases. For further information, consult the original articles.

detecting outliers and influential cases. The major takeaway point for researchers engaging in tests of scaled Schoenfeld residuals from a Cox proportional hazards model is that outliers can be a potential issue, as they are with any tests of association between two variables. Careful examination of one's data in conjunction with formal tests provide researchers with a means of making decisions about when and where corrective measures may be needed in testing for violations of the proportional hazards assumption.

#### D The Kaplan-Meier Transformation of the Time Scale

To derive the Kaplan-Meier transformation of the time scale, we begin with an examination of the cumulative hazard. Following the notation of Therneau and Grambsch (2000), if we let the first failure time be denoted by  $t_1$ , the second by  $t_2$ , and so on, and if we let  $\Delta \bar{N}(t_i)$  be the number of events occurring at time  $t_i$ , and  $\bar{Y}(t_i)$  be the total number of individuals at risk at time  $t_i$ , then

we can define the Nelson-Aalen estimate of the cumulative hazard as

$$\hat{H}(t) = \sum_{i:t_i \le t} \frac{\Delta N(t_i)}{\bar{Y}(t_i)}.$$

Since the cumulative hazard function represents the distribution of failures, a natural representation of the survivor function is simply  $1 - \Delta \hat{H}(t_i)$ , which represents the Kaplan-Meier estimator,  $\hat{S}_{KM}(t)$  (Kaplan and Meier 1958). That is,

$$\hat{S}_{KM} \equiv KM(t) = \prod_{j:t_j \le t} [1 - \Delta \hat{H}(t_j)].$$

The left-continuous version of the Kaplan-Meier estimator, 1 - KM(t-) has been suggested as a monotonic transformation of time to be used as g(t) in scaled Schoenfeld residual tests of the proportional hazards assumption of the Cox model. In reality, statistical software packages transform the time scale for scaled Schoenfeld residual tests by calculating a value of t at each discrete event time. Specifically, if we let the ordered survival times for k units that experience the event of interest be denoted by  $t_1, t_2, \ldots t_k$ , then the Kaplan-Meier transformation of the time scale has values at event times of  $1 - KM(t_0), 1 - KM(t_1), \ldots 1 - KM(t_{k-1})$ .

#### E Algorithm Used to Generate Simulated Data

To generate the data for our simulations, we relied on the method presented in Hendry (2014). Specifically, that method extends upon an argument originally presented by Zhou (2001) and allows the researcher to produce survival times that follow the Cox proportional hazards model and vary as a function of an arbitrary number of either time-varying or time-fixed covariates. We extended on this method to produce survival data that violate the proportional hazards assumption and that take on different forms for the censoring distribution.

The method requires the practitioner to choose bounds of truncation that define the minimum and maximum survival times for units, as well as an arbitrary function g such that g(0) = 0, g(t)is monotone increasing for t > 0, and  $g^{-1}(t)$  is differentiable. We chose to let  $g(t) = g^2$  so that  $g^{-1}(t) = \sqrt{t}$ . The main result presented by Hendry (2014) is that if a random variable X is distributed as truncated piecewise exponential with rate parameters  $\lambda(t) = Z(t)\beta$  and bounds of truncation  $[g^{-1}(a), g^{-1}(b)]$ , then g(X) follows a Cox proportional hazards model with baseline hazard  $h_0(t) = \frac{d}{dt} [g^{-1}(t)]$ , covariate vector Z(t) and parameter vector  $\beta$ , with units having minimum and maximum survival times a and b, respectively. We used a slightly modified version of this method by allowing  $\beta$  to vary with time, allowing for biased censoring, and randomly defining a small number of units to have outlier survival times, all described in the main text.

The algorithm that we used can be summarized as follows:

- 1. Choose g.
- 2. Define  $\beta_1(t)$  and  $\beta_2(t)$ .
- 3. Define  $Z_1(t)$  and  $Z_2(t)$ .
- 4. Generate  $X_i$  as truncated piecewise exponential with bounds of truncation  $[g^{-1}(a), g^{-1}(b)]$ and rate parameter  $\lambda_i(t) = \beta_1(t)Z_{1i}(t) + \beta_2(t)Z_{2i}$  for i = 1, ..., N.
- 5. Generate survival times,  $T_i = g(X_i), i = 1, ..., N$ .
- 6. Let  $\delta_i$  be a random draw from Uniform[0, median(T)] for  $i = 1, \dots, N$ .
- 7. Randomly sample five units and replace  $T_i$  with  $T_i + \delta_i$ .
- 8. Define censoring proportion, p.
- 9. Define censoring indicators as vector of length N in which each entry is a 0 with probability p and a 1 with probability 1 p.
- 10. Distribute censoring indicators across cases:
  - (a) For uniform censoring, randomly assign censoring indicators.
  - (b) For situation in which relatively long survival times are more likely to be censored:
    - i. For units in the upper quartile of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .85 and a 1 with probability .15, if any.
    - ii. For units in the second and third quartiles of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .5 and a 1 with probability .5, if any.
    - iii. For units in the lower quartile of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .15 and a 1 with probability .85, if any.
  - (c) For situation in which relatively short survival times are more likely to be censored:
    - i. For units in the upper quartile of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .15 and a 1 with probability .85, if any.
    - ii. For units in the second and third quartiles of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .5 and a 1 with probability .5, if any.
    - iii. For units in the lower quartile of survival times, sample (without replacement) a 0 from the vector of censoring indicators with probability .85 and a 1 with probability .15, if any.

## F Example Scaled Schoenfeld Residual Plots from Simulations

To provide readers with a sense of the data structure and form of nonproportionality produced by our simulation routine, here we present the covariate-specific scaled Schoenfeld residual plots from a randomly chosen simulated dataset from the 0% censoring condition. Specifically, as with the replications from the main text, we present the scatterplots for each covariate and each time transformation. Presenting all of the plots available from the simulations would obviously be infeasible. But interested readers can explore the full set of 20,000 residual plots (1,000 simulated datasets  $\times$  2 covariates  $\times$  10 censoring distributions) by consulting the replication materials, available on the authors' websites.





*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.F.2: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations,  $z_2$ , Simulation 17, 0% Censoring



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

# G Illustrations of Proportional Hazards Tests from Published Political Science Research

In this section, we use replication materials made available by authors of published political science research to illustrate that the results of the Grambsch-Therneau tests of proportional hazards vary, sometimes markedly, depending on which transformation of the time scale is chosen. Additionally, for each formal test that demonstrates a discrepancy depending upon the time transformation chosen, we present graphical displays of the scaled Schoenfeld residuals across time. Replication code to produce these tables and figures, as well as figures for all of the covariates not displayed, are available from the authors' websites. For more information about the covariates, readers are directed to the original papers.

Table SI.G.1: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Bennett 1997, Table 1, Complete Model; as Replicated in Box-Steffensmeier, Reiter, and Zorn 2003)

	Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ho	ρ	ρ
Change in Security	-0.025	-0.026	-0.045	-0.049
Alliance Security Improvement	0.115	0.097	0.109	0.098
Mutual Threat	0.093	0.099	$0.124^{*}$	0.113
Capability Change	-0.077	-0.132	-0.122	-0.137
Symmetry	-0.144	$-0.254^{*}$	-0.243*	-0.267*
Capability Concentration	-0.105	-0.129	-0.129	-0.133
Democracy (Liberal)	0.063	0.028	0.063	0.045
Polity Change	0.062	-0.003	0.028	0.017
Number of States	-0.064	-0.089	-0.100	-0.106
Wartime	-0.067	-0.031	-0.069	-0.049
War Termination	0.076	$0.233^{*}$	$0.175^{*}$	$0.217^{*}$
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	7.935	$20.074^{*}$	18.180	21.214*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(11)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Bennett (1997). \*p < .05

Figure SI.G.1: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Mutual Threat*, (Bennett 1997, Table 1, Complete Model; as Replicated in Box-Steffensmeier, Reiter, and Zorn 2003)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett (1997) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.2: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Symmetry*, (Bennett 1997, Table 1, Complete Model; as Replicated in Box-Steffensmeier, Reiter, and Zorn 2003)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett (1997) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.3: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *War Termination*, (Bennett 1997, Table 1, Complete Model; as Replicated in Box-Steffensmeier, Reiter, and Zorn 2003)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett (1997) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.2: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Bennett and Stam 1996, Table 1, Model 1, Cox Replication of a Weibull Analysis)

	Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	ρ
Population Ratio	-0.136	-0.149	-0.160	-0.157
Year	-0.175	-0.343*	-0.383*	-0.385*
No. of Actors	0.073	0.069	0.041	0.041
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	4.322	11.100*	13.169*	$13.238^{*}$

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(3)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Bennett and Stam (1996). \*p < .05

Figure SI.G.4: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Year*, (Bennett and Stam 1996, Table 1, Model 1, Cox Replication of a Weibull Analysis)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett and Stam (1996) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.3: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Bennett and Stam 1996, Table 1, Model 3, Cox Replication of a Weibull Analysis)

	Time Transformation			
	$\overline{t}$	$\frac{\ln(t)}{\ln(t)}$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	$\rho$	$\rho$	ρ
Repression	0.139	0.260*	0.215*	0.221*
Democracy	-0.178	-0.326*	-0.286*	-0.292*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	3.213	$10.744^{*}$	8.296*	8.631*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(2)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Bennett and Stam (1996). \*p < .05

Figure SI.G.5: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Repression*, (Bennett and Stam 1996, Table 1, Model 3, Cox Replication of a Weibull Analysis)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett and Stam (1996) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.6: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Democracy*, (Bennett and Stam 1996, Table 1, Model 3, Cox Replication of a Weibull Analysis)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Bennett and Stam (1996) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.4: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Box-Steffensmeier 1996, Table 2)

	Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	$\rho$
South	-0.062	-0.011	-0.087	-0.099
Party	-0.066	-0.082	-0.098	-0.051
Prior Vote	0.142	0.122	0.179	0.146
War Chest	0.027	0.025	0.108	0.022
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	1.521	1.055	3.108	1.809

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(4)$  distribution (Grambsch and Therneau 1994). For more information, consult Box-Steffensmeier (1996). \*p < .05

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Union Membership	-0.012	-0.006	-0.035	-0.026
Perot Vote Pct.	-0.066	-0.055	-0.064	-0.066
Perot Vote Pct. Sq.	0.055	0.052	0.048	0.050
Mexican Border	-0.112*	-0.064	-0.014	-0.023
HH Income	0.064	0.053	0.062	0.056
Corp. Contributions	-0.001	0.048	0.013	0.012
Labor Contributions	0.008	0.038	0.021	0.019
NAFTA Cmte.	-0.023	0.008	-0.060	-0.068
Rep. Leadership	-0.006	-0.005	0.009	0.010
Dem. Leadership	-0.019	-0.003	-0.042	-0.039
Ideology*Union	0.024	0.007	0.065	0.064
Ideology*HH Income	-0.006	-0.004	-0.023	-0.015
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	14.139	7.746	8.870	9.935

Table SI.G.5: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Box-Steffensmeier, Arnold, and Zorn 1997, Table 2)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(12)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Box-Steffensmeier, Arnold, and Zorn (1997). \*p < .05

Figure SI.G.7: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Mexican Border*, (Box-Steffensmeier, Arnold, and Zorn 1997, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Box-Steffensmeier, Arnold, and Zorn (1997) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.6: Gra	ambsch-Therneau Test	s of Proportional	Hazards Ass	sumption Using	g Four	Time
Transformations (	(Chiozza and Goemans	2004, Tables 1 a	and 2, Model	1)		

		Time Tra	nsformation	
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	ρ
Mixed Regime	0.035	0.045*	0.060*	0.061*
Parliamentary Democracy	$0.058^{*}$	$0.105^{*}$	$0.093^{*}$	$0.092^{*}$
Presidential Democracy	$0.073^{*}$	$0.148^{*}$	$0.142^{*}$	$0.151^{*}$
Civil War	0.037	-0.042*	-0.017	-0.020
Economic Development	0.025	$0.070^{*}$	$0.067^{*}$	$0.070^{*}$
Chng. in Econ. Devel.	-0.053*	-0.031	-0.039	-0.038
Trade Openness	$0.068^{*}$	0.039	$0.053^{*}$	$0.052^{*}$
Change in Trade Openness	-0.027	0.013	0.005	0.007
Population	-0.026*	-0.027*	-0.041*	-0.043*
Age	$0.082^{*}$	$0.086^{*}$	$0.074^{*}$	$0.073^{*}$
Previous Times in Office	-0.008	0.030	0.017	0.020
Crisis Involve. as Chall.	-0.011	0.015	0.009	0.009
Crisis Involve. as Target	0.015	0.007	0.007	0.005
Win Crisis	-0.016	-0.008	-0.005	-0.004
Lose Crisis	0.044	0.013	0.023	0.021
Draw Crisis	-0.017	-0.000	-0.008	-0.007
War Involve. as Chall.	0.026	$0.045^{*}$	0.038	0.038
War Involve. as Target	0.020	0.003	0.002	0.001
Win War	-0.026	-0.014	-0.016	-0.016
Lose War	-0.006	-0.012	-0.005	-0.005
Draw War	0.009	0.034	0.037	0.037
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	78.051*	207.863*	$166.377^{*}$	177.182*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(21)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Chiozza and Goemans (2004). \*p < .05

Scaled Schoenfeld residual plots are not shown for these data because tests use multiple imputation averaged over five simulated datasets. See Chiozza and Goemans (2004).

Table SI.G.7: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Chiozza and Goemans 2004, Tables 1 and 2, Model 2)

	Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Mixed Regime	0.034	$0.047^{*}$	$0.065^{*}$	$0.067^{*}$
Parliamentary Democracy	$0.054^{*}$	$0.097^{*}$	$0.085^{*}$	$0.084^{*}$
Presidential Democracy	$0.074^{*}$	$0.151^{*}$	$0.146^{*}$	$0.155^{*}$
Civil War	0.036	-0.041*	-0.016	-0.019
$Economic \ Development$	0.021	$0.067^{*}$	$0.064^{*}$	$0.067^{*}$
Chng. in Econ. Devel.	-0.050	-0.030	-0.038	-0.037
Trade Openness	$0.063^{*}$	0.037	$0.049^{*}$	$0.049^{*}$
Change in Trade Openness	-0.026	0.015	0.008	0.009
Population	-0.019	-0.024*	-0.036*	-0.038*
Age	$0.084^{*}$	$0.088^{*}$	$0.077^{*}$	$0.076^{*}$
Previous Times in Office	-0.010	0.026	0.012	0.014
Crisis Involve. as Chall.	-0.013	0.011	0.003	0.004
Crisis Involve. as Target	0.009	0.005	0.003	0.002
Autocracy*Win Crisis	0.028	0.025	0.030	0.030
Autocracy*Lose Crisis	0.022	0.014	0.024	0.024
Autocracy*Draw Crisis	0.003	0.017	0.015	0.016
Mixed Reg.*Win Crisis	-0.029	-0.023	-0.037	-0.036
Mixed Reg.*Lose Crisis	0.028	-0.003	-0.003	-0.004
Mixed Reg.*Draw Crisis	0.014	0.024	0.017	0.017
Parl. Democ.*Win Crisis	0.007	0.005	0.021	0.021
Parl. Democ.*Lose Crisis	0.019	0.019	0.022	0.022
Parl. Democ.*Draw Crisis	-0.014	-0.013	-0.011	-0.011
Pres. Democ.*Win Crisis	0.007	-0.006	0.003	0.001
Pres. Democ.*Lose Crisis	-0.009	-0.025	-0.020	-0.022
Pres. Democ.*Draw Crisis	-0.023	-0.032	-0.037	-0.038
War Involve. as Chall.	0.018	$0.040^{*}$	0.032	0.032
War Involve. as Target	0.024	0.013	0.011	0.010
$Autocracy^*Win War$	-0.042*	-0.027	-0.039	-0.038
Autocracy*Lose War	0.000	-0.017	-0.008	-0.008
Autocracy*Draw War	-0.026	-0.005	-0.005	-0.004
Mixed Reg.*Win War	-0.009	-0.001	0.001	0.002
Mixed Reg.*Lose War	-0.014	-0.024	-0.024	-0.024
Mixed Reg.*Draw War	0.015	0.026	0.028	0.027
Parl. Democ.*Win War	0.011	0.008	0.014	0.013
Parl. Democ.*Lose War	-0.015	0.005	0.002	0.003

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Table SI.G.7: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Chiozza and Goemans 2004, Tables 1 and 2, Model 2, continued from previous page)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Parl. Democ. *Draw War	0.013	0.048*	0.049*	$0.050^{*}$
Pres. Democ.*Win War	-0.014	-0.015	-0.015	-0.015
Pres. Democ.*Lose War	-0.018	-0.033	-0.031	-0.032
Pres. Democ.*Draw War	0.006	0.001	0.005	0.004
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	83.413*	215.840*	178.246*	189.622*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(39)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Chiozza and Goemans (2004). \*p < .05

Scaled Schoenfeld residual plots are not shown for these data because tests use multiple imputation averaged over five simulated datasets. See Chiozza and Goemans (2004).

Table SI.G.8: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Crescenzi 2007, Table 1, Model 1)

		Time Transformation					
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$			
	ρ	ρ	ρ	ρ			
IIS	0.183*	$0.208^{*}$	$0.171^{*}$	$0.196^{*}$			
Contiguous	-0.164*	-0.148*	-0.151*	$-0.176^{*}$			
$log(Capability \ Ratio)$	-0.038*	-0.017	-0.035*	-0.041*			
Minor Powers	-0.122*	-0.109*	-0.111*	-0.134*			
Regime Score	-0.182*	-0.181*	$-0.172^{*}$	-0.188*			
S-Score	-0.064*	-0.060*	-0.059*	-0.059*			
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$			
Global Test	2400.051*	2439.855*	2069.243*	2712.661*			

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(6)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Crescenzi (2007). \*p < .05

Figure SI.G.8: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, log(Capability Ratio), (Crescenzi 2007, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Crescenzi (2007) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards as-

sumption, p < .05.

Table SI.G.9: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Crescenzi 2007, Table 1, Model 2)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	ho	ρ	$\rho$
RISc	$0.269^{*}$	$0.246^{*}$	$0.258^{*}$	$0.262^{*}$

Note: Cell entries are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution (Grambsch and Therneau 1994). For more information, consult Crescenzi (2007). \*p < .05

Table SI.G.10: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Crescenzi 2007, Table 1, Model 3)

		Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$	
	ρ	$\rho$	$\rho$	ρ	
RISc	0.116*	0.119*	0.100*	0.134*	
IIS	$0.101^{*}$	$0.113^{*}$	$0.097^{*}$	$0.103^{*}$	
RISc*IIS	$0.033^{*}$	0.009	$0.034^{*}$	$0.028^{*}$	
Contiguous	-0.131*	-0.118*	-0.119*	-0.143*	
$log(Capability \ Ratio)$	-0.026*	-0.011	-0.020*	-0.033*	
Minor Powers	-0.104*	-0.097*	-0.092*	-0.120*	
Regime Score	-0.147*	-0.137*	-0.138*	-0.150*	
S-Score	-0.050*	-0.051*	-0.045*	-0.048*	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	1743.860*	1749.358*	1497.441*	1974.510*	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(8)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Crescenzi (2007). \*p < .05

Figure SI.G.9: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, RISc\*IIS, (Crescenzi 2007, Table 1, Model 3)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Crescenzi (2007) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.10: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, log(Capability Ratio), (Crescenzi 2007, Table 1, Model 3)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Crescenzi (2007) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.11: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Cunningham 2011, Table 1, Model 1)

		Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	ρ	$\rho$	ρ	ho	
Unitary Movement	$0.683^{*}$	$0.495^{*}$	$0.466^{*}$	0.309	
Relative Size of Group	-0.327	-0.371	-0.443	-0.414	
Territorial Base	0.278	0.169	0.135	0.060	
log(State Population)	-0.007	-0.110	-0.215	-0.232	
$\log(\text{GDP Per Capita})$	-0.268	-0.294	-0.319	-0.302	
Military Expenditure Per Capita	0.421	0.413	0.421	0.382	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	10.240	6.180	6.068	3.783	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(6)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Cunningham (2011).

\*p < .05

Figure SI.G.11: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Unitary Movement*, (Cunningham 2011, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Cunningham (2011) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.12: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Cunningham 2011, Table 1, Model 2)

		Time Transformation		
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	$\rho$
log(Number of SD Factions)	-0.283	-0.084	-0.027	0.088
Relative Size of Group	-0.214	-0.276	-0.347	-0.340
Territorial Base	0.091	0.008	-0.028	-0.071
log(State Population)	-0.010	-0.139	-0.260	-0.285
log(GDP Per Capita)	-0.188	-0.208	-0.215	-0.210
Military Expenditure Per Capita	0.402	0.316	0.288	0.222
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	1.584	1.191	1.655	1.806

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(6)$  distribution (Grambsch and Therneau 1994). For more information, consult Cunningham (2011). \*p < .05

Table SI.G.13: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Cunningham 2011, Table 1, Model 3)

		Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$	
	ρ	ho	ρ	ρ	
Unitary Movement	0.401	0.216	0.255	0.184	
Relative Size of Group	-0.435*	-0.309*	-0.341*	$-0.284^{*}$	
Territorial Base	-0.015	-0.087	-0.081	-0.101	
$\log(\text{State Population})$	-0.182	-0.034	-0.053	-0.004	
log(GDP Per Capita)	0.109	$0.230^{*}$	$0.218^{*}$	$0.252^{*}$	
Military Expenditure Per Capita	-0.123	-0.215	-0.210	-0.231	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	$21.367^{*}$	$15.927^{*}$	$17.604^{*}$	$15.575^{*}$	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(6)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Cunningham (2011).

\*p < .05
Figure SI.G.12: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations,  $log(GDP \ Per \ Capita)$ , (Cunningham 2011, Table 1, Model 3)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Cunningham (2011) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.14: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Cunningham 2011, Table 1, Model 4)

			0	
		Time Tra	instormation	
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	$\rho$	$\rho$	$\rho$
$\log(\text{Number of SD Factions})$	-0.104	0.112	0.064	0.141
Relative Size of Group	-0.348*	-0.240	-0.264*	-0.217
Territorial Base	-0.030	-0.080	-0.077	-0.091
$\log(\text{State Population})$	-0.110	-0.019	-0.027	0.002
log(GDP Per Capita)	0.120	$0.241^{*}$	$0.224^{*}$	$0.260^{*}$
Military Expenditure Per Capita	-0.156	-0.245	-0.235	-0.256
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	10.315	10.802	10.771	11.182

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(6)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Cunningham (2011).

\*p < .05





Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Cunningham (2011) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.14: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations,  $log(GDP \ Per \ Capita)$ , (Cunningham 2011, Table 1, Model 4)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Cunningham (2011) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.15: Grambsch-Therneau Tests of Proport	tional Hazards Assumption Using	ng Four Time
Transformations (Debs and Goemans 2010, Table 1)	1	

		Time Tra	nsformation	
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	ρ
Democracy	0.058*	$0.098^{*}$	$0.098^{*}$	$0.099^{*}$
Civil War	0.035	0.025	$0.047^{*}$	$0.048^{*}$
GDP Per Capita	-0.017	0.027	$0.035^{*}$	$0.036^{*}$
GDP Growth	-0.041	-0.042	-0.042	-0.042
Trade Openness	$0.073^{*}$	0.031	0.028	0.026
Chng. in Trade Open.	0.004	0.044	0.025	0.026
$\log(\text{Population})$	0.002	0.005	-0.010	-0.012
Age	$0.070^{*}$	$0.055^{*}$	$0.051^{*}$	$0.050^{*}$
Times in Office	-0.005	0.027	0.015	0.015
Entry	-0.122*	-0.151*	$-0.142^{*}$	$-0.142^{*}$
Challenger	-0.020	-0.014	-0.022	-0.022
Target	-0.009	-0.037	-0.039	-0.040
Inheritor	-0.023	-0.028	-0.031	-0.031
Democ. Crisis Victory	0.003	0.005	0.011	0.010
Democ. Crisis Defeat	0.031	0.027	0.035	0.034
Democ. Crisis Draw	-0.007	-0.007	-0.010	-0.009
Nondemoc. Crisis Victory	-0.002	0.004	-0.004	-0.004
Nondemoc. Crisis Defeat	$0.061^{*}$	0.045	0.045	0.045
Nondemoc. Crisis Draw	$0.061^{*}$	$0.051^{*}$	$0.048^{*}$	$0.048^{*}$
Democ. War Victory	0.014	0.015	0.022	0.022
Democ. War Defeat	-0.004	-0.007	-0.008	-0.008
Democ. War Draw	0.011	0.023	0.022	0.022
Nondemoc. War Victory	-0.042	-0.037	-0.047	-0.046
Nondemoc. War Defeat	0.023	$0.052^{*}$	$0.052^{*}$	$0.053^{*}$
Nondemoc. War Draw	0.026	0.024	0.027	0.026
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	$115.737^{*}$	$183.539^{*}$	177.110*	177.792*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(25)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Debs and Goemans (2010). \*p < .05

Figure SI.G.15: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Civil War*, (Debs and Goemans 2010, Table 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.16: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *GDP Per Capita*, (Debs and Goemans 2010, Table 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.17: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Trade Openness*, (Debs and Goemans 2010, Table 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.18: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Nondemoc. Crisis Defeat*, (Debs and Goemans 2010, Table 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.19: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Nondemoc. War Defeat*, (Debs and Goemans 2010, Table 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

		Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	$\rho$	ρ	ρ	ρ	
Civilian	-0.029	-0.043	-0.068	-0.070	
Monarch	0.061	0.010	0.014	0.013	
Civil War	0.041	0.049	0.067	0.067	
GDP Per Capita	-0.079*	-0.033	-0.043	-0.041	
Growth	-0.010	-0.032	-0.014	-0.014	
Trade Openness	0.035	0.020	0.014	0.013	
Chng. in Trade Open.	-0.008	0.042	0.026	0.027	
$\log(\text{Population})$	0.047	0.063	0.061	0.062	
Age at Entry	0.062	$0.104^{*}$	$0.082^{*}$	$0.081^{*}$	
Manner of Entry	-0.101*	-0.106*	$-0.125^{*}$	$-0.125^{*}$	
Times in Office	0.013	0.035	0.038	0.039	
Challenger	0.009	-0.025	-0.024	-0.024	
Target	-0.010	-0.069	-0.048	-0.048	
Inheritor	-0.007	-0.043	-0.028	-0.028	
Military Crisis Victory	-0.014	0.007	-0.005	-0.006	
Military Crisis Defeat	0.029	0.004	0.008	0.007	
Military Crisis Draw	-0.026	0.015	-0.001	-0.001	
Military War Victory	-0.014	-0.012	-0.012	-0.012	
Military War Defeat	-0.018	0.002	-0.012	-0.013	
Military War Draw	0.051	0.072	0.075	0.075	
Civilian Crisis Victory	0.010	-0.007	-0.012	-0.013	
Civilian Crisis Defeat	0.027	0.029	0.031	0.031	
Civilian Crisis Draw	0.068	0.061	0.066	0.065	
Civilian War Victory	0.004	-0.029	-0.023	-0.024	
Civilian War Defeat	-0.013	0.028	0.018	0.019	
Civilian War Draw	-0.013	-0.001	-0.002	-0.002	
Monarch Crisis Victory	-0.054	-0.002	-0.002	-0.001	
Monarch Crisis Defeat	-0.036	-0.002	-0.007	-0.006	
Monarch Crisis Draw	-0.018	0.005	0.003	0.003	
Monarch War Victory	-0.026	-0.000	-0.004	-0.003	
Monarch War Defeat	0.011	0.019	0.015	0.015	
Monarch War Draw	0.031	0.040	0.043	0.043	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	29.842	33.734	34.361	34.498	

Table SI.G.16: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Debs and Goemans 2010, Table 2)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(32)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Debs and Goemans (2010). \*p < .05

Figure SI.G.20: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *GDP Per Capita*, (Debs and Goemans 2010, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.21: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Age at Entry*, (Debs and Goemans 2010, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Debs and Goemans (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.17: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Diermeier and Stevenson 1999, Table 1, Pooled Model)

	Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Majority Status	-0.009	-0.152*	-0.048	-0.058
Post-Election	0.035	0.061	0.057	0.061
Investiture Vote	-0.056	-0.095	-0.100	-0.107
Returnability	-0.189*	-0.139	-0.173*	-0.167*
Left-Right Diversity	0.067	0.047	0.054	0.052
Clerical-Secular Diversity	0.046	-0.013	0.032	0.026
Regime Support Diversity	0.026	0.056	0.051	0.057
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	9.043	12.697	10.198	10.409

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(7)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Diermeier and Stevenson (1999). \*p < .05

Figure SI.G.22: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Majority Status*, (Diermeier and Stevenson 1999, Table 1, Pooled Model)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Diermeier and Stevenson (1999) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.23: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Returnability*, (Diermeier and Stevenson 1999, Table 1, Pooled Model)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Diermeier and Stevenson (1999) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.18: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Diermeier and Stevenson 1999, Table 1, Dissolution Censoring Model)

		Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	$\rho$	ρ	ρ	ρ	
Majority Status	0.124	0.034	0.132	0.135	
Post-Election	0.049	0.080	0.065	0.066	
Investiture Vote	0.172	-0.035	0.172	0.105	
Returnability	-0.237	-0.225	-0.248	-0.209	
Left-Right Diversity	0.143	0.167	0.123	0.135	
Clerical-Secular Diversity	0.087	0.058	0.109	0.094	
Regime Support Diversity	-0.027	0.052	-0.030	-0.013	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	7.036	5.747	7.323	5.467	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(7)$  distribution (Grambsch and Therneau 1994). For more information, consult Diermeier and Stevenson (1999). \*p < .05

Table SI.G.19: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Diermeier and Stevenson 1999, Table 1, Dissolution Not Censoring Model)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	$\rho$
Majority Status	0.056	-0.011	0.055	0.055
Post-Election	0.079	0.039	0.097	0.072
Investiture Vote	0.049	-0.049	0.059	0.039
Returnability	0.021	-0.058	0.036	0.024
Left-Right Diversity	0.048	0.109	0.040	0.053
Clerical-Secular Diversity	-0.049	-0.066	-0.060	-0.060
Regime Support Diversity	0.068	0.133	0.062	0.082
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	2.819	4.849	3.450	3.162

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(7)$  distribution (Grambsch and Therneau 1994). For more information, consult Diermeier and Stevenson (1999). \*p < .05

Table SI.G.20: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Diermeier and Stevenson 1999, Table 1, Replacement Model)

	Time Transformation				
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	ρ	$\rho$	ho	ρ	
Majority Status	-0.116	-0.241*	-0.158	-0.168	
Post-Election	0.078	0.087	0.096	0.099	
Investiture Vote	-0.200*	-0.108	-0.178	-0.167	
Returnability	-0.147	-0.103	-0.163	-0.161	
Left-Right Diversity	0.011	-0.012	-0.007	-0.007	
Clerical-Secular Diversity	0.022	-0.045	0.000	-0.003	
Regime Support Diversity	0.057	0.060	0.076	0.078	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	11.357	13.154	13.046	13.076	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(7)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Diermeier and Stevenson (1999). \*p < .05

Figure SI.G.24: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Majority Status*, (Diermeier and Stevenson 1999, Table 1, Replacement Model)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Diermeier and Stevenson (1999) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.





Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Diermeier and Stevenson (1999) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.21: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Golder, Golder, and Siegel 2012, Table 4, Cox Model)

		Time Tra	nsformation	
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Policy Weight	$0.150^{*}$	0.139*	$0.137^{*}$	0.138*
No. of Parties	-0.018*	-0.028*	-0.029*	-0.029*
Eff. No. of Parties	$0.162^{*}$	$0.167^{*}$	$0.166^{*}$	$0.167^{*}$
Ideo. Diversity	-0.011*	-0.008*	-0.008*	-0.009*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	68311.340*	63888.611*	62445.733*	63447.883*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(4)$  distribution (Grambsch and Therneau 1994). For more information, consult Golder, Golder, and Siegel (2012). \*p < .05

Table SI.G.22: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Hartzell and Hoddie 2003, Table 2, Cox Model)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ho	ρ
Power-Sharing Institutions	0.144	0.235	0.191	0.199
Previous Regime Type	$0.667^{*}$	0.456	$0.610^{*}$	0.522
Conflict Duration	0.157	0.063	0.036	-0.004
Conflict Intensity	0.184	0.049	0.216	0.228
Third Party Enforcer	0.148	0.278	0.186	0.199
International System Structure	-0.026	0.125	0.034	0.055
Conflict Issue	0.189	0.120	0.256	0.276
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	8.800	6.528	10.996	11.229

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(7)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Hartzell and Hoddie (2003).

Figure SI.G.26: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Previous Regime Type*, (Hartzell and Hoddie 2003, Table 2, Cox Model)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Hartzell and Hoddie (2003) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.23: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Leeds and Savun 2007, Table 2)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Change in International Power	0.052	0.083	0.045	0.047
Change in Political Institutions	-0.094	-0.085	-0.090	-0.095
Decrease in External Threat	-0.090	-0.046	-0.091	-0.081
Formation of New Outside Alliance	0.018	0.027	0.007	-0.002
Democratic Members	0.001	0.033	0.009	0.025
Asymmetric Power	0.058	0.089	0.066	0.084
Agr. Incl. Non-Military Coop.	-0.075	-0.145	-0.107	-0.140
Treaty Requiring Ratification	0.021	0.088	0.037	0.058
Agr. Req. Peacetime Mil. Coord.	-0.028	-0.082	-0.047	-0.069
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	3.881	7.242	4.662	6.337

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(9)$  distribution (Grambsch and Therneau 1994). For more information, consult Leeds and Savun (2007). \*p < .05

		Time Transformation			
	$\overline{t}$	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	ρ	ρ	ρ	ρ	
Arbitration Commission	0.111	0.081	0.100	0.080	
Organization	0.115	0.042	0.087	0.063	
Non-aggression	-0.089	-0.084	-0.091	-0.096	
Mediate Disputes	-0.030	0.005	-0.018	0.005	
Military Institutionalization	0.038	0.062	0.062	0.077	
Relative Capabilities	-0.014	0.051	0.009	0.042	
Shared Border	-0.046	-0.089	-0.066	-0.096	
Joint Democracy	0.052	0.043	0.038	0.032	
Similarity	-0.104	-0.087	-0.108	-0.089	
Wartime Alliance	0.059	0.115	0.075	0.107	
Major Power	0.027	-0.008	0.018	0.001	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	7.718	10.535	8.644	10.639	

Table SI.G.24: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Long, Nordstrom, and Baek 2007, Table 1)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(11)$  distribution (Grambsch and Therneau 1994). For more information, consult Long, Nordstrom, and Baek (2007).

\*p < .05

Table SI.G.25: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Lyall 2010, Table 5, Model 5; Cox Replication of a Weibull Analysis)

		Time Transformation		
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	$\rho$	ho	$\rho$
Treat	-0.049	0.015	-0.001	-0.009

Note: Cell entries are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution (Grambsch and Therneau 1994). For more information, consult Lyall (2010). \*p < .05

Table SI.G.26: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Lyall 2010, Table 5, Model 6; Cox Replication of a Weibull Analysis)

		Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	ρ	ρ	ρ	ρ	
Treat	0.006	0.058	0.049	0.040	
Log(Population) in 2000	-0.006	0.040	0.029	0.026	
Log(Elevation)	-0.050	-0.074	-0.078	-0.076	
Log(Isolation)	$0.162^{*}$	$0.183^{*}$	$0.182^{*}$	$0.181^{*}$	
Log(History)	$0.121^{*}$	0.077	$0.087^{*}$	$0.091^{*}$	
Poverty	-0.062	-0.025	-0.037	-0.040	
Large-Scale Theft	$0.117^{*}$	0.012	0.013	0.022	
Presweep Violence	-0.065	-0.009	-0.012	-0.034	
Garrison	$0.072^{*}$	0.032	0.030	0.036	
Tariqa	-0.052	-0.010	-0.024	-0.023	
Killing	0.013	0.080	0.074	0.070	
Rebel	0.007	-0.001	-0.002	0.001	
TAC	$0.124^{*}$	$0.168^{*}$	$0.163^{*}$	$0.164^{*}$	
Log(Total Abuse)	-0.032	-0.104*	-0.088	-0.087	
Month	-0.158*	-0.130*	-0.140*	-0.139*	
Year	-0.137*	-0.057	-0.082	-0.089	
Groznyy	-0.129*	-0.156*	-0.154*	-0.152*	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	$108.806^{*}$	129.128*	126.446*	127.898*	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(17)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Lyall (2010). \*p < .05





*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.





*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

Figure SI.G.29: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Garrison*, (Lyall 2010, Table 5, Model 6; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

Figure SI.G.30: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Log(Total Abuse)*, (Lyall 2010, Table 5, Model 6; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

Figure SI.G.31: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Year*, (Lyall 2010, Table 5, Model 6; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

Table SI.G.27: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Lyall 2010, Table 5, Model 7; Cox Replication of a Weibull Analysis)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	$\rho$
Treat	-0.084	-0.024	-0.049	-0.055

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution (Grambsch and Therneau 1994). For more information, consult Lyall (2010).

\*p < .05

Table SI.G.28: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Lyall 2010, Table 5, Model 8; Cox Replication of a Weibull Analysis)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	$\rho$	ρ	ρ
Treat	0.013	0.043	0.032	0.031
Log(Population) in 2000	-0.048	-0.021	-0.029	-0.031
Log(Elevation)	-0.078	-0.111*	$-0.115^{*}$	-0.112*
Log(Isolation)	$0.178^{*}$	$0.215^{*}$	$0.208^{*}$	$0.205^{*}$
Log(History)	$0.136^{*}$	$0.095^{*}$	$0.111^{*}$	$0.115^{*}$
Poverty	-0.055	-0.019	-0.034	-0.035
Large-Scale Theft	$0.145^{*}$	0.020	0.031	0.041
Presweep Violence	-0.182*	-0.221*	$-0.224^{*}$	-0.231*
Garrison	0.068	0.023	0.027	0.032
Tariqa	-0.034	0.019	-0.002	-0.000
Killing	0.051	0.126	0.102	0.098
Rebel	-0.002	-0.010	-0.005	-0.004
TAC	$0.144^{*}$	$0.218^{*}$	$0.203^{*}$	$0.203^{*}$
Log(Total Abuse)	-0.060	-0.133*	-0.106	-0.105
Month	-0.153*	-0.093	-0.111	-0.116
Year	-0.186*	-0.131*	$-0.165^{*}$	$-0.171^{*}$
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	133.696*	$194.193^{*}$	$180.682^*$	$182.775^{*}$

Note: Cell entries for the upper panel are Harrell's rho statistics for the correlation between the respective covariate and time and are distributed as  $\chi^2(1)$ . Cell entries for the bottom panel are  $\chi^2(16)$  statistics for a global test that uses rescaled Schoenfeld residuals to correct for correlation among model covariates (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Lyall (2010). \*p < .05



Figure SI.G.32: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, Log(Elevation), (Lyall 2010, Table 5, Model 8; Cox Replication of a Weibull Analysis)

Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.33: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Large-Scale Theft*, (Lyall 2010, Table 5, Model 8; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

Figure SI.G.34: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Log(Total Abuse)*, (Lyall 2010, Table 5, Model 8; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.




*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Lyall (2010) for information about covariate.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	ρ	ρ	ρ
Development	0.100	0.144	0.112	0.106
Growth	0.086	-0.090	-0.091	-0.104
Presidential System	$0.156^{*}$	0.054	0.049	0.036
Mixed System	0.129	0.036	0.016	-0.000
Majority Government	-0.034	-0.085	-0.110	-0.117
Ethnic Fragmentation	-0.030	0.089	0.085	0.097
Trade Openness	0.028	0.037	0.032	0.028
Urbanization	0.148	0.227	0.214	0.221
Post-Cold War Era	$0.289^{*}$	$0.340^{*}$	$0.316^{*}$	$0.314^{*}$
Imposed Polity	0.203	0.288	0.308	0.315
Colony	$0.154^{*}$	0.063	0.036	0.024
Military	-0.046	-0.106	-0.124	-0.127
Regional Democracy Level	-0.258*	-0.374*	-0.362*	-0.360*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	17.039	22.197	21.316	21.929

Table SI.G.29: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Maeda 2010, Table 1, Model 1)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(13)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Maeda (2010). \*p < .05

Figure SI.G.36: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Presidential System*, (Maeda 2010, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.37: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Colony*, (Maeda 2010, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	$\rho$	ρ	ρ
Development	0.122	0.124	0.121	0.114
Growth	-0.297*	-0.515*	-0.489*	-0.507*
Presidential System	$-0.281^{*}$	-0.352*	-0.364*	-0.360*
Mixed System	-0.356*	-0.331*	-0.366*	-0.348*
Majority Government	$0.239^{*}$	-0.014	-0.002	-0.054
Ethnic Fragmentation	$0.302^{*}$	$0.446^{*}$	$0.445^{*}$	$0.454^{*}$
Trade Openness	$0.407^{*}$	$0.213^{*}$	$0.226^{*}$	$0.173^{*}$
Urbanization	$0.420^{*}$	$0.428^{*}$	$0.405^{*}$	$0.380^{*}$
Post-Cold War Era	$0.538^{*}$	$0.502^{*}$	$0.504^{*}$	$0.472^{*}$
Imposed Polity	-0.263	0.021	0.010	0.069
Colony	0.073	-0.165	-0.161	-0.202
Military	0.127	-0.105	-0.077	-0.120
Regional Democracy Level	-0.195	-0.441*	-0.376*	-0.403*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	$50.299^{*}$	$56.577^{*}$	$53.211^{*}$	$52.\overline{665^{*}}$

Table SI.G.30: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Maeda 2010, Table 1, Model 3)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(13)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Maeda (2010). \*p < .05

Figure SI.G.38: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Majority Government*, (Maeda 2010, Table 1, Model 3)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.39: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Regional Democracy Level*, (Maeda 2010, Table 1, Model 3)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Development	-0.156	-0.305	-0.360*	-0.378*
Growth	0.175	0.139	0.133	0.125
Presidential System	0.294	$0.351^{*}$	$0.402^{*}$	$0.417^{*}$
Mixed System	0.142	0.013	-0.020	-0.052
Majority Government	0.034	0.028	0.055	0.044
Ethnic Fragmentation	0.123	0.176	0.110	0.125
Trade Openness	-0.146	-0.066	-0.005	0.025
Urbanization	$0.353^{*}$	$0.453^{*}$	$0.433^{*}$	$0.437^{*}$
Post-Cold War Era	0.140	0.100	0.061	0.048
Imposed Polity	0.280	$0.456^{*}$	$0.456^{*}$	$0.497^{*}$
Colony	0.102	0.064	0.040	0.040
Military	-0.154	-0.087	-0.035	0.008
Regional Democracy Level	-0.193	-0.103	-0.085	-0.039
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	9.469	18.194	20.963	$23.965^{*}$

Table SI.G.31: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Maeda 2010, Table 1, Model 5)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(13)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Maeda (2010). \*p < .05

Figure SI.G.40: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Development*, (Maeda 2010, Table 1, Model 5)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.41: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Presidential System*, (Maeda 2010, Table 1, Model 5)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.42: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Imposed Polity*, (Maeda 2010, Table 1, Model 5)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Maeda (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

	Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Government Issue Saliency	0.043	$0.064^{*}$	0.051	0.051
Government Issue Divisiveness	-0.101*	-0.102*	-0.106*	-0.106*
Opposition Issue Saliency	-0.019	-0.028	-0.023	-0.023
Opposition Issue Divisiveness	0.018	-0.001	0.015	0.015
Foreign Policy	0.026	0.018	0.033	0.033
Industrial Policy	0.044	$0.064^{*}$	0.054	0.054
Social Policy	0.049	$0.095^{*}$	0.055	0.054
Clerical Policy	0.032	0.048	0.032	0.032
Agricultural Policy	0.008	0.031	0.017	0.017
Regional Policy	0.027	0.033	0.030	0.030
Environmental Policy	$0.066^{*}$	0.058	$0.070^{*}$	$0.070^{*}$
Germany	-0.014	-0.028	-0.015	-0.015
Belgium	-0.023	-0.009	-0.028	-0.029
Luxembourg	-0.060	-0.012	-0.065*	-0.065*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	22.625	20.420	25.688*	$25.705^{*}$

Table SI.G.32: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Martin 2004, Table 1, Model 1)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(14)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Martin (2004). \*p < .05

Figure SI.G.43: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Government Issue Saliency*, (Martin 2004, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.44: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Industrial Policy*, (Martin 2004, Table 1, Model 1)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.45: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Social Policy*, (Martin 2004, Table 1, Model 1)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.46: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Environmental Policy*, (Martin 2004, Table 1, Model 1)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards as-

sumption, p < .05.

Figure SI.G.47: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Luxembourg*, (Martin 2004, Table 1, Model 1)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	ρ	ρ	ρ	ρ
Gov't Issue Saliency	$0.229^{*}$	$0.165^{*}$	$0.234^{*}$	0.234*
Gov't Iss. Sal. $^{\ln(\text{CIEP})}$	-0.200*	-0.133*	-0.203*	-0.203*
Gov't Iss. Divis.	$0.045^{*}$	0.006	0.012	0.012
Gov't Iss. Div. *ln(CIEP)	$-0.047^{*}$	-0.011	-0.015	-0.015
Opposition Iss. Sal.	-0.068*	-0.082*	-0.076*	-0.076*
Opp. Iss. Divis.	0.038	0.040	0.046	0.046
Foreign Policy	$0.081^{*}$	0.044	$0.081^{*}$	$0.081^{*}$
Industrial Policy	0.004	0.050	0.022	0.022
Social Policy	$0.108^{*}$	$0.141^{*}$	$0.114^{*}$	$0.114^{*}$
Clerical Policy	-0.028	0.013	-0.020	-0.020
Agricult. Policy	-0.010	0.019	-0.001	-0.001
Regional Policy	0.057	0.055	0.054	0.054
Environ. Policy	0.012	0.013	0.009	0.009
Germany	0.002	-0.032	-0.003	-0.002
Belgium	-0.049	-0.018	-0.042	-0.042
Luxembourg	$0.085^{*}$	$0.065^{*}$	$0.069^{*}$	$0.069^{*}$
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	738.793*	311.979*	646.519*	646.449*

Table SI.G.33: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Martin 2004, Table 1, Model 2)

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(16)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Martin (2004). \*p < .05

Figure SI.G.48: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Gov't Iss. Divis.*, (Martin 2004, Table 1, Model 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards as-

sumption, p < .05.

Figure SI.G.49: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Gov't Iss. Div.* \**ln(CIEP)*, (Martin 2004, Table 1, Model 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.50: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Foreign Policy*, (Martin 2004, Table 1, Model 2)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin (2004) for information about covariate.

\*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.34: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Martin and Vanberg 2004, Table 3, Model 1; Cox Replication of a Weibull Analysis)

	Time Transformation			
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$
	$\rho$	ho	ρ	ho
Government Issue Divisiveness	-0.192*	-0.251*	-0.214*	-0.214*
Government Issue Saliency	-0.008	0.062	0.037	0.039
Opposition Issue Divisiveness	-0.045	-0.033	-0.035	-0.035
Opposition Issue Saliency	0.057	-0.044	-0.025	-0.029
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	$11.258^{*}$	21.219*	$16.079^{*}$	$16.280^{*}$

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(4)$  distribution (Grambsch and Therneau 1994). For more information, consult Martin and Vanberg (2004). \*p < .05 Table SI.G.35: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Martin and Vanberg 2004, Table 3, Model 2; Cox Replication of a Weibull Analysis)

	Time Transformation				
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	ρ	$\rho$	ρ	ρ	
Government Issue Divisiveness	-0.111	-0.094	-0.079	-0.077	
Government Issue Saliency	0.022	0.013	0.020	0.019	
Opposition Issue Divisiveness	-0.065	-0.043	-0.052	-0.051	
Opposition Issue Saliency	0.011	-0.093	-0.075	-0.079	
Foreign Policy	0.012	0.044	0.031	0.031	
Industrial Policy	0.024	-0.055	-0.027	-0.030	
Social Policy	0.059	0.074	0.058	0.058	
Agricultural Policy	-0.067	-0.201*	-0.159*	-0.162*	
Regional Policy	0.014	-0.089	-0.058	-0.061	
Environmental Policy	0.011	0.040	0.042	0.043	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	13.156	$35.855^{*}$	$25.082^*$	$25.666^*$	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(10)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Martin and Vanberg (2004). \*p < .05

Figure SI.G.51: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Agricultural Policy*, (Martin and Vanberg 2004, Table 3, Model 2; Cox Replication of a Weibull Analysis)



*Note*: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Martin and Vanberg (2004) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.36: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Mattes and Savun 2010, Table 2)

	Time Transformation				
	Identity	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$	
	$\rho$	ρ	ρ	ρ	
UncertReducing Prov.	0.091	-0.078	-0.043	-0.067	
Power-Sharing Provisions	-0.065	0.109	0.073	0.102	
Third-Party Guarantees	0.059	-0.176	-0.149	-0.197	
Life Expectancy	0.002	$0.237^{*}$	0.213	$0.265^{*}$	
Previous Level of Democ.	0.120	0.294	0.236	0.267	
Ethnic Issue	0.245	0.220	0.255	0.277	
Costs of Previous War	0.033	$0.287^{*}$	0.258	$0.312^{*}$	
Duration of Previous War	-0.055	-0.353*	-0.298	-0.374*	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	1.947	7.198	6.138	8.824	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(8)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Mattes and Savun (2010). \*p < 0.05

Figure SI.G.52: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Life Expectancy*, (Mattes and Savun 2010, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Mattes and Savun (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.53: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Costs of Previous War*, (Mattes and Savun 2010, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Mattes and Savun (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Figure SI.G.54: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Duration of Previous War*, (Mattes and Savun 2010, Table 2)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Mattes and Savun (2010) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.37: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Senese and Quackenbush 2003, Table 4, Base Model)

	Time Transformation			
	t	$\ln(t)$	1 - KM(t)	$\operatorname{Rank}(t)$
	ρ	$\rho$	ρ	$\rho$
Negotiated Settlement	-0.062*	-0.013	-0.018	-0.012
No Settlement	-0.103*	-0.054*	-0.066*	-0.058*
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$
Global Test	21.612*	8.070*	11.840*	9.944*

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(2)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Senese and Quackenbush (2003). \*p < .05





Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Senese and Quackenbush (2003) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

Table SI.G.38: Grambsch-Therneau Tests of Proportional Hazards Assumption Using Four Time Transformations (Senese and Quackenbush 2003, Table 4, Full Model)

	Time Transformation				
	t	$\ln(t)$	$1 - \mathrm{KM}(t)$	$\operatorname{Rank}(t)$	
	ρ	ho	ρ	ρ	
Negotiated Settlement	-0.021	-0.001	-0.000	0.002	
No Settlement	-0.029	-0.012	-0.016	-0.013	
Minimum Democracy	-0.030	-0.058*	-0.062*	-0.064*	
ln(Relative Capabilities)	$0.076^{*}$	$0.091^{*}$	$0.087^{*}$	$0.086^{*}$	
ln(Chng. in Rel. Capabil.)	0.011	0.003	0.003	0.001	
Geographic Contiguity	$0.088^{*}$	$0.055^{*}$	$0.059^{*}$	$0.053^{*}$	
Decisive Outcome	$0.082^{*}$	$0.133^{*}$	$0.132^{*}$	$0.133^{*}$	
War	-0.056*	-0.077*	-0.070*	-0.070*	
	$\chi^2$	$\chi^2$	$\chi^2$	$\chi^2$	
Global Test	81.221*	$106.569^*$	105.638*	102.914*	

Note: Cell entries for the upper panel are Pearson product-moment correlation coefficients with tests of statistical significance based on comparison of the covariate-specific test statistic given in (SI.B.3) to a  $\chi^2(1)$  distribution. Cell entries for the lower panel are the global test statistics given in (SI.B.2) with tests of statistical significance based on comparison to a  $\chi^2(8)$  distribution (Grambsch and Therneau 1994). Covariates whose tests are inconsistent are presented in bold and italics. For more information, consult Senese and Quackenbush (2003). \*p < .05

Figure SI.G.56: Plot of Scaled Schoenfeld Residuals vs. Time for Four Time Transformations, *Minimum Democracy*, (Senese and Quackenbush 2003, Table 4, Full Model)



Note: Solid line is a smoothing spline. Dashed lines represent a  $\pm$  2-standard error confidence band. Consult Senese and Quackenbush (2003) for information about covariate. \*Statistically significant test statistic indicating covariate violates the proportional hazards assumption, p < .05.

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