Coding Decisions & Additional Results for Third-Party Intervention and the Civil War Process

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Data Set Construction

Our sample of civil wars is taken from the Correlates of War (COW) Intra-State War Data (`Intra-State Wars (V 3-0).csv`). To identify third party interventions we used the COW Intra-State War Participants Data (`Intra-State War Participants(V 3-0).csv`). These files are available at: `http://correlatesofwar.org/`.

We split the COW Intra-State War Participants data into spells in order to merge our three intervention covariates, which are time-varying, into the civil war data. A spell represents a period of time during a civil war when the values of the covariates are constant. Each time a third party intervenes a new spell begins, thus allowing our three intervention variables to be time-varying. Additionally, a new spell begins if a civil war continues past December 31 of any year. To illustrate how the spells were constructed we present data from two civil wars, 501 and 502, in Table 1. Civil war 501 began on July 2, 1820 and ended on March 3, 1821. In this civil war, a third-party intervention occurred on February 15, 1821 and thus a new spell begins. In contrast civil war 502, which began on December 1, 1821 and ended on April 6, 1823, had no third-party interventions. When there are no third-party interventions enddate records the end of each year of the civil war or the date the civil war ended.

Table 1: Civil War Data Setup

cwarnum	statenum	startdate	enddate
501	329	02jul1820	31dec1820
501	329	01jan1821	14feb1821
501	329	15feb1821	03mar1821
502	230	01dec1821	31dec1821
502	230	01jan1822	31dec1822
502	230	01jan1823	06apr1823

Start/End Dates of Civil Wars

There were missing values for some of the start/end dates of civil wars. Below we detail the procedures that were used to replace the missing values.

1. If the start/end day was missing we coded the start/end day as occurring on the 15th of the month. For example, for civil war 511 the start month is February, 1830 and the end month is November, 1831. We coded the start date as February 15, 1830 and the end date as November 15, 1831.

2. If there were two start and end dates for a civil war we coded the end date of the civil war using the second end date. For example, for civil war 519 the first start date was June 10, 1839 and the first end date was June 24, 1839. The second start date was September 9, 1840 and the second end date was November 27, 1840. We coded the

start date of the civil war as June 10, 1839 and the end date as November 27, 1840. There are six civil wars for which this was an issue; 519, 527, 555, 592, 630, and 694.

3. If the start/end month and day was missing we coded the start/end month and day as being June 15. For example, for civil war 516 the start year was 1835 and the end date was March 1, 1845. We coded the start date as June 15, 1835.

4. If both the start month and day and the end month and day were missing for a multi-year civil war we coded the start month and day as being June 15 and the end month and day as being June 15. For example, civil war 500 began in 1816 and ended in 1825. We coded the civil war as beginning on June 15, 1816 and ending on June 15, 1825.

5. If both the start month and day and the end month and day were missing for a single-year civil war we coded the start month and day as being June 15 and the end month and day as being December 31. For example, civil war 523 began in 1841 and ended in 1841. We coded the civil war as beginning on June 15, 1841 and ending on December 31, 1841.

6. Three civil wars ended on January 1; 537, 588, and 707. Given the way the data set needed to be structured, it was necessary to move the end month and day of the last year to January 1. However, data were merged based on the previous year. For example, civil war 707 ended on January 1, 1981 but the data were merged for December 31, 1980.

Start/End Dates of Third-Party Intervention

There were missing values for some of the start/end dates of third-party intervention(s). Below we detail the procedures that were used to replace the missing values.

1. If the start day of a third-party intervention was missing, we coded the intervention as occurring on the 15th of the month in which the civil war began. For example, for civil war 501 the intervention is coded as occurring on February, 1821. We coded the intervention as occurring on February 15, 1821.

2. If there was an intervention on both the side of the government (IntSide = 1) and on the side of the opposition (IntSide = 2) the civil war is coded as having a balanced intervention.

3. If the start month and day of a third-party intervention was missing we coded the intervention as beginning on June 15. For example, for civil war 704 one intervention occurred in 1984. We coded the intervention as occurring on June 15, 1984.

4. If IntSide = 3 then a third party did not join either side and thus we did not code an intervention. For example, for civil war 713 IntSide = 3 and thus we did not code an intervention for that civil war since the intervener joined neither the side of the government or the opposition.

3

5. The third-party intervention into civil war 677 ended one day before the war ended. This intervention was extended by one day in order to match the end date of the civil war.

Censored Cases

There are 8 civil wars that were coded as ongoing (-888) at the end of COW data (1997) and thus are right censored; 715, 717, 719, 722, 734, 739, 745, and 753. We coded eleven additional civil wars as right censored; 525, 638, 639, 654, 658, 673, 674, 682, 684, 714, and 756. In these civil wars a decisive outcome did not occur and the war fizzled out due to COW time constraints on when a civil war was determined to have ended.

Variable Construction

Economic Development

In order to create a measure of economic development we used the COW National Material Capability data set (`NMC_3.02.csv`). We measured economic development by taking the natural log of the sum of energy consumption plus iron/steel production (plus 1 to avoid taking the log of zero). We created a pre-civil war level of economic development by lagging this variable one year prior to the onset of a civil war. For example, for civil war 502, which began in 1816, we recorded its level of economic development in 1815. This variable is time-invariant, that is, it does not vary throughout the course of a civil war.

When we merged this variable with the civil war data there were 101 missing values across 13 civil wars; 500, 501, 522, 527, 540, 542, 543, 630, 639, 655, 659, 693, 736, 737, and 738. Most of these missing values were created because this variable was lagged one year and some of the civil war states were not considered independent according to the COW state system membership list in the year prior to the onset of the civil war. In these civil wars we replaced the missing values with the first available level of economic development. For example, for civil war 738, which began in 1992, Bosnia was not an independent state in 1991, the year in which we want to measure economic development and so we used the 1992 level. There are two civil wars; 500 and 501, for which missing values were caused because energy consumption was missing. We replaced these missing values with zero since their level of iron/steel production was zero.

Democracy

In order to create a measure of democracy we used the polity2 variable from the Polity IV project. We used the file prepared for *EUGene* (`p4v2004e.csv`) which aligns the Polity IV data set with the COW country codes and state system membership list. We created a pre-civil war measure of democracy by lagging this variable one year prior to the onset of a civil war. For example, for civil war 500, which began in 1816, we recorded its regime type in 1815. This also corresponds with the coding of the Polity IV project which measures regime

type on December 31 of the coded year. We then created a binary measure of democracy which equals 1 if the polity2 measure was greater than 5 and 0 otherwise. We estimated models with both the continuous and binary version of this variable (see the Additional Results section). This variable is time-invariant, that is, it does not vary throughout the course of a civil war.

When we merged this variable with the civil war data there were 71 missing values across 11 civil wars; 525, 604, 632, 639, 655, 659, 693, 708, 736, 737, and 738, corresponding to the -66 code in the Polity IV data set and/or the year of independence according to the COW state system membership list. We replaced the missing values as follows:

- cwarnum 525: Mexico has a missing value for 1846. This missing value was replaced with -3 because Mexico's values for 1845 and 1848 were -3.

- cwarnum 604: Hungary has a missing value for 1918. This is because the COW state system membership list records Hungary as becoming an independent state beginning in 1919. This missing value was replaced with -6 because that was the value given in the Polity IV data set for Hungary in 1918.

- cwarnum 632: China has a missing value for 1945 and has missing values from 1937 to 1946. There are values for 1936 and 1946 both of which equal -5. We replaced the missing value with -5.

- cwarnum 639: Myanmar has a missing value for 1947. This is because the COW state system membership list records Myanmar as becoming an independent state beginning in 1948. We replaced the missing value with 8 since that is Myanmar's 1948 value.

- cwarnum 655: Congo/Zaire has a missing value for 1959. This is because the COW state system membership list records Congo/Zaire as becoming an independent state beginning in 1960. We replaced the missing value with 0 since that is Congo/Zaire's 1960 value.

- cwarnum 659: Algeria has a missing value for 1961. This is because the COW state system membership list records Algeria as becoming an independent beginning in 1962. We replaced the missing value with -8 since that is Algeria's 1962 value.

- cwarnum 693: Angola has a missing value for 1974. This is because the COW state system membership list records Angola as becoming an independent state beginning in 1975. We replaced the missing value with -7 since that is Angola's 1975 value.

- cwarnum 708: Uganda has a missing value for 1979. Uganda does have values for 1978 and 1980. We took the average of the two values $(-7 + 3/2) = -2$ and replaced the missing value with -2.

- cwarnum 736: Georgia has a missing value for 1990. This is because the COW state system membership list records Georgia as becoming an independent state beginning in 1991. We replaced the missing value with 4 since that is Georgia's 1991 value.

- cwarnum 737: Azerbaijan has a missing value for 1990. This is because the COW state system membership list records Azerbaijan as becoming an independent state beginning in 1991. We replaced the missing value with -3 since that is Azerbaijan's 1991 value.

- cwarnum 738: Bosnia has a missing value for 1991. This is because the COW state system membership list records Bosnia as becoming an independent state beginning in 1992. We replaced the missing value with 0 since that is Bosnia's 1992 value.

We created a second measure of democracy by calculating the average of the polity2 variable three years prior to the onset of a civil war. For example, for civil war 500, which began in 1816, we calculated the average of the polity2 variable in the three years prior to the onset of the civil war; 1813, 1814, and 1815. We created a binary version of this variable which equals 1 if the average polity2 score was greater than 5 and 0 otherwise. We estimated models with both the continuous and binary version of this variable (see the Additional Results section).

There were also missing values to correct for the average democracy variable. We used the follow procedures to correct the missing values.

- cwarnum 525: Mexico has missing values for 1846 and 1847. These missing values were replaced with -3 because Mexico's 1845 and 1848 values were -3. We then calculated the three year average.

- cwarnum's 540, 542, 543: China has missing values for 1860 and 1861. These missing values were replaced with -6 because China's 1859 and 1862 values were -6. We then calculated the three year average.

- cwarnum 603: Finland is not recorded as being an independent state by the COW system membership list until 1917 and thus we cannot calculate a three year average. Finland's average value was its 1917 value.

- cwarnum 604: Hungary is not recorded as being an independent state by the COW state system membership list until 1919. In order to obtain a three year average we used the values in the Polity IV data set.

- cwarnum's 632, 634: China has missing values between 1937 and 1945. China's values for both 1936 and 1946 were -5. We assigned China an average value of -5.

- cwarnum 639: Myanmar is not recorded as being an independent state by the COW system membership list until 1948 and thus we cannot calculate a three year average. Myanmar's average value was its 1948 value.

- cwarnum 655: Congo/Zaire is not recorded as being an independent state by the COW system membership list until 1960 and thus we cannot calculate a three year average. Congo/Zaire's average value was its 1960 value.

- cwarnum 659: Algeria is not recorded as being an independent state by the COW system membership list until 1962 and thus we cannot calculate a three year average. Algeria's average value was its 1962 value.

- cwarnum 664: Rwanda is not recorded as being an independent state by the COW system membership list until 1961 and thus we cannot calculate a three year average. Rwanda's average value was the average of its 1961 and 1962 values.

- cwarnum 685: Zimbabwe is not recorded as being an independent state by the COW system membership list until 1970 and thus we cannot calculate a three year average. Zimbabwe's average value was the average of its 1970 and 1971 values.

- cwarnum 693: Angola is not recorded as being an independent state by the COW system membership list until 1975 and thus we cannot calculate a three year average. Angola's average value was its 1975 value.

- cwarnum 736: Georgia is not recorded as being an independent state by the COW system membership list until 1991 and thus we cannot calculate a three year average. Georgia's average value was its 1991 value.

- cwarnum 737: Azerbaijan is not recorded as being an independent state by the COW system membership list until 1991 and thus we cannot calculate a three year average. Azerbaijan's average value was its 1991 value.

- cwarnum 738: Bosnia is not recorded as being an independent state by the COW system membership list until 1992 and thus we cannot calculate a three year average. Bosnia's average value was its 1992 value.

- cwarnum 740: Tajikistan is not recorded as being an independent state by the COW system membership list until 1991 and thus we cannot calculate a three year average. Tajikistan's average value was its 1991 value.

War Costs

In order to create a measure of war costs we used the COW `Intra-State Wars (V 3-0).csv` file. We used the variable stdeaths, which records the total battle deaths sustained by all state participants at the end of a civil war. We divided stdeaths by the pre-civil war total population of the civil war state (multiplied by 1000) from the COW National Material Capability data set (`NMC_3.02.csv`). When third parties participated in the civil war we summed the pre-civil war population of all state participants. This variable is time-invariant, that is, it does not vary throughout the course of a civil war. Table 2 shows an example of how this variable was coded for two civil wars (500 and 515).

Table 2: War Costs

cwarnum	statenum	deaths	stdeaths	prewarpop	War Costs
500	365	5000	5000	45900000	0.0001
Total		5000		45900000	0.0001
515	220	7700	75229	33260000	0.001
515	200	2479	75229	25134000	0.001
515	230	65000	75229	12681000	0.001
515	235	50	75229	3199000	0.001
Total		75229		74274000	0.001

Summary Statistics

Temporal Domain: 1816-1997

Number of Civil Wars: 213

Number of Government Military Victories: 109

Number of Opposition Military Victories: 45

Number of Negotiated Settlements: 40

Number of Interventions Supporting the Government: 29

Number of Interventions Supporting the Opposition: 18

Number of Balanced Interventions: 6

Number of Civil Wars in which the goal of the opposition was Separatist: 67

Table 3: Summary Statistics

Variable	Minimum	Maximum	Mean	Standard Deviation
Government Military Victory	0	1	0.12	0.32
Opposition Military Victory	0	1	0.05	0.22
Negotiated Settlement	0	1	0.04	0.20
Intervention for Government	0	1	0.16	0.37
Intervention for Opposition	0	1	0.09	0.29
Balanced Intervention	0	1	0.06	0.24
Separatist	0	1	0.36	0.48
War Costs	$1.44e-06$	0.09	0.004	0.01
Government Reputation	0	1	0.12	0.27
Economic Development	0	13.90	6.35	3.43
Democracy (Continuous)	0	20	6.69	5.32
Democracy (Binary)	0	1	0.09	0.28
Democracy (Average, Continuous)	0	20	6.75	5.25
Democracy (Average, Binary)	0	1	0.11	0.31

Table 4: Correlation Matrix of Civil War Outcomes

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Government Military Victory	1.00	−0.08	−0.08
Opposition Military Victory	−0.08	1.00	−0.05
Negotiated Settlement	−0.08	−0.05	1.00

Table 5: Correlation Matrix: Independent Variables

	Intervention for Government	Intervention for Opposition	Balanced Intervention	Separatist	Wars Costs	Government Reputation
Intervention for Government	1.00	0.40	0.56	−0.08	−0.08	0.16
Intervention for Opposition	0.40	1.00	0.78	−0.04	−0.06	0.33
Balanced Intervention	0.56	0.78	1.00	−0.10	−0.03	0.37
Separatist	−0.08	−0.04	−0.10	1.00	−0.20	0.004
War Costs	−0.08	−0.06	−0.03	−0.20	1.00	0.21
Government Reputation	0.16	0.33	0.37	0.004	0.21	1.00
Economic Development	−0.12	0.03	−0.03	−0.01	0.04	0.02
Democracy (Continuous)	−0.10	0.04	0.05	0.01	−0.11	0.13
Democracy (Binary)	−0.14	−0.05	−0.08	0.02	−0.08	−0.09
Democracy (Average, Continuous)	−0.10	0.02	0.04	0.01	−0.07	0.09
Democracy (Average, Binary)	−0.11	−0.06	−0.09	0.10	−0.10	0.001

Table 6: Correlation Matrix: Independent Variables

	Economic Development	Democracy (Continuous)	Democracy (Binary)	Democracy (Average, Continuous)	Democracy (Average, Binary)
Intervention for Government	−0.12	−0.10	−0.14	−0.10	−0.11
Intervention for Opposition	0.03	0.04	−0.05	0.02	−0.06
Balanced Intervention	−0.03	0.05	−0.08	0.04	−0.09
Separatist	−0.01	0.01	0.02	0.01	0.10
War Costs	0.04	−0.11	−0.08	−0.07	−0.10
Government Reputation	0.02	0.13	−0.09	0.09	0.001
Economic Development	1.00	0.30	0.25	0.31	0.26
Democracy (Continuous)	0.30	1.00	0.65	0.96	0.69
Democracy (Binary)	0.25	0.65	1.00	0.63	0.89
Democracy (Average, Continuous)	0.31	0.96	0.63	1.00	0.68
Democracy (Average, Binary)	0.26	0.69	0.89	0.68	1.00

Additional Results

We estimated some additional Cox Competing Risk models using different model specifications in order to determine the robustness of the results presented in the article. In general, the results are quite robust across a variety of different model specifications.

We tested for violations of the proportional hazards assumption by examining the correlation coefficient between transformed survival time and the scaled Schoenfeld residuals in each of our competing risks models. Variables were corrected for violations of the proportional hazards assumption if the significance level was $<= 0.10$. For any covariate that violated the proportional hazards assumption we interacted the offending covariate with the natural log of time. Note, if a covariate violated the proportional hazards assumption in one model we corrected for the violation in all three models.

The significance levels in the tables presented below (and the one in the article) were based on a one-tailed hypothesis test, thus the p-values from the `STATA` output were divided by 2.

There were no Balanced Interventions that resulted in an Opposition Military Victory (see Table 7). As a result, in the Opposition Military Victory Model, the coefficient for Balanced Intervention tends toward ∞. While `STATA` reports a coefficient and sometimes a standard error and p-value, we are hesitant to draw inferences about the effect Balanced Interventions have on the time until an Opposition Military Victory.

Table 7: Balanced Interventions and Opposition Military Victory

		Opposition Military Victory		
		0	1	Total
Balanced Intervention	0	825	45	870
	1	54	0	54
Total		879	45	924

We begin by estimating a basic model without controlling for economic development and democracy (Table 14). We then control for economic development and democracy, first independently (Tables 15-19), and then jointly (Tables 20-23). Note, the results presented in the article can be found in Table 21.A summary of the results can be found in Tables 8 and 9 for the Government Military Victory Model, Tables 10 and 11 for the Opposition Military Victory Model, and Tables 12 and 13 for the Negotiated Settlement Model. The summary results presented in Tables 8 to 11 are based on the results in Tables 14-23.

For each of the three intervention variables we plotted the estimated baseline survivor function for each civil war outcome (see Figures 1, 2, and 3) using the results presented in the article (and also in Table 21). In each figure the relevant intervention variable was set to 1,

the remaining discrete variables set at their modal value (i.e., 0), and continuous variables set at their mean value. Additionally, we have plotted the estimated survivor function when the three civil war outcomes are pooled. The estimated survivor function from the pooled model demonstrates the importance of estimating a competing risks model, namely, that pooling the civil war outcomes gives a distorted view of the effect a third party intervention has on the duration to different civil war outcomes.

Table 8: Results Across Model Specifications: Government Military Model Victory

	original	original econ	original democ	original democ.b	original democ.avg	original democ.avg.b
Intervention for Government	+†	+†	+†	+*	+†	+*
Intervention for Government × ln(Time)	−*	−*	−*	−**	−*	−**
Intervention for Opposition	−†	−†	−†	−†	−†	−†
Balanced Intervention	+	+†	+	+	+	+
Separatist	+*	+	+*	+**	+*	+*
Separatist × ln(Time)	−**	−	−**	−**	−**	−**
War Costs	+	+	+	+	+	+
War Costs × ln(Time)	−†	−	−†	−	−†	−†
Government Reputation	−**	−**	−**	−**	−**	−**
Economic Development		+**				
Economic Development × ln(Time)		−**				
Democracy			−	+**	−	+**
Democracy × ln(Time)			−**	−**	−**	−**

Table 9: Results Across Model Specifications: Government Military Victory Model

	original econ & democ	original econ & democ.b	original econ & democ.avg	original econ & democ.avg.b
Intervention for Government	+†	+†	+†	+†
Intervention for Government × ln(Time)	−*	−*	−*	−*
Intervention for Opposition	−†	−†	−†	−†
Balanced Intervention	+†	+†	+†	+
Separatist	+	+	+	+*
Separatist × ln(Time)	−	−	−	−**
War Costs	+	+	+	+
War Costs × ln(Time)	−	−	−	−†
Government Reputation	−**	−**	−**	−**
Economic Development	+**	+**	+**	−
Economic Development × ln(Time)	−**	−**	−**	
Democracy	−	+	+	+

Table 10: Results Across Model Specifications: Opposition Military Victory Model

	original	original econ	original democ	original democ.b	original democ.avg	original democ.avg.b
Intervention for Government	+*	+	+*	+*	+*	+*
Intervention for Government × ln(Time)	−**	−*	−**	−**	−**	−**
Intervention for Opposition	+**	+**	+**	+**	+**	+**
Balanced Intervention	−**	−	−**	−**	−	−
Separatist	+	+	+	+	+	+
Separatist × ln(Time)	−	−	−	−	−	−
War Costs	+**	+**	+**	+**	+**	+**
War Costs × ln(Time)	−**	−**	−**	−**	−**	−**
Government Reputation	−	−	−	−	−	−
Economic Development		+**				
Economic Development × ln(Time)		−**				
Democracy			+**	+**	−	+**
Democracy × ln(Time)			−**	−**	−**	−**

Table 11: Results Across Model Specifications: Opposition Military Victory Model

	original econ & democ	original econ & democ.b	original econ & democ.avg	original econ & democ.avg.b
Intervention for Government	+	+	+	+*
Intervention for Government × ln(Time)	−*	−*	−*	−**
Intervention for Opposition	+**	+**	+**	+**
Balanced Intervention	−**	−**	−**	−**
Separatist	−	−	−	+
Separatist × ln(Time)	−	−	−	−
War Costs	+**	+**	+**	+**
War Costs × ln(Time)	−**	−**	−**	−**
Government Reputation	−	−	−	−
Economic Development	+**	+**	+**	−*
Economic Development × ln(Time)	−**	−**	−**	
Democracy	−	−	−	−

Table 12: Results Across Model Specifications: Negotiated Settlement Model

	original	original econ	original democ	original democ.b	original democ.avg	original democ.avg.b
Intervention for Government	+†	+†	+†	+†	+†	+†
Intervention for Government × ln(Time)	−†	−†	−†	−†	−†	−†
Intervention for Opposition	+**	+**	+**	+**	+**	+**
Balanced Intervention	−*	−*	−*	−*	−*	−*
Separatist	+**	+**	+**	+**	+**	+**
Separatist × ln(Time)	−**	−**	−**	−**	−**	−**
War Costs	−†	−†	−†	−	−†	−
War Costs × ln(Time)	+	+†	+	+	+	+
Government Reputation	+	+	+	+	+	+
Economic Development		+†				
Economic Development × ln(Time)		−*				
Democracy			+	+	+	+
Democracy × ln(Time)			−*	−*	−*	−*

Table 13: Results Across Model Specifications: Negotiated Settlement Model

	original econ & democ	original econ & democ.b	original econ & democ.avg	original econ & democ.avg.b
Intervention for Government	+†	+†	+†	+†
Intervention for Government × ln(Time)	−†	−†	−†	−†
Intervention for Opposition	+**	+**	+**	+*
Balanced Intervention	−**	−*	−**	−*
Separatist	+**	+**	+**	+**
Separatist × ln(Time)	−**	−**	−**	−**
War Costs	−†	−†	−†	−
War Costs × ln(Time)	+†	+	+†	+
Government Reputation	+	+	+	+
Economic Development	+†	+†	+†	−
Economic Development × ln(Time)	−*	−†	−*	
Democracy	+†	−	+†	−†

Table 14: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.78†	2.43*	5.39†
	(1.86)	(1.39)	(3.39)
Intervention for Government $\times$ ln(Time)	-0.66*	-0.46**	-0.69†
	(0.29)	(0.18)	(0.45)
Intervention for Opposition	-1.52†	1.45**	1.31**
	(1.07)	(0.43)	(0.53)
Balanced Intervention	1.58	-39.39**	-2.69*
	(1.27)	(1.01)	(1.23)
Separatist	2.49*	0.79	8.81**
	(1.09)	(2.19)	(2.95)
Separatist $\times$ ln(Time)	-0.46**	-0.30	-1.31**
	(0.18)	(0.35)	(0.42)
War Costs	239.07	261.02**	-215.46†
	(225.81)	(70.07)	(163.09)
War Costs $\times$ ln(Time)	-60.14†	-51.29**	25.34
	(45.84)	(13.95)	(20.86)
Government Reputation	-1.60**	-1.01	0.27
	(0.52)	(0.90)	(0.66)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-475.69	-197.34	-137.26
Wald $\chi^2_{(9,9,9)}$	33.02**	4609.01**	29.48**

Significance (one-tailed): $\dagger = .1$; $* = .05$; $** = .01$.

Coefficients with robust standard errors in parentheses.

Table 15: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis & Economic Development

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.33†	2.05	5.72†
	(1.80)	(1.62)	(3.82)
Intervention for Government $\times$ ln(Time)	-0.61*	-0.44*	-0.75†
	(0.27)	(0.23)	(0.50)
Intervention for Opposition	-1.63†	1.70**	1.41**
	(1.12)	(0.45)	(0.56)
Balanced Intervention	1.75†	-46.56	-2.61*
	(1.34)	(.)	(1.20)
Separatist	0.69	0.08	8.11**
	(1.01)	(1.63)	(2.89)
Separatist $\times$ ln(Time)	-0.19	-0.21	-1.23**
	(0.17)	(0.25)	(0.40)
War Costs	104.84	173.63**	-232.80†
	(204.28)	(63.04)	(163.73)
War Costs $\times$ ln(Time)	-34.20	-33.95**	28.12†
	(37.97)	(11.89)	(20.95)
Government Reputation	-1.36**	-0.62	0.17
	(0.50)	(0.57)	(0.63)
Economic Development	0.97**	0.92**	0.54†
	(0.15)	(0.21)	(0.36)
Economic Development $\times$ ln(Time)	-0.17**	-0.18**	-0.09*
	(0.02)	(0.04)	(0.05)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-428.38	-174.61	-133.77
Wald $\chi^2_{(11,.,11)}$	76.24**	.	33.72**

Significance (one-tailed): $\dagger =.1$; $* =.05$; $** =.01$.

Coefficients with robust standard errors in parentheses.

Table 16: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997 Original Analysis & Democracy (Continuous)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.78†	2.41*	5.32†
	(1.84)	(1.39)	(3.40)
Intervention for Government $\times$ ln(Time)	-0.66*	-0.46**	-0.67†
	(0.29)	(0.18)	(0.45)
Intervention for Opposition	-1.53†	1.48**	1.34**
	(1.07)	(0.44)	(0.53)
Balanced Intervention	1.57	-41.44**	-2.77*
	(1.27)	(1.03)	(1.25)
Separatist	2.44*	0.58	8.88**
	(1.12)	(2.26)	(2.92)
Separatist $\times$ ln(Time)	-0.46**	-0.27	-1.32**
	(0.18)	(0.36)	(0.42)
War Costs	235.45	251.69**	-229.54†
	(222.42)	(69.15)	(172.03)
War Costs $\times$ ln(Time)	-59.44†	-49.53**	27.33
	(45.07)	(13.60)	(22.06)
Government Reputation	-1.60**	-1.00	0.22
	(0.52)	(0.92)	(0.68)
Democracy	-0.01	-0.03	0.02
	(0.02)	(0.03)	(0.03)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-475.58	-196.87	-137.14
Wald $\chi^2_{(10,10,10)}$	32.86**	4950.46**	31.60**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Table 17: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997 Original Analysis & Democracy (Binary)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	3.52*	2.97*	5.45†
	(1.94)	(1.48)	(3.42)
Intervention for Government $\times$ ln(Time)	-0.77**	-0.55**	-0.72†
	(0.30)	(0.20)	(0.45)
Intervention for Opposition	-1.47†	1.57**	1.30**
	(1.07)	(0.47)	(0.53)
Balanced Intervention	1.52	-37.68**	-2.73*
	(1.26)	(1.02)	(1.25)
Separatist	2.19**	0.89	8.91**
	(0.91)	(1.97)	(2.99)
Separatist $\times$ ln(Time)	-0.41**	-0.31	-1.33**
	(0.15)	(0.31)	(0.42)
War Costs	223.90	266.14**	-186.72
	(230.90)	(68.07)	(156.26)
War Costs $\times$ ln(Time)	-56.71	-51.68**	21.01
	(44.82)	(13.34)	(20.04)
Government Reputation	-1.48**	-1.06	0.25
	(0.52)	(0.89)	(0.63)
Democracy	4.40**	4.99**	1.32
	(1.01)	(1.95)	(1.82)
Democracy $\times$ ln(Time)	-0.74**	-1.04**	-0.41*
	(0.18)	(0.39)	(0.23)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-467.19	-192.86	-135.16
Wald $\chi^2_{(11,11,11)}$	60.04**	4236.17**	35.24**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Table 18: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997 Original Analysis & Democracy (Average, Continuous)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.79†	2.43*	5.28†
	(1.84)	(1.40)	(3.39)
Intervention for Government $\times$ ln(Time)	-0.66*	-0.47**	-0.67†
	(0.29)	(0.18)	(0.45)
Intervention for Opposition	-1.53†	1.49**	1.35**
	(1.07)	(0.45)	(0.53)
Balanced Intervention	1.58	-45.46	-2.78*
	(1.27)	(.)	(1.26)
Separatist	2.44*	0.53	8.88**
	(1.12)	(2.27)	(2.92)
Separatist $\times$ ln(Time)	-0.45**	-0.26	-1.32**
	(0.18)	(0.36)	(0.42)
War Costs	235.10	248.15**	-230.22†
	(222.64)	(68.55)	(172.74)
War Costs $\times$ ln(Time)	-59.33†	-48.77**	27.33
	(45.12)	(13.48)	(22.05)
Government Reputation	-1.60**	-1.01	0.24
	(0.52)	(0.91)	(0.66)
Democracy	-0.01	-0.04	0.02
	(0.02)	(0.03)	(0.03)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-475.59	-196.66	-137.10
Wald $\chi^2_{(10,.,10)}$	32.91**	.	31.47**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Table 19: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis & Democracy (Average, Binary)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	3.37*	2.98*	5.41†
	(1.90)	(1.48)	(3.41)
Intervention for Government $\times$ ln(Time)	-0.75**	-0.55**	-0.71†
	(0.30)	(0.20)	(0.45)
Intervention for Opposition	-1.48†	1.57**	1.28**
	(1.07)	(0.47)	(0.53)
Balanced Intervention	1.52	-45.69	-2.76*
	(1.26)	(.)	(1.25)
Separatist	2.12*	0.73	8.84**
	(0.93)	(2.02)	(3.00)
Separatist $\times$ ln(Time)	-0.40**	-0.29	-1.31**
	(0.15)	(0.32)	(0.43)
War Costs	224.24	264.00**	-181.72
	(227.52)	(67.67)	(155.07)
War Costs $\times$ ln(Time)	-57.02†	-51.34**	20.23
	(44.54)	(13.26)	(19.90)
Government Reputation	-1.43**	-1.00	0.33
	(0.49)	(0.88)	(0.61)
Democracy	4.05**	5.11**	1.15
	(0.98)	(1.91)	(1.80)
Democracy $\times$ ln(Time)	-0.70**	-1.06**	-0.41*
	(0.18)	(0.39)	(0.23)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-468.87	-192.56	-134.73
Wald $\chi^2_{(11,.,11)}$	58.64**	.	36.42**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Table 20: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis & Economic Development, Democracy (Continuous)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.32†	1.97	5.43†
	(1.81)	(1.62)	(3.82)
Intervention for Government $\times$ ln(Time)	-0.60*	-0.43*	-0.70†
	(0.27)	(0.23)	(0.50)
Intervention for Opposition	-1.64†	1.72**	1.52**
	(1.12)	(0.46)	(0.57)
Balanced Intervention	1.75†	-38.20**	-2.80**
	(1.34)	(1.07)	(1.20)
Separatist	0.68	-0.01	8.42**
	(1.04)	(1.66)	(2.83)
Separatist $\times$ ln(Time)	-0.19	-0.20	-1.27**
	(0.17)	(0.26)	(0.40)
War Costs	103.77	168.54**	-280.58†
	(203.33)	(63.06)	(186.53)
War Costs $\times$ ln(Time)	-34.02	-33.05**	34.64†
	(37.77)	(11.77)	(23.82)
Government Reputation	-1.36**	-0.62	0.002
	(0.50)	(0.57)	(0.65)
Economic Development	0.97**	0.93**	0.54†
	(0.15)	(0.22)	(0.34)
Economic Development $\times$ ln(Time)	-0.17**	-0.18**	-0.10*
	(0.02)	(0.04)	(0.05)
Democracy	-0.002	-0.02	0.05†
	(0.02)	(0.03)	(0.04)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-428.37	-174.51	-132.87
Wald $\chi^2_{(12,12,12)}$	76.11**	4558.72**	44.20**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Table 21: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis & Economic Development, Democracy (Binary)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	$2.49^{\dagger}$	1.93	$5.67^{\dagger}$
	(1.83)	(1.63)	(3.79)
Intervention for Government $\times$ ln(Time)	-0.63^{*}	-0.43^{*}	$-0.75^{\dagger}$
	(0.27)	(0.23)	(0.50)
Intervention for Opposition	$-1.64^{\dagger}$	1.74^{**}	1.39^{**}
	(1.12)	(0.48)	(0.56)
Balanced Intervention	$1.75^{\dagger}$	-34.11^{**}	-2.63^{*}
	(1.34)	(1.06)	(1.21)
Separatist	0.87	-0.10	8.16^{**}
	(1.05)	(1.71)	(2.93)
Separatist $\times$ ln(Time)	-0.22	-0.18	-1.23^{**}
	(0.18)	(0.26)	(0.41)
War Costs	108.67	171.25^{**}	$-211.75^{\dagger}$
	(204.70)	(62.88)	(158.26)
War Costs $\times$ ln(Time)	-34.67	-33.56^{**}	25.08
	(38.05)	(11.80)	(20.40)
Government Reputation	-1.30^{**}	-0.66	0.16
	(0.51)	(0.58)	(0.62)
Economic Development	0.96^{**}	0.93^{**}	$0.51^{\dagger}$
	(0.15)	(0.22)	(0.37)
Economic Development $\times$ ln(Time)	-0.17^{**}	-0.18^{**}	$-0.08^{\dagger}$
	(0.02)	(0.04)	(0.05)
Democracy	0.33	-0.34	-1.19
	(0.33)	(0.53)	(1.22)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-427.88	-174.45	-132.85
Wald $\chi^2_{(12,12,12)}$	80.54^{**}	3712.71^{**}	36.16^{**}

Significance (one-tailed): $\dagger = .1$; $* = .05$; $** = .01$.

Coefficients with robust standard errors in parentheses.

Table 22: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997
Original Analysis & Economic Development, Democracy (Average, Continuous)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.34†	1.97	5.33†
	(1.80)	(1.62)	(3.80)
Intervention for Government $\times$ ln(Time)	-0.61*	-0.43*	-0.69†
	(0.27)	(0.23)	(0.50)
Intervention for Opposition	-1.63†	1.72**	1.52**
	(1.12)	(0.47)	(0.57)
Balanced Intervention	1.75†	-34.60**	-2.82**
	(1.34)	(1.07)	(1.22)
Separatist	0.70	-0.04	8.41**
	(1.03)	(1.66)	(2.82)
Separatist $\times$ ln(Time)	-0.19	-0.20	-1.27**
	(0.17)	(0.26)	(0.40)
War Costs	105.68	166.42**	-275.85†
	(204.06)	(63.05)	(184.14)
War Costs $\times$ ln(Time)	-34.35	-32.62**	33.75†
	(37.93)	(11.81)	(23.37)
Government Reputation	-1.36**	-0.63	0.08
	(0.50)	(0.58)	(0.62)
Economic Development	0.97**	0.93**	0.54†
	(0.15)	(0.22)	(0.34)
Economic Development $\times$ ln(Time)	-0.17**	-0.18**	-0.09*
	(0.02)	(0.04)	(0.05)
Democracy	0.002	-0.02	0.05†
	(0.02)	(0.04)	(0.04)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-428.37	-174.43	-132.81
Wald $\chi^2_{(12,12,12)}$	76.38**	3751.48**	45.48**

Significance (one-tailed): $\dagger = .1$; $* = .05$; $** = .01$.

Coefficients with robust standard errors in parentheses.

Table 23: Cox Competing Risks Model of Civil War Duration & Outcome, 1816-1997 Original Analysis & Economic Development, Democracy (Average, Binary)

	Government Military Victory	Opposition Military Victory	Negotiated Settlement
Intervention for Government	2.81†	2.42*	5.15†
	(1.85)	(1.41)	(3.47)
Intervention for Government $\times$ ln(Time)	-0.67*	-0.48**	-0.68†
	(0.29)	(0.19)	(0.45)
Intervention for Opposition	-1.45†	1.80**	1.32*
	(1.07)	(0.46)	(0.57)
Balanced Intervention	1.52	-43.74**	-2.74*
	(1.26)	(1.03)	(1.24)
Separatist	2.48*	0.73	8.90**
	(1.09)	(2.07)	(2.96)
Separatist $\times$ ln(Time)	-0.46**	-0.28	-1.32**
	(0.18)	(0.33)	(0.42)
War Costs	235.29	264.53**	-189.51
	(228.03)	(67.35)	(154.77)
War Costs $\times$ ln(Time)	-59.19†	-51.56**	21.46
	(45.94)	(13.48)	(19.94)
Government Reputation	-1.53**	-0.91	0.29
	(0.51)	(0.74)	(0.61)
Economic Development	-0.03	-0.10*	-0.03
	(0.03)	(0.04)	(0.06)
Democracy	0.07	-0.45	-1.60†
	(0.37)	(0.58)	(1.24)
Civil wars	213	213	213
Civil war failures	109	45	40
Time at risk	249,462	249,462	249,462
Spells	924	924	924
Log-Likelihood	-475.04	-194.32	-134.78
Wald $\chi^2_{(11,11,11)}$	36.51**	5621.47**	37.70**

Significance (one-tailed): $\dagger$ =.1; $*$ =.05; $**$ =.01.

Coefficients with robust standard errors in parentheses.

Figure 1. Intervention for Government

Legend:
- Government Military Victory
- Opposition Military Victory
- Negotiated Settlement
- Pooled Outcomes
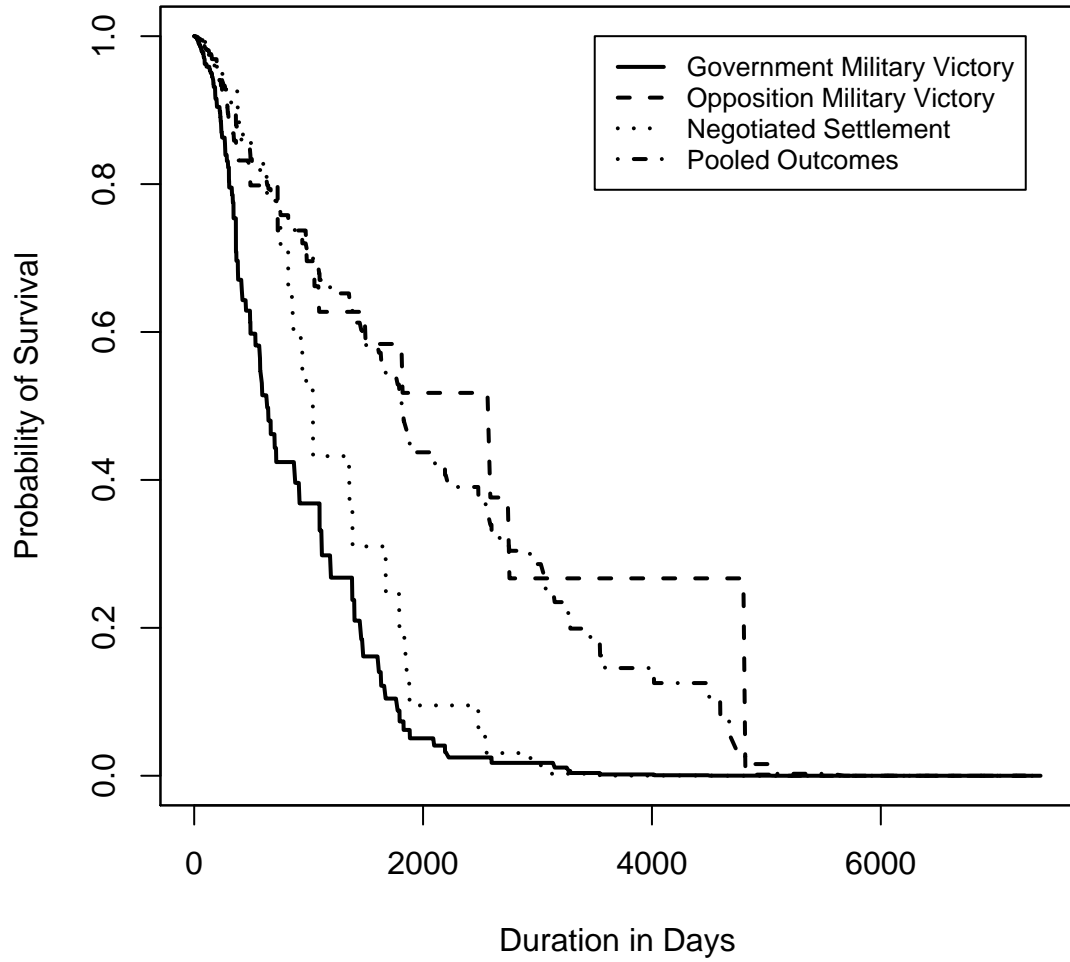
Y-axis: Probability of Survival
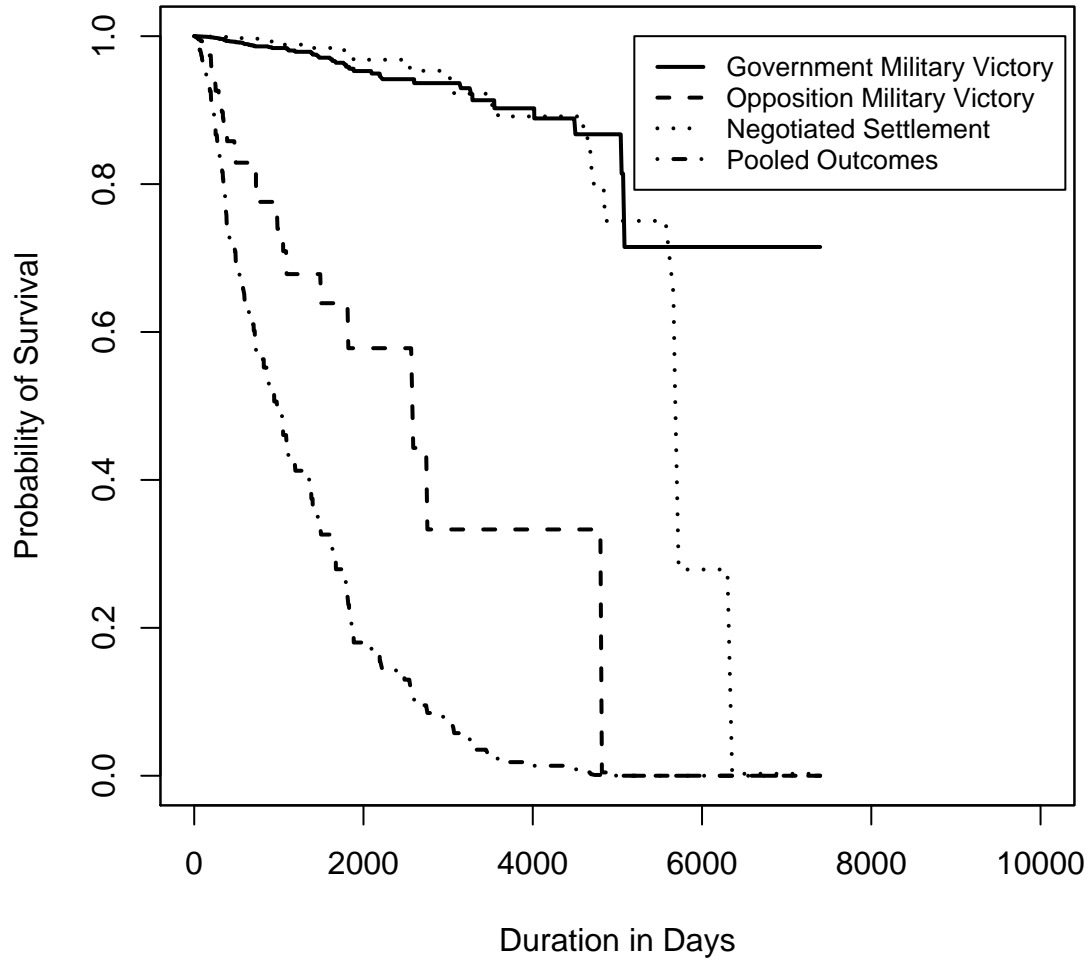X-axis: Duration in Days

Figure 2. Intervention for Opposition

Figure 3. Balanced Intervention