EC3320

2016-2017

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Lecture 10. Coups and Assassinations

The Dube et al. paper continues the theme from lecture 9 of using stock market prices to generate insights into political violence.

The form of political violence they consider is regime change through CIA-supported coups, i.e., “a sudden, violent, and illegal seizure of power from a government”.

There have been many coup attempts, successful and unsuccessful, over the years.

Yet the authors include only 5 coup attempts in their analysis so we need to ask – why only these 5?

It is important to understand Dube et al.’s selection mechanism because there is a danger that the authors might just select cases that work well for their theory.

Dube et al. use three selection criteria:

1. They must be able to establish a timeline of events as seen by the CIA at the time.

2. There has to have been at least one secret event authorizing a coup.

3. There had to have been at least one publicly traded multinational firm whose property was expropriated by the regime against which the coup is directed – this criterion is crucial for the whole research programme because Dube et al. need to have a stock price to track or else their whole idea is worthless.

The table on slide 4 gives a list of CIA “projects”. You can see why Dube et al. selected the five coups that they did – Iran, Chile, Guatemala, Congo (DRC) and Cuba.

Table I
Coup Selection

Project	Country	Year	Planning Docs Declassified	Description	Coup	Exprop.
Ajax	Iran	1953	Yes	Coup against Mossadeq	Yes	Yes
FU/Belt	Chile	1970-73	Yes	Coup against Allende	Yes	Yes
Bloodstone	Germany	1946	No	Recruitment of Nazis	No	No
Brushfire	US	1955	Yes	Propaganda at Universities	No	No
Camelot	Chile	1960s	No	Funded Anthro. Research	No	NA
ST/Circus	Tibet	1955	No	Trained Tibetan Rebels	Yes	No
Democracy	Nicaragua	1985	No	Anti-Sandinista Operations	No	Yes
IA/Feature	Angola	1975	No	Supported Savimbi	No	Yes
Fiend	Albania	1949	No	Insurgency	Yes	No
Fortune/PB/Success	Guatemala	1952-54	Yes	Coup Against Arbenz	Yes	Yes
PM/Forget	All over	1950s	No	Pro-U.S. Media Distortion	No	NA
Haik	Indonesia	1956/57	No	Military Support for Rebels	Yes	Yes
HardNose	Vietnam	1965	No	Disrupt Viet Cong Supplies	No	No
Momentum	Laos	1959	No	Trained Hmong in Laos	No	No
Mongoose	Cuba	1961	Yes	Post-Bay of Pigs Operations	No	Yes
Opera	France	1951	No	Electoral Manipulations	No	No
Paper	China	1951	No	Invasion from Burma	No	No
Stole	N. Korea	1950/51	No	Sabotage	No	No
Tiger	Syria	1956	Yes	Assassination Attempts	No	No
Washtub	Guatemala	1954	Yes	Anti-Arbenz Propaganda	No	Yes
Wizard	Congo	1960	Yes	Lumumba Assassination	Yes	Yes
Zapata	Cuba	1960-61	Yes	Bay of Pigs	Yes	Yes

Notes: (1.) Project is the name of the operation, (2.) Country is the target country of the operation, (3.) Year is the year when the operation was carried out, (4.) Planning documents records yes if the planning documents are publicly available, (5.) Description is a description of the operation, (6.) Coup is recorded as yes if a coup was planned as part of the operation and no otherwise, and (7.) Exprop. refers to whether or not the regime nationalized (or expropriated) property from multinational firms operating within the country.

Notice that the events described in Table 1 happened a long time ago. This is because:

1. Dube et al.'s approach relies on having documents that were secret at the time and it takes a while before secret documents move into the public domain.

2. It is likely that the CIA tended to take bigger initiatives, like secret coups, in the 1950's through 1970's than it does now.

Table 2 shows the "authorization events" that are incorporated into the analysis.

Table II
Authorization Event Selection

Date	Country	Description	Good	Cancelled
September 15, 1970	Chile	Nixon Authorizes Anti-Allende Plan (Incl. Poss. Coup)	Y	N
January 28, 1971	Chile	40 Committee Appropriates $1.2 Million	Y	N
October 26, 1972	Chile	40 Committee Appropriates $1.4 Million	Y	N
August 20, 1973	Chile	40 Committee Appropriates $1 Million	Y	N
August 18, 1960	Congo	Eisenhower Endorses Lumumba's Elimination	Y	Y
September 12, 1960	Congo	Belgian Operation Barracuda Begins	Y	Y
October 11, 1960	Congo	Operation Barracuda Cancelled	N	Y
December 5, 1960	Congo	CIA Stops Operation	N	Y
January 18, 1961	Congo	Lumumba Secretly Killed	Y	N
March 17, 1960	Cuba	Eisenhower Approves Plan to Overthrow Castro	Y	N
August 18, 1960	Cuba	Eisenhower Approves $13 Million to Overthrow Castro	Y	N
January 30, 1961	Cuba	Kennedy Authorizes Continuing Bay of Pigs Op	Y	N
November 4, 1961	Cuba	Operation Mongoose Planning Authorized	Y	Y
February 26, 1962	Cuba	Operation Mongoose Scaled Back	N	Y
October 30, 1962	Cuba	Operation Mongoose Cancelled	N	Y
August 18, 1952	Guatemala	DCIA Approves PBFortune (Coup to Overthrow Arbenz)	Y	Y
October 8, 1952	Guatemala	PBFortune Halted	N	Y
December 9, 1953	Guatemala	DCIA Approves PBSuccess (Coup to Overthrow Arbenz)	Y	N
April 19, 1954	Guatemala	Full Approval Given to PBSuccess	Y	N
June 19, 1953	Iran	CIA/MI6 Both Approve Coup	Y	N
July 1, 1953	Iran	Churchill Approves Coup	Y	N
July 11, 1953	Iran	Eisenhower Appoves Coup	Y	N

Notes: (1.) Date is the date of the event, (2.) Country is the target country of the coup attempt, (3.) Description gives a brief description of the event, (4.) Good is coded as Y if the event should raise the share value of the company and N if the event should lower the share value of the company, (5.) Cancelled is coded as Y if the operation was cancelled and N if it was executed, (6.) The 40 Committee was the subgroup of the executive branch National Security Council responsible for authorizing covert actions after 1964.

The column labelled “Good” shows codings of “Y” for events that are considered good for stock prices of the firms being considered and “N” for events that are considered bad for the stock prices of these firms.

But we need to remember that all these events were meant to be secret at the time so they should not have had immediate effects on stock prices – how can investors react to events they do not know about?

Here are a few remarkable facts on Guatemala:

1. The United Fruit Company (UFC) owned more than 40% of the land in Guatemala.

2. The Director of the CIA (Alan Dulles) had been on the Board of UFC.

3. A former CEO of UFC (Thomas Dudley Cabot) was Director of International Security Affairs in the State Department and his younger brother (John Moore Cabot) was Secretary of Inter-American Affairs.

Guatemala is probably the most cartoonish of these coups but all of them are pretty interesting stories. If you are interested you should read the appendix to the Dube et al. paper and also maybe listen to this clip.

Slide 9 gives information on the expropriated companies covered by Dube et al..

Table III
Summary Statistics

Variable										
Company	Country	N	4-Digit SIC	Market Cap	Exprop. Value	Exposure	Mean (Raw Return)	SD (Raw Return)	Volume	Daily Avg. NYT Stories
Anaconda Co	Chile	2224	3333	4.80E+08	3.20E+08	0.6666	0.0000	0.0234	24298.61	0.5494
Bethlehem Steel Corp	Chile	2225	3312	9.79E+08	2.50E+07	0.0255	0.0002	0.0177	36475.6	0.5494
Cerro Corp	Chile	2224	1031	1.53E+08	1.41E+07	0.0923	-0.0001	0.0231	11858.5	0.5494
General Tire & Rubr Co	Chile	2225	3011	3.29E+08	1.20E+07	0.0365	-0.0002	0.0188	14514.7	0.5494
International Tel & Teleg Corp	Chile	2223	3662	2.57E+09	1.07E+08	0.0417	0.0000	0.0183	61939.7	0.5501
Kennecott Copper Corp	Chile	2225	3331	1.33E+09	2.17E+08	0.1633	0.0002	0.0194	31554.1	0.5494
Union Miniere	Congo	1124	1021	1.85E+11	6.25E+10	0.3379	-0.0009	0.0268		0.8823
American Sugar Refng Co	Cuba	2085	2061	5.84E+07	5.52E+07	0.9452	0.0007	0.0167	709.2	2.6749
Canada Dry Corp	Cuba	2088	2090	4.90E+07	1.11E+06	0.0227	0.0003	0.0127	1949.1	2.6733
Coca Cola Co	Cuba	2087	2090	6.05E+08	1.87E+07	0.0310	0.0005	0.0115	2301.3	2.6592
Colgate Palmolive Co	Cuba	2087	2841	2.79E+08	9.88E+06	0.0354	0.0006	0.0167	3880.8	2.6740
Continental Can Inc	Cuba	2089	3411	5.55E+08	6.07E+06	0.0109	-0.0001	0.0165	4590.7	2.6696
Freeport Sulphur Co	Cuba	2089	1477	2.26E+08	6.02E+07	0.2658	0.0002	0.0171	2730.5	2.6725
International Tel & Teleg Corp	Cuba	2087	3662	5.40E+08	8.90E+07	0.1649	0.0005	0.0206	11711.5	2.6714
Lone Star Cement Corp	Cuba	2087	3272	2.52E+08	1.69E+07	0.0672	0.0001	0.0163	3543.9	2.6716
Swift & Co	Cuba	2088	2011	2.44E+08	4.05E+06	0.0166	0.0000	0.0127	2607.2	2.6738
United Fruit Co	Cuba	2088	2062	3.03E+08	5.88E+07	0.1941	-0.0002	0.0165	7255.9	2.6733
Woolworth F W Co	Cuba	2088	5331	5.58E+08	6.26E+06	0.0112	0.0002	0.0106	3537.8	2.6655
United Fruit Co	Guatemala	3469	120	5.31E+08	7.83E+07	0.1475	0.0001	0.0116	3412.3	0.2170
Anglo-Iranian	Iran	2391	2910	7.46E+09	2.31E+09	0.3103	0.0006	0.0204		0.7525

Notes: (1.) Summary statistics by country and company are shown over the event window, (2.) N gives the number of observations for the majority of listed variables for a given company in a given country; in some cases, particular variables are missing for a few days for a given company/country, (3.) Market Cap is the average price times the outstanding shares starting two years before the nationalizing regime comes to power and ending one year before the nationalizing regime comes to power, (4.) Expropriated Value is the dollar amount of the assets that were expropriated from the company by the coup country government, (5.) Exposure is the ratio of nationalized to total assets for the company/country, (6.) Raw returns and volume are at the daily level, (7.) Daily Average NYT Stories are daily counts of articles in the New York Times which mention both a country and the country's leader by name.

Dube et al. estimate this equation:

$$R_{ft} = \mathbf{X}_t \boldsymbol{\beta}_f + \gamma_c E_{ft}(k) + \epsilon_{ft}$$

R_{ft} - the one-day return for the stock of firm f on day t

X_t - a vector of four "Fama-French" factors that are often used to explain stock prices…you should think of these as control variables

$E_{ft}(k)$ - the "exposure" of firm f on day t in a model for which we assume that a firm is exposed for k days after an "authorization event"….this is the key variable and slide 11 will be completely about it

ε_{ft} - a random shock affecting firm f at time t

Let's take a close look at $E_{ft}(k)$

There are two components to the concept of "exposure"

1. A firm is exposed at time t if there was an authorization event in its country less than k days ago.

2. The quantity of exposure for an exposed company is equal to the ratio of the value of assets expropriated to total assets (see the exposure column of slide 9).

So every time there is an authorization the exposure variable gets turned on for k days for firms in the country that are affected by the event – the more a firm's assets have been expropriated (relative to the total assets of the firm) the higher will be the setting for the exposure variable.

Dube et al. estimate separate models for a bunch of different values of k – from 1 to 21.

The main object of interest in these estimates are the coefficients - γ_c

"c" stands for country – there is a separate coefficient estimate for each country

γ_c can be viewed as the average daily return to the stock prices of exposed firms per unit of exposure within a window of k days after an authorization event. When you multiply these estimates by the number of days of exposure you get something which can be described as cumulative average returns.

Slide 13 gives a table of estimates of γ_c's. Slides 14 and 15 displays the same information on graphs.

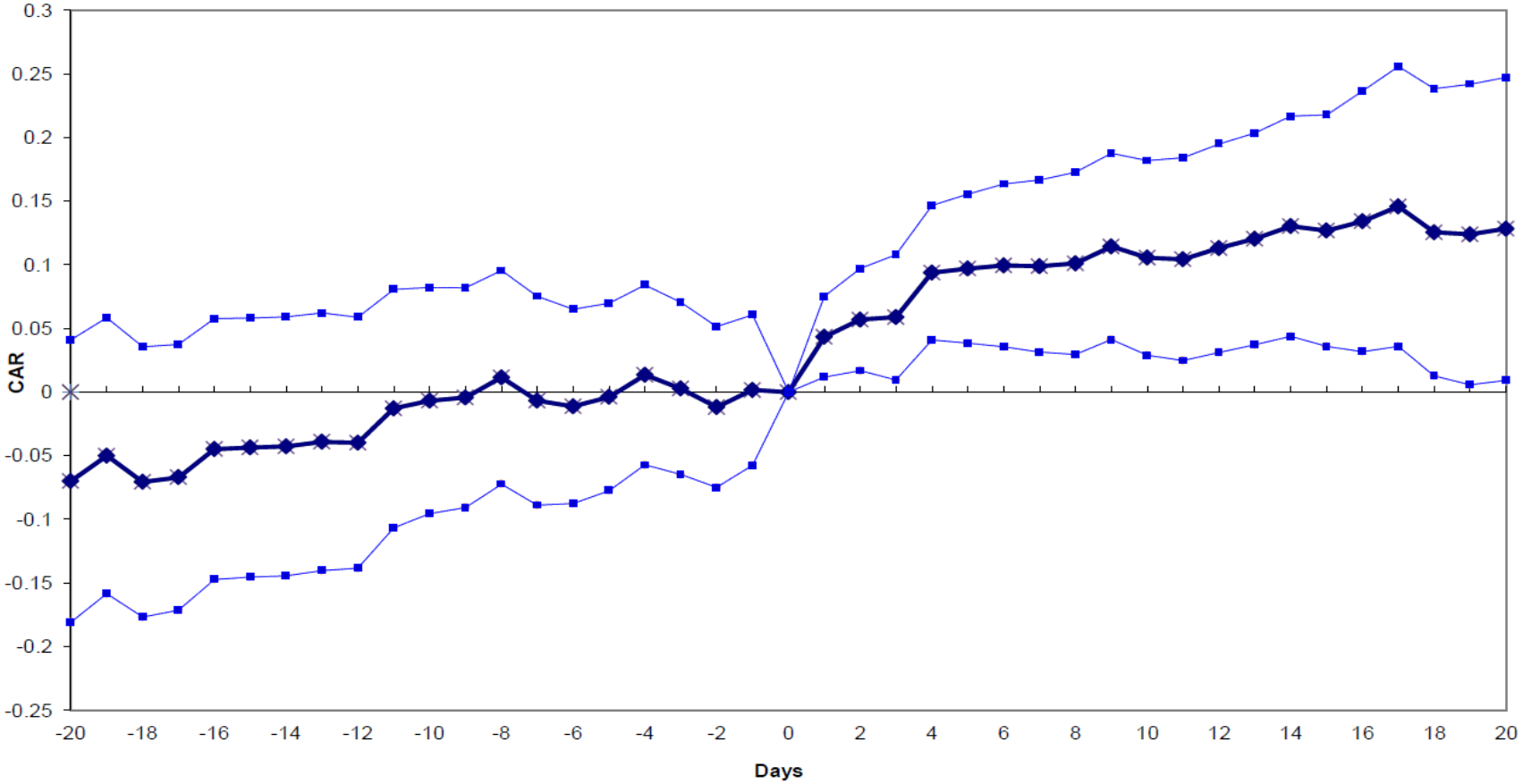
Table IV
Effect of Secret Coup Authorizations on Stock Returns

Main Effects - Cumulative Abnormal Returns

	(0,0)	(0,3)	(0,6)	(0,9)	(0,12)	(0,15)
All Coups	0.0435	0.0938	0.0990	0.1055	0.1204	0.1342
	(0.0162)***	(0.0270)***	(0.0345)***	(0.0390)***	(0.0424)***	(0.0522)**
	22157	22157	22157	22157	22157	22157
Successful Coups	0.0551	0.1208	0.1274	0.1309	0.1459	0.1640
	(0.0201)***	(0.0336)***	(0.0425)***	(0.0481)***	(0.0523)***	(0.0647)**
	8555	8555	8555	8555	8555	8555
Cancelled Coups	0.0729	0.1341	0.1414	0.1359	0.1564	0.1971
	(0.0337)**	(0.0546)**	(0.0681)**	(0.0730)*	(0.0777)**	(0.1018)*
	15257	15257	15257	15257	15257	15257
Chile	-0.0095	0.0172	0.0003	0.0214	0.0183	0.0104
	(0.0066)	(0.0274)	(0.0373)	(0.0491)	(0.0510)	(0.0620)
	6091	6091	6091	6091	6091	6091
Congo	0.1667	0.2270	0.2014	0.2429	0.2283	0.2581
	(0.0771)**	(0.1196)*	(0.1335)	(0.1426)*	(0.1546)	(0.1719)
	421	421	421	421	421	421
Congo-Belgium events	0.2730	0.2632	0.3179	0.4260	0.3914	0.4622
	(0.0794)***	(0.1895)	(0.1972)	(0.2029)**	(0.2182)*	(0.2260)**
	421	421	421	421	421	421
Cuba	-0.0030	-0.0141	-0.0147	0.0039	0.0183	0.0147
	(0.0079)	(0.0125)	(0.0178)	(0.0202)	(0.0222)	(0.0263)
	13602	13602	13602	13602	13602	13602
Guatemala	0.0491	0.1650	0.2049	0.1365	0.2011	0.1859
	(0.0203)**	(0.0530)***	(0.0896)**	(0.1136)	(0.1274)	(0.1662)
	1234	1234	1234	1234	1234	1234
Iran	0.0144	0.0739	0.1030	0.1229	0.1359	0.2017
	(0.0110)	(0.0184)***	(0.0428)**	(0.0385)***	(0.0349)***	(0.0792)**
	809	809	809	809	809	809

Notes: (1.) For single country regressions, the reported coefficient is on an indicator for authorization events interacted with company exposure, muliplied by the length of the window, (2.) Multi-country regressions report the mean of the country coefficients, (3.) All regressions control for an interaction of a company dummy (or country-specific company dummy for multi-country regressions) with the four Fama-French factors, (4.) All dates where a company changed its name or changed its outstanding shares by more than 5% were dropped, (5.) One day price changes greater than 50% in magnitude were dropped, (6.) "Successful coups" excludes Cuba, (7.) "Cancelled coups" only uses authorizations and deauthorizations of coups that were eventually cancelled, (8.) Column numbers at the top in parentheses denote the number of days before and after the authorizations which are included as part of the dummy variable for the authorization event, e.g., (0,3) refers to the return between the event date and three days after the event date, (9.) Standard errors reported in parentheses are the maximum of clustered by company, clustered by date, and robust, (10.) Statistical significance at 10%, 5% and 1% levels is denoted by *,**, and *** respectively.

Figure I
Cumulative Abnormal Returns - All Countries



Notes: (1.) The thicker line (and the diamond symbols) represent the average of country-specific coefficients on an indicator for authorization events interacted with company exposure, muliplied by the length of the window, (2.) The horizontal axis labels denote the number of days before or after the authorizations which are included as part of the dummy variable for the authorization event, e.g., 4 refers to the return between the event date and four days after the event date while -4 refers to the return between four days prior to the event date and the event date, (3.) All regressions control for an interaction of a country-specific company dummy with the four Fama-French factors, (4.) All dates where a company changed its name or changed its outstanding shares by more than 5% were dropped, (5.) One day price changes greater than 50% in magnitude were dropped, (6.) The thinner lines (and square symbols) represent the 95% confidence interval using standard errors that are the maximum of clustered by company, clustered by date, and robust.

Figure IIa
Chile Cumulative Abnormal Returns

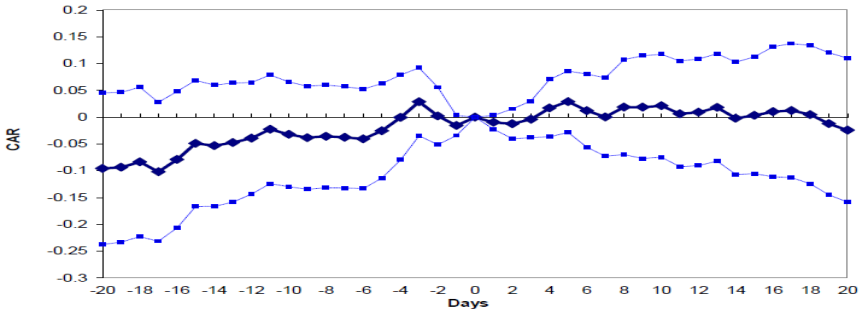


Figure IIb
Congo Cumulative Abnormal Returns

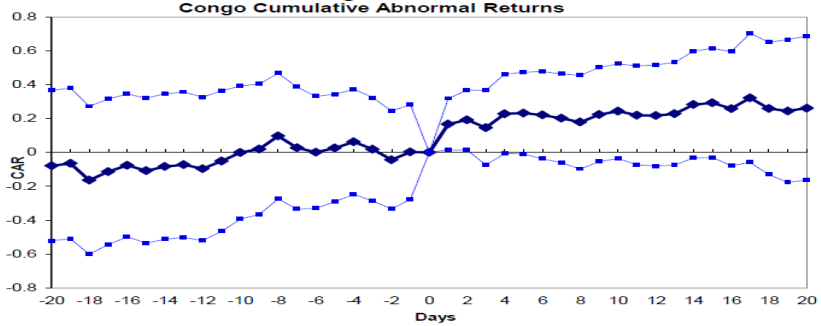


Figure IIc
Congo (Belgium events only) Cumulative Abnormal Returns

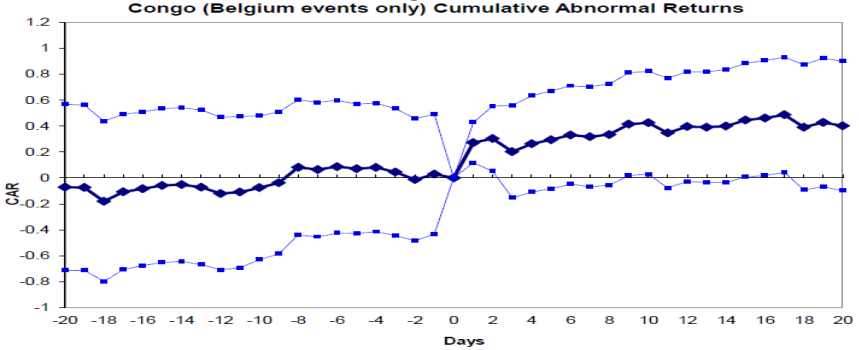


Figure IId
Cuba Cumulative Abnormal Returns

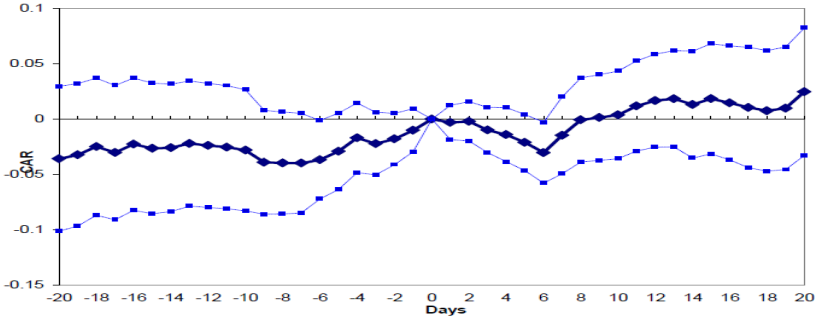


Figure IIe
Guatemala Cumulative Abnormal Returns

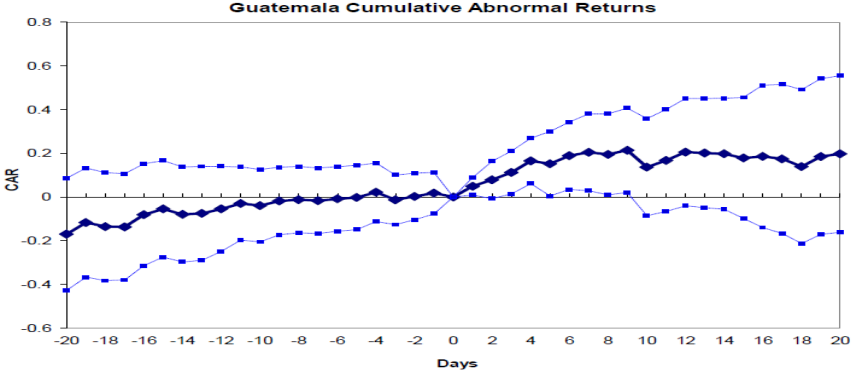
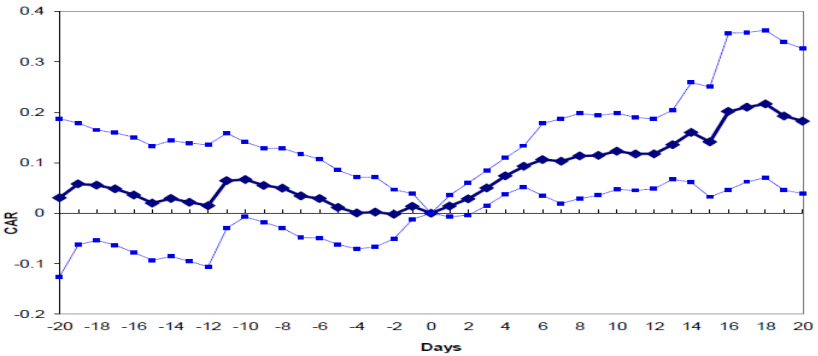


Figure IIf
Iran Cumulative Abnormal Returns



Notes: (1.) The thicker line (and the diamond symbols) represent the coefficients on an indicator for authorization events interacted with company exposure, muliplied by the length of the window, (2.) The horizontal axis labels denote the number of days before or after the authorizations which are included as part of the dummy variable for the authorization event, e.g., 4 refers to the return between the event date and four days after the event date while -4 refers to the return between four days prior to the event date and the event date, (3.) All regressions control for an interaction of a company dummy with the four Fama-French factors, (4.) All dates where a company changed its name or changed its outstanding shares by more than 5% were dropped, (5.) One day price changes greater than 50% in magnitude were dropped, (6.) The thinner lines (and square symbols) represent the 95% confidence interval using standard errors that are the maximum of clustered by company, clustered by date, and robust.

There is good evidence on the last three slides that stock prices of exposed firms react to supposedly secret events that increase or decrease the probability of coups.

The evidence is most compelling when the countries are pooled together.

Chile and Cuba do not look like they fit the pattern.

Congo, Guatemala and Iran do fit the pattern, especially Guatemala and Iran.

The results suggest that US foreign policy was operating as a tool of a handful of private companies and the individuals involved were profiteering off their influence on the US government.

Assassinations

The Jones and Olken paper spots a research opportunity that is quite good for two main reasons.

1. Assassinations are common so it makes sense to try to understand what kinds of effects they may have.

2. There is a substantial random component affecting whether or not each assassination attempt succeeds.

The randomness is actually an advantage from a research perspective because it makes comparisons between successful assassinations and failed assassinations resemble a controlled experiment. The next slide helps us to understand this point better.

Suppose we want to know if assassinations of political leaders during an armed conflict tend to make the conflict more intense, i.e., we want to know if violence increases after a successful assassination. Now suppose that:

1. After rebel groups receive secret US support they tend to intensify their war effort.

2. Assassination attempts made by rebel groups are more likely to succeed if the US is supporting them than if the US is not supporting them.

Thus, the arrival of US aid will cause both more fighting and more favourable assassination outcomes but successful assassinations will not necessarily cause intensified fighting.

On the other hand, if success or failure of an assassination is determined by a coin flip and we observe that fighting tends to intensify after success and not intensify after a failure that would be pretty good evidence that success actually causes the intensification of a conflict.

Jones and Olken collect data on “all publicly reported assassination attempts for national leaders since 1875.

They come up with 298 attempts, including 59 successes and 47 cases they classify as not being “serious attempts”, where a “serious attempt” means that the assassin(s) used his weapon.

It is worth taking a look at Table 1 in the paper to see the list of successful assassinations but I will not reproduce the list here.

The table on the next slide tells you about the assassination data.

TABLE 2—ASSASSINATION ATTEMPTS: SUMMARY STATISTICS

	Observations	Percentage	Probability leader killed		Bystander casualties	
			All attempts	Serious attempts	Mean killed	Mean wounded
Type of weapon						
Gun	161	55%	28%	31%	1.0	2.2
Explosive device	91	31%	5%	7%	5.8	18.2
Knife	23	8%	13%	21%	0.3	0.4
Other	19	6%	16%	18%	1.1	0.3
Unknown	10	3%	40%	44%	2.0	1.3
Location						
Abroad	12	4%	25%	30%	3.6	6.5
At home	286	96%	20%	23%	2.4	6.7
Number of attackers						
Solo	132	59%	24%	29%	0.4	2.5
Group	92	41%	22%	26%	5.6	11.0
Total attempts	298	n/a	20%	24%	2.4	6.7

Notes: There are 298 total assassination attempts observed and 251 serious attempts. Serious attempts are defined as cases where the weapon was actually used. Note that the location of the attack is observed in every case, but the type of weapon is observed in 288 cases and the number of attackers observed in 224 cases. For some attempts, multiple types of weapons were used, so that the weapon observation counts sum to 304. Attacks with weapons classified as "other" include arson, rocket attacks, stoning, and automobile crashes, among others. Also note that casualties among bystanders are skewed distributions so that the means are much larger than medians.

Let’s think a bit about this table.

Guns have the highest success probabilities. Does this mean that it is a mistake to attempt an assassination with a knife or explosives? Not necessarily since it may be impossible or very hard to get a clean shot at a target so it may be necessary to use a knife or explosives.

Explosives kill and wound many more people on average than the other weapons do. This should not come as a big surprise to us.

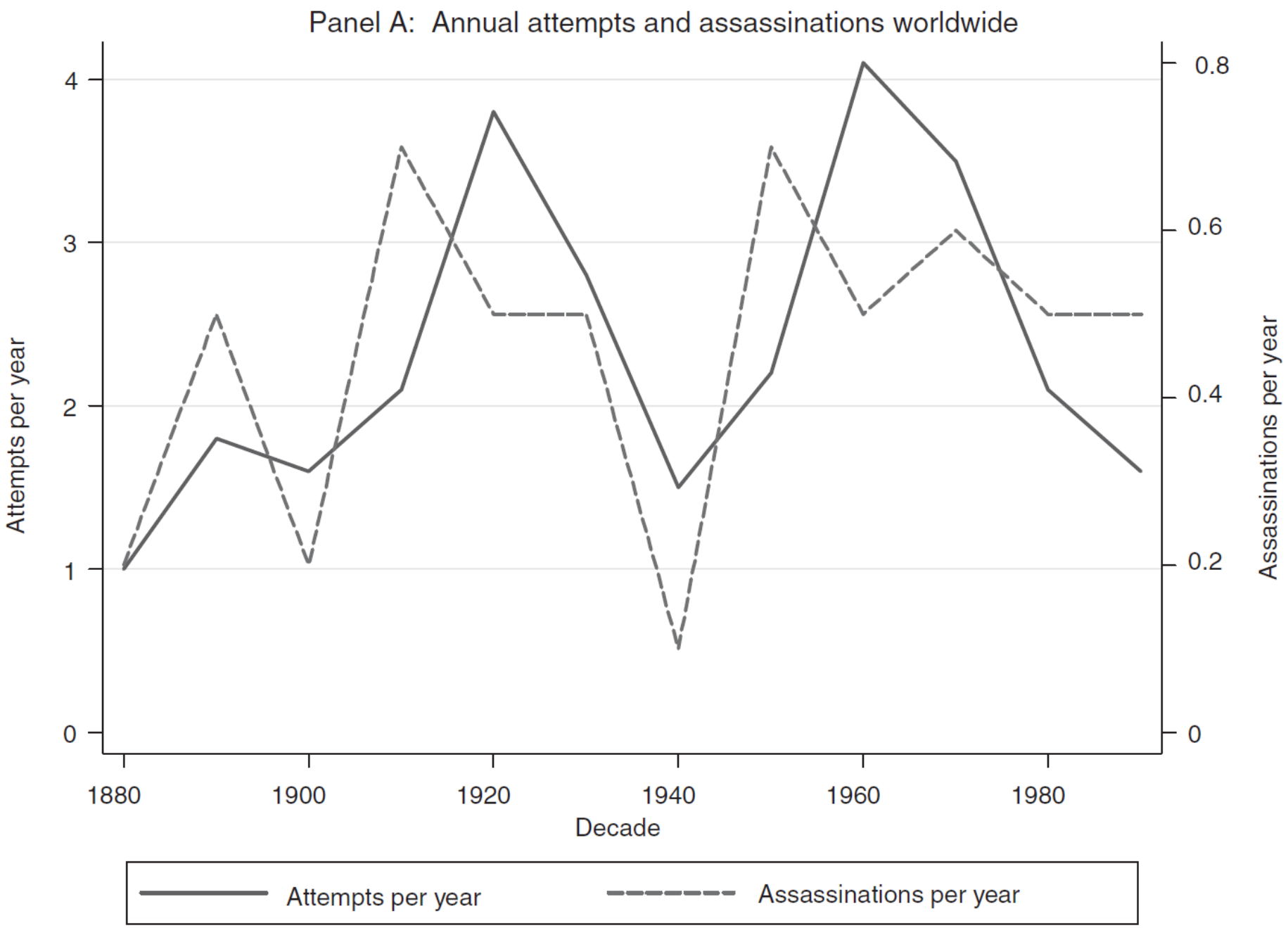
Notice the last comment in the footnote to the table. The high means for killed and wounded in explosions is largely because a few of these explosions caused quite a few casualties.

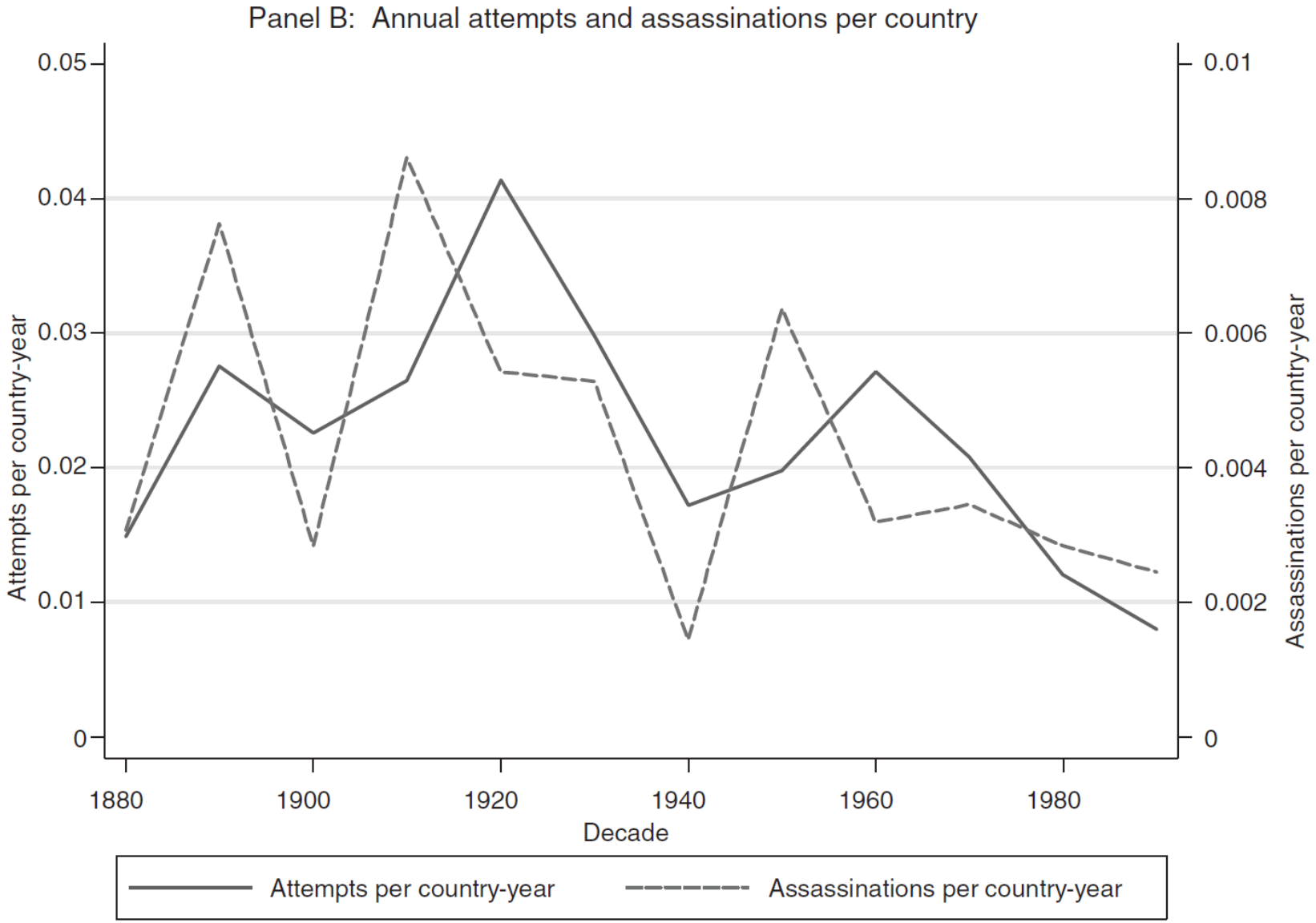
The next two slides show you the time series for assassination attempts and successful assassinations.

The first picture gives you the raw numbers while the second divides by the number of countries in world in each year. Since the number of countries grows over time this adjustment makes a big difference.

There is clearly a sharp increase in assassination activity at the end of the 19th and beginning of the 20th century followed by a decrease as we head for World War II.

After that there is a rise and then a fall in assassinations but the rise is less pronounced and the fall is more pronounced when you adjust for the growth in the number of countries than it is when you do not do this adjustment.


Panel A: Annual attempts and assassinations worldwide
Attempts per year
0
1
2
3
4
Assassinations per year
0
0.2
0.4
0.6
0.8
1880
1900
1920
1940
1960
1980
Decade
Attempts per year
Assassinations per year


Panel B: Annual attempts and assassinations per country
0.05
0.04
0.03
0.02
0.01
0
Attempts per country-year
0.01
0.008
0.006
0.004
0.002
0
Assassinations per country-year
1880
1900
1920
1940
1960
1980
Decade
Attempts per country-year
Assassinations per country-year

I would like to make two side points about these graphs.

1. It is much better to put labels right next to your curves rather than having a legend at the bottom of the picture. Every graphing programme lets you do it. This link shows you how to do this in Excel.

2. Having two curves referring to two different y axes is a really bad practice because doing this makes it really easy to deceive your readers. This blog post really drives the point home well. That said, the pictures manage to use the double y axis device without deceiving.

Jones and Olken are interested in two separate things.

Part of the paper is about political regimes. This would be a tangent for the course so I pass over it other than to note that they find assassinations seem to increase the probability for countries to transition from autocracy to democracy.

The rest of the paper is about the impact of assassinations on the intensity of armed conflict.

The table on the next slide tell you about the dependent variables used by Jones and Olken.

TABLE 3—KEY DEPENDENT VARIABLES: SUMMARY STATISTICS

	Historical period		
	Pre 1950	Post 1950	All years
Panel A: Institutions—Probability of change in political regime, year t + 1 versus year t − 1 (Polity IV data)			
Any change	3.4%	4.9%	4.3%
Democracy to autocracy	4.0%	4.7%	4.5%
Autocracy to democracy	2.9%	5.0%	4.2%
Panel B: Institutions—Percent leader transitions that are "regular" in next 20 years (Archigos data)			
All regimes	70.2%	67.3%	68.8%
Autocracy	59.6%	51.0%	55.1%
Democracy	81.9%	86.6%	84.1%
Panel C: Conflict—Probability of change in war status, year t + 1 versus year t − 1 (Gleditsch-COW data)			
Intense war begins	7.2%	4.4%	5.5%
Intense war ends	44.1%	30.0%	35.4%
Panel D: Conflict—Probability of change in war status, year t + 1 versus year t − 1 (PRIO/Uppsala data)			
Intense or moderate war begins	—	7.7%	7.9%
Intense or moderate war ends	—	37.4%	37.3%
Moderate war ends	—	29.2%	29.5%
Moderate war intensifies	—	17.4%	17.3%

Notes: Democracy and autocracy are defined using the POLITY2 variable in the Polity IV dataset, with POLITY2 values ≤ 0 indicating autocracy and > 0 indicating democracy. Panels A, C, and D consider transition probabilities. A transition occurs if the state one year later is different that than the state one year before. In Panel A, the transition probability "to Autocracy" ("to Democracy") is conditional on being in a democratic (autocratic) state. Panel B reports the percentage of leader transitions in the next 20 years that occur by "regular" as opposed to "irregular" means (i.e., coups). Panel B reports these percentages for all regime types and separately for country-years in autocratic states and democratic states. In panels C and D, the transition probability "War Begins" ("War Ends") is conditional on being at peace (at war). In panel D, the transition probabilities for "Moderate War Ends" and "Moderate War Intensifies" are conditional on being engaged in a moderate war, as defined by the PRIO/Uppsala dataset (see text).

We focus just on the war variables.

Intense War - This means that there are at least 1,000 battle deaths in a year

Moderate War - This means that there are between 25 and 999 battle deaths in a year. Before 1950 we do not have data on moderate wars.

A war, either moderate or intense, begins if there is a shift from peace to war. Similarly, a war ends if there is a shift from war to peace. A moderate war intensifies if there is a shift from moderate war to intense war.

Here is the type of equation that Jones and Olken estimate:

$$(1) \qquad y_i = \beta SUCCESS_i + \boldsymbol{\gamma}\mathbf{X}_i + \varepsilon_i,$$

where i indexes a country-year in which there is an assassination attempt, y_i is an outcome of interest (institutional change or change in war status), $SUCCESS_i$ is a dummy equal to one if a leader is killed in that country and year and zero if the leader survives any attempts, and $\mathbf{X}_i$ is a vector of other regressors. The key identify-

This is a simple linear regression with β being the parameter of interest. If the success or failure of an assassination attempt can be viewed as random then we can interpret β as the causal impact of success on the war variable.

The table on the next slide gives some evidence that the success of coups is pretty random.

TABLE 4—ARE SUCCESSFUL AND FAILED ATTEMPTS SIMILAR?

Variable	Success	Failure	Difference	*p*-val on difference
Panel A: Pairwise t-tests of sample balance				
Democracy dummy	0.362	0.344	0.018	0.80
	(0.064)	(0.035)	(0.072)	
Change in democracy dummy	−0.036	−0.022	−0.013	0.67
	(0.025)	(0.019)	(0.032)	
War dummy	0.263	0.318	−0.055	0.42
	(0.059)	(0.034)	(0.068)	
Change in war	0.036	0.011	0.025	0.71
	(0.058)	(0.034)	(0.067)	
Log energy use per capita	−1.589	−1.740	0.152	0.69
	(0.338)	(0.180)	(0.383)	
Log population	9.034	9.526	−0.492	0.05*
	(0.219)	(0.117)	(0.248)	
Age of leader	55.172	52.777	2.395	0.14
	(1.351)	(0.866)	(1.604)	
Tenure of leader	9.328	7.619	1.709	0.27
	(1.440)	(0.544)	(1.539)	
Observations	59	194		

Notes: Panel A reports the means of each listed variable for successes and failures, where each observation is a serious attempt. Standard errors are in parentheses. *p*-values on differences in the mean are from two- sided unpaired *t*-tests. All variables are examined in the year before the attempt took place. Change variables represent the change from three years before the attempt occurred to one year before the attempt occurred.

The table shows that no variable except population seems to be of any use in predicting whether or not an assassination attempt will succeed.

Of course, if success versus failure were determined by a coin flip then nothing would help to predict assassination outcomes.

So the table is consistent with the notion that the success variable is, indeed, fairly random.

The table on the next slide gives the main results pertaining to war.

TABLE 7—ASSASSINATIONS AND CONFLICT: CHANGE ONE YEAR AFTER ATTEMPT

	Gleditsch-COW dataset 1875–2002 (1)	Gleditsch-COW dataset 1946–2002 (2)	PRIO/Uppsala dataset 1946–2002 (3)
Panel A: Average effects			
Success	−0.072	0.041	0.162
	(0.068)	(0.093)	(0.071)
Parm. *p*-value	0.29	0.66	0.02**
Nonparm. *p*-value	0.57	0.83	0.03**
Observations	223	116	116
Data source	Gleditsch	Gleditsch	PRIO
Panel B: Split by war status in year before attempt			
Success × intense war	−0.255	−0.103	−0.110
	(0.144)	(0.257)	(0.294)
Success × moderate war			0.334
			(0.163)
Success × not at war	−0.024	0.020	0.070
	(0.068)	(0.086)	(0.057)
Intense war—parm. *p*-value	0.08*	0.69	0.71
Intense war—nonparm. *p*-value	0.13	1.00	0.69
Moderate war—parm. *p*-value	N/A	N/A	0.05**
Moderate war—nonparm. *p*-value	N/A	N/A	0.13
Not at war—parm. *p*-value	0.73	0.82	0.22
Not at war—nonparm. *p*-value	0.62	0.71	0.21
Observations	222	116	116
Data source	Gleditsch	Gleditsch	PRIO

Notes: See notes to Table 5. Nonparametric *p*-values are computed using Fisher's exact tests. In panel B, at war/not at war is defined by whether the relevant war concept (i.e., the concept used in the dependent variable) is positive in the year before the attempt. The main effect for the lagged war variable is also included in the regression in panel B.

*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

There are three main results:

1. There is some evidence that having a successful assassination attempt rather than a failed one increases the probability that an intense war will end (Panel B, column 1). The estimated effect is very large, more than 25 percentage points, but the effect has only marginal statistical significance. This effect only survives if you use the whole time period (1875 – 2002)

2. There is evidence that having a successful assassination attempt rather than a failed one increases the probability that a moderate war will turn into an intense war (Panel B, column 3). This effect is even larger, 33 percentage points and reaches a conventional statistical significance level.

3. There does not seem to be any association between assassinations and the start of new wars.