POLSCI.733
Maximum likelihood estimation

Term paper

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1. Introduction

Contemporary research holds that co-optation and political repression represent two mainstays of authoritarian regimes (Gerschewski, 2013, 21f.). Usually co-optation is defined as "the intentional extension of benefits to potential challengers to the regime in exchange for their loyalty" (Frantz and Kendall-Tylor, 2014, p. 333), and legislatures and parties are said to simplify those exchanges. Since the end of the Cold War those nominally democratic institutions have taken root in almost every authoritarian regime. In fact, by 2007 only Saudi Arabia, Oman, and the United Arab Emirates sustained neither political parties nor a publicly elected parliament. At the same time, however, authoritarian regimes did not forget about political repression. Restrictions on core political liberties and violations of physical integrity rights limit public criticism of the government, they undermine coordinated campaigns against it, and occasionally they even enforce commitments in authoritarian politics (Wintrobe, 1998, pp. 33,38). Yet, little is know about how co-optation and political repression interact.

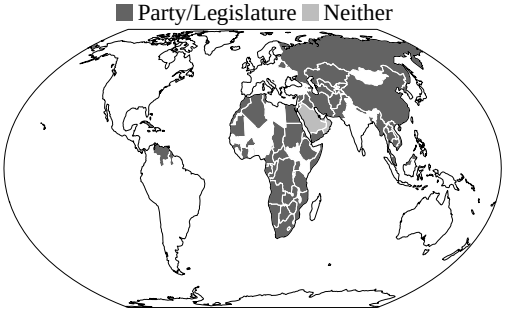

Figure 1: Parties and legislatures in authoritarian regimes, 2007

This is the point of departure for Erica Frantz' and Andrea Kendall-Taylor's (2014) recent publication 'A dictators toolkit: Understanding how co-optation affects repression in autocracies'. Based on extensive quantitative analyses they claim that co-optation has far-reaching consequences for how repression is used (Frantz and Kendall-Tylor, 2014, p. 332). More precisely, they find that increasing levels of co-optation lead dictators to reduce restrictions on empowerment rights, but at the same time they increase physical integrity violations. The authors explain this key finding by reference to the trade-offs involved in applying political repression. Restrictions on empowerment such as the freedoms of speech and assembly aim at the general public and characterize a diffuse approach to social control. Physical integrity violations such as torture and extra-judicial killings in contrast target specific individuals and are more attractive when the opposition is known. Nominally democratic institutions offer fora where regime opponents can make their demands heard and consequently they increase the available information on the political opposition. Under the bottom line, the institutions of co-optation generate

knowledge on threats to the regime and lead dictators to "shift their repressive approach in favor of physical integrity rights violations over empowerment rights restrictions" (Frantz and Kendall-Tylor, 2014, p. 337).

This paper replicates the work of Frantz and Kendall-Taylor. It provides evidence to the violation of key assumptions in the original publication and raises concerns with regard to predictive accuracy. Moreover, it casts doubt on a widespread estimation strategy that depends on lagged dependent variables to control for serial autocorrelation in pooled time-series cross-sectional designs. My extension .... The following section characterizes data and design of the original publication, and section three presents the replication results. Section four discusses the results of a modified estimation approach, and section five concludes.

2. Design & data

Covering the period from 1981 to 2004 Frantz and Kendall-Taylor analyze 154 dictatorships based on the "Autocratic regimes" data. The authors follow the example set by J. R. Vreeland (2008) and run ordered logistic regressions (c.f. Fox, 2008; Fox and Weisberg, 2011) to account for the ordinal characteristics of their dependent variables. Their research design inquires into the effect of co-optation on either type of political repression, empowerment rights restrictions and physical integrity violations, based on pooled time-series cross-section data. Furthermore, as institutional changes might take years before they impact government policies, Frantz and Kendall-Taylor use current levels of co-optation including a set of control variables (t_0) to predict future levels of political repression ($t_0 + 1$ to $t_0 + 5$). All models include a lagged dependent variable (t_0) to account for serial autocorrelation and standard errors are clustered at the country level as a remedy to heteroscedasticity (Beck and Katz, 1995). Finally, Frantz and Kendall-Taylor used multiple imputation to fill gaps in the raw data and to avoid inefficiency as well as biased estimates or inference (Honaker and King, 2010; Honaker, King, and Blackwell, 2011; King et al., 2001).

Information on political repression is drawn from two different sources. To assess the level of empowerment rights restrictions the authors rely on Freedom House's civil liberties scale, which captures the extent to which citizens enjoy the "freedoms of expression and belief, associational and organizational rights, rule of law, and personal autonomy from

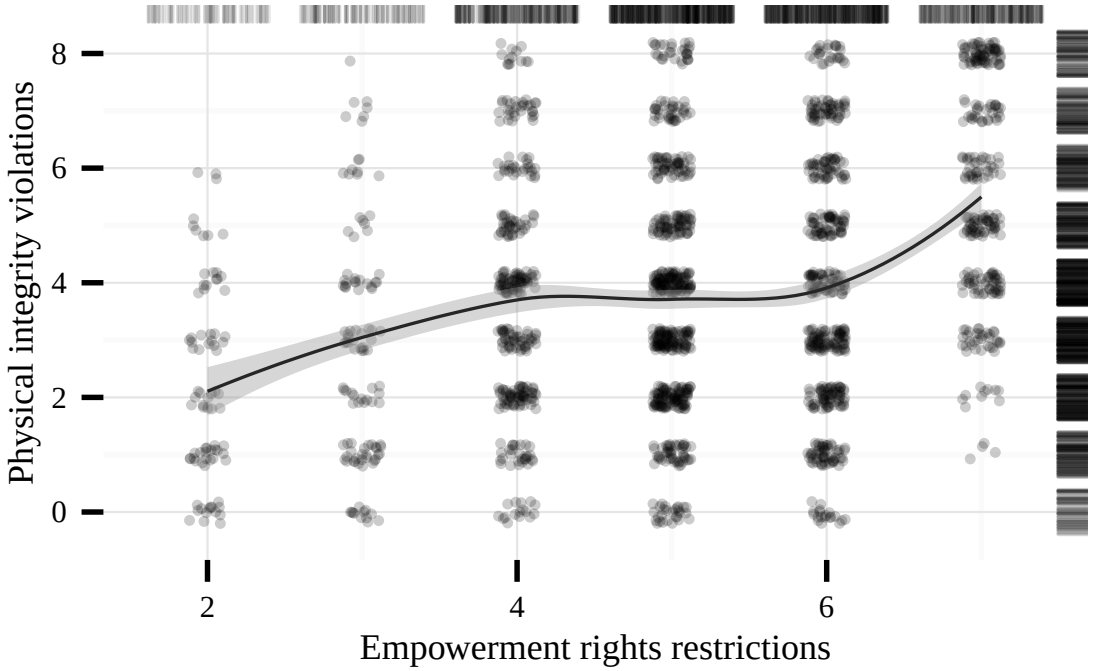

Figure 2: Political repression in authoritarian regimes between 1972 and 2007 with local non-parametric smoother and .95 per cent confidence envelope added.

the state" (Freedom House, 2010). In contrast to viable alternatives, Frantz and Kendall-Taylor argue, the Freedom House data is not endogenous to the existence of political parties and legislatures, i.e. their measurement of co-optation in authoritarian regimes. The scale runs from 1 to 7 whereby higher values denote more restrictions on empowerment rights. Physical integrity violations are measured using the physical integrity index from the CIRI human rights dataset, which provides "standards-based measures of government human rights practices" (Cingranelli and Richards, 2010, p. 402). It captures acts of torture, political imprisonment, extra-judicial killings, and disappearances on a scale from 0 to 8 whereby higher values denote more government respect for the sanctity of person. Frantz and Kendall-Taylor recode the index such that higher values denote more political repression.

The typology of political repression draws out meaningful differences between authoritarian regimes. This can be seen from Figure 2 which explores their relationship in the unimputed raw data. Here the full range of physical integrity violations is observed, but empowerment rights restrictions do not take their lowest possible value 1. Consequently, all authoritarian regimes restrict civil and political liberties, but they do not always dis-

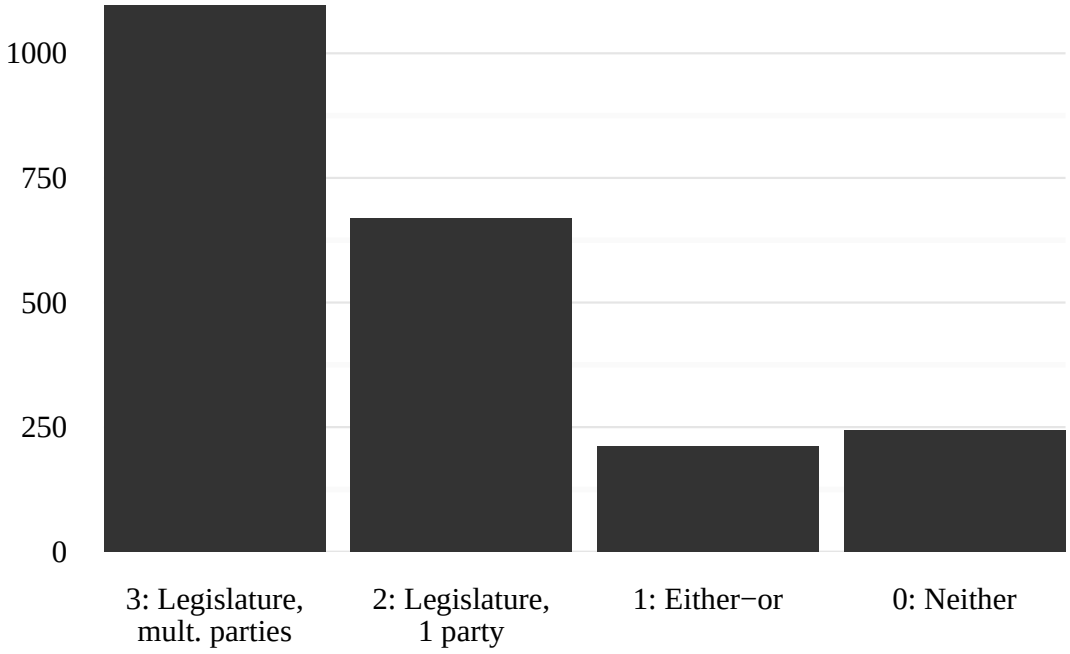

Figure 3: Patterns of co-optation in authoritarian regimes between 1972 2007, absolute frequencies.

respect the sanctity of the individual at the same time. Moreover, Pearson's r between both types of political repression is only 0.31, and the loess smoother gives reason to believe that this already weak relationship completely disappears in certain regions of the data. More precisely, the smoother stays flat across the most densely populated interval of empowerment rights restrictions (4 to 6) and no inferences whatsoever may be drawn from the level of one type of political repression on the other. Thus, there is preliminary empirical reason to believe that although authoritarian regimes use both types of political repression they differ to "the extent to which they rely on one type more than the other" (Frantz and Kendall-Tylor, 2014, p. 336).

Frantz and Kendall-Taylor assume that co-optation tips the scales of political repression. They measure their key explanatory variable by reference to the existence of political parties and legislatures. Information on either institution is drawn from the 'Democracy & Dictatorship' data (Cheibub, Gandhi, and J. Vreeland, 2010) which map their de facto existence. Frantz and Kendall-Taylor create an index that takes the value of 3 if there is a multi-party legislature, 2 if there is a single-party legislature, 1 if there is no legislature but at least one political party or, equivalently, if there is a non-partisan legislature, and

0 if neither exists. Furthermore, the authors presume that their index behaves linearly, and they justify their coding scheme with their interest in the "interactive effect" of legislatures and political parties (Frantz and Kendall-Tylor, 2014, p. 338). Figure 3 explores the empirical picture in the unimputed data. The majority of 2,221 non-missing country-year observations falls into the highest category.[1] Accordingly, more than half of all authoritarian regimes in the data sponsored multi-party legislatures. Single-party regimes come in second, and only a minority of observations ranks lower than 2 on the index. In sum, empirically speaking almost all authoritarian regimes co-opt via some combination of political parties and a legislature.

To account for alternative explanations of political repression Frantz and Kendall-Taylor include a large set of controls. Among these are counts of ongoing civil and interstate war as well as event counts of domestic political dissent in the form of riots, general strikes, and anti-government demonstrations. Moreover, the authors include counts of past leadership turnovers and attempted coups under the assumption that authoritarian regimes with a history of leadership instability are more willing to repress. Another set of controls maps socio-economic conditions of the regime. For instance, under the assumption that oil-revenues offer alternatives to political repression and institutionalized co-optation Frantz and Kendall-Taylor control for oil rents per capita. Moreover, since size and growth of the population have been discussed as potential causes for state repression in the past the authors control for those as well. Moreover, they add indicators on trade and economic well being as well as regime type. Finally, following the advice of Carter and Signorino (2010) cubic splines of leadership duration are added to the analyses (c.f. Frantz and Kendall-Tylor, 2014, p. 338). Sample information on these variables are given in the appendix.

[1] It is worth noting that this is a post-Cold-War development.

A. Summary statistics

Table 1: Summary statistics of control variables

Statistic	Min	Mean	Max	St. Dev.	N
Civil war	0	0.240	5	0.601	2,386
Interstate war	0	0.063	2	0.250	2,386
log(population)	4.215	8.777	14.074	1.712	2,352
log(GDP per capita)	5.139	7.913	10.807	1.058	2,352
Personal regime	0	0.292	1	0.455	1,857
Monarchy	0	0.097	1	0.297	1,857
Dominant party regime	0	0.489	1	0.500	1,857
Trade (Cold War	−50.046	1.003	90.470	7.694	2,049
Growth (Leadership duration	0	4.379	43	6.471	2,386
Past leadership fails	0	2.264	22	3.004	2,386
Past coups	−11.513	−3.867	10.811	8.328	2,250
Oil rents	0	0.090	5	0.442	1,857
Election year	0	0.358	23	1.378	1,857
Strikes	0	0.634	26	2.034	1,857

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