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Shooting for the Tsars: Heterogeneous Political Volatility and Institutional Change in Russia

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ABSTRACT

Can deliberate political instability, including terrorism and/or political violence, have an effect on changing formal political institutions? This paper offers two major contributions toward answering this question, one focused on data and one focused on methodology. In the first instance, this paper introduces a brand-new dataset of monthly political instability in Russia from 1788 to 1914; Czarist Russia was a country plagued by informal instability and political violence throughout the nineteenth century, and which saw waves of reform and reaction. As such, it makes an excellent test case for examining the relationship between informal political instability and formal political change. Secondly, in order to trace the evolution of Russia's political institutions in the presence of various forms of instability, I utilize non-traditional estimation in the form of Poisson, IV-Poisson-GMM, and logistic regressions to account for the slow-moving nature of political regime change. The results of these estimations show that some forms of instability did indeed "work" in forcing a modicum of liberalization. On the other hand, large-scale unrest or external conflict had no correlation with political regime change and actually appeared to be counterproductive.

KEYWORDS

Institutions; terrorism; political instability; regime change

Introduction

Perhaps not surprisingly, there is an impressive body of research in political science—as well as in economics—on political instability. In particular, the extant literature has focused on the effects of political instability on economic growth[1] and other economic attributes such as investment,[2] and how instability affects various political institutional settings such as democracy or autocracy,[3] or is in turn influenced by existing institutions.[4] In each of these instances, political instability has been treated either as an exogenous occurrence or a phenomenon contemporaneous with other outcomes, mainly in an attempt to draw a clear line of causality from instability to specific metrics (or from political institutions to instability).

However, as we know from historical episodes globally, political instability is not in actuality an exogenous shock, but is usually generated endogenously on purpose as a tactic to influence the political system.[5] This *deliberate* instability can take many forms: at the individual level, it can manifest itself in political violence or terrorism, directed at symbols of (or actual representatives of) a particular regime. Such instability could be planned or spontaneous, organized by a group or carried out by a "lone wolf," but it is generally

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carried out via individual agency in service of a political goal. At the same time, deliberate instability can encompass collective action-based events such as strikes, demonstrations, revolts, or armed rebellion, and like individual actions, they may be either spontaneous or organized. Finally, these bouts of deliberate instability may be further exacerbated by the external position of a country, especially if they are undergoing armed conflict with another state[6] and/if it is going poorly.[7]

Given this variety of types of deliberate political instability, the question becomes, does the instigation of political violence or targeted uprisings "work?" That is, can either individual acts of terrorism or collective acts of rebellion force regime change or, at the very least, create space for reform? And if so, which modalities are most effective? The heterogeneity of political violence may mean that some variants of terrorism may help to force a regime to political concessions, while at different times and in different circumstances, collective action may be the driver of regime change. In any event, there has been very little work testing the effectiveness of certain types of deliberate instability on either generating reform in existing political institutions and/or creating momentum toward systemic change in the long run; indeed, much of the literature has focused on either regime change or territorial concessions as a result of specific events of political instability, rather than stepping back and observing the effect of various types of instability exercised over a long period of time. This is especially crucial given the reality that political instability does not occur instantaneously, but often builds over a long period of time and tends to display a high level of persistence.[8]

Perhaps the largest example of regime change begat from deliberate instability occurred in Russia in 1917, following over a century of assassinations (both attempted and actual), peasant rebellions, strikes, and war. The purpose of this paper is to revisit our understanding the effects of political violence and instability on institutional structures over the long-term, using Russia as a case study. The overall weakness of the political system in Czarist Russia and its proclivity toward paroxysms of violence makes the country a perfect testing ground for examining the effectiveness of deliberate political instability in changing the character of the regime. While we have a wealth of historical accounts and political history regarding separate episodes of political instability, we have very little concrete statistical relationships between the two. Did terrorism, a manifestation of political volatility, have a tangible effect on the Russian regime? Did organized uprisings help to nudge Russia toward a more liberal democracy, or did it just engender a conservative backlash? Did different forms of deliberate instability work better or worse in forcing change?

This paper makes two major contributions to the existing literature: in the first instance, in order to test the hypotheses above, the paper introduces a brand-new and wholly unique monthly database of terrorism and political instability in Czarist Russia monthly from 1788 to 1914. Drawing on newspapers, published literature, and official records, I have created the most comprehensive database on informal political instability in Russia, delineated by type of instability and location.

The second major contribution of this paper is methodological: while the existing research, as mentioned above, focuses on the democratic consequences of political instability—mainly on public opinion and voting patterns—this note eschews (much as the Czar did) popular opinion to test directly if various terrorist acts were correlated with liberalization of the regime. This entails both using a new measure of regime openness which measures access to the political system and, more importantly, econometric techniques only beginning to be used in the study of institutions.[9] The reality of institutional

change is that it is slow-moving even over a period as long as 126 years, and to treat it as a continuous rather than lumpy process would result in biased or inaccurate results. Using the MaxRange indicator of political regimes,[10] this paper corrects for this persistent oversight in applying count data methods to understand how repeated political instability can affect infrequent formal political shifts.

The econometric results presented here show that individual acts of terror did in fact help to push Russia toward liberalism, while broad-based collective action in the form of uprisings and revolts appear to have a negative effect. In particular, successful assassinations in Russia and throughout the Empire appear to be correlated with some gradual liberalization of the political system, while large scale unrest and external conflict conversely led to strengthening of Czarist repression. Most importantly, terrorism was most effective when the country was at its most restrictive, being counterproductive once some measure of liberalization had been attained. These results have ramifications for the wider political science and economics literature beyond the specific case of Russia, as they show that the heterogeneity of political instability must be considered when ascertaining its possible effect on various regimes.

Theoretical background

The study of political instability has a long pedigree in political science and economics, with the extant literature bifurcated into examinations of the *drivers* of political instability and examinations of the *effects*. For the purposes of this paper, there is less relevance of the drivers of political instability, as it has been amply covered by others (see an excellent example in[11]); indeed, the literature has explored various forms of instability and attributed their onset or persistence to *inter alia* the level of economic development,[12] specific economic policies,[13] inequality and relatively unequal distribution of wealth,[14] proximity to instability,[15] and population size and their natural surroundings.[16] More important for our purposes is the research exploring how political instability occurs under different types of regimes,[17] and in particular the reality that political violence and deliberate instability is often the only way to influence the system.[18] Simply put, given the closed nature of decision-making in an authoritarian—and also a monarchical[19]—regime, various forms of political instability may have the overt goal of either changing policies within the system or overthrowing the regime and existing political institutions entirely (a driver of instability often, but not entirely, missing from democratic regimes).

Of greater relevance for this study is the existing literature focusing on the effects of various types of political instability, with most of the research in this vein focusing on either: (a) the modality of instability and agency, (b) the environment in which it occurs, and (c) the channels by which the instability influences formal political institutions. In reality, however, the papers focused on the mode of instability have been highly aggregated, a consequence of the fact (as Bowlsby et al note) that "state-level political instability [is] a catch-all category encompassing civil wars, democratic reversals, genocides and politicides, and state collapse."[20] This imprecision on the heterogeneity of deliberate political instability has then been reflected in empirical treatments of instability, with one of the most highly cited papers[21] using a principal components analysis to lump different types of instability together. The reality of the heterogeneity of deliberate political instability has been examined elsewhere in the literature, mainly, in single country studies, but usually with a focus on a particular type of instability, be it terrorism and political violence,[22] revolution,[23] external pressure,[24] or civil war,[25] rather than holistically approaching the spectrum of instability together.[26]

Along these lines, and similar to the drivers of political instability, the political science literature has homed in on the effectiveness of political instability in influencing a regime as dependent upon what sort of regime it is and, in particular, the state's capacity; this stratification by regime/strength thus also determines the channels by which a particular act of deliberate political instability may influence the regime, as not all channels are available in a monarchy or autocracy but which may be available in a democracy. For example, rather than studying the ability of targeted instability to directly alter political institutions, papers focused on democracies instead trace out the effect that political violence (as an example) has on the polity: for instance, Friedland and Merari[27] note that acts of terror without obvious political messages tend to harden attitudes against the perpetrators rather than create waves of sympathy, while violence against civilian targets also can harden a government's own resolve (on the other hand, military-related attacks can extract concessions from a government).[28] On the other hand, suicide bombings are regularly employed because they do actually work in forcing change of political policies, with a long list of territorial concessions in the 1980s and 1990s coming about due to increased political violence;[29] this could be because individual terrorist attacks could force the populace to become more dovish[30] or more religious.[31] In the aggregate, democracies tend to have the most to lose from bouts of sociopolitical instability, which may also be a factor in determining how individuals, non-state actors, or collective action may influence the regime.[32]

Autocracies and monarchies, on the other hand, are famously more stable and less affected by political instability in discrete bursts,[33] mainly due to either an ability to co-opt the rebellious[34] or via the mechanisms of repression which raise the cost of deliberate political instability, either at the individual[35] or collective level.[36] In theory, this leads to fewer incidents of political violence than in democracies,[37] but a corollary of this work makes such an outcome dependent upon the strength of the regime: intuitively, if political violence, terrorism, or large-scale unrest should occur in a weaker institutional environment, such political instability can be plausibly expected to have at least the probability of a modicum of success in changing the political order. The precise reason why terrorist attacks in a weak institutional environment may generate large responses is that repeated terrorist attacks can weaken a regime and perhaps even cause regime change. Indeed, the timing of terrorism itself in democracies is influenced by political cycles and the strength of incumbent governments,[38] but as also shown in Condra et al.,[39] terrorism may be most effective when used against weaker political institutions ("incomplete autocracies"), and governments perceived as having weaknesses may even invite more and specific types of terrorism or other types of political instability.[40] In such an environment, repeated deliberate political instability may actually be "feeling out" what is the best way to strike at an authoritarian regime, contingent on the costs incurred by merely existing within an authoritarian regime.

Examining the spectrum of instability in Czarist Russia

Russia under the Czars

The pre-revolutionary Russian Empire, with a political system built around the personage of the Czar, was well-known for having weak political institutions underpinning the state.[41] Specifically, Czarist Russia was characterized by a corrupt and inefficient bureaucracy,

overlapping administrative centers, and sudden shifts of policy due to the whims of the Czar himself. At the same time, however, the Czar's power was absolute, with an extensive security and regulatory apparatus which "maintained the state's priority over the individual," preserving a system which "stubbornly resisted fundamental change."[42]

The absolutist nature of the monarchy left no opportunities for political expression in the country throughout the eighteenth and nineteenth centuries, meaning any reforms which did occur came about as a result of bargaining within the elite structure and not from the Czar's subjects. Given the vast expanse of Russian territory (making the cost of administration high and requiring an elaborate system to ensure that the Czar's diktats reached to the hinterlands) and the relatively uneducated state of the populace (Langdon & Tismaneanu[43] note that, by 1897, only about 20 percent of the population could sign their own name), the Russian political system was built on subservience, meaning any move toward political consciousness would be lighting the spark to the Russian powder keg. Coupled with global movements such as the revolutions of 1848, the rise of socialism, and the disruption of the industrial revolution, political violence in all its forms became the preferred outlet for the political discontent of the bourgeoise[44] (see Figure 1). During this era, Russia thus became the birthplace of the modern variants of political violence, mainly targeted assassinations, bombings, and organized uprisings, with instability in Czarist Russia used exclusively for political ends, aimed at the political system in an attempt to either overthrow it or replace it wholesale.[45] Moving from mass unrest in the early nineteenth century, before the emancipation of the serfs in 1861, to revolutionary violence shortly thereafter and up until 1917, Russia ran the gamut of deliberate political instability.

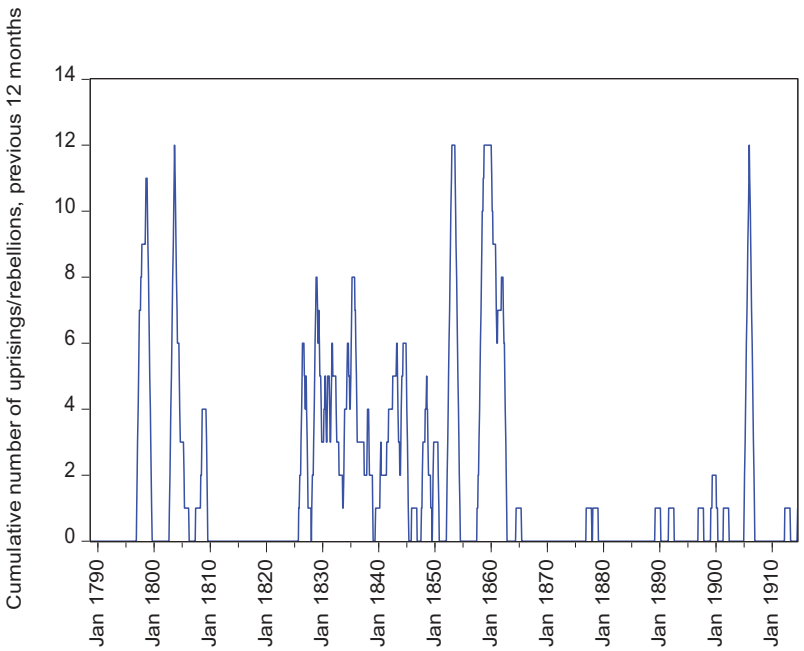

Figure 1. Cumulative number of uprisings/rebellions over the previous 12 months in Russia.

Empirical strategy and methodology

These stylized facts make Russia an excellent test case to understand the effects of various types of political instability on political institutions. To test for these effects econometrically, I employ an identification strategy which draws on the extant political science and economics literature to sketch a theory of political institutional change.

The accumulation of current research in this vein posits that the drivers of political change *in general* (and not just political instability) are many, including: endogenous changes in the ruling class (such as innate personality traits of leaders[46]), underlying political currents (including changes in prevailing ideas or narratives[47] and the current state of power relations,[48] global waves of political change or changes in neighboring countries,[49] ability for rulers to access resources to quell potentially troubling opposition,[50] overall economic conditions,[51] and, important for our purposes, the various manifestations of political instability.

These factors can be consolidated into three specific vectors as part of a formal model:

To apply this model to the Russian case, the Y variable in Equation 1 is the first hurdle, as broad annual indicators of political openness and/or executive constraints such as the Polity IV dataset show no variation for Russia throughout the entire 126 years under the Czar available in the data. Much better for the purpose outlined here is a monthly database of political indicators produced by researchers at Halmstad University in Sweden, covering political institutions and regime types on a monthly basis from 1789 to the present day.[52]

$$Y_t = \alpha + \gamma\ POLITICAL - INSTABILITY_t + \beta\ POLITICAL - INSTITUTIONS_t + \delta\ ECONOMIC - CONDITIONS_t + \epsilon_t \quad (1)$$

The "MaxRange" dataset offers a new way to conceptualize the extent of democratic access to the political system, and the headline "regime value" measure used here allows for fine gradations in the type of political institutions that exist in a country. Coded from 0 to 100, with higher numbers representing more democratic access and greater executive constraints, the regime value variable encapsulates the checks and balances within a system, particular institutional arrangements, and political competition. Thus, the use of the MaxRange regime variable is taken to be an imperfect proxy for political institutional change, albeit one which is directly related to our question of interest.

Turning to measuring terrorism itself, as noted above, a problem of existing literature is that it either collapses political volatility into one vector via principal components analysis (ignoring the heterogeneity of instability), or instead focuses only on one type of instability (e.g. terrorism or uprisings). To rectify this in the Russian case, I have created a brand-new monthly database which classifies political instability across the Russian empire from 1788 to 1914 according to its modality, target, and location (the taxonomy is shown in Table 1 and summary statistics for the data are given in Appendix A, Table A1).[53] Drawing on several Russian- and English-language sources (see Data Appendix), the taxonomy follows from insights on the heterogeneity of terror.[54] For the purposes of Equation 1, the month in which a particular act of volatility occurred is coded as a 1 and a 0 if no terrorism or unrest occurred. As attacks need to be substantial in order to induce any sort of attitudinal shift,[55] the database focuses only on "major" events, as described in Table 1.[56]

Table 1. Classification of informal political volatility in Czarist Russia

Type of volatility	Definition
Attempted assassinations Russia	An attack (bombing, mass shooting) which resulted in fatalities but was unsuccessful in assassinating the main target (Russian territory only, excluding the Caucasus, Poland, Ukraine, and Central Asia)
Attempted assassinations Empire	An attack (bombing, mass shooting) which resulted in fatalities but was unsuccessful in assassinating the main target (Russian Empire only, including the Caucasus, Poland, Ukraine, and Central Asia)
Assassinations Russia	A major public figure was assassinated on the territory of Russia; if shot in one month and died in another, month is coded 1 from the attack itself
Assassinations Empire	A major public figure was assassinated on the territory of the Russian Empire, including the Caucasus, Poland, Ukraine, and Central Asia. Same coding as above
Unrest Russia	Strikes, peasant uprisings, or other mass movements which resulted in fatalities or the use of state force to suppress; territory of Russia only
Unrest Empire	Same as unrest but only in Caucasus, Poland, Ukraine, and Central Asia
External Conflict	Russia's involvement in external conflict, wars, or interventions abroad

In addition to utilizing dummies for discrete terrorist events, it is perhaps more interesting to see if *prolonged* political instability had a bigger impact on the Czarist regime. To that end, the database also contains cumulative measures of terrorism, coded from 0 to 12, signifying the number of months in which a terrorist attack occurred within the previous twelve months. For example, if—as during the height of the socialist revolutionary campaign against the Czar—there were assassinations in each of the preceding ten months, a month would be coded as 10 in the database.

For the covariates shown in Equation 1, we are both helped and hindered. In the help column, the stability of the monarchy means that there was little endogenous political change, while political events such as elections were non-existent; thus, the *Political Institutions* variable in Equation 1 is a dummy for the month in which there was a transition of Czars due to death, the only reason why the regime would change absent revolution or conscious design.[57]

From the hindrance side, however, the paucity of monthly data on economic conditions in Czarist Russia means we will likely be unable to control for all of the various economic realities which could contribute to political change. In the first instance, although Russia was not highly integrated into global markets, it became more so over the nineteenth century and was sensitive to global economic conditions; for this reason, we include the price of gold in New York as a proxy for the world economy. Similarly, there are little indicators available for Russian economic conditions prior to 1880 (and even the industrial production indices which exist are on an annual basis). Thus, as a crude approximation of Russian economic prospects, we use ruble/Dutch guilder exchange rates, which have the bonus of having a monthly time series back to the 1700s.

As noted in the introduction, a difficulty in measuring institutional change directly is that traditional estimators treat change as continual, when in reality institutions are semi-permanent and given to long periods of stasis and sudden, abrupt changes (this is especially true in the quantification of institutions). This is indeed the case with the MaxRange variable, which is slow-moving over the period of 1789 to 1914 and shows only two discrete shifts. Given this reality, two estimation techniques are used to account for the slow-moving nature of institutional change: first, a negative binomial regression modeling the regime changes as similar to count data[58] or, more accurately, as an exceptional event of varying probability;[59] and second, an instrumental variable Poisson

generalized method of moments (IV Poisson-GMM) estimator to account for both the stochastic nature of regime change and possible endogeneity among the explanatory variables.[60]

The negative binomial model treats the slow-moving regime value Y_i as having a Poisson-gamma mixture distribution, where the mean of the regime value (denoted as μ) is conditioned on a baseline matrix of covariates X_t (including acts of terrorism) which describe the characteristics of Russia's political regime in a given time period *t*, and β, the matrix of parameter coefficients to be estimated:

$$\mu = \exp(X_t, \beta + \epsilon_t) \tag{2}$$

The distribution (conditional likelihood) of a regime shift given the presence of a terrorist attack can be expressed as:

$$\Pr(Y = y_i|\mu_t, \alpha) = \frac{\Gamma(y_i + \alpha^{-1})}{\Gamma(\alpha^{-1})\Gamma(y_t + 1)} \left(\frac{1}{1 + \alpha\mu_t}\right)^{\alpha^{-1}} \left(\frac{\alpha\mu_t}{1 + \alpha\mu_t}\right)^{y_t} \tag{3}$$

Given the possibility of endogeneity in political instability (i.e. previous period terrorism might induce current period terrorism), an additional test, the IV Poisson-GMM estimator[61] is used to account for the reality that macroeconomic and political outcomes are the product of previous and concurrent political and economic conditions. This model takes the general form of:

$$y_i = \exp\left(x_i'\beta_1 + y_2', {}_i\beta_2\right) + \epsilon_i \tag{4}$$

Where the regime value (*y*) is a function of a matrix of exogenous regressors (*x*'), endogenous regressors (shown in Equation 4 as y_2), and an error term ϵ (this model uses additive errors). GMM estimation then uses instruments for the endogenous regressors (denoted as to specify moment conditions that hold in the population, solving a minimization problem to make the sample-moment conditions as close to zero as is possible.

In this model, the endogenous regressor is assumed to be the proxy for political instability under examination at that moment in time, with the instrumentation strategy building on the vast literature on the economic and political determinants of terrorism. In particular, prevailing theories of political instability posit that poverty *per se* may not be a leading determinant of terroristic activity,[62] but rather dislocation and disruption caused by economic change.[63] Poorer socio-economic environments also lower the opportunity costs of terrorism, meaning that both lower levels of development and countries in transition may be prone to political violence and instability.[64] Moreover, highly publicized (and especially successful) political violence may induce others to commit political violence via a demonstration effect.[65] Finally, there is a clear connection between political repression and increases in terrorism or unrest,[66] as nonviolent routes are closed off. To accommodate all of these empirical findings, our instrument set uses lags of the regime variable, previous political instability, and lags of the economic variables as instruments.[67]

As a final dive into this data, given that we are examining political institutions and possible shifts, it may be interesting to look beyond average effects and see if political violence had an effect in shifting Russia from a "low" and repressive state to a (relatively more) liberal one. To that end, I also include a logistic regression (similar to Ulam,[68] who examines institutional change in Africa) which predicts the log odds (probability) of

reaching the "higher" state of a more liberal Russia based on a one unit increase in the political instability variables (whether discrete or cumulative events). Given the fact that terrorism and unrest was clustered over Russia's history, with some periods not having any instability, I have eschewed a multinomial logit based on the three actual states of Russia's political institutes and collapsed the two Max Range categories 2 and 4 into one "low" category and the category 17 as the "high" or "successful" category:

$$y_t = \begin{cases} 1 \; if \; MaxRange \; = \; 17 \\ 0 \; if \; MaxRange \; = \; 2 \; or \; 4 \end{cases} \tag{5}$$

With this binary variable created, we thus fashion a logistic regression as:

$$\ln\left(\frac{p_t}{1-p_t}\right) = \beta_0 + \beta_1 PoliticalInstability_t + \beta_2 XRate_t + \beta_3 Gold_t \tag{6}$$

Given collinearity with Czarist transitions (and the infrequence of their occurrence), the Czar dummy has been removed from this equation. Additionally, to counter heteroskedasticity of unknown form, robust standard errors are utilized in equation 6.

Results

Individual events

The first results of the tests of the effectiveness of individual acts of political violence in nineteenth century Russia are shown in Tables 2 and 3. The negative binomial and the IV-Poisson GMM regressions both model the Y variable, in this case the regime value, in log form, and thus the interpretation of our output is that a one unit increase in political volatility leads to an increase in the log count of the regime value by the value of the coefficient.

As can be seen across both the negative binominal (Table 2) and IV-Poisson regressions (Table 3), there is a clear pattern in the correlations, with different types of political instability having markedly different effects on political institutions in Czarist Russia—a result which should be expected given the heterogeneity of deliberate political instability. In the first instance, attempted assassinations in Russia have a small positive effect on the regime value and attempted assassinations in the Empire have exactly the opposite effect, but in neither case is there any statistical significance (either for the negative binomial or IV regressions). This changes when we examine successful assassinations, however, as both assassinations in Russia and the Empire appear to have had a salutary effect on the liberal stance of the Russian regime. Individual acts of terrorism, perhaps by eliminating conservative and reactionary officials, may have reassigned a greater weight to reformers in government, a reality which was seen especially during the massive waves of killings from 1904–1907. With security officials in particular being targeted, the overall shift in the elite in Russia moved toward a more liberal stance, perhaps allowing for more support of reform.

Interestingly, collective acts of rebellion—perhaps by not targeting individual policymakers but the regime as an abstraction—have exactly the opposite effect, with unrest in both Russia and throughout the Empire associated with much lower levels of liberalization. Seen through an economic lens, the rationale behind this may be clear, as the Czar had little incentive to assist those who pushed back against the system (a system which protected his own privilege). Moreover, throughout Russian history, collective acts of

Table 2. Results of negative binomial regressions, regime value versus political instability

	1	2	3	4	5	6	7
Terrorism variables							
Attempted assassinations Russia	0.08						
	0.47						
Attempted assassinations Empire		−0.31					
		*1.86**					
Assassinations Russia			0.58				
			*6.23****				
Assassinations Empire				0.33			
				*1.78**			
Unrest Russia					−0.167		
					*3.08****		
Unrest Empire						−0.17	
						*2.96****	
External Conflict							−0.18
							*3.00****
Control variables							
Price of gold	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02
	*3.55****	*3.52****	*3.27****	*3.51****	*3.86****	*3.27****	*3.52****
Ruble/Guilder Exchange Rate	−0.50	−0.51	−0.46	−0.50	−0.48	−0.48	−0.48
	*11.03****	*11.19****	*10.48****	*10.98****	*10.60****	*10.82****	*10.59****
Czar Transition	−0.32	−0.30	−0.27	−0.30	−0.32	−0.32	−0.28
	1.08	*1.05*	*0.95*	*1.02*	*1.12*	*1.10*	*0.98*
C	2.84	2.85	2.72	2.83	2.86	2.80	2.82
	*19.25****	*19.40****	*18.73****	*19.19****	*19.69****	*19.14****	*19.33****
R-squared	0.10	0.12	0.14	0.10	0.10	0.10	0.10
n	1157	1157	1157	1157	1157	1157	1157

Absolute value of t-statistics under coefficients. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table 3. Results of IV-poisson regressions, regime value versus political instability

	1	2	3	4	5	6	7
Terrorism variables							
Attempted assassinations Russia	0.39						
	0.51						
Attempted assassinations Empire		−0.92					
		1.37					
Assassinations Russia			1.54				
			*8.87****				
Assassinations Empire				1.17			
				*3.10****			
Unrest Russia					−0.23		
					*5.18****		
Unrest Empire						−0.22	
						*6.12****	
External Conflict							−0.19
							*7.17****
Control variables							
Price of gold	−0.02	−0.02	−0.011	−0.02	−0.02	−0.02	−0.02
	*7.96****	*7.93****	*4.29****	*7.49****	*7.44****	*7.14****	*7.82****
Ruble/Guilder Exchange Rate	−0.77	−0.61	−0.38	−0.53	−0.68	−0.71	−0.78
	*10.05****	*10.65****	*4.31****	*9.31****	*11.83****	*12.16****	*13.03****
Czar Transition	−0.45	−0.25	−0.16	−0.21	−0.33	−0.32	−0.31
	*1.77**	*3.62****	*3.02****	*3.51****	*4.33****	*4.08****	*3.03****
C	3.22	2.87	2.31	2.69	3.15	3.09	3.27
	*18.64****	*20.22****	*11.24****	*18.80****	*21.06****	*21.45****	*21.90****
Hansen's J-statistic p	0.2429	0.2456	0.17994	0.2624	0.1784	0.1922	0.1476
estimator	two-step	two-step	two-step	two-step	IGMM	IGMM	IGMM
n	1123	1113	1123	1122	1119	1119	1123

Absolute value of t-statistics under coefficients. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

unrest were usually targeted precisely against low-level "elites" (specific landowners or, as in the 1880s and 1890s, factory owners) and represented economic grievances rather than political ones. Once again, there was little incentive to open the political system for instability which was essentially economic in nature.

Finally, as predicted by several scholars,[69] the mobilization of military forces against enemies domestic and foreign led to a decline in political liberalism across the board in Russia; as shown in the last column of Tables 2 and 3, the indicator for external conflict persistently shows a correlation with a lower regime variable. Randolph Bourne[70] famously remarked that "war is the health of the state," which in this case (and many others) means more repression and a less-liberal political regime.

Cumulative events

The takeaways from this examination of singular acts of political instability appear to be that targeting policymakers, rather than the system itself, was effective in effecting some modicum of liberalization in Czarist Russia. But as noted above, one or two acts of terrorism may be perceived as "black swans" by the populace and discounted appropriately by lawmakers, but it is difficult to discount repeated and continuous political instability. To that end, we examine the relationship between cumulative terrorism or instability and political liberalization in Czarist Russia in Tables 4 and 5, using again negative binomial and IV-Poisson methods. While the magnitude of the effect for cumulative instability differs across the negative binomial and IV-Poisson regressions, the same

Table 4. Negative binomial regressions, regime value versus cumulative political instability

	1	2	3	4	5	6	7
Terrorism variables							
Cumulative Attempted Assassinations Russia	0.05						
	1.16						
Cumulative Attempted Assassinations Empire		−0.05					
		1.35					
Cumulative Assassinations Russia			0.16				
			*13.19***				
Cumulative Assassinations Empire				0.23			
				*5.23***			
Cumulative Unrest Russia					−0.02		
					*3.47***		
Cumulative Unrest Empire						−0.02	
						*2.88***	
Cumulative External Conflict							−0.02
							*2.90***
Control variables							
Price of gold	−0.02	−0.02	−0.01	−0.02	−0.02	−0.02	−0.02
	*3.53***	*3.34***	*2.53***	*3.24***	*4.07***	*2.84***	*3.33***
Ruble/Guilder Exchange Rate	−0.49	−0.51	−0.38	−0.45	−0.46	−0.48	−0.48
	*10.66***	*11.14***	*8.91***	*10.33***	*10.16***	*10.58***	*10.47***
Czar Transition	−0.30	−0.31	−0.27	−0.27	−0.33	−0.31	0.28
	1.04	*1.05*	*1.00*	*0.95*	*1.15*	*1.09*	*0.97*
C	2.82	2.84	2.41	2.69	2.88	2.75	2.80
	*18.94***	*19.28***	*17.39***	*18.57***	*19.90***	*18.43***	*19.03***
R-squared	0.10	0.10	0.27	0.09	0.10	0.10	0.10
n	1157	1157	1157	1157	1157	1157	1157

Absolute value of t-statistics under coefficients. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table 5. Results of IV-poisson regressions, regime value versus cumulative political instability

	1	2	3	4	5	6	7
Terrorism variables							
Cumulative Attempted Assassinations Russia	0.26						
	0.96						
Cumulative Attempted Assassinations Empire		0.46					
		*7.13***					
Cumulative Assassinations Russia			0.21				
			*11.91***				
Cumulative Assassinations Empire				0.16			
				*2.87***			
Cumulative Unrest Russia					−0.11		
					*2.71***		
Cumulative Unrest Empire						−0.11	
						*2.37***	
Cumulative External Conflict							−0.02
							*5.42***
Control variables							
Price of gold	−0.02	−0.02	−0.01	−0.02	−0.04	−0.04	−0.02
	*6.85***	*6.97***	*4.33***	*7.93***	*5.15***	*4.78***	*7.03***
Ruble/Guilder Exchange Rate	−0.64	−0.34	−0.32	−0.70	−0.40	−0.39	−0.78
	*3.26***	*5.53***	*4.66***	*11.45***	*2.98***	*2.62***	*12.98***
Czar Transition	−0.34	−0.12	−0.23	−0.29	−0.41	−0.41	−0.31
	*3.22***	*2.88***	*3.84***	*3.70***	*5.48***	*5.36***	*3.05***
C	2.97	2.5	2.17	3.08	3.14	3.13	3.25
	*7.91***	*16.78***	*13.05***	*20.45***	*19.21***	*19.05***	*21.63***
Hansen's J-statistic p estimator	0.9847 two-step	0.3123 two-step	0.1391 two-step	0.1455 two-step	0.6975 IGMM	0.4541 IGMM	0.1283 IGMM
n	1123	1113	1123	1123	1117	1119	1123

Absolute value of t-statistics under coefficients. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

relationships as found in the individual attacks hold: most prominently in the negative binomial models (Table 4), successful assassinations correlate with higher levels of the regime value while unrest and conflict correlate with lower values. Interestingly, when instrumenting for cumulative terror (on the theory that previous instability can induce more instability) in the IV-Poisson regressions (Table 5), we see the same results on a greater scale, but with the added finding that attempted assassinations in the Empire also pushed the Czar toward somewhat more liberalization. It is plausible thus that the waves of terror in Russia in the late nineteenth and early twentieth centuries did in fact push the Russian government to make concessions, especially in the periphery.

Effectiveness in changing regimes

Finally, we turn to the logistic regressions in Table 6, which examine if political instability was associated with a higher or lower probability of escaping the "lower" regime value. Using both the individual acts of political instability and cumulative instability, the log odds shown here run broadly in line with the direction and significance found in the previous models. In particular, there is no significant correlation between the probability of reaching the higher state for attempted assassinations in Russia or cumulative assassination attempts in Russia or the Empire (the model containing attempted assassinations in the Empire suffered from perfect prediction and was dropped). On the other hand, successful assassinations in Russia in particular increase the odds as much as five times

Table 6. Logistic regressions, high/low regime value versus political instability (discrete and cumulative)

	1	2	3	4	5	6	7	8	9	10	11	12
Terrorism variables												
Attempted assassinations Russia	−0.15											
	0.17											
Cumulative assassination attempts Russia		−0.07										
		0.32										
Cumulative assassination attempts Empire			−0.36									
			1.64									
Assassinations Russia				1.61								
				*4.25***								
Cumulative assassinations Russia					0.66							
					*7.76***							
Assassinations Empire						0.71						
						0.92						
Cumulative assassinations Empire							0.43					
							*2.63***					
Unrest Russia								−2.02				
								*1.98***				
Cumulative unrest Russia									−0.17			
									*1.84**			
Cumulative unrest Empire										−0.26		
										1.60		
External Conflict											−2.23	
											*2.20***	
Cumulative external conflict												−0.33
												*3.56****
Control variables												
Price of gold	−0.43	−0.43	−0.42	−0.41	−0.37	−0.42	−0.42	−0.44	−0.44	−0.43	−0.43	−0.43
	*13.21****	*13.15****	*12.87****	*13.17****	*13.01****	*13.23****	*13.29****	*13.46****	*13.40****	*12.72****	*14.61****	*14.54****
Ruble/Guilder Exchange Rate	−5.34	5.37	−5.41	−5.17	−4.57	−5.30	−5.17	−4.97	−4.81	−4.95	−5.12	−5.11
	*20.73****	*19.32****	*20.42****	*20.87****	*20.15****	*20.73****	*20.53****	*18.85****	*13.88****	*16.80****	*19.85****	*19.07****
C	13.88	13.96	13.98	13.27	11.10	13.80	13.41	13.74	13.7	13.68	13.73	13.89
	*15.80****	*15.36****	*15.47****	*15.45****	*13.97****	*15.72****	*15.53****	*15.78****	*15.86****	*15.23****	*16.88****	*16.73****
Pseudo R-squared	0.21	0.21	0.21	0.23	0.33	0.21	0.22	0.22	0.21	0.22	0.22	0.23
Wald Chi-squared	480.08	483.58	457.20	541.78	736.48	484.45	520.95	461.68	482.04	483.43	495.88	483.93

Absolute value of t-statistics under coefficients. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

of reaching the higher regime value; at the same time, external conflict and unrest decrease the likelihood of the country moving in a more liberal direction.

Conclusions

This paper has attempted to explore the effectiveness of terrorism and/or political instability using the long history of terrorism in the Russian Empire as a test case. Using econometric techniques which appropriately deal with the slow-moving nature of institutional change, the examination shows that the removal of reactionary officials had a salutary effect in pushing the Czarist system toward openness, especially in the late nineteenth century (as the cost of being a Russian leader escalated immensely). On the other hand, collective action had a counterproductive effect, at least until the country was weakened by the Great War.

As a first attempt at rigorously modeling the determinants of political change, this paper should be seen as a complement to the many excellent works which exist detailing the history of political violence in Russia[71] instead of a replacement. Indeed, this work gives statistical credibility to the theorized effects of political violence in both autocracies and countries moving toward semi-democracy,[72] as well as confirming the historical record on Russia's long road to (and abrupt end of) liberalization. A natural extension to the model here would be to further develop the simple model utilized for Russia, delving deeper into the economic correlates of change in political institutions and perhaps constructing better monthly series than are currently available for nineteenth century Russia.

There are many extensions to this work beyond merely Russia, and center on both the heterogeneity of political instability and moving toward a more formalized theory of political change which incorporates this heterogeneity. One could also expand the simple econometric model for Russia to check its external validity across countries: using panel data, are the results similar in other countries in different time periods, or are the heterogenous effects of various forms of instability unique to Russia and its political system? Such an expansion may be easier to undertake for more modern forms of terrorism or rebellion, with the caveat that the appropriate estimators must once again account for slow-moving institutions. Finally, linkages can be built with the literature on the economic drivers of terrorism to provide a more holistic picture of the role of political instability on regime change, building on the work of Buchheim and Ulbricht[73] but explicitly incorporating how prior instability, in all its guises, may weaken a regime.

In any event, the importance of these questions, and their relevance for understanding political instability more broadly, means we should not aim low in exploring these ideas.

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Appendix A

Table A1. Summary statistics

Variable	Observations	Mean	Std. Deviation	Min	Max
MaxRange	1,510	4.5132	3.3915	2	17
Successful Assassinations Russia	1,510	0.0225	0.1484	0	1
Successful Assassinations Empire	1,510	0.0066	0.0811	0	1
Attempted Assassinations Russia	1,510	0.0073	0.0851	0	1
Attempted Assassinations Empire	1,510	0.0099	0.0992	0	1
Unrest Russia	1,510	0.1351	0.3419	0	1
Unrest Empire	1,510	0.1110	0.3143	0	1
External Conflict	1,510	0.1974	0.3981	0	1
Cumulative Assassinations Russia	1,510	0.2702	1.0283	0	9
Cumulative Assassinations Empire	1,510	0.0795	0.3752	0	4
Cumulative Attempted Assassinations Russia	1,510	0.0874	0.3608	0	3
Cumulative Attempted Assassinations Empire	1,510	0.1192	0.4666	0	3
Cumulative Unrest Russia	1,510	1.6132	2.8021	0	12
Cumulative Unrest Empire	1,510	1.3272	2.6205	0	12
Cumulative External Conflict	1,510	2.2927	4.2421	0	12
RUB/Guilder Exchange Rate	1,157	1.5942	0.5270	0.93	5.95
Price of Gold	1,510	21.0104	2.9830	19.39	52.29
Czar Transition	1,510	0.0046	0.0680	0	1

Data Appendix

A number of sources were consulted for creating the database on political volatility in Russia during the Czarist era. A complete list of scholarly literature and compilations from which the dating was taken appears below:

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In addition to these published works, a number of international newspapers were consulted to double-check dates and ensure that consistency was kept with new-style dating as opposed to the old-style dating used during the nineteenth century. These newspaper accounts were also used to verify that these events were reported widely, with no discernible lag, so that the event actually became a source of information for financial markets. Publication of these events around the globe confirms that news of political volatility was widespread.

The full list of attempted assassinations, assassinations, unrest, and external conflict are available at https://www.openicpsr.org/openicpsr/project/117682/version/V1/view/.