Terrorist attacks and public approval and confidence in the Russian president: Evidence from time series analysis

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Abstract

In this paper we apply time series analysis to examine weekly data of Vladimir Putin's approval and confidence ratings and their dependence on terrorist attacks. We find that minor terrorist attacks with few or no mortal casualties in Chechnya, Ingushetia and Dagestan increase Putin's ratings, while major terrorist attacks, with more than four mortal casualties, have a negative impact. There is also evidence that terrorist attacks in other Russian regions reduce Putin's public approval; however, this evidence is weaker and depends on the model specification. The effects of terrorist attacks on the confidence rating are indistinguishable from the statistical noise. Furthermore, we control for main annual media events with President Putin's participation: the television Q&A program `Direct Line with V. Putin', address to the Federal Assembly and a large annual conference. All three media events increase the president's approval, with `Direct Line' having the least effect. Only the large annual conference has a significant positive impact on respondents' confidence in Putin.

JEL Classification: D72, H56, P26, Y80

Keywords: Terrorist attack, Russia, Putin, approval ratings, confidence ratings

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Introduction

On August 9, 1999 Vladimir Putin was appointed acting prime minister of the Russian government. A series of significant terrorist attacks soon followed. Between September 4 and 16, bombs destroyed apartment blocks in Moscow, Buynaksk and Volgodonsk. Several hundred people were killed (Cornell 2003). On September 22, alert residents in Ryazan reported unknown individuals carrying bags into the basement of an apartment block. Police concluded that the bags contained cyclonite timed to explode at 5.30 a.m. The head of the Federal Security Service (FSS) Nikolay Patrushev, however, requested police to halt proceedings. He claimed the FSS were engaged in anti-terrorism training exercises, and that the bags contained sugar. This event gave rise to the hypothesis the bombings in Moscow and other cities were the work of the FSS (Satter 2002). Nevertheless, on September 23, the Russian army initiated the bombardment of Grozny, the capital of Chechnya, and on September 30 Russian troops started ground operations, known as the Second Chechen War.[2] Thereafter, Russia suffered a large number of terrorist attacks, which some researchers have claimed were provoked by the massive human rights violations and the brutality of Russian troops and pro-Kremlin Chechens (Cornell 2003, Calzini 2005, Moore 2006); other researchers have come to the opposite conclusion (Mukhina 2005). Nowadays, while terrorist attacks continue, they are much less frequent. And given the case of `Ryazan sugar', now almost every large terrorist attack gives rise to conspiracy theories involving the FSS or other special services, who follow their own agenda, probably to increase the popularity of Russian authorities.[3]

The goal of our paper is to estimate the effect of terrorist attacks on President Putin's approval ratings during his third and fourth mandates.

It is supposed that the transformation and democratization of the Russian regime is only possible with concerted public pressure (Shevtsova 2012). The popularity of Mr. Putin, the central figure of the regime, is the key factor in its stability (Rose 2007). Additionally, news of terror attacks provokes intense emotional reactions among Russians (Oates 2006). Therefore, this information may affect Putin's popularity and the stability of the regime. In this work I study the link between terror attacks and Putin's popularity in detail.

Previous studies suggest that the key factor influencing Putin's popularity is Russia's economic performance (White and McAllister 2008, Treisman 2011, Treisman 2014). In a study of Putin's approval rating, Treisman (2011) also controlled for a large number of various events: the sinking of the Kursk submarine, the arrest of Mikhail Khodorkovsky, the takeover of the NTV channel, the return of the Soviet anthem, the monetization of benefits, etc. The coefficients corresponding to two terrorist attacks are of particular interest to us. The Nordost theatre siege in October 2002 is estimated to have had no impact on V. Putin's approval rating, while the Beslan terrorist attack in September 2004 brought about an estimated reduction in his approval rating of between 2.97-7.13 percent depending on the model specification. It is interesting that the 9/11 terrorist attacks are also estimated to have had a negative

[2] Formally, the second Chechen war started on 7 August 1999, when Chechen militants led by Shamil Basayev invaded Dagestan territory.

[3] Almost all relatively new conspiracy theories are collected by Dmitrij Ivanov, known as kamikadzedead, on his YouTube channel.

impact on Putin's popularity, suggesting that increased sensations of insecurity are harmful to V. Putin's approval rating even if terrorist attacks happen abroad.

The negative short-run effects of terrorist attacks on Putin's ratings are accounted for in the dynamic model - consisting of three differential equation - developed by Faria (2008). However, in his model, political leaders may increase their public support by implementing counter-terrorism activities. If terrorist attacks are followed by an overreaction in counter-terrorism activities, the terrorist attacks may in fact generate increased public support for the government. He calls such a state of the dynamic system the `Putin Paradox'.

Another avenue though which terrorist attacks may have an impact on Putin's popularity is the intensification of censorship in the Russian media. The war on terror provides a justification to limit freedom of speech. Authorities claim these repressive actions are needed to protect the public, promote the work of security forces in combating terrorism, prohibit the spread of terrorist propaganda, etc. At the same time, the intensification of censorship is often employed for political reasons (Simons and Strovsky 2006). Similarly, terror threats are sometimes used to justify repression against opponents (Lagon and Puddington 2015).

In this paper I study the short-run effects of terrorist attacks on Putin's public support between 2012-2019. I find that Putin's approval rating increases if terrorist attacks with no or few mortal casualties take place in one of the three Muslim republics of the Northern Caucasus: Chechnya, Ingushetia and Dagestan, while larger terrorist attacks in the same republics have negative effects on his approval rating. Terrorist attacks in other regions are estimated to have a negative impact on Putin's approval; however, these effects are not robust and their significance depends on the model specification. We also control for large annual media events with V. Putin's participation: the Q&A television program `Direct Line with V. Putin',[4] address to the Federal Assembly and a large annual conference. All these events have a positive impact on Putin's approval ratings with the large conference having the greatest quantitative impact and `Direct Line' – the lowest. A significant impact of terrorist attacks on the Mr. Putin's confidence rating is not noted, the only significant media event being the large annual conference.

Data

The data on Putin's ratings are taken from the Russian Public Opinion Research Center. Its usual English abbreviation is a transliteration from the Russian: VTsIOM. VTsIOM poses two questions when considering Putin's ratings. The first: "In general, do you approve of the activities of the president of Russia?" Respondents may either approve or disapprove. I analyse the percentage of agents who approve of the activities and refer to this variable as "approval rating".

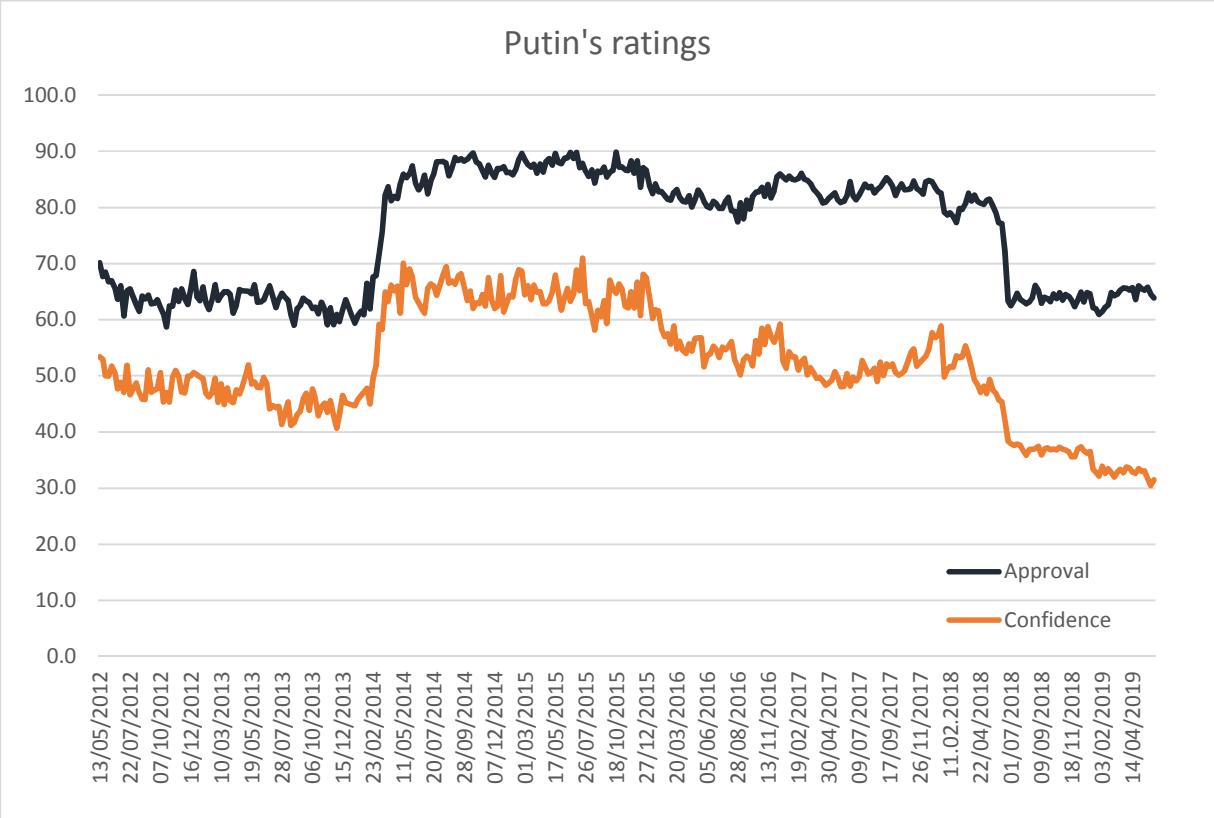
The second question translates as "Everyone may trust certain people and have less confidence in others. In reference to politicians, whom would you trust to handle important national issues?" Respondents may enumerate as many politicians as they wish. I consider the percentage of respondents naming V. Putin.

[4] `Direct line with V. Putin' is a TV show during which Russian citizens ask V. Putin questions generally regarding current events.

As President Putin has held the office continuously since 7 May 2012, we evaluate weekly data from 13 May 2012 till 02 June 2019. However, the interval between observations is not always 7 days - intervening public holidays and other events create occasional intervals one or two days shorter or longer. Also, several observations within the interval are lacking. Most of the missing observations correspond to the period between the New Year and Eastern Orthodox Christmas (January 7). As data analysing algorithms are sensitive to missing observations, we generate these observations using linear interpolation.

The dynamics of Putin's ratings is presented in figure 1, with approval rating always higher than confidence; the correlation between them is 0.8168. The spike in both ratings in 2014 followed the annexation of Crimea; the drop in 2018 followed the announcement of an additional five years to reach pensionable age.

Figure 1



The data on terrorist attacks are taken from Wikipedia.[5] On this page all events officially recognized as terrorist attacks are recorded since 1866. In order to assure the veracity of the data, the facts of the terrorist attacks and the number of victims were double-checked in the open media. I construct a variable equal to one if during a specific week there was at least one terrorist attack, and zero otherwise. Terrorist attacks committed in Chechnya, Ingushetia and Dagestan are included in the ARIMA

[5] https://ru.wikipedia.org/wiki/ Теракты,_совершённые_в_России

models as a separate regressor because these regions have been in terroristic turmoil since the first Chechen war (1994-1996).

The number of killed and wounded in each terrorist attack was noted, with terrorists killed or wounded during the attack excluded from the number of casualties. The distribution of terrorist attacks and their victims by year in Russia are shown in Figure 2. It should be noted that two terror attacks in 2012 - shown in Figure 2 - occurred prior to V. Putin‘s inauguration; they were excluded from the time series analysis. The geography of terrorist attacks is summarized in table 1.

Figure 2

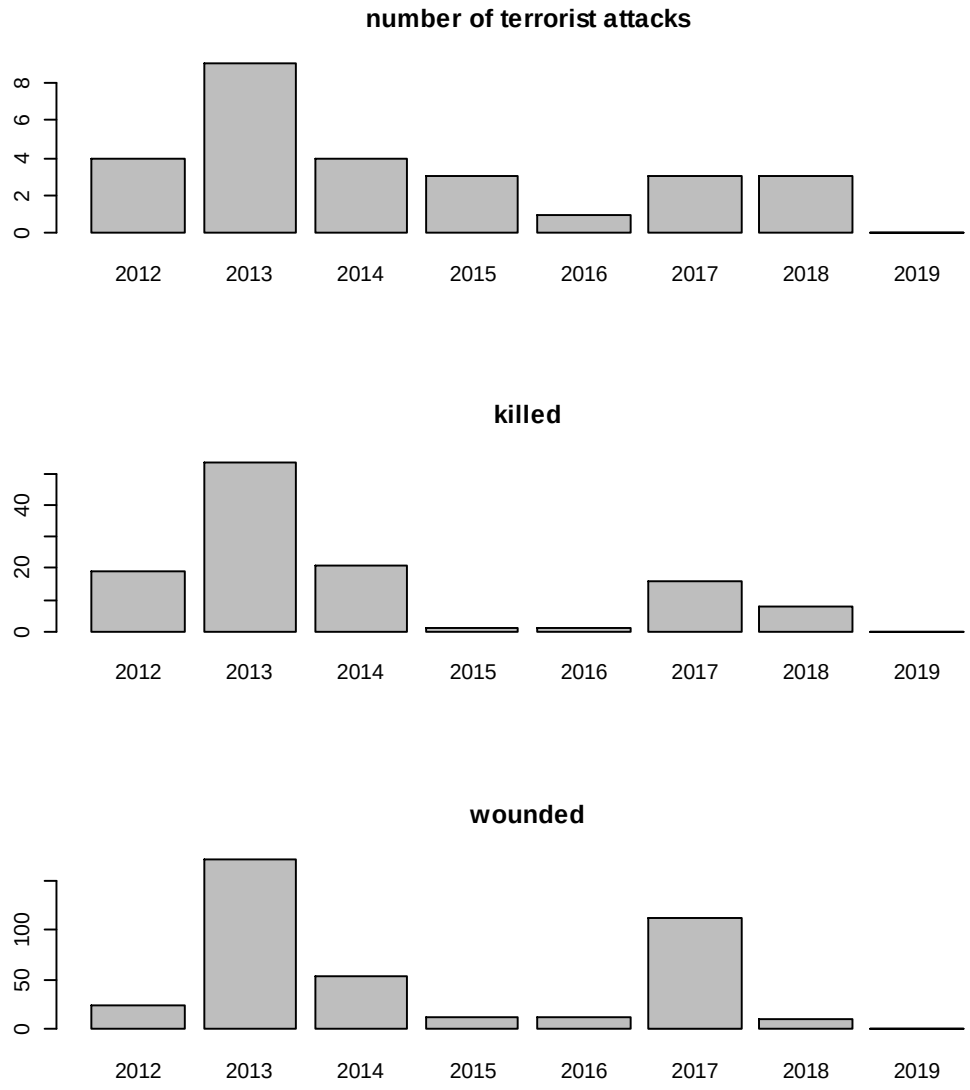


Table 1 Geography of terorist attacks

	Attack(s)	Killed	Wounded
Dagestan	10	21	90
Chechnya	4	28	58
St. Petersburg	4	16	106
Volgograd	3	41	107
Ingushetia	2	10	19
Pyatigorsk	1	3	0
N. Osetia	1	1	4
Surgut	1	0	7
Archangelsk	1	0	3

Putin‘s ratings rest on numerous factors apart from terror attacks. We control for the most important: participation in the traditional annual `Direct Line with V. Putin', the annual presidential address to the Federal Assembly, and the large annual conference. In 2017, however, the presidential address to the Federal Assembly was not delivered; it was moved closer to elections in March 2018. I include dummy variables, which are equal to one, if the event happened during a specific week, and zero otherwise. The data on these events were taken from the official Kremlin webpage.[6]

The number of observations for all variables is 348.

Methodology

We employ an *ARIMA(p,d,q)* model with additional regressors, which has the following general form:

$$\Delta^d X_t = a_0 + \sum_{i=1}^{p} a_i \Delta^d X_{t-i} + \sum_{j=1}^{q} b_j \varepsilon_{t-j} + c' Z_t + \varepsilon_t. \qquad (1)$$

X_t denotes a variable, which corresponds to the approval or confidence rating of the Russian president, *d* is the degree of differencing, *p* – the number of time lags of the autoregressive process, q – the order of the moving-average process, Z_t – additional regressors, which correspond to terrorist attacks and large media events, *c* – a vector of parameters and ε_t- residuals of the model.

The model was estimated using R, with the *auto.arima()* function from the *forecast* package. It chooses an optimal model according to Akaike information criterion (AIC) (Akaike 1974) and Bayesian information criterion (BIC) (Schwarz 1978). The degree of differencing is selected according to the KPSS test (Kwiatkowski et al. 1992). In fact, of all specifications we tried, the optimal model was the *ARIMA(1,1,0)* form:

[6] http://www.kremlin.ru/

$$\Delta X_t = a_0 + a\Delta X_{t-1} + c'Z_t + \varepsilon_t. \qquad (2)$$

The vector of explanatory variables $\boldsymbol{Z_t} = (\boldsymbol{z_1}, \dots, \boldsymbol{z_k})'$ contains variables that correspond to the number of killed and wounded during terrorist attacks. I find it useful to use a logarithmic transformation for these variables: $\boldsymbol{z_i} = \mathbf{log}(\boldsymbol{killed} + \mathbf{1})$, and the same transformation for wounded.

Empirical results

Before estimating model (1) we started from a more general model of autoregressive fractionally integrated moving average (ARFIMA(p,d,q)), where *d* can be fractional. Such a model was used by Treisman (2011), who received *d*=0.646 for Putin's approval rating for the period of 2000-2007. In our case, for the period 2012-2019, *d* is estimated at 1.0342 level (s.e. =0.0629) for approval rating, and 0.9646 (s.e. =0.0547) for confidence rating. In both cases the hypothesis that *d*=1 is not rejected at the 10% significance level. Therefore, we fix it to 1 and the ARFIMA model simplifies to the ARIMA model defined in equation (1).

Table 2 presents estimates of regression (1). In all cases, only one AR term is significant. The (AR(1) term corresponds to coefficient *a* in equation (2)) In models 1-3, our dependent variable is approval. In model 1 we regress Mr. Putin's approval on the dummy variables which correspond to terrorist attacks in the three regions of Chechnya, Dagestan and Ingushetia, and in the rest of Russia; we also control for the number killed. The dummy variable corresponding to the terrorist attacks in the three regions is positive and significant at the 0.01 significance level. The logarithm of agents killed in this region is negative and statistically significant at the 1% significance level as well. This indicates that small terrorist attacks, with no or few mortal casualties increase Mr. Putin's approval, while large terrorist attacks reduce his approval. Keeping in mind the logarithmic transformation of the number killed, it can be shown that terror attacks with fewer than four mortal casualties have a positive effect, while five or more mortal casualties produce a negative effect.

Table 2 Estimates – linear ARIMA model

	Approval			Confidence		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
AR (1)	-0.1469***	-0.1441**	-0.1437**	-0.3863***	-0.3874***	-0.3796***
	(0.0539)	(0.0540)	(0.0545)	(0.0504)	(0.0506)	(0.0511)
Ter. attack	-0.1648	-0.7939	-0.7592	-0.5428	-0.2476	-0.2599
	(0.5352)	(0.8775)	(0.8492)	(0.7579)	(1.2411)	(1.2264)
Ter. attack Caucasus	2.3446***	2.2744***	2.5636***	0.3899	0.4583	0.7026
	(0.7316)	(0.8085)	(0.7908)	(1.0865)	(1.1995)	(1.1974)
Log Killed	0.2953	-0.1231	0.0347	0.1039	0.2920	0.3831
	(0.3370)	(0.5726)	(0.5559)	(0.4565)	(0.7778)	(0.7712)
Log Killed, Caucasus	-1.4404***	-1.5045***	-1.6932***	-0.6896	-0.6346	-0.7894
	(0.4555)	(0.5356)	(0.5236)	(0.6706)	(0.7782)	(0.7751)

Log Wounded		0.4561	0.4245		-0.2116	-0.1825
		(0.5049)	(0.4888)		(0.7068)	(0.6984)
Log Wounded, Caucasus		0.0799	0.0244		-0.0714	-0.0769
		(0.3686)	(0.3579)		(0.5182)	(0.5137)
Direct line			1.1020**			-0.1922
			(0.5024)			(0.7233)
Address to Federal Assembly			1.3499***			1.0296
			(0.4812)			(0.6929)
Large conference			1.6736***			1.6757**
			(0.4745)			(0.6789)
AIC	1355.67	1358.81	1342.73	1544.56	1548.46	1547.06
BIC	1378.84	1389.61	1343.52	1567.66	1579.25	1589.40
* p-value<0.1 ** p-value<0.05 *** p-value<0.01						

In the second model we include the logarithms of the numbers of wounded victims. None of these variables is significant. However, the estimates of the other coefficients have changed. In this case, terrorist attacks with 3 or fewer mortal casualties increase Putin's approval rating, while 4 or more casualties reduce it.

Terrorist attacks in the three Caucasus republics remain significant if we control for the large annual media events. The qualitative interpretation of results remains as in model 2. AIC and BIC imply that the third model best explains the dynamics of approval.

Quantitatively, our results imply that a small terrorist attack in the Northern Caucasus with no mortal casualties would increase the approval of Mr. Putin's policies by more than two percent of the Russian population. At the same time, a larger terrorist attack with ten mortal casualties would reduce approval by approximately 1.5%.

We interpret this result as follows: First, terrorist attacks in Chechnya, Dagestan and Ingushetia increase the demand for security and iron- fisted action, policies Mr. Putin is known for. Furthermore, Mr. Putin is generally associated with putting an end to Russia's dismemberment and with the fight against separatist movements in the above-mentioned republics. The impact therefore on the Putin's ratings is positive. Second, terrorist attacks in the Northern Caucasus also show how Putin's policies in this region have been inefficient since despite years of Putin's governance peace remains elusive. If a terrorist attack is relatively small, the first `positive' effect is dominant, while for large terrorist attacks, the second negative effect prevails.

The coefficients corresponding to terrorist attacks and numbers killed in other Russian regions are negative but insignificant. Therefore, we cannot distinguish the effects of these terrorist attacks on Putin's approval rating from the statistical noise.

In model 3, the coefficients corresponding to Putin's main media events are also significant. On average, the approval of Putin's policies increases. The large conference has the highest positive impact and `Direct Line' – the lowest. While the difference between these coefficients is not large, the hypothesis

that these coefficients are equal to each other is not rejected. The interpretation of these coefficients is straightforward.

In models 4-6 we estimate the impact of terrorist attacks and media events on Russian public confidence in Putin. We note that all coefficients corresponding to terrorist attacks - numbers killed and wounded - are insignificant. Nevertheless, the signs of the coefficients, relative to the events in Chechnya, Dagestan and Ingushetia are the same as in models 1-3.

Apart from the `technical' AR(1) terms, the only significant coefficient in models 4-6 corresponds to Putin's large annual conference. Interestingly appearance on `Direct Line' reversed the sign to the negative (though insignificant). In fact, the difference between the large annual conference and `Direct Line' is that the former is more spontaneous, with journalists occasionally putting hard questions to Mr. Putin. 'Direct Line' is more controlled, with Mr. Putin replying to vetted questions from selected journalists from the main Russian TV channels and a few viewers complaining to Mr. Putin about local problems via videoconference. Not surprisingly, Mr. Putin is always aware of problems in every small village. Our estimates suggest that this type of dialogue between Mr. Putin and Russians does not boost public confidence in him.

As a robustness check, we estimated the model using the logit transformation for the president's ratings:

$$Y_t = log\left(\frac{X_t}{100 - X_t}\right)$$

Y_t is plugged into equation (1) instead of X_t. The advantage of such a transformation is that independent of the number of terrorist attacks, the number of casualties and the mass media events, the predicted values of Putin's ratings always stand between zero and one hundred. The disadvantage is that interpretation of the coefficients is more complicated. Nevertheless, positive values correspond to increasing ratings. Table 3 presents estimates of the model.

Table 3, logit transformed ratings

	Logit, approval			Logit, confidence		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
AR (1)	-0.2090***	-0.2014**	-0.1909**	-0.3952***	-0.3966***	-0.3887***
	(0.0531)	(0.0534)	(0.0538)	(0.0502)	(0.0503)	(0.0509)
Ter. attack	-0.0330	-0.0895*	-0.0888*	-0.0207	-0.0083	-0.0089
	(0.0329)	(0.0540)	(0.0522)	(0.0318)	(0.0522)	(0.0515)
Ter. attack Caucasus	0.0963**	0.1000**	0.1187**	0.0154	0.0196	0.0295
	(0.0454)	(0.0500)	(0.0487)	(0.0457)	(0.0505)	(0.0504)
Log Killed	0.0226	-0.0145	-0.0064	0.0037	0.0116	0.0152
	(0.0205)	(0.0348)	(0.0338)	(0.0192)	(0.0326)	(0.0323)
Log Killed, Caucasus	-0.0667**	-0.0648**	-0.0767**	-0.0295	-0.0262	-0.0324
	(0.0282)	(0.0329)	(0.0321)	(0.0282)	(0.0327)	(0.0326)
Log Wounded		0.0408	0.0400		-0.0089	-0.0075
		(0.0310)	(0.0299)		(0.0297)	(0.0293)
Log Wounded, Caucasus		-0.0029	-0.0060		-0.0043	-0.0044

		(0.0226)	(0.0219)		(0.0218)	(0.0216)
Direct line			0.0731**			-0.0098
			(0.0306)			(0.0304)
Address to Federal Assembly			0.0813***			-0.0422
			(0.0295)			(0.0291)
Large conference			0.0938***			0.0724**
			(0.0289)			(0.0285)
AIC	-596.45	-594.19	-609.17	-656.09	-652.22	-653.89
BIC	-573.36	-563.39	-566.82	-632.99	-621.42	-611.55
* p-value<0.1 ** p-value<0.05 *** p-value<0.01						

The model with logit-transformed ratings gives very similar estimates to the linear model: small terrorist attacks in the three republics of the Northern Caucasus increase Mr. Putin's approval and large terrorist attacks reduce them. Mass media events increase his approval. One important difference is that the coefficient to terrorist attacks in the rest of Russia became significant at the 10% significance level in models 2 and 3. This implies that terrorist attacks in the rest of Russia may have a negative effect on the president's approval. Nevertheless, this result is not robust and depends on the model's specification.

Like the results reported in table 2, terrorist attacks shown in table 3 do not affect Putin's confidence rating - the only statistically significant variable is the large conference. Curiously, in this model specification the address to the federal assembly reversed its sign in comparison with table 2 and was negative (but statistically insignificant).

For additional robustness checks we included trends so as to capture possible changes in public reactions to terrorist attacks, but these trends remained insignificant - the main results being similar. Therefore, evidence indicates that minor terrorist attacks in Chechnya, Dagestan and Ingushetia increase Putin's public approval, while major attacks reduce it. There is also evidence that terrorist attacks in other regions lower his approval, though this finding is not robust. Furthermore, there is no statistical evidence that terrorist attacks affect public confidence in Putin.

Conclusions

Having analysed V. Putin's weekly rating data, we can conclude that minor terrorist attacks with no or few mortal casualties in the three Muslim republics of the Northern Caucasus: Chechnya, Dagestan and Ingushetia increase V. Putin's approval rating, while terrorist attacks with a larger number of deaths (more than four killed, excluding terrorists) in the same region reduce it. These findings may be explained as follows: on the one hand terrorist attacks increase the demand for security and for a more relentless fight against separatism in the Northern Caucasus - precisely Putin's policies during most of his time as president. On the other hand, the mere existence of terror attacks suggests that Putin's policy in that region is inefficient. Our empirical estimations imply that the former effect is dominant when terrorist attacks are minor, while the latter is prevalent when major terrorist attacks take place.

There is also some evidence that terrorist attacks in other parts of Russia reduce Putin's approval; however, this evidence is not robust and depends on the exact model specification. Furthermore, the corresponding coefficient is significant to a lesser extent (10% significance level) than those corresponding to the terrorist attacks in the above mentioned three republics in the Northern Caucasus.

Putin's approval also raises with his annual participation in "Direct Line with V. Putin", his address to the Federal Assembly, and his appearance at the large annual conference. The lowest quantitative impact is noted after Direct Line, while the large conference is estimated to have the highest impact. Nevertheless, the resulting coefficients are rather similar.

We discovered no statistically significant results of terrorist attacks on Putin's confidence ratings. The only media event with a positive and statistically significant impact on Putin's confidence rating is the large annual conference.

To sum up, our analysis suggests that the optimal policy for Putin's administration is to try to minimize the number of terrorist attacks in regions other than Chechnya, Dagestan and Ingushetia but also to reduce the number of major terrorist attacks in these areas as well. However, there is no incentive to eradicate all minor attacks because some turbulence in the Northern Caucasus creates demand for Putin's `iron-fist' policies. But the turbulence need be low enough so as not to sow doubts about the efficiency of these policies.

If we assume that terrorists aim to depress Putin's public approval, their optimal strategy would be to carry out major terrorist attacks in the Northern Caucasus or else abandon terrorist attacks completely. And since major attacks require lengthy preparation and group coordination, the chances of being discovered by the FSS or other Russian security forces increases. A logical policy for willing terrorists therefore would be to cease terrorist attacks and focus on methods of peaceful resistance as explained in detail by Sharp (2010). Although our analysis does not suggest that peaceful resistance is efficient, the 198 methods enumerated by Sharp provide many recommendations. Obviously the exact goals and preferences of terrorists and would-be terrorists are unknown, and they certainly differ among different individuals and groups. It is difficult therefore to draw policy suggestions from our analysis.

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