

# Indications of vote manipulation in the 2011 Russian elections

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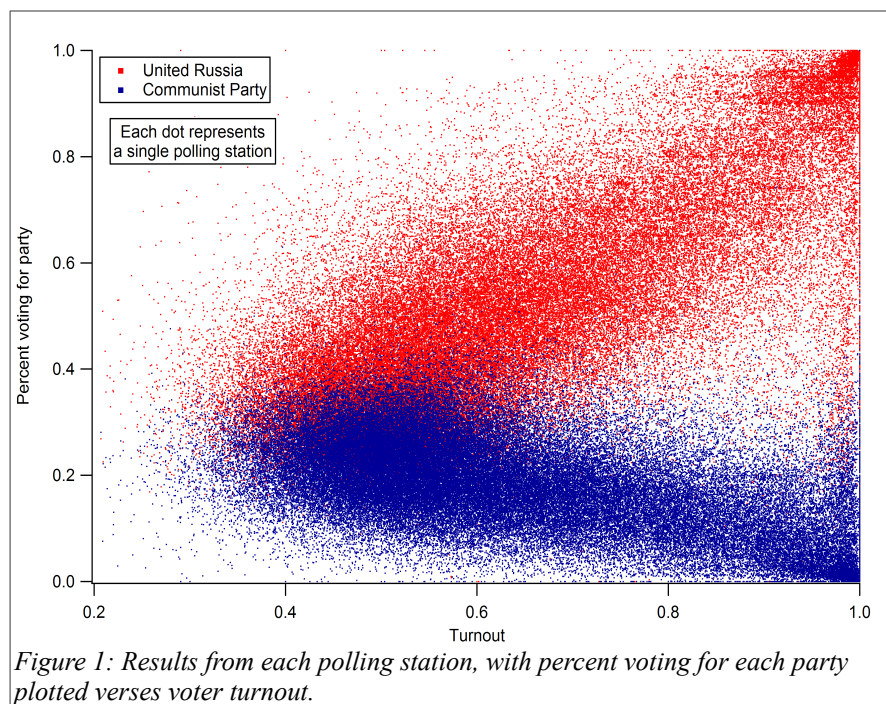
## Introduction

Several Russian commentators<sup>1</sup> have noted unusual voting patterns in the publicly-available preliminary election results that are posted to the Russian election commission web site.<sup>2</sup> Here, we look at this data and discuss a number of unusual features. In particular, we note a correlation between voter turnout and percent voting for the United Russia party and a very large voter turnout with almost total support for United Russia in some unexpected regions.

This document is a work in progress, and will be continually updated. This first draft includes mostly raw data; more detailed analysis will follow in subsequent versions. Please let us know if you have any questions about this work or notice any errors at [web@samarcandanalytics.com](mailto:web@samarcandanalytics.com).

## Voter turnout and support for United Russia

We define voter turnout as the ratio of valid and invalid ballots<sup>3</sup> to eligible voters.<sup>4</sup>



The first thing that sticks out in this plot is the large number of polling stations which have essentially perfect turnout. There are nearly seven thousand stations that reported better than 97% turnout. The support for United Russia has a very strong dependence on turnout, while a simple model would predict that these two should be largely independent. Note that because of this, the support for the Communist Party declines proportionally with increasing turnout due to the excess votes for United Russia.

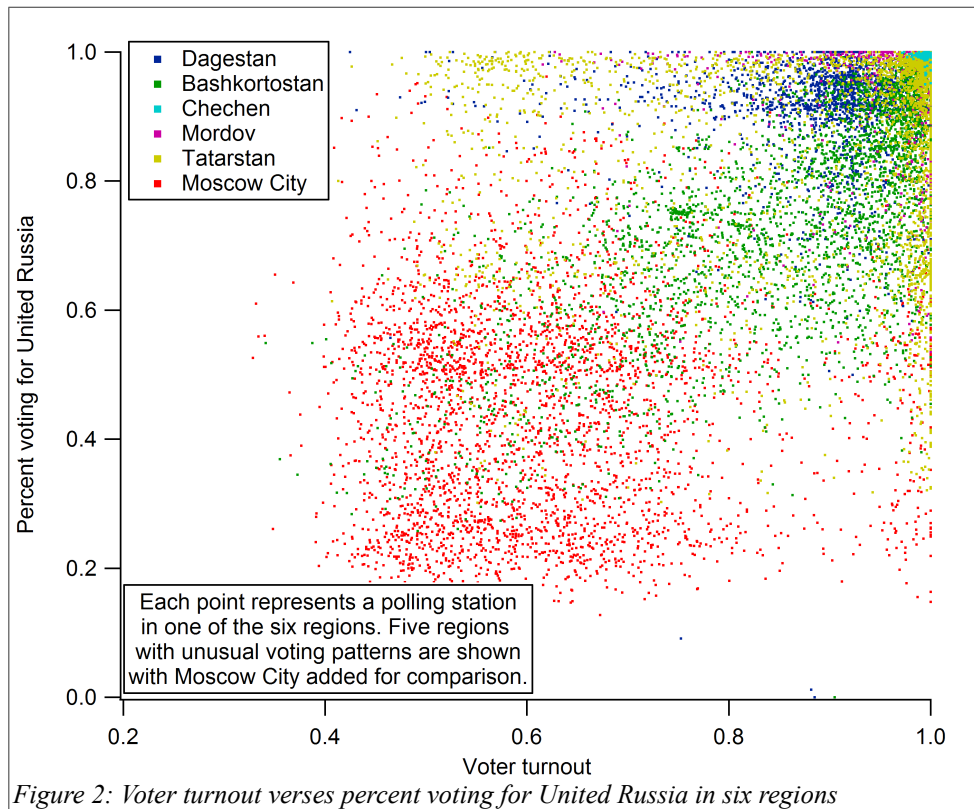
1 <http://eugenyboger.livejournal.com/4514.html> originally looked at and posted this data

2 <http://cikrf.ru>, we have also posted a compiled collection of the data to [http://SamarcandAnalytics.com/election\\_data](http://SamarcandAnalytics.com/election_data)

3 A common protest is to mark all parties on the ballot, rendering it invalid:  
<http://www.nytimes.com/2011/12/05/world/europe/russians-vote-governing-party-claims-early-victory.html?pagewanted=all>

4 Число избирателей, внесенных в список избирателей - Number of voters included in voters list

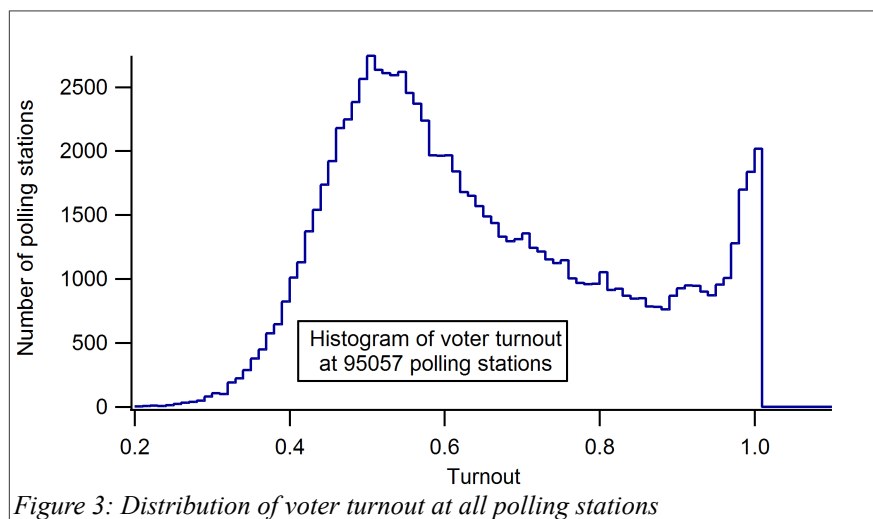
We can similarly look at the performance for United Russia in five areas with unusual voting patterns, with the results for Moscow City shown for comparison.



The results for Chechnya, in which United Russia won 99.5% of the vote with 99.5% of eligible voters voting, seem particularly implausible, although it is comparable to previous results published for the region.<sup>5</sup>

### Distribution of voter turnout

A simple model for voting trends suggest that voter turnout should have a binomial distribution around a central value.



5 <http://www.themoscowtimes.com/news/article/chechnya-backs-ruling-party-995/449314.html>

This voter turnout for all polling stations in Russia shows a distinctly non-Gaussian distribution with a peak near 100% turnout. Much of this is due to large turnouts in several regions mentioned previously.

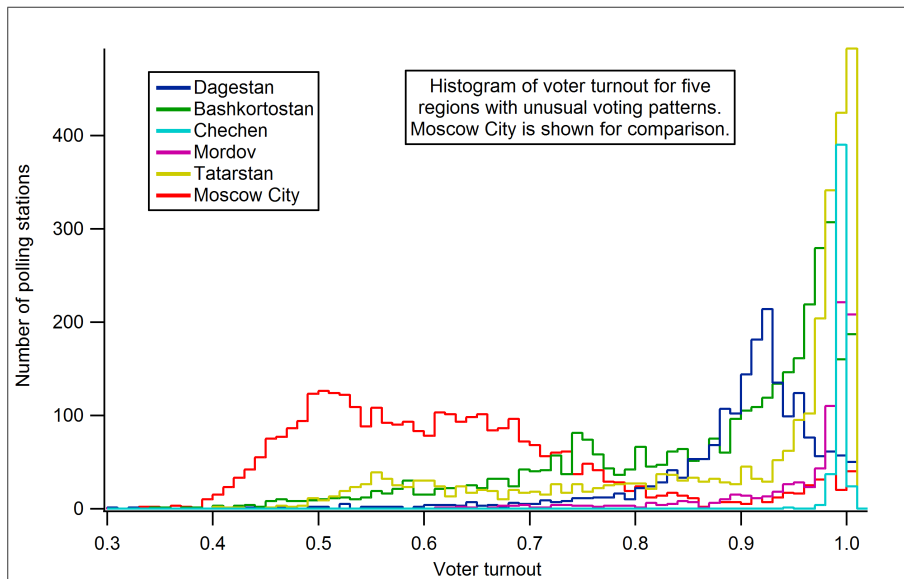


Figure 4: Distribution of voter turnout in six selected regions

Note that the Moscow City region also shows a second peak near 100% turnout. We can also compare the distribution of total votes cast and valid votes cast.

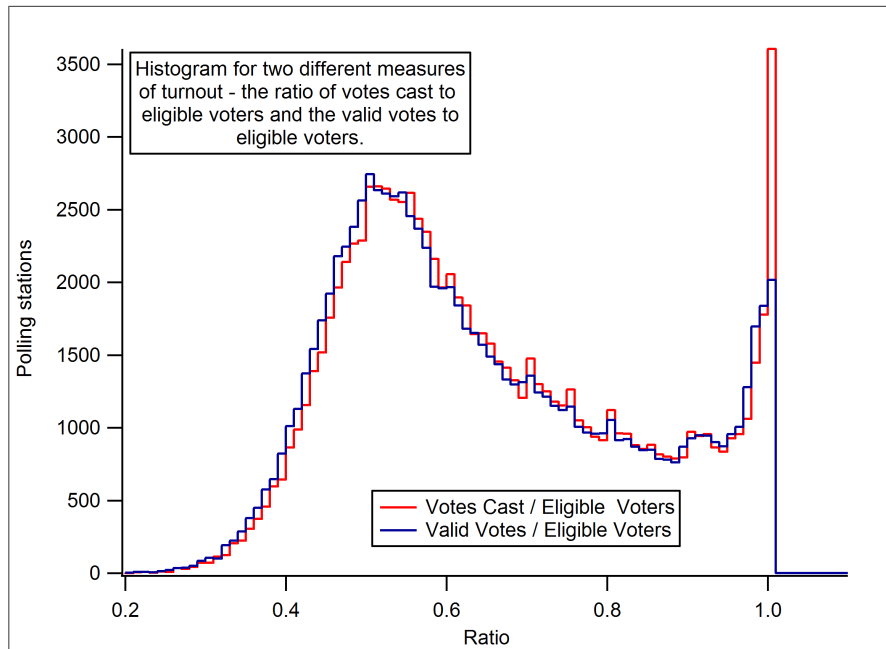
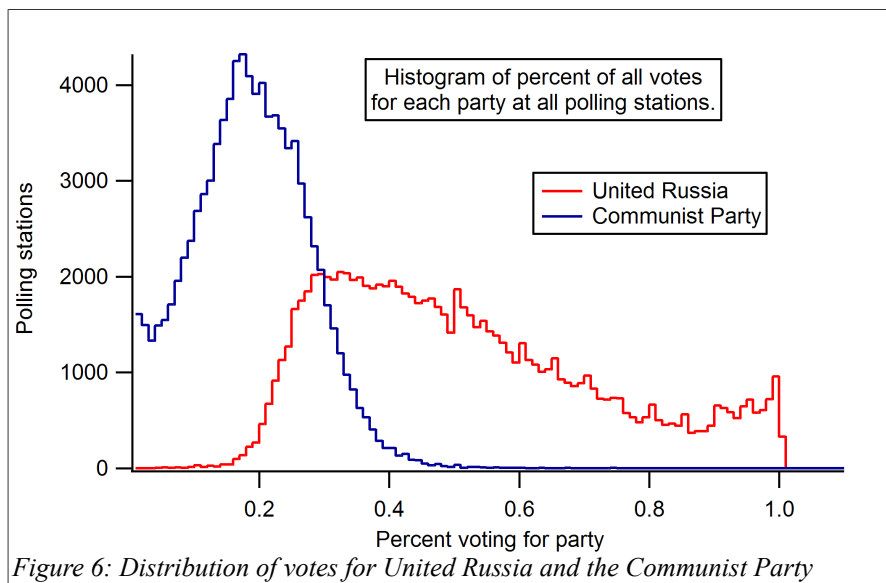


Figure 5: Comparison of distribution of votes cast and valid votes

A large number of polling stations reported receiving a large number of ballots, although many of those were later ruled invalid.

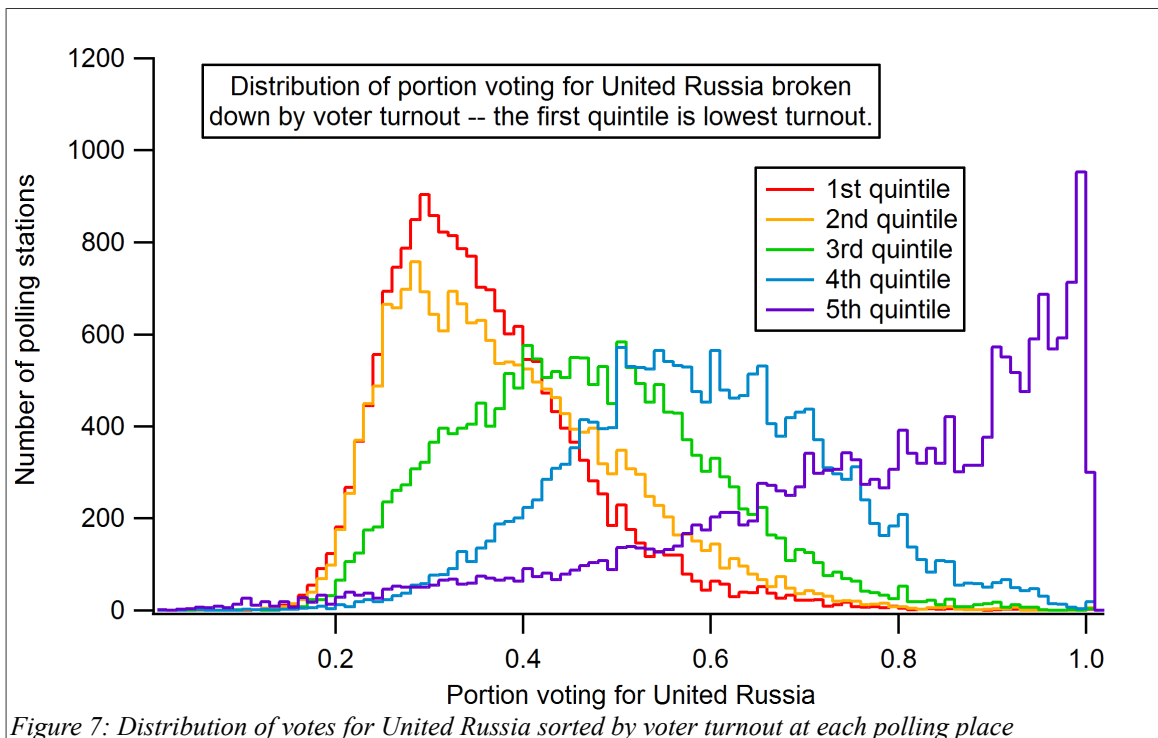
### Distribution of voted by party

As with voter turnout, the percent voting for a given party is also expected to have a binomial distribution, centered around the average likelihood of voting for that party.

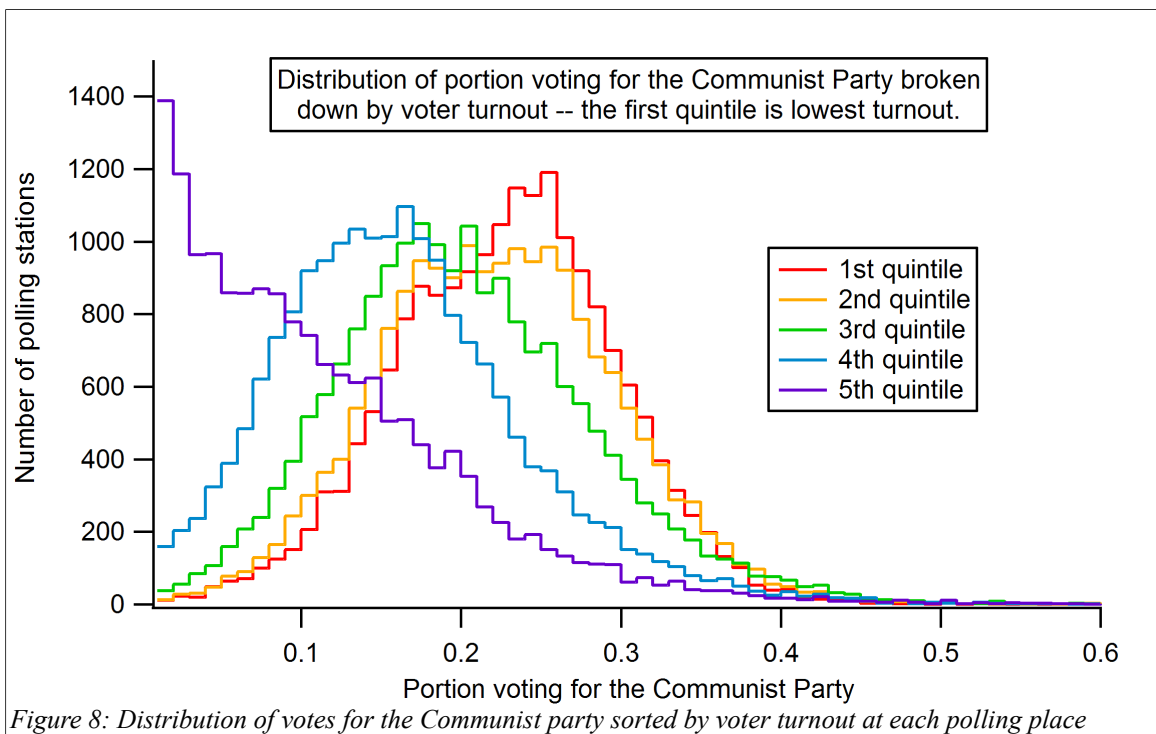


The results for the Communist Party roughly follow the expected distribution, although their relatively low support causes an extra apparent peak at zero percent. The results for United Russia, however, have a very long tail on the side of high support, and a peak near 100% that can't be explained by this model.

We noted above that polling stations with high turnout often vote differently than those with average turnout. To see the extent of this we can sort all polling stations by their turnout and then plot the distribution of votes for each quintile of turnout. The middle quintile represents a mean voter turnout of 61% while the top quintile has a mean voter turnout of 93%.



All quintiles show a relatively standard distribution except for the highest quintile of turnout which trends very strongly for voting for United Russia. Similarly, the portion voting for United Russia trends upwards for the 3<sup>rd</sup> and 4<sup>th</sup> quintiles, although it is almost the same for the first two.



The support for the Communist Party shows a relatively weak dependence on voter turnout, and has the expected distribution except for in the 5<sup>th</sup> quintile.

Because of the unusual voting seen in this quintile, it is instructive to look at what the voting totals would have been without its inclusion

Party	Percent of the vote	Percent without high-turnout polling stations
United Russia	49.3	42.7
Communist Party	19.2	21.2
A Just Russia	13.2	15.2
Liberal Democratic Party	11.7	13.3
Yabloko	3.4	4.0
Patriots of Russia	1.0	1.1
Right Cause	0.6	0.7

In this case United Russia is still the dominant party, but has lost 6.6%, while other parties have gained slightly. (Note that these values sum to less than 100% since this is the percent of total votes cast, which includes invalid ballots).

## Conclusions

There is strong evidence for widespread vote manipulation in the 2011 Russian elections. While much of the press has focused on reports of voter fraud in large metropolitan areas,<sup>6</sup> this analysis indicates that fraud may have occurred on a ever-wider scale in other areas. It is difficult to quantitatively estimate how much fraud occurred, but a simple estimate would be to see how many less ballots would have been cast for United Russia if the polling stations with the highest 20% of turnout voted along the same lines as the others. In this case United Russia would have received 3.54 million fewer votes.

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6 <http://www.nytimes.com/2011/12/06/world/europe/russian-parliamentary-elections-criticized-by-west.html?scp=1&sq=vote%20fraud&st=cse> and <http://www.latimes.com/news/nationworld/world/la-fg-russia-election-protest-20111206,0,4837064.story>