

Quantifying Polarization around Election Denial

Measuring Public Sentiment Changes in the 2022 Midterms

Ben Gimbel

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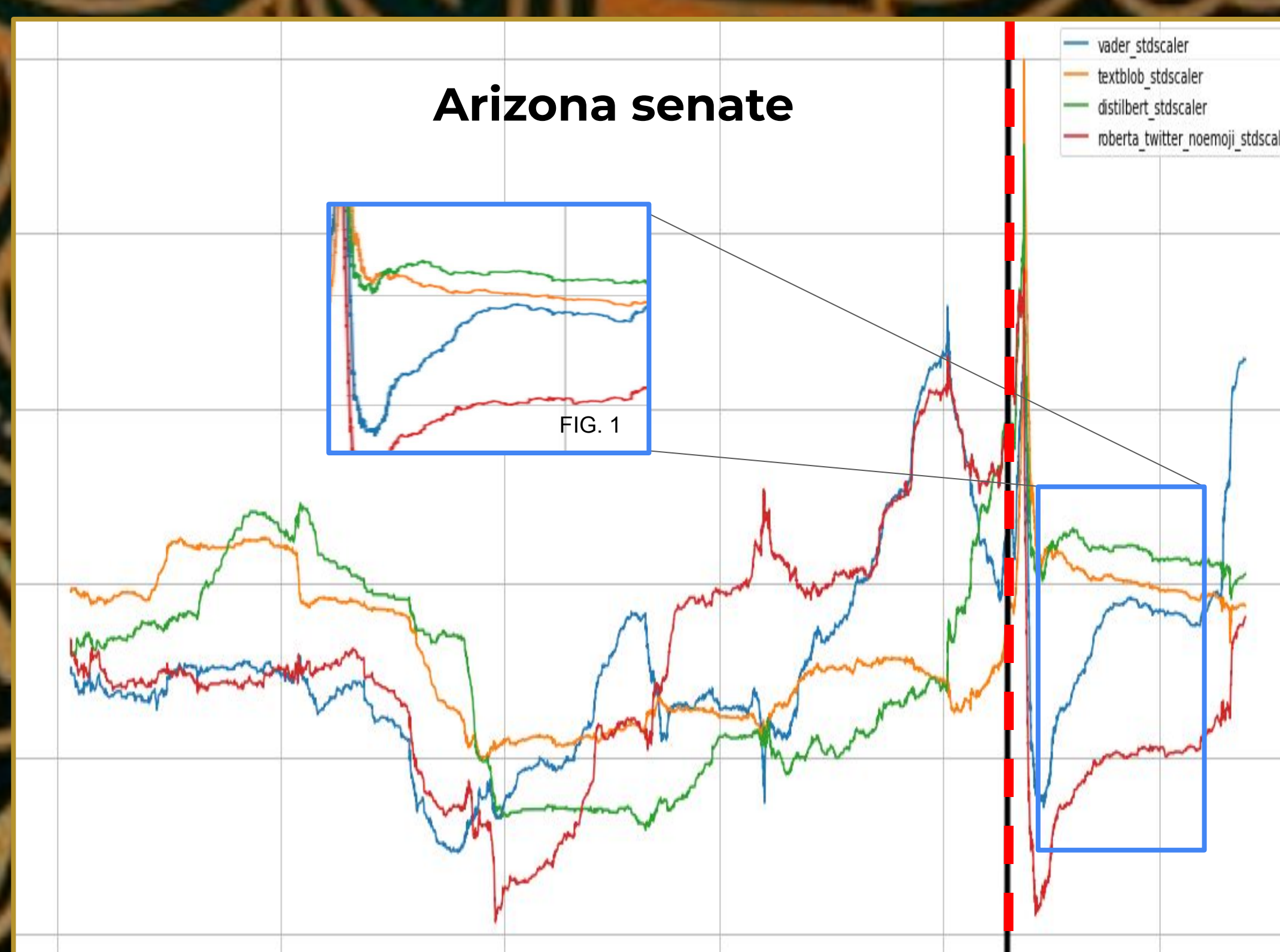
Introduction

It is commonly said in popular media that American politics are becoming more polarized.¹ Polarization, or decreases in moderate positions in favor of unifying along the extremes, has far-reaching effects into public opinion surrounding neutral electoral processes. Blaming electoral fraud, suppression, and interference became a popular tool of losing candidates from both parties in the 2016 Presidential election, the 2018 Georgia gubernatorial race, and the 2020 Presidential election.² In this spirit, several 2022 senate candidates (many of whom deny the results of the election two years ago) refused to commit to respecting the results or admit they might lose. However, the increase in distrust among those running does not definitively imply trickling effects into the general public.

Our goal is to assess sentiments around three of the most contentious midterm senate elections with national implications (Pennsylvania, Arizona, and Georgia), and examine whether there is evidence of political polarization in the responses to announced winners when compared to base level sentiments before the election. Furthermore, sentiment will then be compared to the Arizona governor's race, where the loser, Kari Lake, did not concede. To do this, we will scrape data from Twitter and perform sentiment analysis. Although Twitter is far from the perfect place to make broad generalizations to the American public, it is the best existing dataset for this type of research. Strong increases or decreases in sentiment even after the announcement of a winner supports the notion of greater polarization surrounding electoral results and processes, while maintaining pre-election levels supports the over-exaggeration of polarization.

Visualizations

Line denotes Election Day
Pre- and post- periods vary based on amount of tweets



Visualization of sentiment (+3 to -3) of 'Arizona senate'. Line denotes Election Day.

Methodology

We used multiple methods of sentiment analysis to perform tests. This way, any outliers caused by a single technique's methodology (VADER, TextBlob, DistilBERT, RoBERTa) would be mediated. Our implementation of these programs work backwards, starting with the test day's date (Dec. 12, 2022) as far back as the maximum amount of tweets. For Arizona and Pennsylvania (tweets identified as having the terms 'Arizona senate' / 'Arizona governor' and 'Pennsylvania senate', respectively), 10,000 tweets were sufficient to measure time before the election. For the Georgia race (search term, 'Georgia runoff'), 30,000 tweets were necessary.

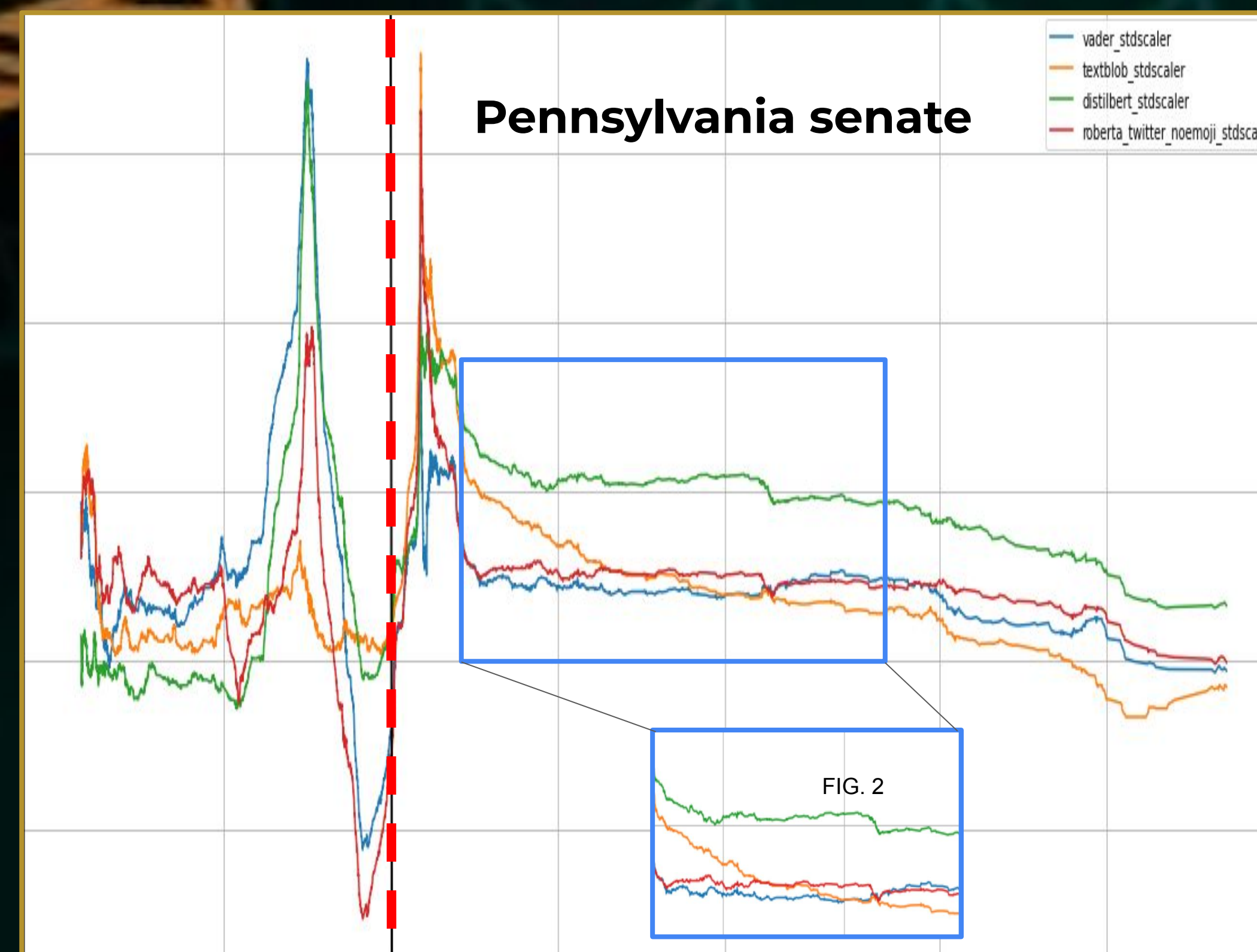
Collection of the tweets was performed using sncrape. After using Python code to strip the tweets of non-ASCII characters and clean them for use, the tweets were put through the sentiment analysis, and plotted on to graphs.

The specific search terms were determined by using general, unbiased phrases which would yield maximum results. For instance, 'Arizona fraud', although more specific to criticism of the electoral process, would have been a biased search term. This in turn exaggerates the issue by only looking at tweets likely to be upset about the election.

'Georgia runoff' was chosen over 'Georgia senate', as the goal was to specifically look at sentiment in response to declaring a winner. This establishes the Nov. 8, 2022 - Dec. 6, 2022 period as the baseline sentiment.

Beyond the immediate reactions on Twitter, we will also examine the sentiment over the month (or week, in the case of Georgia) since.

The governor's race in Arizona was chosen to examine differences in sentiment based on whether the loser concedes. Although candidates, such as Blake Masters in the Arizona senate race, never committed to accept a loss, they did end up doing so.³ While a governor's race and senate races have different national profiles, because of the expected close race and President Trump's influence in selecting the candidate, the gubernatorial election was followed closely across the country, giving us confidence in comparing it to senatorial ones.



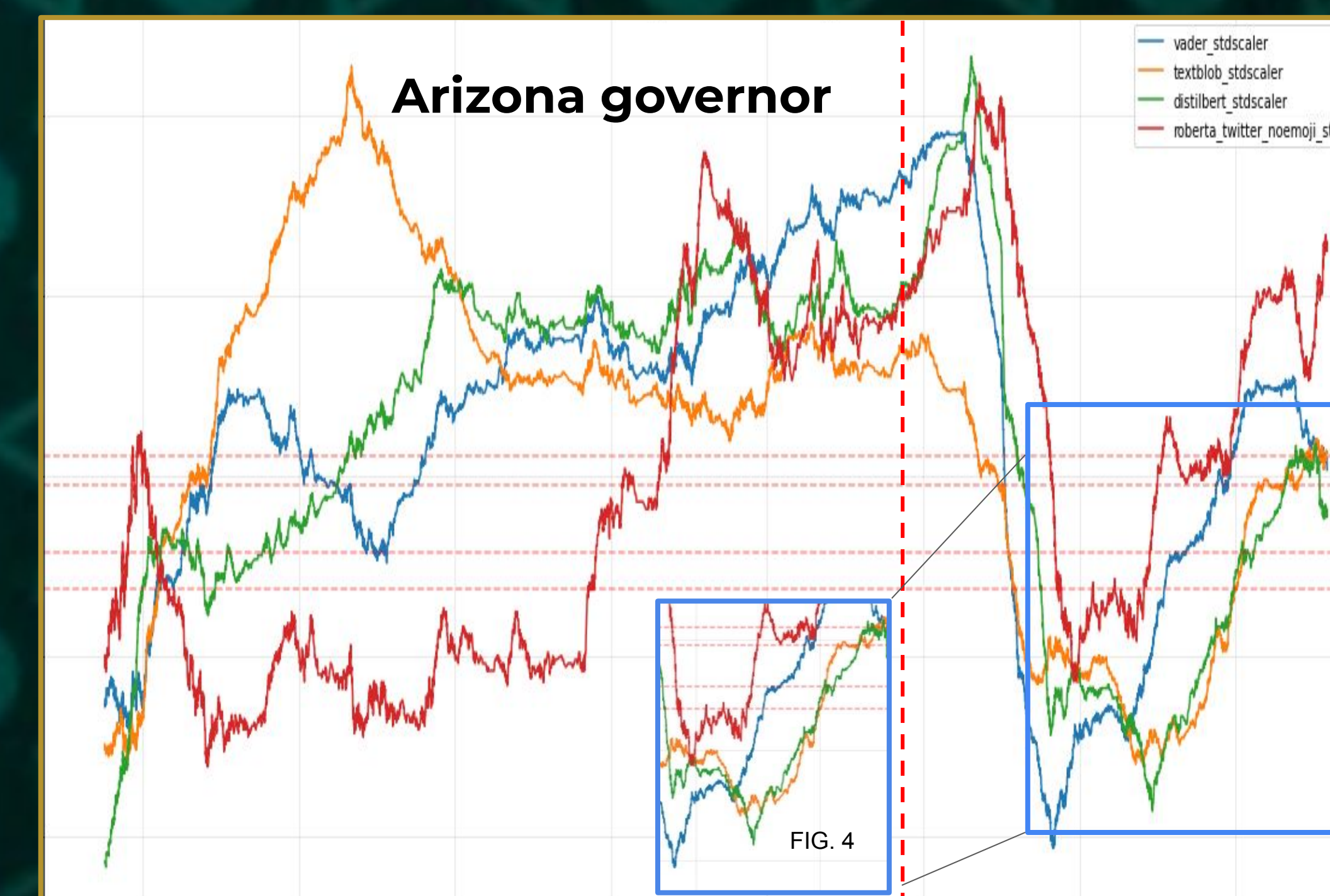
Visualization of sentiment (+3 to -3) of 'Pennsylvania senate'. Line denotes Election Day.

Results

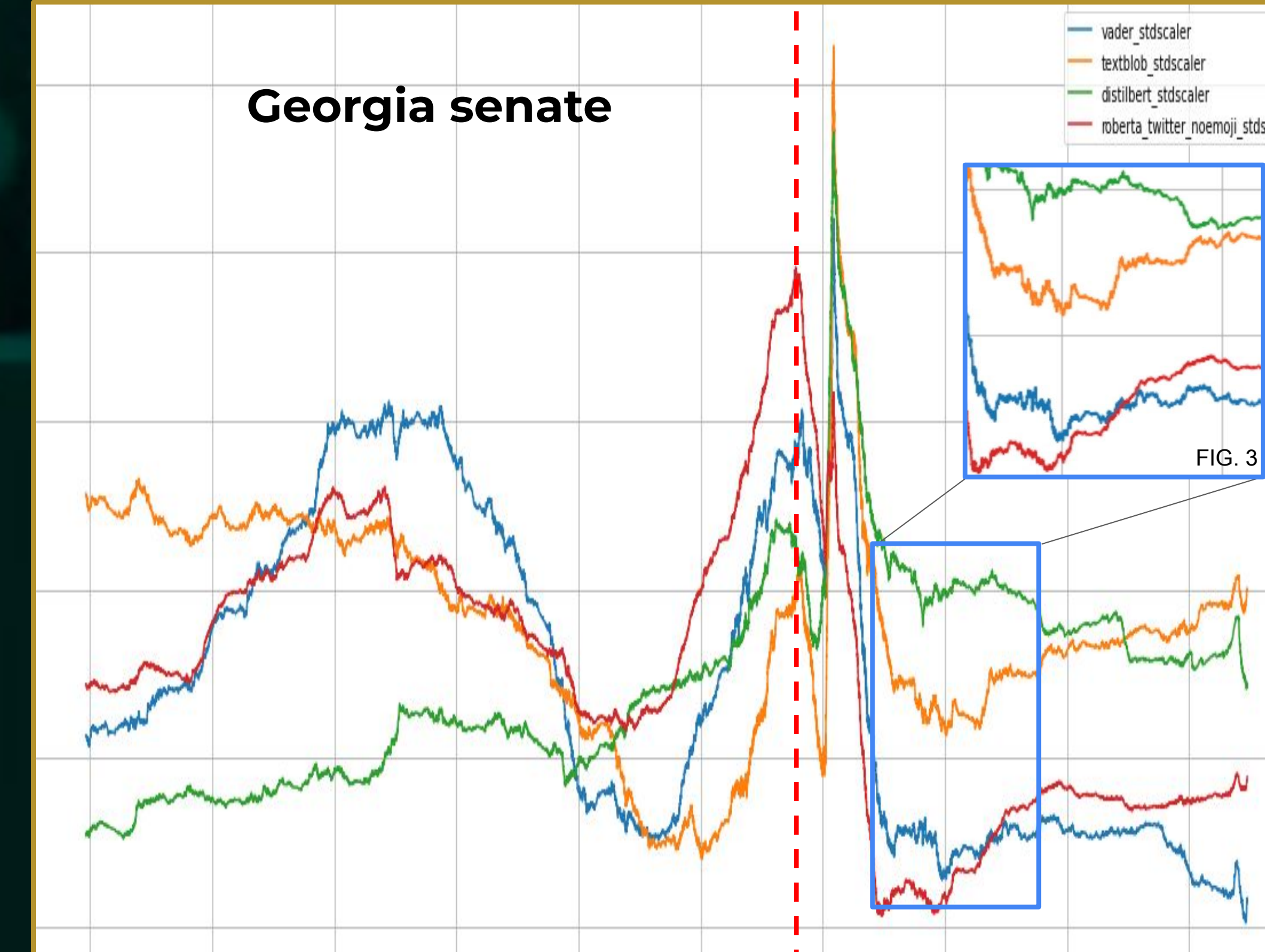
In all tests, there was a spike of positive sentiment, presumably anticipation, immediately before Election Day. The models remained generally consistent in their analyses, with the greatest variations being in the Arizona senate. As demonstrated the clearest in Pennsylvania, there tended to be a large spike and large fall, in either order, right at Election Day.

There was general consistency of the sentiments in the lead up to the election. Pre-election trended to relatively moderate levels, with occasional dips and spikes. When a winner was announced, we see the aforementioned large variations of immense peaks and valleys, in the expected initial excitement or dread.

But, far more notably, all sentiments generally turn back to moderate in the aftermath. Pennsylvania and Georgia highlight this well (Fig. 2, 3). This suggests that this election cycle did not have extremely long-lasting effects on public sentiment around elections. However, in the Arizona governor's race, where Kari Lake refused to concede, we see more charged sentiments for longer in the aftermath (Fig. 4), implying a link between a candidate's concession and polarity of public opinion.



Visualization of sentiment (+3 to -3) of 'Arizona governor'. Line denotes Election Day.



Visualization of sentiment (+3 to -3) of 'Georgia runoff'. Line denotes Election Day.

Conclusion

As we see the common theme of a spike of positive sentiment followed by a fall in negative sentiment, it appears the immediate reactions tend to the extremes of the model. This was the expected 'reaction period' of the results announcements. However, the most notable trend was the regression to moderate sentiment shortly after the election. This occurred in all elections, but to a lesser extent in the Arizona gubernatorial race (Fig. 4), showing there still is a tangible impact in concession.

The other key takeaway from this assessment is that public support for continuing attacks on the election process after a loss does not seem to have the backing it did in prior cycles, shown by the regression to neutral sentiment in the following days. This may be attributable to the candidates being non-presidential and therefore less popular, it being a midterm year, or there actually being a dip (although still a presence) of willingness in the public to buy prolonged attacks on election integrity.

In 2020, it was plainly clear that negative sentiment was carried much further, with it being stoked all the way into an insurrection almost three months later. Even beyond the radicals who attacked the Capitol, there was wider public support for overturning the election due to non-existent fraud. If the trend of sentiment moderating after large peaks and valleys immediately following the election continues, then faith in and the legitimate perception of elections will likely increase in the absence of sustained attacks and negativity.

Future and Ethics Statement

This is just one piece of evidence in quantifying political sentiments around neutral election processes. Not only should it be compared with data from prior elections to chart increases or decreases in polarization, but broader assessments of sentiment should be pursued. Twitter tends to echo fewer, more polar voices, which generate the most reaction.⁴ With more time and resources, a future direction is to plot the absolute value of positive and negative sentiment, to characterize the growth in polar opinions about elections. Furthermore, narrowing in on whether extreme sentiment is about the candidate or the election process would also provide insightful results.

References/Acknowledgements

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