

BROOKINGS

Report

What internet search data reveal about Donald Trump's first year in office

Darrell M. West Wednesday, January 17, 2018

The past year has been full of ups and downs for President Donald Trump. His inaugural address launched an “America First” vision that claimed the country was beset by violence and poverty, and needed to “protect our borders from ravages of other countries.” According to him, “protection will lead to great prosperity and strength.”^[1]

In subsequent months, the president doubled down on this perspective with a flood of tweets, press conferences, rallies, and policy actions that raised negative sentiments among Democrats, women, minorities, and immigrants.^[2] The year ended with GOP election losses in Alabama, Virginia, and New Jersey, and a Gallup public opinion survey showing the president with a 35 percent approval and 59 percent disapproval rating.^[3] The former figure is far below the support of any other post-war president at the first-year point.

Policywise, though, President Trump ended the year with a notable victory. Congress enacted a \$1.5 trillion tax cut and repealed the individual mandate of the Affordable Care Act, two long-term goals of the Republican party. Also taking into account the elevation of Neil Gorsuch to the U.S. Supreme Court, a host of deregulation executive orders, the dismantling of the Trans-Pacific Partnership trade agreement, and an exit from the Paris climate accord, Trump argued that he had an impactful first year.^[4]

To date, much of the analysis of Trump's initial service has emphasized traditional metrics such as polls, election results, and legislation. All of these are useful ways to analyze, but they ignore big data analytics based on digital tools and social media behavior. Due to their real-time character and the large number of data points, these

techniques represent valuable means to examine contemporary behavior.

In this report, I inaugurate the first in a series of big data analyses that will chart long-term trends. In the same way that researchers track political, economic, and social activities, it is useful to deploy social media and event histories to identify patterns in internet search behavior regarding President Trump. Using this information, I find several important developments:

1. Public interest in Trump has plummeted over the course of 2017. After peaking during inauguration week, searches for him have dropped to 20 percent of the initial level as the public has soured on the chief executive.
2. There were variations in interest in economic, domestic, and foreign policy, depending on the time of year. Interest in health care peaked during the period of the summer when Congress attempted but failed to repeal Obamacare. There also were spikes in interest in North Korea, terrorism, taxes, and inequality as those topics were in the news.
3. There were significant differences across states and cities in public interest as various topics surfaced nationally. Variations based on geography reveal interesting things in terms of how different issues resonate in various parts of the country.
4. Impeachment interest has surged during Trump's first year. In May and November, there were major spikes in public interest in that topic as Trump fired FBI Director James Comey in May and saw leading advisers face federal indictment in November.

The value of big data

Big data provide a valuable perspective on political developments. Unlike public opinion surveys, they are based on a large number of observations. As an illustration, Google currently hosts at least 2 trillion searches per year around the world, up from 1.2 trillion in 2012.^[5] That magnitude of activity gives search data a value that goes beyond conventional research methodologies based on a few hundred or a few thousand respondents.

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In addition, big data have a real-time component that provides contemporary and ongoing relevance. Social media reactions take place instantly and therefore help researchers track the views of large numbers of people on an ongoing basis. The instant nature of this information makes it very valuable for policymakers, reporters, and researchers because it can signal trends long before surveys or censuses have identified them.

Finally, big data can measure trends over time. Their longitudinal component sheds light on what is happening to contemporary figures and how that shifts at various points. Careful analysis can spot trends and find alterations in public sentiments. Through “event history” analysis, researchers can link changes in search behavior to particular events that drive people’s information requests. That can provide additional nuance to the analysis of aggregate data.

Internet search queries

Digital media platforms represent a lens through which to study contemporary politics. They are ubiquitous in nature and multi-faceted in what they measure. Tools like Google and Bing search, Facebook posts, Twitter tweets, and Instagram sharing reveal important clues about what is happening today.

The topics on which people search show what is of interest to them and how that interest changes over time and in different parts of the country. Facebook likes and sharing behavior help people understand how others engage with important topics and how those reactions change over time.^[6] People’s reactions to tweets in terms of retweets and likes represent a form of engagement that measure type and intensity of reaction.

Instagram sharing behavior reveals what people like and what images engage them. Taken together, this information provides a rich and detailed perspective on current affairs.^[7]

Already, there have been innovative studies using internet search data. In 2009, for example, researchers argued that search queries could predict influenza epidemics. Using Google information, they said “because the relative frequency of certain queries is highly correlated with the percentage of physician visits in which a patient presents with influenza-like symptoms, we can accurately estimate the current level of weekly influenza activity in each region of the United States, with a reporting lag of about one day.”^[8]

Others have extended this analysis to additional topics. Nikolaos Askitas and Klaus Zimmermann applied similar reasoning to unemployment forecasting. Using Google search data, their analysis “demonstrates strong correlations between keyword searches and unemployment rates using monthly German data.”^[9] Tobias Preis, Helen Moat, and Eugene Stanley did the same thing with financial markets. They claim that “by analyzing changes in Google query volumes for search terms related to finance, we find patterns that may be interpreted as ‘early warning signs’ of stock market moves.”^[10]

However, some scholars remain skeptical of big data analytics. David Lazer, Ryan Kennedy, Gary King, and Alessandro Vespignani showed that Google search data was not accurate in tracking the 2013 flu. An analysis of search data that year predicted “more than double the proportion of doctor visits for influenza-like illness,” but Centers for Disease Control and Prevention data demonstrate that turned out not to be the case. Using information from that year, the researchers noted the “traps in big data analysis.”^[11]

Event histories

Event histories help to make sense of longitudinal data. Matching events that correspond to spikes in interest enable researchers to add context to the aggregate information. For example, developments such as a terrorist attack or a major legislative action often drive media and public interest in particular topics. The media report high-profile activities

and the public responds by requesting information related to those events. Seeing the ups and downs in search behavior and matching those data points to actual events provides clues regarding the factors driving public interest.

From the standpoint of politics and public policy, 2017 was an eventful year. Trump was inaugurated on Jan. 20. There was a historic women's march on Washington, D.C. on Jan. 21 that attracted millions of participants. The president delivered his first address to Congress on Feb. 28. Neil Gorsuch was confirmed to the Supreme Court on April 7. FBI Director James Comey was fired on May 9. President Trump sent his infamous "covfefe" tweet on May 31. The Senate failed to repeal the Affordable Care Act on July 28. Protests turned violent in Charlottesville, Va., on Aug. 17. An American terrorist in Las Vegas killed dozens of people on Oct. 1. Former Trump campaign manager Paul Manafort was indicted on Oct. 30. Democrats won major victories in Virginia and New Jersey on Nov. 7. Former Trump national security adviser Michael Flynn pled guilty on Dec. 3. Alabama Democrat Doug Jones won an unexpected seat in the Senate on Dec. 12. The Senate passed Trump's tax cut bill and repealed Obamacare's individual health mandate on Dec. 19. As is discussed below, these events help us understand search behavior over the past year.

Data and methodology

In this analysis, I use Google search queries and event histories to examine trends relevant to President Trump. The data for this analysis come from Google searches of the U.S. web between Jan. 1 and Dec. 30, 2017. Geographically, I report data from national, state, and urban levels in order to elucidate variations across states and cities.^[12] I use weekly search data to smooth out the data into regular time intervals.

Among the topics analyzed include interest in Trump, the economy, health care, foreign policy, immigration, terrorism, social groups, political groups, and impeachment. According to Google Trends, interest is defined as "search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. Likewise a score of 0 means the term was less than 1% popular as the peak."^[13]

Interest in Trump peaked right around the time of his inauguration. By the end of April, though, public interest had dropped precipitously.

I focus on Google search because it includes 88 percent of the searches that take place in the United States, compared to 7 percent for Bing and 4 percent for Yahoo.^[14] It is important to note that since data are aggregated, it is not possible to break them down by age, gender, race, or other categories of possible interest. According to Google, its search data are normalized in order to facilitate comparability based on subject, time period, and location.

Interest in Donald Trump

Internet search data represent a way to gauge public interest in Trump over the course of his first year in office. Figure 1 shows that interest in Trump peaked during the week of Jan. 15 to 21, 2017, right around the time of his inauguration. By the end of April, though, public interest had dropped precipitously. From its high point, interest has declined to around 20 percent of the early level and stayed there for the rest of the year.

Figure 1: US interest in Donald Trump, Jan. 1-Dec. 30, 2017 (by week)



Week

Source: Google Trends



The top states in terms of Trump interest included the District of Columbia, New York, Massachusetts, New Jersey, and Maryland (see Table 1). These were the places that displayed the greatest interest in him at the end of 2017, compared to other states.

Table 1: Top states in terms of Trump interest (Dec. 24-30, 2017)

Top states	Interest in Trump
District of Columbia	100
New York	86
Massachusetts	84
New Jersey	84
Maryland	80
Illinois	79
Rhode Island	79
Pennsylvania	79
Connecticut	78
California	76

The top cities in terms of Trump interest were Washington, D.C., New York, Chicago, Los Angeles, and Boston (see Table 2). These were the localities that elicited the highest level of interest in President Trump.

Table 2: Top cities in terms of Trump interest (Dec. 24-30, 2017)

Top cities	Interest in Trump
Washington, D.C.	100
New York	89
Chicago	88
Los Angeles	88

Boston	87
Portland	86
San Francisco	86
Philadelphia	85
Miami	85
Seattle	84

The economy

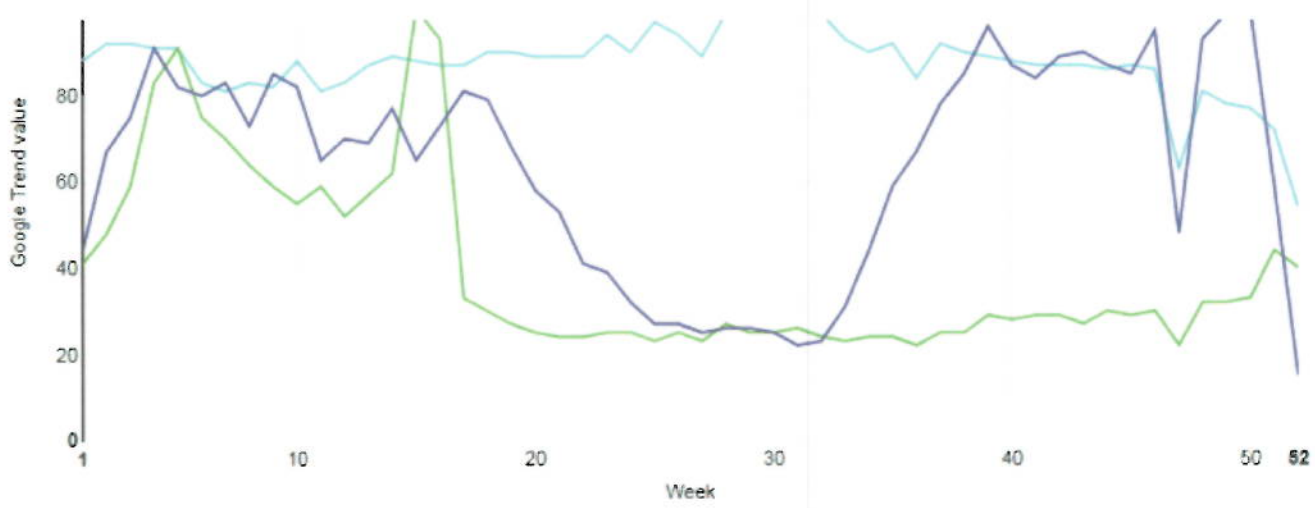
Figure 2 illustrates the search trends for some of the economic topics (jobs, taxes, and inequality) that generated considerable attention in 2017. Public interest in jobs was consistent throughout the year, generally averaging at least 80 percent. However, interest declined in the last few weeks of the year as the unemployment rate dropped to 4.1 percent in November 2017.

Interest in taxes peaked the weeks of Jan. 29-Feb. 4 and April 9-15. The former was at the beginning of Trump's administration, when advisers were discussing his legislative agenda. The latter was at the time of the April 15 tax filing deadline, when Americans had to pay their annual taxes.

Public interest in inequality started high during the first few months of the year, especially around the time of Jan. 29-Feb. 4, as demonstrations against the president's anticipated agenda were taking place. But it dropped over the summer time when there was less public and media attention. However, interest re-surged around Sept. 24-30 and Dec. 10-16. The former was when Republicans signaled a serious effort to cut taxes on wealthy individuals and corporations and the latter was near the end of the year when the House and Senate actually passed a large tax cut. This increase over the last few months of 2017 signals concern over inequality and how the GOP bill likely will raise disparities between the rich and non-rich.

Figure 2: US interest in jobs, taxes, and inequality, Jan. 1-Dec. 30, 2017 (by week)





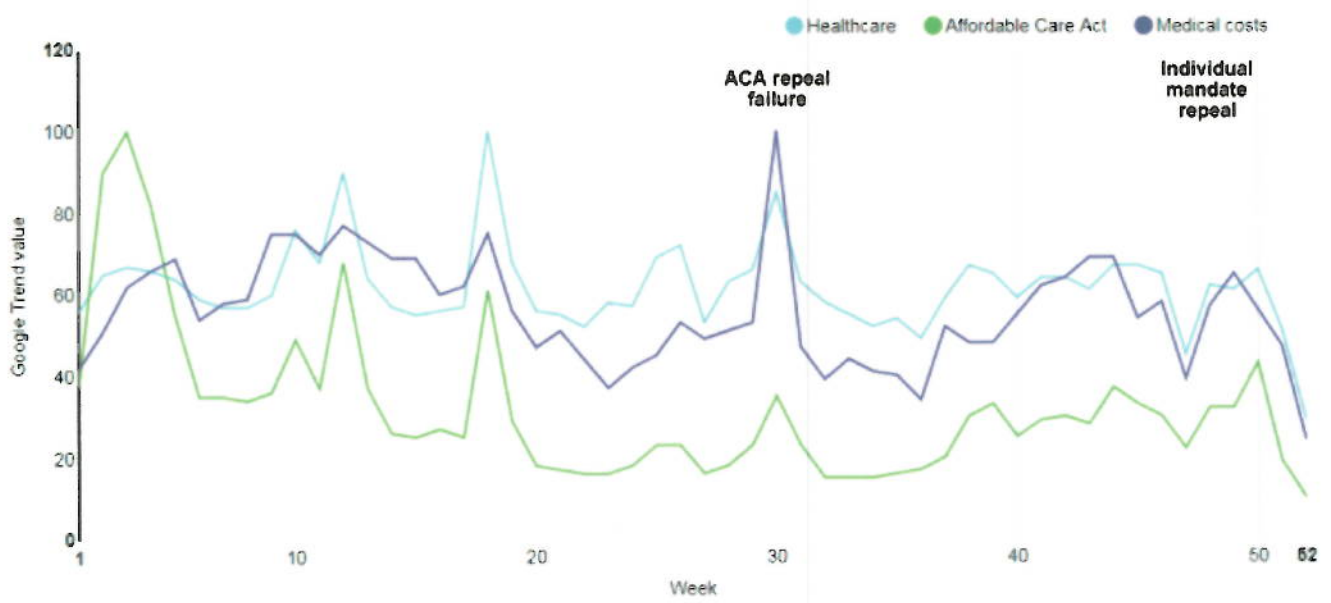
Source: Google Trends

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Health care

Figure 3 charts search information for health care, the Affordable Care Act, and medical costs. Interest in health care moved up and down as the subject was in the news. It was high during congressional efforts to repeal the Affordable Care Act and low after that effort failed on July 28. Interestingly, it remained low in December, when Republicans successfully repealed the individual mandate. Concern over medical costs peaked exactly at the time in July when Republicans were seeking to repeal the entire legislation.

Figure 3: US interest in health care, the Affordable Care Act, and medical costs, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends

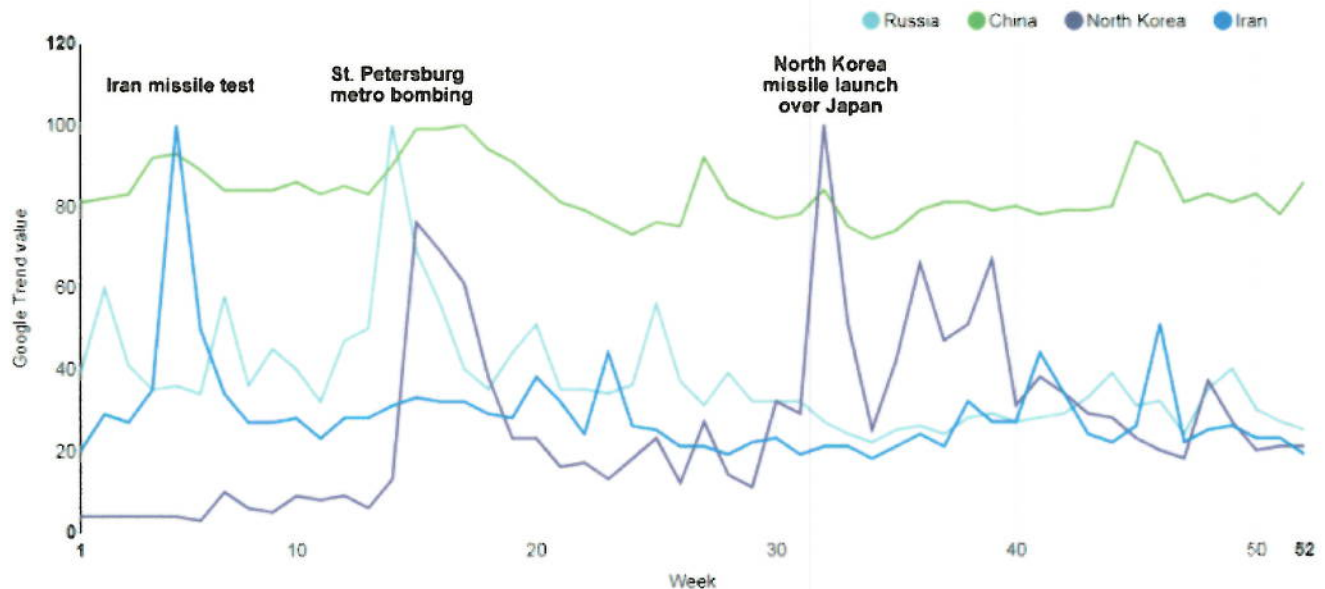
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Foreign policy

Figure 4 shows the data for searches regarding Russia, China, North Korea, and Iran. For most of the year, interest in China outpaced that of the other countries. But there were times when there were spikes in interest in Russia, Iran, and North Korea. Interest in Russia, for example, peaked in early April, when there was a bombing in St. Petersburg.

Searches for Iran rose in early February following its missile test and Trump's response that he was putting that country "on notice." Interest in North Korea increased in April and August, when the country fired missiles in the direction of Japan. In the latter month, President Trump also warned Americans not to travel to North Korea.

Figure 4: US interest in Russia, China, North Korea, and Iran, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends

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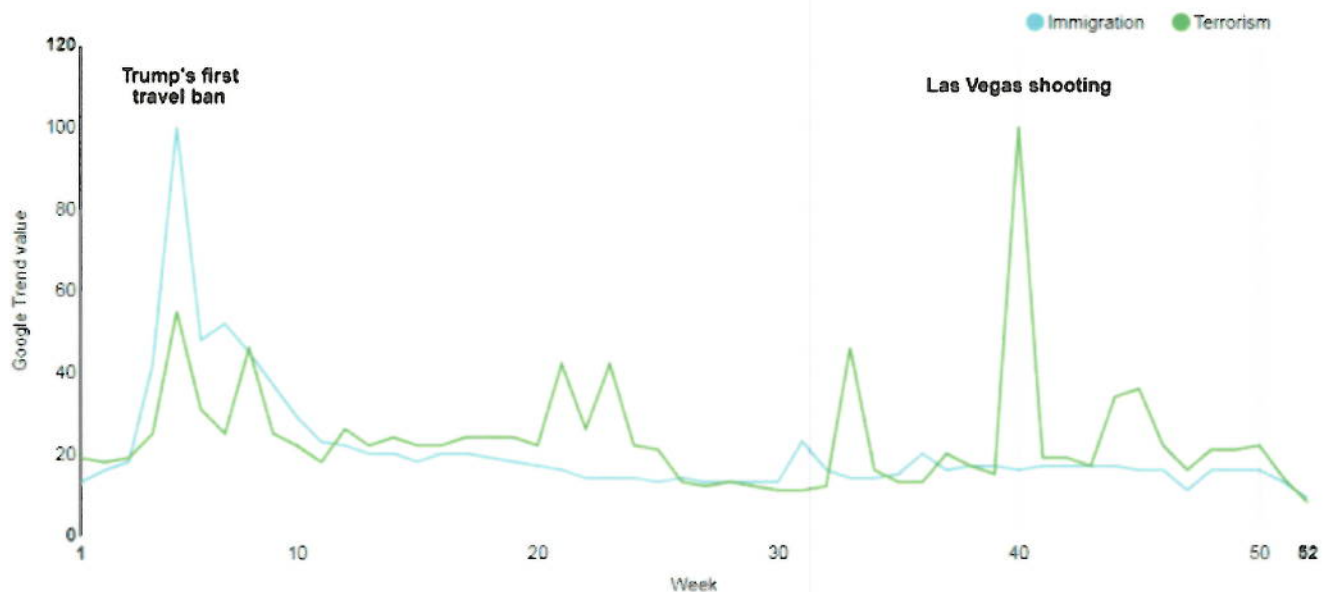
Immigration and terrorism

Figure 5 provides data on immigration and terrorism. Public interest in immigration peaked in February, when President Trump imposed a travel ban on people coming from seven predominantly Muslim countries. However, it fell substantially thereafter and

stayed relatively low because there were no legislative initiatives that addressed that topic.

Interest in terrorism rose dramatically in early October, when a Las Vegas shooter killed dozens of people from a nearby hotel. There was wall-to-wall news coverage of domestic terrorism at this time, but interest dropped after a couple of weeks of saturated reporting.

Figure 5: US interest in immigration and terrorism, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends

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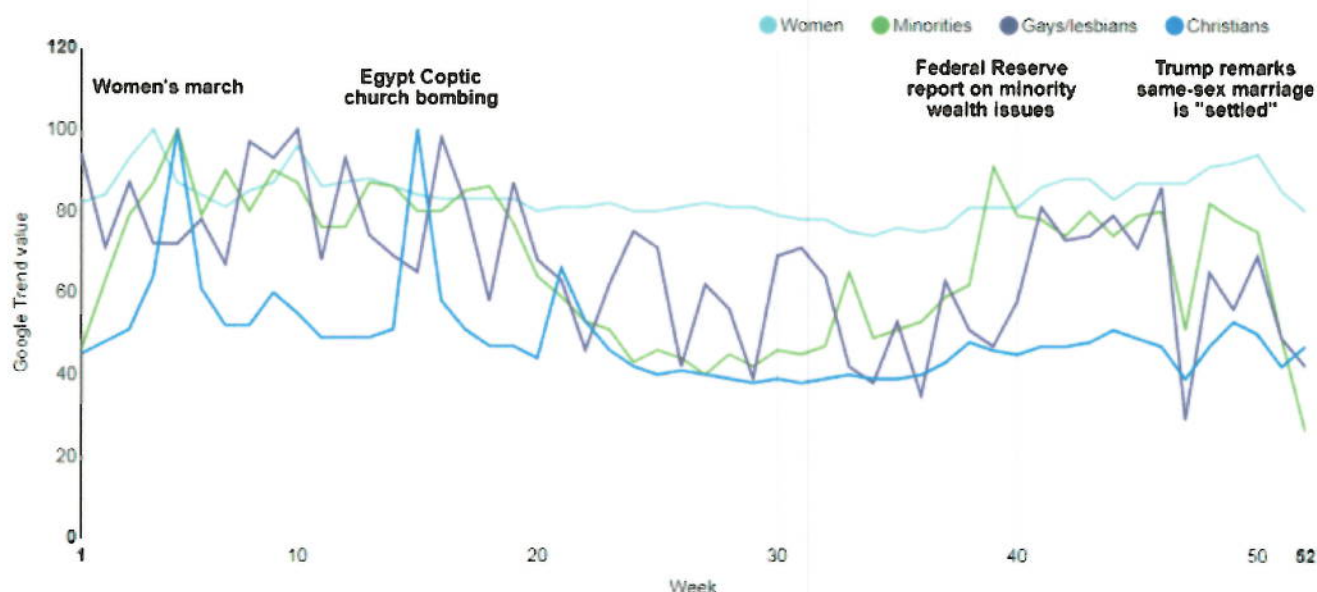
Social groups

Figure 6 compares search data for women, minorities, gay/lesbian individuals, and Christians. Public interest in women stayed high throughout the year. It started at a high level with the women's march on Washington at the time of the Trump inauguration, and generally was above 80 percent.

Interest in Christians was high in late January at the time of Trump's inauguration and in April, when there was a widely publicized bombing of an Egyptian Coptic church. It spiked for minorities in September, when a U.S. Federal Reserve report underscored problems of economic opportunity for racial minorities.

Public searches related to gay/lesbian individuals was high during the initial months of the Trump administration, before falling during the summer months. However, it rose again in November, when Trump told an interviewer that same-sex marriage was “settled” law in America.

Figure 6: US interest in women, minorities, gays/lesbians, and Christians, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends

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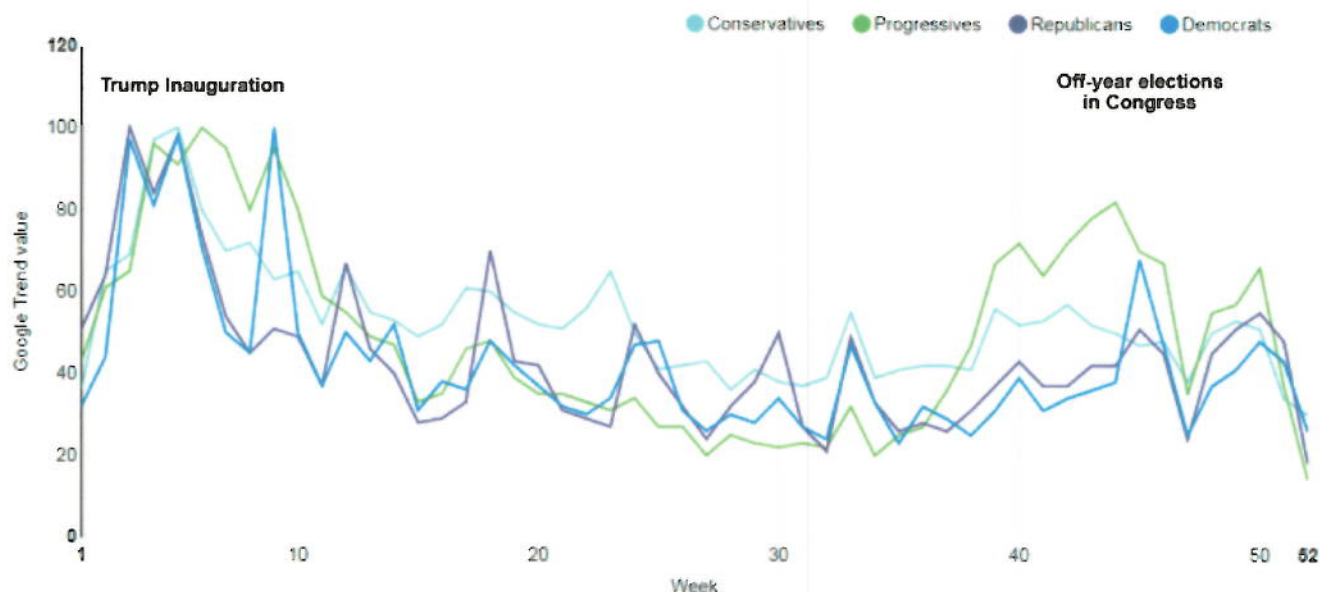
Political groups

Searches for progressives were much higher in the fall, a time when Democrats made major gains in several high-profile elections.

Figure 7 compiles data on searches regarding conservatives, progressives, Republicans, and Democrats. Reflecting the polarized nature of American politics and the contentiousness surrounding the start of the Trump administration, public interest in all four groupings was very high in January and February. It dropped during the summer, but

then rose again for progressives in the weeks leading up to the off-year November elections. Searches for progressives were much higher in September, October, and November than any of the other political groups. Democrats made major gains then in Virginia, New Jersey, and Alabama.

Figure 7: US interest in conservatives, progressives, Republicans, and Democrats, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends

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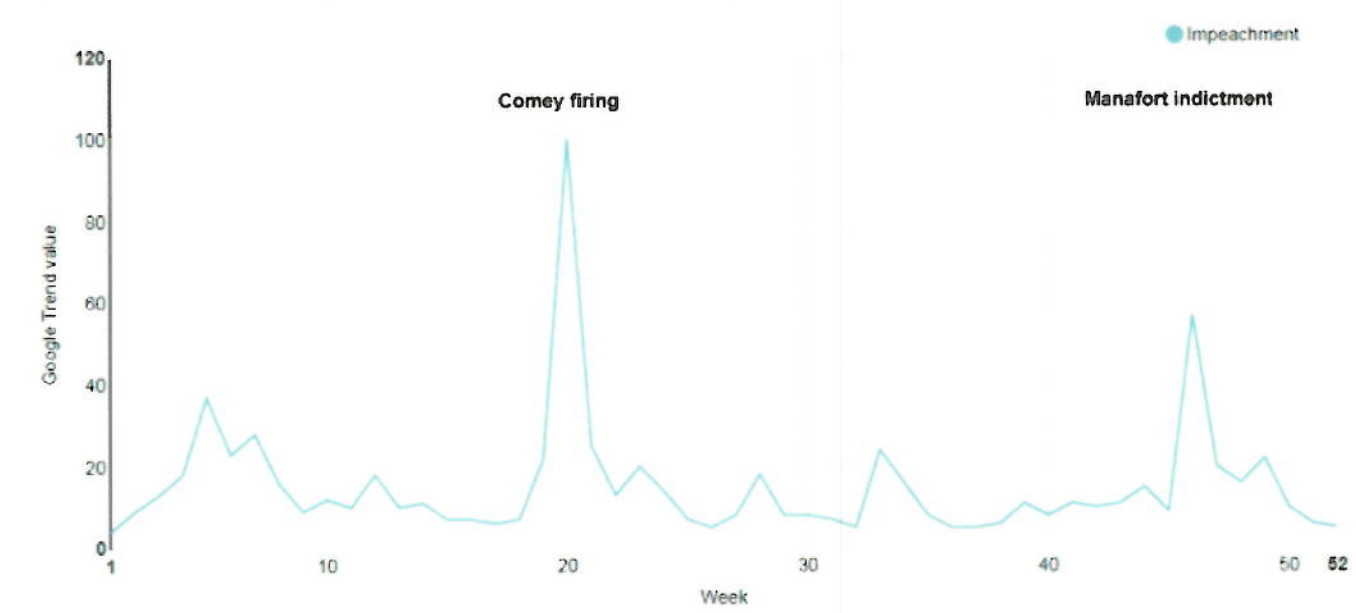
Impeachment

Figure 8 provides search data for impeachment. The results demonstrate that interest peaked the weeks of May 14-20 and Nov. 12-18, 2017. The former was right after President Trump fired FBI Director James Comey on May 9, while November was the period right after the Oct. 30 indictment of Trump's former campaign manager Paul Manafort and leading into the Dec. 1 guilty plea by Trump's former national security adviser Michael Flynn. The spikes around those time points demonstrate that when negative events take place, public interest in impeachment rises substantially.

Search data from the past year indicate that when there are major negative developments for Trump, interest in impeachment rises from three to five times its usual level.

With Special Counsel Robert Mueller undertaking a detailed investigation into Trump's Russia relations, possible obstruction of justice, and long-term financial dealings, that connection poses considerable risks to the President in 2018. Search data from the past year indicate when there are major negative developments for Trump, interest in impeachment rises from three to five times its usual level. If President Trump fires Mueller, it could launch a political firestorm that could engulf the chief executive.

Figure 8: US interest in impeachment, Jan. 1-Dec. 30, 2017 (by week)



Source: Google Trends
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The top states in terms of impeachment interest were District of Columbia, Vermont, Maryland, Washington, and Colorado.

Table 3: Top states in terms of impeachment interest (Dec. 24-30, 2017)

Top states	Interest in impeachment
District of Columbia	100
Vermont	93
Maryland	90
Washington	89
Colorado	87
Massachusetts	86
Oregon	85
Delaware	83
Connecticut	82
California	80

The top cities for impeachment interest were Seattle, Portland, Washington, D.C., Denver, and Philadelphia.

Table 4: Top cities in terms of impeachment interest (Dec. 24-30, 2017)

Top cities	Interest in impeachment
Seattle	100
Portland	100
Washington, DC	98
Denver	86
Philadelphia	86
San Francisco	84
Los Angeles	82
San Diego	79
Austin	77
Boston	77

Conclusions

To summarize, there were a number of important trends in internet searches relevant to President Trump in 2017. Data show interest in Trump plummeting over the course of the year; variations in interest in economic, domestic, and foreign policy, depending on the time of year; spikes in interest in Russia, terrorism, taxes, and inequality as those topics were in the news; significant differences across states and cities as various topics surfaced nationally; and interest in impeachment surging during May and November.

Overall, search data show interest in Trump plummeting over the course of the year.

It is important, of course, to keep in mind the limits of internet search data. First, they are highly aggregated and it is not possible to break down the overall numbers by age, gender, race, or other important demographic categories. Second, they measure interest in a topic, but not the direction of sentiment. Third, search data are sensitive to the terms being queried. The word “race,” for example, can generate different results than the word “minorities.”

Those points notwithstanding, though, internet search data rest on trillions of data points, provide information in real time, and measure trends over time. That helps analysts explore important topics such as the first year of Donald Trump's presidency, and discern shifts in interest based on subject, time, and geography. As such, they represent a valuable technique for the exploration of contemporary politics and policymaking.

Report Produced by [Center for Technology Innovation](#)

Footnotes

1. [Haley Sweetland Edwards](#), “Donald Trump Just Broke with Decades of Foreign Policy in Inaugural Address,” *Time*, January 20, 2017.
2. [Ginger Gibson](#), “Trump's First Year in Office Marked by Controversy, Protests,” *Reuters*, December 6, 2017.
3. [Gallup News](#). “Trump Approval Rating,” December 21, 2017.

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5. 5 Danny Sullivan, "Google Now Handles At Least 2 Trillion Searches Per Year," *Search Engine Land*, May 24, 2016.
6. 6 Sarah Perez, "Analysis of Social Media Did a Better Job at Predicting Trump's Win Than the Polls," *Tech Crunch*, November 10, 2016.
7. 7 Patrick Martinchek, "What I Discovered About Trump and Clinton From Analyzing 4 Million Facebook Posts," *New Co*, November 9, 2017.
8. 8 Jeremy Ginsberg, Matthew Mohebbi, Rajan Patel, Lynnette Brammer, Mark Smolinski, and Lary Brilliant, "Detecting Influenza Epidemics Using Search Engine Query Data," *Nature*, February 19, 2009.
9. 9 Nikolaos Askitas and Klaus Zimmermann, "Google Econometrics and Unemployment Forecasting," *Applied Economics Quarterly*, 2009.
10. 10 Tobias Preis, Helen Moat, and Eugene Stanley, "Quantifying Trading Behavior in Financial Markets Using Google Trends," *Scientific Reports*, 2013.
11. 11 David Lazer, Ryan Kennedy, Gary King, and Alessandro Vespignani, "The Parable of Google Flu: Traps in Big Data Analysis," *Science*, May 14, 2014.
12. 12 Carlin Leung, "Exploring Google Trends' Explore Function," *Quietly for Writers*, June 18, 2015.
13. 13 The definition of "interest over time" is shown at <https://trends.google.com>.
14. 14 Stats Counter, "Search Engine Market Share in the United States," 2017, <http://gs.statcounter.com/search-engine-market-share/all/united-states-of-america>.