

The Fox News Effect

Recently, many scholars have been interested in quantifying the effect of the national news media on the behavior of electorate. Understanding how the national media environment affects the election results is critically important, but also notoriously difficult. In particular, even if an association between media coverage and election outcomes exists, it is difficult to identify whether this association is due to the media's influence over the voters or the result of the media adjusting its contents to the preferences of voters.

In this exercise, we will consider the entry of the Fox News Channel (hereafter Fox News) into the television market in the late 1990s. This exercise is based on the following study: Stefano DellaVigna and Ethan Kaplan (2007). "The Fox News Effect: Media Bias and Voting." *Quarterly Journal of Economics*, 122:3, pp.1187-1234.

Note that due to the nature of negotiations between cable companies and television networks, adding a new channel to the line-up of a cable company may take a long time. For this reason, in contrast to what many people might expect, the Fox News was not able to enter conservative media markets first. We will be looking at some of the differences between the towns that initially did not receive Fox News, and those that did. The data set is in the csv file `foxnews.csv`. It contains information for 10,126 towns across 28 states in the United States:

Name	Description
<code>town</code>	Town name
<code>state</code>	State in which the town is located
<code>subrf2000</code>	Share of Fox News subscribers in 2000
<code>gopvoteshare2000</code>	Two-party vote share for the Republicans (2000 Presidential election)
<code>gopvoteshare1996</code>	Two-party vote share for the Republicans (1996 Presidential election)
<code>gopvoteshare1992</code>	Two-party vote share for the Republicans (1992 Presidential election)
<code>college1990</code>	Proportion of population with a college degree in 1990
<code>male1990</code>	Proportion of male population in 1990
<code>black1990</code>	Proportion of black population in 1990
<code>hisp1990</code>	Proportion of hispanic population in 1990
<code>income1990</code>	Median income in 1990
<code>logincome1990</code>	Median income in 1990 on the logarithmic scale

Question 1

We will investigate whether there are any systematic differences in the distribution of some key pre-treatment variables (`college1990`, `black1990`, `hisp1990`, `male1990`, `logincome1990`) between towns that received Fox News as compared to those that did not. First, create a new variable called `foxnews2000` that takes the value of 1 if the share of Fox News subscribers in a given town is strictly larger than 0 and equals 0 otherwise. Create five Quantile-Quantile plots to assess the similarity of the distributions for towns with and without subscribers across the five variables (`college1990`, `black1990`, `hisp1990`, `male1990`, `logincome1990`). Interpret the results. Are there any consistent patterns of differences between the two groups of towns? What do the plots tell you about our ability to make causal inferences regarding the effect of Fox News on the election outcome?

Question 2

We further examine whether there are any clear differences between those towns that did receive Fox News and those that did not. To do this, apply the k -means algorithm with two clusters to the five variables you

analyzed in the previous question. Be sure to remove any missing values and scale each variable so that their means are zero and standard deviations are one, before applying the algorithm. What is the distribution of the clusters with respect to whether or not towns received Fox News? What are the characteristics of each cluster? Explain how this analysis answers the question about our ability to make causal inferences about the electoral effect of Fox News.

Question 3

We begin to examine the relationship between the exposure to Fox News in 2000 and the change in the GOP's vote share from the 1996 to the 2000 Presidential election. First, create a new variable that measures the difference between the Republican vote share in 2000 and in 1996. Compute the correlation between this new variable and `subrf2000` and provide an interpretation of the result.

Question 4

We now estimate the causal effect of Fox News on the Republicans' vote share. For this question, use `foxnews2000` to measure exposure to Fox News. Interpret the results. What estimation strategy did you use to identify this causal effect? What is the assumption required for this analysis to be valid? Interpret this assumption in the context of this particular question. In your view, how credible is this assumption? Use the 1992 and 1996 election outcomes, both of which took place before the creation of the Fox News channel, to probe the credibility of the assumption.

Question 5

We further divide the towns that received Fox News into three groups based on the share of Fox News subscribers. Among the towns who received Fox News, the 'High exposure' group represents the group of towns whose share of subscribers is greater than or equal to the 66 percentile (among those who received Fox News). In contrast, the 'Low exposure' group represents the group of towns whose share of subscribers is less than or equal to the 33 percentile (among those who received Fox News). Conduct the same analysis as in the previous question but separately for the 'High exposure' and 'Low exposure' groups where the control group is the 'No exposure' group. Interpret the results.

Question 6

Finally, we consider the effect of having access to Fox News (as measured by `foxnews2000`) on the Republican vote share for each state. Repeat the analysis you have done in Question 4 for each state and compute a state-specific estimate of the Fox News effect (whenever possible). Create a histogram of state-specific effects to examine how much the magnitude of the Fox News effect varies across states. Interpret the results. Finally, compare the average effect across states with the estimate you obtained in Question 4. What does this comparison suggest about the validity of the assumption made in Question 4?