

How Independent is the News? The Effect of the 2016 Presidential Election on U.S. Media

Jai Singh

Abstract

The independence of the media and its insulation from political activity is a critical characteristic of a healthy democracy. This paper assesses the independence of modern U.S. news and reporting by investigating the effect of shifts in political power on media bias in the United States. Using an event study model, we analyze whether news publications began to cite conservative and libertarian think tanks more frequently after the 2016 election and assess whether the Republican Party victory led to an increased right-wing bias in the following years. Our findings show that there are no significant shifts in media bias or partisanship over the 2014-2018 period. On the individual publication level, we discover that the New York Times, Washington Post, and Wall Street Journal show no changes in the frequency with which they cite right-leaning think tanks. We find similar results for topic-specific citations, with no significant changes in bias for reporting on politics, economics, health, or education.

1 Introduction

Journalism and news media is often cited as the fourth pillar of democracy. Touted as disseminators of information and watchdogs of government, the news and media industry plays a critical role in society by holding public institutions accountable as well as driving social reform (Hanitzsch and Vos, 2018). Naturally, this role leads to a significant level of influence over public perception of government. An ever-growing body of work in political science and economics has shown that the media wields considerable power when it comes to agenda setting, and ultimately, the public vote (Prat and Strömberg, 2013; DellaVigna and Kaplan, 2007). As a result, influencing news coverage and reporting at all levels—from social media to traditional outlets—has become a key tool leveraged by political parties and organizations around the globe (Hoppman et al., 2012; Allcott and Gentzkow, 2017). Hence, the freedom and independence of the press has extremely consequential implications for all democratic systems of governance. In particular, the United States has exhibited a growing issue of journalism and news being susceptible to political pressure. Between 2002 and 2022, the U.S. fell from 17th to 42nd out of 180 countries on the World Press Freedom Index with press freedom violations being described as “increasing at a troubling rate” (Reporters Without Borders, 2022).

While a large number of studies have investigated how news and media bias change during election cycles (Hoppman et al., 2012; Léon et al., 2021), the literature on the long term effect of shifts in political power on media bias is surprisingly sparse. Goidel et al. (2021) show that over the course of the 2016 election, public perception of media bias was significantly more polarized, with Democrat voters believing the media to be biased against Hillary Clinton and Republican voters perceiving a bias against Donald Trump. This paper builds on Rich and Weaver’s (2002) approach of modelling media bias by using an event study model to determine whether news publications began to cite conservative and libertarian think tanks more frequently after the 2016 election, and assess whether the Republican Party victory led to an increased right-wing bias in the following years. This is made possible by two

factors unique to this case: 1) The U.S is home to the largest number of think tanks in the world which allows for a large sample of data, and 2) the tightly-contested 2016 election can be modelled as an exogenous shock, with the majority of polls and forecasts incorrectly predicting a win for the Democrats (Kennedy et al., 2018). We then go on to explore shifts in bias within specific topics such as health, politics, education, and economics.

Our findings show that there are no significant shifts in media bias or partisanship over the 2014-2018 period. Citations to conservative and libertarian think tanks remained consistent post the 2016 election, even without controlling for changes in expenses and funding. On the individual publication level, we find that the *New York Times*, *Washington Post*, and *Wall Street Journal* show no changes in the frequency with which they cite right-leaning think tanks. We find similar results for topic-specific citations, with no significant changes in bias for reporting on politics, economics, health, or education.

2 Literature Review

A number of novel methods have been applied to establish measures of implicit and explicit bias in the media. However, there is a significant lack of studies exploring media independence and the degree to which the media is insulated from the state. A notable example is Hopmann et al. (2012), where data from the 2007 national election campaign in Denmark is used to show that the agenda-setting power of a party in the media is linked to its ‘relevancy’ as defined by Sartori (2005). Larcinese et al. (2011) use a sample of American newspapers between 1996 and 2005 to investigate reporting behaviors and find that publications with a history of endorsing Democrat policies give more attention to negative news during Republican presidencies, and vice versa. This study explores a more implicit measure of bias by examining changes in the frequency with which publications cite right-leaning think tanks and aims to determine the causal relationship between a change in the incumbent party and media bias.

The majority of empirical studies on media partisanship have established that there is not a significant bias to either side (Puglisi and Snyder, 2015; Rich and Weaver, 2000). An exception is Groseclose and Milyo (2005), who find a left-leaning bias in all publications studied between 1993 and 2002, apart from the *Fox News Special Report* and *Washington Times*. Their methodology involves assembling a sample of think tanks and assigning each an *Americans for Democratic Action* (ADA) score, based on the average ADA score of members of Congress who cited them. This is then used to construct an ADA score for each publication, based on the frequency with which they cite the think tanks in the sample. However, these results were found to be highly sensitive within the time period in question and to outliers in the think tank sample, and failed to account for confounding factors such as think tank size or funding (Puglisi and Snyder, 2015; Nyhan, 2012). On a longer time scale, McDonald (2014) uses newspaper citations to detail the rise in prominence of conservative think tanks in the education policy sphere over the course of the 20th century, indicating that think tanks play an important role in shaping media coverage and the public perception

of political ideologies.

On the other hand, Rich and Weaver (2000) use think tank citations in the media to study media partisanship and find no significant bias. Along with using citations to think tanks in six national newspapers between 1991 and 1998 and encoding each think tank’s political leaning based on their mission statements, their methodology also employs a number of controls, such as think tank revenue, size, age, and location in order to eliminate possible confounding factors. They find that the majority of newspapers do not exhibit a preference for any particular ideology, with the exception of the *Washington Times* which shows a significant conservative bias. This paper builds on and adapts Rich and Weaver’s model for use in an event study in order to determine if media bias changed significantly after the 2016 U.S. Presidential election, both on a macro-level as well as within specific niches of political news.

3 Empirical Model

In order to assess how the 2016 election influenced mainstream media, we use the number of citations made by a publication to a think tank as a proxy. A rise in the number of citations to conservative or libertarian think tanks post-2016, holding other factors equal, would suggest the media adopted a more favourable view to right-leaning policies and ideology than before. To determine this, we model the number of citations made by a publication to a think tank using an event-study:

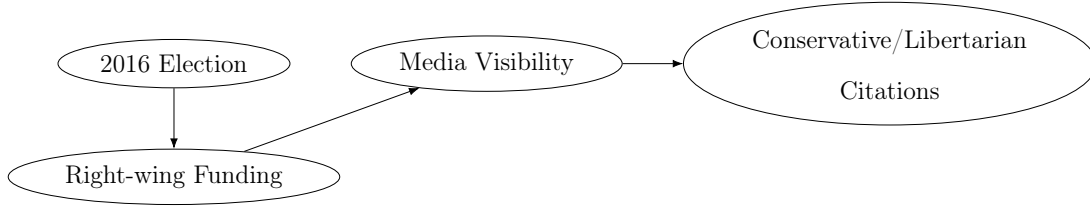
$$citations_{i,t,p} = \alpha_i + \mu_p \times \delta_t + \sum_{k \neq 2016} \gamma_k C_i \mathbb{1}\{k = t\} + \beta_1 \ln(1 + Expenses_{i,t}) + \beta_2 \sqrt{Age_{i,t}} + \epsilon_{i,t,p} \quad (1)$$

where $citations_{i,t,p}$ represents the number of citations think tank i received from publication p during year t . α_i corresponds to think-tank level fixed effects, whereas $\mu_p \times \delta_t$ corresponds to publication-by-year fixed effects. C_i is a dummy variable taking the value 1 if think tank i is conservative or libertarian, and 0 otherwise, allowing us to estimate the treatment effect on

right-leaning institutions. Adjusting C_i to be an indicator for only conservative institutions will also allow us to estimate the effect for conservative think tanks specifically. By omitting γ_{2016} in (1), we normalize its value to 0. Under the hypothesis that the 2016 election led to news media slanting more to the right, we would expect $\gamma_{2018}, \gamma_{2017} > 0 > \gamma_{2015}, \gamma_{2014}$.

The key assumption of the event study is that the 2016 election was an exogenous shock. We justify this as the majority of forecasts predicted a win for Hillary Clinton and the Democratic Party with most estimates ranging from 70 to 90 percent (Kennedy et al., 2018), implying that the Republican victory was a largely unexpected outcome.

$\sqrt{Age_{i,t}}$ acts as a proxy for a think tank’s reputation, which may influence how often journalists cite a particular institution as a source of information (Rich and Weaver, 2000). Similarly, including a measure for think tank spending in the form of $\ln(1 + Expenses_{i,t})$, we can control for variations in expenditure over time that may influence the institution’s visibility in the media and content output. However, it is possible that that changes in expenditure can be caused due to the outcome of the 2016 election, as right-of-center organizations may have experienced increases in funding, as depicted below:



Therefore, implementing the regression in (1) and omitting Expenses as a control also allows us to capture the effects of this indirect mechanism.

4 Data

The empirical model draws from two primary data sets to assess the impact of the 2016 election on media bias: a data set of prominent think tanks in the United States that includes relevant control variables, along with a data set of references made to those think tanks by news publications in articles written between 2014 and 2018. These datasets were then combined to create the panel data used to implement the model described in section 3.

4.1 Think Tank Data

The initial list of think tanks was scraped from Wikipedia ("List of think tanks in the United States", n.d.) and then manually parsed to correct any errors or repetitions. The data covers institutions from across the political spectrum, ranging from conservative organizations such as the Heritage Foundation to liberal and progressive think tanks such as the Center for American Progress, along with moderate and centrist groups such as the Brookings Institution.

4.1.1 Control Variables

In order to control for the effect a think tank's size and funding has on their impact on media, annual expenses were used as a control variable. As the majority of think tanks in the United States are registered as non-profit organizations, their annual expenses from 2014-2018 were manually recorded from their publicly-available Form 990 filings on the Securities and Exchange Commission (SEC) website. Institutions with gross receipts of under \$50,000 are not required to file a Form 990, so a 0 value was imputed in its place. For a few select institutions—primarily university affiliated research groups—expense data is not publicly available. These values were imputed with the median when running the regressions shown in section 5.

Additionally, a think tank's reputation and pedigree can have a large effect on their level

of media visibility and how often journalists rely on them as a source of information. In this case, age was used as a proxy for reputation, sourced from each institution’s website.

4.1.2 Political Ideology

Based on the approach by Rich and Weaver (2000), each think tank was assigned two dummy variables that indicate if the institution identifies as conservative and/or libertarian. The value for each was typically based on the institution’s mission statement and ‘about’ section on their web page; institutions with references to political keywords such as limited government, free markets, and individual liberty were encoded as libertarian, whereas references to conservatism, traditional values and heritage were encoded as conservative.

Table 1 shows the summary statistics for the the think tank data set after imputing missing values:

Table 1: Think Tank Data Summary Statistics

	N	Mean	Std. Dev.	Min	Max	Missing
Year Established	228	1981	24.7	1901	2020	0
Conservative (0/1)	228	0.189	0.393	0	1	0
Libertarian (0/1)	228	0.115	0.319	0	1	0
University Affiliated (0/1)	228	0.048	0.215	0	1	0
Small Organization	228	0.026	0.160	0	1	0
Expenses (2014)	219	44.64	329.9	0	4870	9
Expenses (2015)	219	45.62	326.37	0	4809	9
Expenses (2016)	219	46.91	333.29	0	4910	9
Expenses (2017)	219	48.13	337.44	0	4957	9
Expenses (2018)	219	49.12	343.37	1	5047	9

Note: Expenses in millions of dollars

4.2 Citation Data

The basis of the citation data is the corpus of all articles from the Washington Post (WP), New York Times (NYT), and Wall Street Journal (WSJ) published between 2014 and 2018, totalling 677,213 documents. The articles are sourced from ProQuest’s TDM Studio catalog, and were scraped for references to any of the think tanks in the think tank dataset. For each article, every sentence was checked for a mention of any of the think tank names, along with a reference word such as “said”, “says”, “according”, “report”, etc. (Thompson, 2020). If a match was found, the specific sentence, along with the publication name, was ascribed as a citation to the mentioned think tank and saved to the data set. The final data set includes 22,725 citations linked to 182 unique think tanks.

Table 2: Citation Data Summary Statistics

	N	Unique Values	Range	Missing
Article Title	22725	18658	—	0
Year	22725	5	2014-2018	0
Think Tank	22725	182	—	0
Publication	22725	3	{NYT, WSJ, WP}	0
Sentence	22725	—	—	0

Figure 1 showcases the share of citations coming from conservative/libertarian groups compared to those coming from other sources between 2014 and 2018. After the time of the election (November 8th, 2016), we do not see a discernible spike in conservative or libertarian citations, suggesting there is no correlation between the two.

Figure 1: Distribution of Citations by Ideology

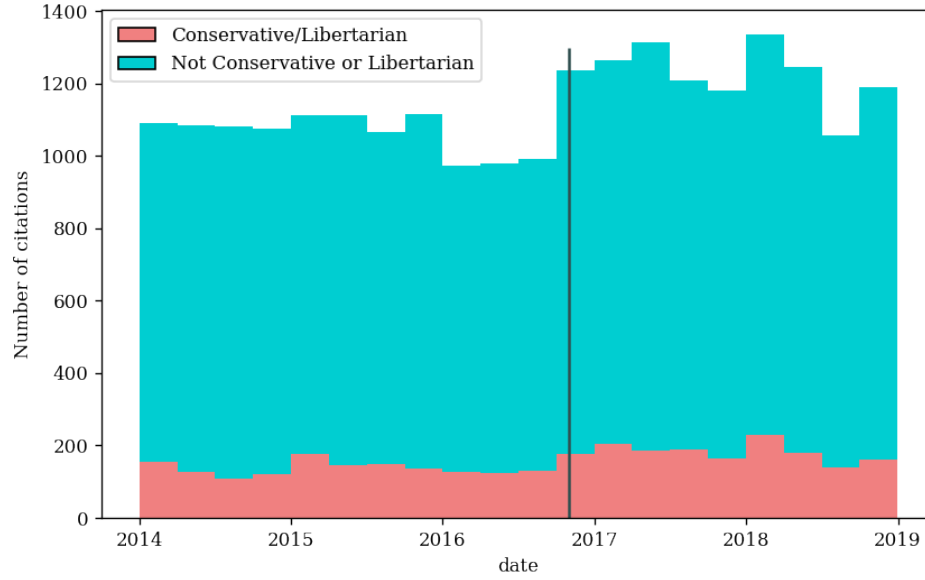


Table 3: 20 Most-Cited Think Tanks

Think Tank	Citations	Think Tank	Citations
Pew Research Center	2385	Urban Institute	483
Brookings Institution	2023	Peterson Institute for International Economics	483
Center for Automotive Research	1497	Atlantic Council	464
Center for Strategic and International Studies	1005	International Crisis Group	430
Council on Foreign Relations	918	Economic Policy Institute	416
Center for American Progress	917	Woodrow Wilson International Center for Scholars	389
American Enterprise Institute	779	Public Citizen	345
New America	671	Washington Institute for Near East Policy	339
National Bureau of Economic Research	607	Carnegie Endowment for International Peace	337
Cato Institute	604	Center on Budget and Policy Priorities	318

4.2.1 Topic Classification

In order to assess shifts in bias within specific socio-economic topic categories, each citation was tagged with a topic(s) based on the content of the sentence where the reference occurred. If any one of a predetermined set of keywords for each topic was present in the sentence, the citation was categorized as relevant to the given topic. The categories include politics, economics, health, and education. Table 3 details the keywords used for each, and Figure 2 shows the distribution citations by topics after the tagging process:

Table 4: Topics & Keywords

Topic	Keywords
Economy	monetary, inflation, Fed, Federal Reserve, labor union, labor, tax, taxes, taxation, banking, banks
Education	School, schools, education, college, university, universities, teachers, pre-school, kindergarten, students
Health	health insurance, Medicare, hospital, hospitals, medicine, health care, doctor, doctors
Politics	Democrat, Republican, Senate, The House, Congress, bill, legislation

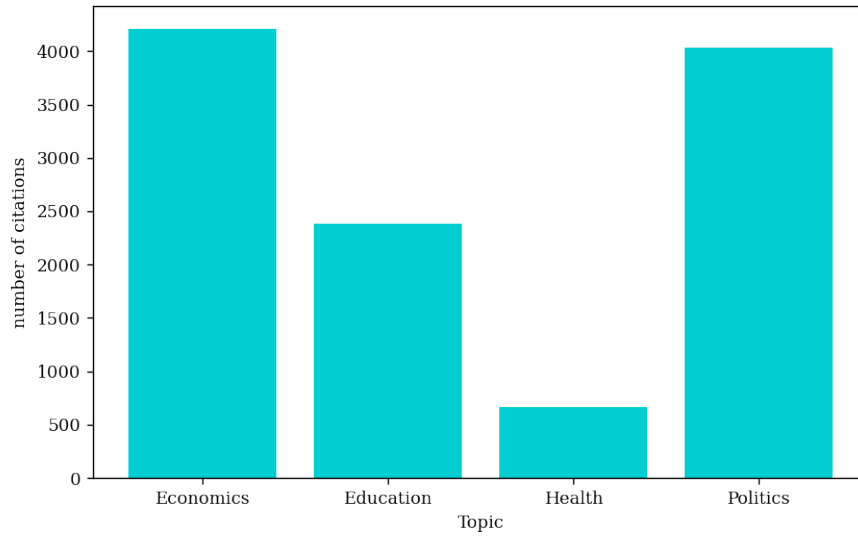


Figure 2: Distribution of Citations by Topic

5 Results

We now present the results of the event study model applied to the entire panel in Table 5. *Conservative Treatment* and *Libertarian Treatment* indicate if the γ_k coefficients capture the post-event effect for conservative and libertarian think tanks respectively. That is, $(\text{Conservative Treatment}, \text{Libertarian Treatment}) = (\text{Yes}, \text{No})$ implies that $C_i = \mathbb{1}\{i \text{ is conservative}\}$ from equation 1 in section 3, whereas (Yes, Yes) implies $C_i = \mathbb{1}\{i \text{ is conservative or libertarian}\}$

Table 5: Impact of Election on Citations to Conservative/Libertarian Think Tanks

	Number of Citations			
	(1)	(2)	(3)	(4)
γ_{2014}	-1.833 (1.43829)	-1.587 (1.43625)	-1.027 (1.50256)	-0.839 (1.49949)
γ_{2015}	-0.379 (1.35675)	-0.273 (1.35571)	-0.137 (1.49308)	-0.0435 (1.49529)
γ_{2017}	0.0615 (1.61941)	-0.0102 (1.61814)	0.478 (1.77525)	0.396 (1.77824)
γ_{2018}	-0.0930 (1.81383)	-0.0516 (1.80203)	0.555 (1.81231)	0.555 (1.80230)
\sqrt{Age}		-7.940* (4.51124)		-8.105* (4.51468)
$\ln(1 + \text{Expenses})$		3.133** (1.03107)		3.089** (1.03230)
Controls	No	Yes	No	Yes
Conservative Treatment	Yes	Yes	Yes	Yes
Libertarian Treatment	No	No	Yes	Yes
F-stat [†]	0.57	0.43	0.36	0.27
N	1577	1577	1577	1577

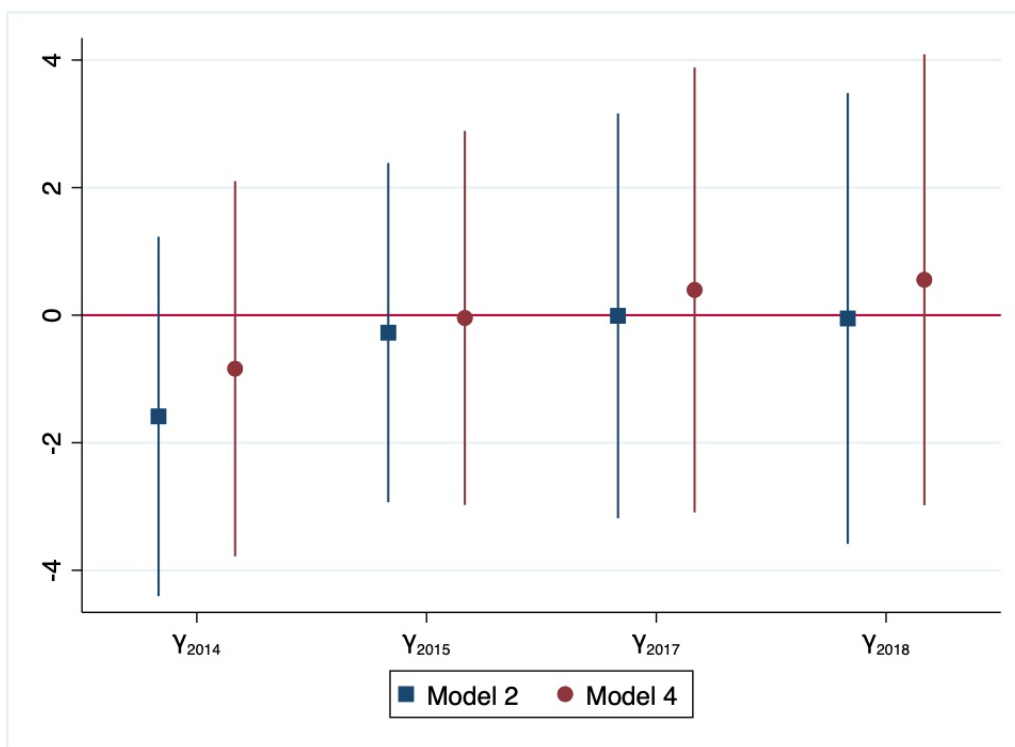
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[†] $H_0 : \gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018} = 0$

From models (2) and (4), we see that Expenses play a statistically significant role in determining the number of citations a think tank receives as hypothesized. A 1% increase in spending is estimated to correspond to approximately three additional citations per year by

a given publication. Counterintuitively, we see that \sqrt{Age} has a negative relationship with the number of citations received, and is statistically significant at the $\alpha = 0.1$ level. For each additional year, a think tank is estimated to lose approximately 8 citations per year by a publication. This contradicts the findings of Rich and Weaver (2000), and may be ascribed to the formation of newer think tanks in the 2000s that have seen considerable success since. The Pew Research Center, founded in 2004, is a notable example and is the most-cited think tank in the citations dataset (Table 3).

Figure 3: γ_k Coefficients from Table 5



From Table 5 and Figure 3, we see that the γ_k coefficients do show an upward trend, but are not statistically significant. Further, from the F-statistics reported in Table 5, we fail to reject the null hypothesis that $\gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018}$, indicating that the levels of bias remained consistent during this five year period.

Models (1) and (3) omit the control variables, and therefore allow us to account for the mechanism described in section 3, where increased right-wing funding after the election can have an impact on conservative/libertarian think tank citations. The results fail to reject the

hypothesis that $\gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018}$, indicating that levels of bias did not increase significantly even after accounting for variation in funding post-2016.

Table 6: Results by Publication

	Number of Citations		
	NYT	WP	WSJ
\sqrt{Age}	-9.906** (4.69356)	-5.941 (6.50084)	-7.067 (6.61698)
$\ln(1 + Expenses)$	2.210* (1.25204)	3.250** (1.48848)	3.092* (1.86515)
γ_{2014}	-1.296 (2.02482)	-2.853 (2.56002)	0.0316 (1.37021)
γ_{2015}	-0.425 (1.62037)	-1.510 (2.42863)	1.158 (1.36486)
γ_{2017}	-0.492 (1.60370)	0.654 (2.75026)	1.817 (1.38353)
γ_{2018}	1.223 (1.86952)	0.213 (3.00394)	0.460 (1.95684)
Controls	Yes	Yes	Yes
Conservative Treatment	Yes	Yes	Yes
Libertarian Treatment	Yes	Yes	Yes
F-stat	0.45	0.59	0.54
N	542	503	459

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

$^{\dagger}H_0 : \gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018}$

Table 6 showcases the results of the empirical framework applied to each publication independently. The model is identical to the one detailed in section 3, but only uses year fixed-effects in place of publication-by-year fixed effects. We see each publication exhibits similar behavior, with expenses playing a statistically significant role in determining how often a think tank is cited. We observe a general increasing trend for each γ_k coefficient between 2014 to 2017, with each coefficient being statistically insignificant. The reported F-statistics also indicate that we fail to reject the null hypothesis that γ_k remains constant over time, suggesting that levels of bias remained consistent within publications as well.

Interestingly, we see a drop in the magnitude of γ_{2018} for the *The Washington Post* and *Wall Street Journal*, with a large increase in γ_{2018} for the *New York Times*. This goes against general intuition, as the *NYT* is generally considered to be the most liberal or progressive institution out of the three. Given that the coefficient remains statistically insignificant, this could be ascribed to random error arising from the decreased sample size.

5.1 Topic-Specific Results

Table 7: Impact of Election on Citations to Conservative/Libertarian Think Tanks by Topic

	Number of Citations			
	Economics	Education	Health	Politics
\sqrt{Age}	-7.812*** (2.16674)	-2.030 (2.15757)	-0.332 (2.35847)	-3.560 (2.19861)
$\ln(1 + Expenses)$	1.213 (0.98887)	0.349 (0.80468)	0.990 (0.90522)	0.543 (0.74348)
γ_{2014}	-0.886 (0.78771)	0.321 (0.69653)	-0.559 (0.64237)	-0.466 (0.69972)
γ_{2015}	-0.109 (0.62474)	0.123 (0.66493)	0.251 (0.72152)	0.523 (0.68460)
γ_{2017}	-0.520 (0.86615)	0.804 (0.70639)	0.198 (0.82822)	0.151 (0.83926)
γ_{2018}	-0.702 (0.69039)	-0.0805 (0.61080)	0.412 (0.80834)	0.431 (0.75380)
Controls	Yes	Yes	Yes	Yes
Conservative Treatment	Yes	Yes	Yes	Yes
Libertarian Treatment	Yes	Yes	Yes	Yes
F-stat	0.50	0.60	1.33	0.90
N	814	716	280	835

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

$^{\dagger} H_0 : \gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018} = 0$

Table 7 presents the results of the topic-specific regressions. We lose statistical significance for the *Expenses* control in all cases, likely due to the reduction in power from the limited sample size of each topic. The γ_k coefficients for each topic do not show an upward

Table 8: Impact of Election on Conservative/Libertarian Citations by Topic (no controls)

	Number of Citations			
	Economics	Education	Health	Politics
γ_{2014}	-0.892 (0.77400)	0.219 (0.69972)	-0.644 (0.63938)	-0.454 (0.69299)
γ_{2015}	-0.134 (0.62297)	0.0897 (0.66386)	0.184 (0.72079)	0.507 (0.67434)
γ_{2017}	-0.634 (0.87935)	0.820 (0.70839)	0.240 (0.83097)	0.138 (0.83648)
γ_{2018}	-0.828 (0.69623)	-0.0946 (0.60628)	0.379 (0.79128)	0.396 (0.74950)
Controls	No	No	No	No
Conservative Treatment	Yes	Yes	Yes	Yes
Libertarian Treatment	Yes	Yes	Yes	Yes
F-stat	0.649	0.518	1.136	0.649
N	814	716	280	835

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

$^{\dagger}H_0 : \gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018} = 0$

trend, unlike the results from Table 5. Further, the reported F-statistics also show that the models fails to reject the hypothesis that $\gamma_{2014} = \gamma_{2015} = \gamma_{2017} = \gamma_{2018}$, indicating that there were no shifts in bias within specific topic groups either.

Table 8 presents the results without including controls, in order to account for the increased funding mechanism described in section 3. We see similar results, with the F-statistic indicating that levels of bias remain consistent after accounting for changes in expenditure.

6 Conclusion

From the results in Section 5, we see that there were no significant shifts in media bias as a result of the 2016 election, both on a macro-scale as well as within specific topic categories. This suggests that the U.S. media has retained autonomy and independence from the state and political pressures and generally does not respond to changes in the incumbent party over the medium- to long-term. This follows previous literature on media bias (Puglisi and Snyder, 2015), with the general consensus indicating that there is no large-scale systemic bias in U.S. media.

However, it is possible that the effects of the election were not captured by the sample of data studied. *The New York Times*, *Washington Post*, and *Wall Street Journal* are some of the largest and most prominent publications in the United States, and are likely to be less influenced by political activity. Additionally, while the *The New York Times* and *Wall Street Journal* are typically perceived as left-of-center and right-of-center respectively, all the publications in the sample are relatively moderate. Extending the dataset to include publications—particularly online-only publications—such as *Vice*, *Vox*, *Fox News*, *Politico* and others would serve as a more representative sample of modern U.S. media, and could be more susceptible to changes in the political environment. It could also be beneficial to extend the time period studied, as it is possible that the effect of political shocks on the media may only be realized over a longer-term period. Using a web crawler along with a website sitemap, it is entirely feasible to collect and analyze a publication’s entire corpus for a ten-year period.

Another area of improvement is the classification of think tanks by political ideology. This paper uses the same approach as Rich and Weaver (2000), and classifies each think tank as conservative and libertarian based on their mission statement, web page, and whether they include references to typically conservative topics or free market policies. This allows for a degree of subjectivity, and also is an extremely coarse measure of political ideology. Adopting the method used by Groseclose and Milyo (2005), we can assign each think tank

its own ADA score based on the average ADA score of the members of Congress that cite it between a given time period. This allows us to construct an objective and continuous measure of a think tank's level of conservatism or liberalism. Additionally, the topic classification strategy described in section 4.2.1 is a rudimentary approach to text classification which uses keywords to assign each sentence a specific topic. The significantly reduced sample size for each topic led to a large reduction in power for the estimates shown in tables 7 and 8. Using machine learning models such as Support Vector Machines or a Naive Bayes classifier, the classification process can be improved and extended to other topic categories as well.

Think tanks and their influence on media as well as public policy is a topic of study with significant real-world consequences. This study highlights an important role that journalists and reporters play, which is to act as critical disseminators of information. While think tanks can be valuable sources of information and analysis, their output cannot always be regarded as objective and unbiased. Acting as a filter between them and the general public, journalists and media play a key role in ensuring the reach and influence of such organizations is tempered by a neutral third party.

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