Appendix A - Description of Oversight Data

As described in the text, we collected all available data on hearings from the Government Printing Office's Federal Digital System (`http://www.gpo.gov/fdsys/search/advanced/advsearchpage.action`). We batch downloaded metadata on each hearing (N: 17,572) in XML format and converted these individual files to a CSV-formatted spreadsheet of hearings metadata, with each XML file becoming a row in the data. The XML tags within each file became columns in the aggregate metadata and included such information as "Title," "Held Date," "Committee," "Subcommittee," etc., and then, importantly, information on the identity of witnesses. This information included the full names and titles of witnesses in each hearing, including institutional affiliation(s). Some hearings do not have witnesses and the maximum number of witnesses in our data is 157. Using the scheme of the 2012 Federal Human Capital Survey, we matched each agency witness to their respective agency and used this information to create an agency-year dataset of hearings.

Next, we needed to make sure that we did something to separate oversight hearings from hearings having to do with proposed legislation or appropriations. We collected the full text transcripts of each hearing and searched for the following keywords meant to indicate oversight activity: "oversight," "investigation," and "budget request." This is a subset of keywords used in recent research to identify oversight (McGrath, 2013; MacDonald and McGrath, N.d. (forthcoming), but our study differs from these in that we have access to the full text of each hearing, rather than just the abstracts provided by the Policy Agendas Project. We found that nearly 65% of the total number of hearings included at least one of these keywords and was thus coded as an oversight hearing (N: 11,407).

After identifying oversight hearings from the universe of available hearings and identifying agency witnesses, we were able to compile the full agency-year data on hearings, oversight and non-oversight. The agency-year dataset has 1,053 observations—13 full years of data (1999-2011) for 80 agencies and 2 agencies with fewer than 13 observations due to being created after 1999.

Table A1 below displays agency-level summary statistics for oversight hearings in which an agency employee was a witness.

Table A1: Descriptive Statistics for Yearly Hearings, by Agency (**Departments in bold**, *agencies included in models in italics)*

Agency	Mean	SD	Min-Max	Agency	Mean	SD	Min-Max
United States Air Force	15.08	14.38	1-39	***Department of Homeland Security***[2]	93	19.13	65-130
Department of Agriculture	34.38	12.26	20-63	***Department of HUD***	21.31	7.31	7-32
National Endowment for the Arts	0.07	0.27	0-1	*Broadcasting Board of Governors*	0.23	0.43	0-1
National Endowment for the Humanities	0.15	0.37	0-1	*Inter-American Foundation*	0.08	0.27	0-1
Institute of Museum and Library Services	0.23	0.59	0-2	National Indian Gaming Commission	0.62	0.87	0-2
Agency for International Development	4.31	4.31	0-13	***Department of the Interior***	53.38	16.81	27-81
United States Army	29.07	17.11	7-66	Kennedy Center	0.07	0.27	0-1
Federal Labor Relations Authority	0.38	0.65	0-2	*Corporation for National and Community Service*	0.15	0.37	0-1
Merit Systems Protection Board	0.62	0.87	0-3	*Federal Election Commission*	0.23	0.83	0-3
Defense Nuclear Facilities Safety Board	0.15	0.37	0-1	*Federal Maritime Commission*	0.62	0.77	0-2
Pension Benefit Guaranty Corporation	0.92	1.49	0-4	*National Science Foundation*	3.62	3.09	0-10
Office of Management and Budget	12.92	5.95	3-24	*National Labor Relations Board*	0.15	0.38	0-1
U.S. Access Board	0.08	0.28	0-1	National Mediation Board	0	0	0-0
Department of Commerce	29.92	10.74	10-46	*National Aeronautics and Space Administration*	5.07	3.3	0-12
Commodity Futures Trading Commission	4.84	5.68	0-19	*National Capital Planning Commission*	0.07	0.27	0-1
National Credit Union Administration	2.46	1.89	0-6	*National Archives and Records Administration*	0.84	0.98	0-3
Department of Defense	78.31	33.36	23-129	*Nuclear Regulatory Commission*	3.69	3.06	0-11
Department of Justice	47.62	15.73	22-81	*United States Navy*	13.07	11.96	1-33
Department of Labor	16	8.33	5-30	*Office of Personnel Management*	6.07	4.01	0-11
Department of Energy	24.76	7.41	12-36	Occupational Safety and Health Review Comm.	0	0	0-0
Federal Energy Regulatory Commission	2.31	2.06	0-5	*Postal Regulatory Commission*	0.69	0.94	0-2
Export-Import Bank of the United States	1.31	1.6	0-5	*Office of Navajo and Hopi Indian Relocation*	0	0	0-0
Department of Education	13.23	7.31	5-32	*Federal Retirement Thrift Investment Board*	0.53	0.87	0-3
Equal Employment Opportunity Commission	0.31	0.48	0-1	Railroad Retirement Board	0	0	0-0
Environmental Protection Agency	19.46	12.64	8-55	*Small Business Administration*	10.15	5.58	3-26
Trade and Development Agency	0.46	0.52	0-1	*Securities and Exchange Commission*	16.31	10.01	3-34
Federal Communications Commission	6.84	3.72	3-15	*Consumer Product Safety Commission*	1.92	2.21	0-7
Chemical Safety and Hazard Investigation Board	1	1.29	0-3	National Gallery of Art	0	0	0-0
Federal Mediation and Conciliation Service	0	0	0-0	Selective Service System	0	0	0-0
Court Services and Offender Supervision Agency	0.15	0.37	0-1	***Department of State***	30.85	11.81	14-55
Federal Trade Commission	9.23	4.89	2-18	Woodrow Wilson International Center for Scholars	2	4.02	0-15
U.S. Office of Special Counsel	0.69	0.94	0-3	*Social Security Administration*	5.85	1.72	3-9
Overseas Private Investment Corporation	0.54	0.66	0-2	*National Transportation Safety Board*	2.53	2.06	0-7
U.S. Office of Government Ethics	1.85	1.95	0-6	*U.S. International Trade Commission*	0.54	0.97	0-3
General Services Administration	4.38	2.78	1-10	***Department of Transportation***	29.76	12.44	7-51
International Boundary and Water Commission	0.76	0.27	0-1	Office of the U.S. Trade Representative	1.46	1.81	0-5
Department of Health and Human Services	36.46	9.59	26-57	***Department of the Treasury***	41.31	13.2	28-77
Federal Housing Finance Agency[1]	5	2.31	3-7	*Surface Transportation Board*	1.15	0.89	0-3
Advisory Council on Historic Preservation	0.15	0.38	0-1	***Department of Veterans Affairs***	34.53	24.19	13-75
American Battle Monuments Commission	0.23	0.44	0-1	*Administration for Children and Families*	0.69	1.18	0-4
Committee for Purchase...Severely Disabled	0	0	0-0	*Commission on Civil Rights*	1.46	2.29	0-6

[a] 4 observations. Agency created in 2008

[b] 9 observations. Agency created in November 2002.

Appendix B: Measuring Hearing Sentiment

We measured targeted hearing sentiment for each of the oversight hearings we identified in the GPO data (N= 11,407, see Appendix A). The first step in our process involved identifying the agencies involved in each hearing and expanding the dataset so that each agency-hearing pair is an observation, resulting in 55,831 unique observations (29,268 observations for the House of Representatives and 26,563 for the Senate). Once we identified these agency-hearings, we prepared each transcript for processing by removing special characters and metadata.

There are a number of different approaches to sentiment analysis and we have tried two particular methodologies. In particular, we have used Alchemy API, an unsupervised deep-learning algorithm for the analyses in the main body of the paper, but we have also used a lexicon-based approach for validation.[1] Alchemy API is available as a commercial data analysis product: `http://www.alchemyapi.com`. Conveniently, the Alchemy API algorithm has a built-in procedure for weighting sentiments that are directed at user-supplied strings (in our case, the names of agencies), using both distance from the target string, and syntactic and semantic context.

Using a custom Python script, we ran each hearing through the Alchemy API algorithm to recover estimates of targeted sentiment (targeted at the agency) for each agency-hearing in the data.[2] These scores theoretically range from -1 to 1. Positive scores denote that a hearing reflected largely positively on an agency, negative scores mean the opposite. Scores at or near zero reflect hearings that did not express strong sentiment in either direction towards the agency. As a rough validation of these scores, we took a sample of very high and very low sentiments and referenced the hearing transcripts to verify that the scores had a basis in common sense. This exercise did much to ensure us of the face validity of the scores. For example, the following statement by House Committee on Government Reform Chairman Rep. Henry Waxman (D-CA) regarding the Department of Homeland Security in a 2005 hearing received a strongly negative score (-.79), for good reason:

> I'm going to be blunt in my remarks. This administration is squandering literally billions of dollars on wasteful Federal contracts. Private contractors are reaping a bonanza while taxpayers are being gouged. Whether the explanation is gross incompetence or deliberate malfeasance, the result is the same: Taxpayers are being vastly overcharged. ... Nearly every week the papers are full of stories of contract abuse. The Department of Homeland Security has wasted hundreds of millions of dollars on security contracts that have produced virtually no result.

Besides directly expressing positive or negative sentiment towards agencies in their members' comments, committees carefully choose witness testimony to serve a particular purpose in their hearings. For example, in a 2009 hearing held by a House Select Committee on Energy Independence and Global Warming, Chairman Rep. Edward J. Markey (D-MA) called as a witness Mr. Stephen Seidel, Vice President for Policy Analysis, Pew Center on Global Climate Change. In his testimony, Mr. Seidel

[1] Lexicon-based approaches use "dictionaries" containing lists of positive (e.g., "fantastic," "excellent") and negative words (e.g., "failure," "abysmal"), assigning an arbitrary positive value to positive words found in the text and an arbitrary negative value to negative words, weighting sentiment words that appear closer to the target phrase more than sentiment words that are further away. While useful in many domains, the lexicon-based approach is arguably not ideal for our purposes. For one, available lexicons do not include every possible positive or negative word, especially across different domains. Since each target agency deals with its own substantive focus, from environmental protection, to banking regulation, to personnel management, the extent to which the generic lexicon applies to hearings involving each agency would be expected to vary across agencies. We could develop custom lexicon dictionaries for each agency, but it would be difficult to ensure that these apply the same standards of sentiment polarity across agencies. As our goal is explicitly to measure the tenor of congressional attention across agencies, we sought a more general approach.

[2] That is, we analyzed each of the 11,407 hearings, repeating the analysis for each specific agency mentioned, giving us 55,831 agency-hearing scores.

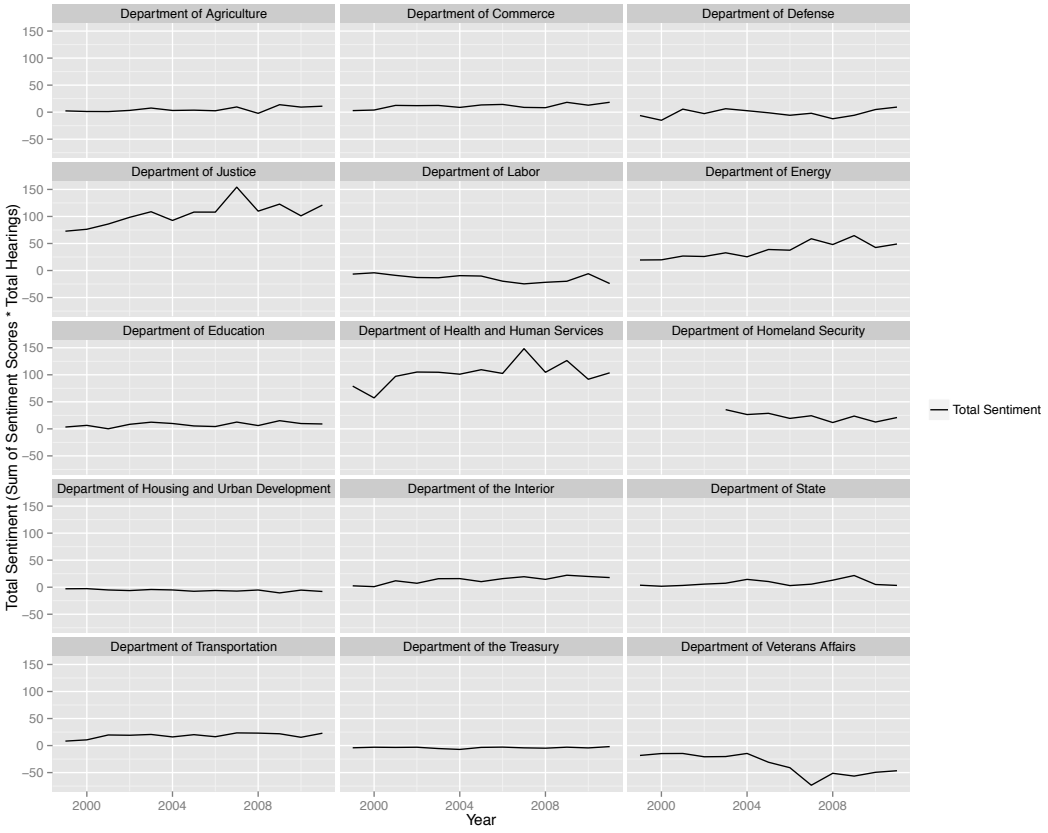
praises the efforts of a number of federal agencies in their strategic plans regarding curbing global warming. He is particularly effusive about the Department of the Interior ("And I would say the Department of the Interior is a great example of moving forward and looking through each of their program areas and coming up with what needs to be done to deal with the types of changes that have been discussed this morning."), thus leading to a very positive sentiment score for that agency (0.89). These statements were not counteracted by negative congressional response, but had they been, the algorithm would have yielded a lower score. In fact, a number of other witnesses chime in to agree with Mr. Seidel's assessment. We mean this as an example of positive language leading to a high sentiment score, but it also is an indication that committees express sentiment towards agency policy and performance by strategically calling sympathetic witnesses. One potential drawback of the sentiment method we use is that it is unable to weight sentiment by speaker and assumes a statement by a witness is of equal importance to a statement by a member of Congress.

Table B1 below shows the considerable cross-sectional variation by giving summary statistics for the sentiment directed at each agency in our data. Figure B1 shows that there is also a fair bit of variation in hearing sentiment over time, especially when the sentiment scores are aggregated by how often department agencies are called before Congress. We see here that most agencies get positive hearings and negative hearings each year and that, on the whole, congressional attention is rather neutral. We also see that some agencies get more positive attention than not (e.g., Department of Justice, Department of Health and Human Services, Department of Energy), but others regularly receive negative congressional attention (e.g., Department of Veterans Affairs).

Table B1: Targeted Sentiment, by Agency

Agency	Mean Sentiment	SD Min-Max	Agency	Mean Sentiment	SD Min-Max
United States Air Force	.043	.262-.866-.899	Department of HUD	-.110	.172-.716-.492
Department of Agriculture	.025	.213-.783-.892	Broadcasting Board of Governors	-.022	.200-.558-.580
Agency for International Development	.078	.186-.550-.767	Inter-American Foundation	.136	.2610-.801
United States Army	.017	.218-.813-.784	Department of the Interior	.088	.252-.855-.924
Federal Labor Relations Authority	-.008	.108-.426-.367	Corporation for National and Community Service	.137	.1770-.577
Merit Systems Protection Board	.537	.155-.309-.805	Federal Election Commission	-.011	.206-.610-.574
Defense Nuclear Facilities Safety Board	.030	.162-.521-.409	Federal Maritime Commission	.026	.202-.607-.728
Pension Benefit Guaranty Corporation	.269	.201-.648-.706	National Science Foundation	.087	.198-.801-.749
Office of Management and Budget	-.099	.251-.821-.845	National Labor Relations Board	-.020	.206-.719-.791
Department of Commerce	.064	.228-.753-.867	National Mediation Board	-.060	.215-.394-.626
Commodity Futures Trading Commission	-.175	.142-.527-.434	National Aeronautics and Space Administration	.074	.243-.820-.858
National Credit Union Administration	-.013	.141-.500-.690	National Capital Planning Commission	.146	.206-.282-.662
Department of Defense	-.003	.253-.769-.917	National Archives and Records Administration	.011	.089-.285-.561
Department of Justice	.293	.195-.726-.881	Nuclear Regulatory Commission	-.014	.208-.758-.856
Department of Labor	-.077	.235-.777-.782	United States Navy	-.060	.216-.788-.793
Department of Energy	.154	.247-.791-.925	Office of Personnel Management	.037	.215-.795-.856
Export-Import Bank of the United States	-.0008	.107-.259-.393	Occupational Safety and Health Review Comm.	.418	.065.230-.566
Department of Education	.060	.237-.819-.861	Federal Retirement Thrift Investment Board	-.079	.274-.734-.847
Equal Employment Opportunity Commission	-.031	.256-.790-.733	Railroad Retirement Board	-.201	.192-.542-.447
Environmental Protection Agency	.403	.121-.594-.904	Small Business Administration	.069	.249-.740-.868
Trade and Development Agency	.164	.1670-.699	Securities and Exchange Commission	.043	.213-.743-.771
Federal Communications Commission	.005	.220-.742-.819	Consumer Product Safety Commission	.212	.213-.900-.780
Federal Mediation and Conciliation Service	0	. 0-0	Department of State	.045	.250-.870-.847
Federal Trade Commission	-.059	.245-.834-.799	Social Security Administration	-.094	.230-.884-.817
U.S. Office of Special Counsel	.176	.1660-.413	National Transportation Safety Board	.078	.217-.738-.779
Overseas Private Investment Corporation	.056	.1310-.476	U.S. International Trade Commission	.002	.197-.681-.541
U.S. Office of Government Ethics	-.226	.081-.451-0	Department of Transportation	.104	.224-.822-.849
General Services Administration	.024	.188-.764-.774	Office of the U.S. Trade Representative	-.0006	.158-.761-.563
Department of HHS	.596	.113-.481-.886	Department of the Treasury	-.043	.206-.822-.819
Federal Housing Finance Agency	-.110	.170-.610-.276	Department of Veterans Affairs	-.398	.110-.889-.488
Department of Homeland Security	.074	.256-.789-.838	Commission on Civil Rights	-.065	.153-.516-.523

Figure B1: Total Sentiment (Sum of Sentiment Scores * Number of Hearings), by Department



Appendix C - Description of Agency Characteristics Data

Agency characteristic data are available at `http://agencydata.wordpress.com`. Bertelli et al. (2015) used the following surveys to construct their measures:

- Merit Principles Surveys (administered by the Merit Systems Protection Board) from 2000 and 2005;
- Federal Human Capital Surveys (now known as Federal Employee Viewpoint Surveys; administered by the Office of Personnel Management) from 2004 2006, 2008, and 2010
- Reinventing Government Surveys (established by the National Partnership for Reinventing Government) from 1998, 1999, and 2000

The following questions were used to measure the agency autonomy and job satisfaction characteristics used in this paper. From Bertelli et al. (2015), Table 1:

Autonomy (see Figure 4 for how this varies over time in cabinet agencies)

- "I feel encouraged to come up with new and better ways of doing things."
- "Employees have a feeling of personal empowerment with respect to work processes."
- "Creativity and innovation are rewarded."
- "How satisfied are you with decisions that affect your work?"
- "How satisfied are you with your involvement in decisions that affect your work?"
- "I have been given more flexibility in how I accomplish my work."
- "Creativity and innovation are important."
- "In the past two years, I have been given more flexibility in how I accomplish my work."

Job Satisfaction (Overall) (see Figure 5 for how this varies over time in cabinet agencies)

- "Considering everything, how satisfied are you with your job?"
- "In general, I am satisfied with my job."
- "I would recommend the government as a good place to work."

Job (Compensation) Satisfaction

- "Considering everything, how satisfied are you with your pay?"
- "Overall, I am satisfied with my current pay."
- "Overall, I am satisfied with my pay."

Not all agencies are represented in all surveys, so the agency-year dataset of agency characteristics has a total number of 573 observations. See Table A1 (appendix A) for an indication of which agencies have enough survey responses to be included in our analyses.

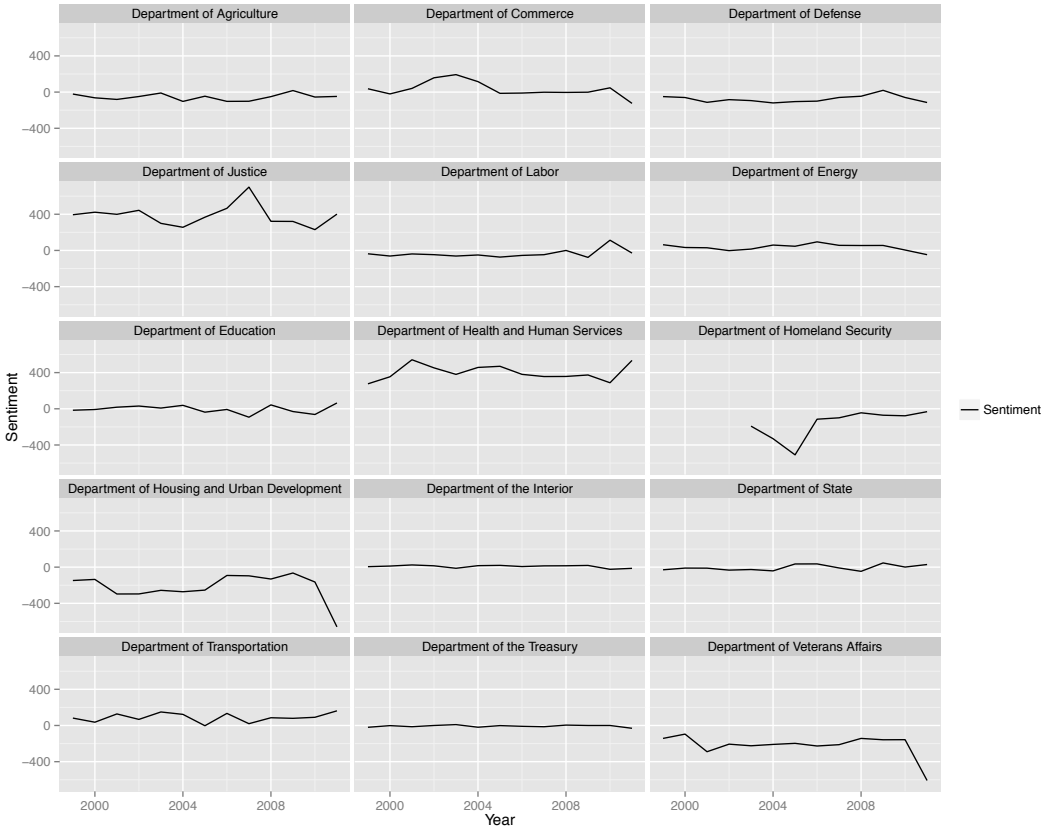
Appendix D - Description of Media Attention Data

We collected *Washington Post* news stories using the *Lexis Nexis Academic* database, employing keyword searches for agency names for each year from 1999 through 2011 to match up with the oversight and morale data. This was mostly a straightforward process, with agencies clearly and unambiguously identified by their names. Yet, there were times where we searched a common acronym, as well as the official agency name, taking care to remove duplicate articles from the dataset. For example, the National Aeronautics and Space Administration is more commonly known as NASA, so we obtained many of this agency's media coverage by searching for the acronym. Once we downloaded these data[1], we prepared each file (each file contains one news story) for the computer-assisted text analysis, by removing quotation marks and special characters.

Using the same approach as above with the hearing transcripts (appendix B), we measured the *targeted* sentiment of articles, discounting positive/negative words that appear far from the target phrases, e.g., "Department of Agriculture," "Office of Management and Budget," "Securities and Exchange Commission," etc. As mentioned in the text, to capture both sentiment and volume of *Washington Post* coverage, we simply sum the sentiment scores by agency and year. Figure D1 below displays this agency-year aggregate score for each department agency over time. The correlation (Pearson's r) between news sentiment and hearings sentiment scores is 0.56.

[1]We collected a total of 106,554 stories, totaling 286,094 pages.

Figure D1: Total *Washington Post* Sentiment, by Department



Appendix E - Instrumental Variables Results

Table E1. 2SLS Models of Agency Autonomy and Job Satisfaction (Overall), 1999-2011

	(1) Autonomy Δ	(2) Satisfaction Δ	(3) (1) with Interaction	(4) (2) with Interaction
Oversight Hearings (Lag)	-.00273*	-.00312**	-.00203**	-.00191**
	(.00140)	(.00140)	(.00086)	(.0086)
Hearings Sentiment (Lagged mean)			-.52879	-.20510
			(.32124)	(.20108)
Oversight Hearings (Lag)× Hearings Sentiment (Lagged mean)			.01531***	.00777***
			(.00542)	(.00333)
Divided Government	.03392	.02897	-.00427	-.00645
	(.03408)	(.03390)	(.02098)	(.02095)
Republican Control of Congress	.07748*	.08344**	.03712	.03974
	(.04032)	(.04011)	(.02481)	(.02478)
Democratic President	.00631	.00484	-.01583	-.01648
	(.03313)	(.03291)	(.02039)	(.02034)
Presidential Transition Year	.03951	.04087	.00349	.00409
	(.03594)	(.03570)	(.02212)	(.02206)
Presidential Attention	-.00004	-.00001	.00069	.00071
	(.00121)	(.00121)	(.00075)	(.00075)
Non-oversight Hearings (Lag)	.01426***	.01529***	-.00026	.00019
	(.00541)	(.00539)	(.00333)	(.00333)
Total *Washington Post* Sentiment (Lag)	-.00001	.00005	-.00011	.00001
	(.00028)	(.00017)	(.00028)	(.00017)
Constant	-.04961	-.04340	.02883	.03155
	(.04600)	(.04575)	(.02831)	(.02827)
Agency FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	470	470	470	470
R^2	.545	.678	.552	.681

*$p < 0.10$, **$p < 0.05$, ***$p < 0.05$

Note: Entries are two-stage least squares regression coefficient estimates and standard errors, clustered by agency. First stage results are available on request. The dependent variables are created by calculating the change in the Bertelli et al. (2015) measures of autonomy and job satisfaction (excluding compensation questions) from time $t-1$ to time t. Agency and year fixed effects are included in all models but not reported. See appendix A for further description of the oversight data.