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Does Public Attention Reduce the Influence of Interest Groups? Policy Positions on SOPA/PIPA Before and After the Internet Blackout

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Abstract

We investigate the role that public attention plays in determining the effect that campaign contributions funded by interests groups have on legislators' policy positions. In so doing, we exploit the Internet service blackout of January 2012 as a quasi-experiment in which a shock increases the salience of the SOPA/PIPA bills aimed at securing stronger protection of property rights on the Internet. Using a newly compiled dataset of U.S. congressmen's public statements, which capture their positions throughout the debate, we find an initially strong statistical relationship between campaign contributions funded by the affected industries and legislators' positions. However, this relationship evaporates once the two bills become primary policy issues. The evidence presented is in line with the theoretical notion that legislators choose positions on secondary policy issues in order to cater to organized interests, whereas positions on primary policy issues are driven by electoral support.

Keywords: Campaign finance, secondary policy issues, outside lobbying, Internet governance, mass media, policy positions, interest groups

JEL classification: D72, L82, L86

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Introduction

Legislative policy choices can be understood as outcomes of collective decision-making based on individual legislators' policy positions. These positions may be rather malleable and only partly revealed in public statements. While interest groups are concerned about legislators' positions on certain issues and therefore try to influence them, the salience of these issues for the electorate may differ widely. Some issues receive a great deal of attention and will rouse large numbers of the electorate, while other issues will slip voters' attention. These differences in salience across policy issues create incentives for politicians who are interested in re-election. Where highly salient primary policy issues are at stake, politicians are expected to choose a policy stance that follows voter preferences. However, where secondary policy issues are concerned, politicians may prefer to cater to interest groups in exchange for campaign finance and therefore support the policy options that are favored by their donors.

In this paper, we want to gain a better understanding of this trade-off and investigate how legislators choose and reveal policy positions. The question is thus about the role of money, i.e., financial support from interest groups, in the (non-)choice of policy positions. Specifically, we ask whether the role of money differs if a policy issue is publicly more or less salient. Any empirical testing faces several challenges, however. First, there is an endogeneity problem, as the salience of an issue is likely to depend on its content. Issues that citizens consider important receive more attention, and, at the same time, legislators care more about their constituents' preferences. Second, there is a risk of tautological reasoning. If campaign finances predict policy positions, one cannot conclude that the underlying issues are necessarily secondary ones. Third, data limitations may prevent a rigorous analysis, as the researcher must simultaneously obtain information about the policy positions of politicians as well as about campaign finances and the public attention given to an issue.

For the present investigation, we draw on the fluctuations in support for and opposition against the so-called SOPA/PIPA bills in the 112th U.S. Congress as a case in point. It gives us a unique opportunity to learn about the effect of public attention on the influence of campaign finance. The Protect IP Act (S. 968; PIPA), which was introduced in the U.S. Senate on May 12, 2011, and its counterpart, the Stop Online Piracy Act (H.R. 3261; SOPA), which was introduced in the U.S. House on October 26, 2011, proposed extending the power of law enforcement in order to combat online copyright infringement and online trafficking in counterfeit goods.[1] Both bills were strongly favored by the music

[1] The SOPA and PIPA bills are essentially the same. PIPA is sometimes considered to be slightly less restrictive than SOPA. This is in particular due to the fact that PIPA does not include a provision that would potentially force Internet

and motion picture industries, which expected a stricter protection of their intellectual property and thus potentially higher revenues. The Internet industry, on the other hand, would face financial losses if these bills were passed. The bills offered several new ways to penalize website providers with fines or even force them to shut down for making content available that was free up to then. Initially, the public debate about the SOPA/PIPA bills was rather low key and involved primarily people from companies in information technology. However, a drastic change occurred on January 18, 2012, when an online protest was orchestrated involving inter alia Reddit and the English-language Wikipedia. Many popular Internet sites and several thousand other smaller websites participated in a temporary service blackout. This triggered a huge public debate and reflected widespread opposition in the population.[2]

We exploit this service blackout as a quasi-experiment, and consider the dramatic change in attention and the outstanding success that the blackout achieved in mobilizing citizens as an exogenous event. While the attention was, of course, part of an opposition campaign, nobody probably expected such a leap in public attention. The SOPA/PIPA bills thus changed unexpectedly from being a secondary policy issue to being a primary policy issue. This allows us to study the relationship between campaign finances and politicians' policy positions for one and the same issue under low and high public attention.

As a foundation for our empirical analysis, we compile a dataset of legislators' public statements on SOPA/PIPA, covering the debate since the introduction of the COICA bill[3] to the official postponement of the SOPA and the PIPA bills in January 2012. We then relate the public statements to information on campaign support from interest groups and the politicians' characteristics.

We find that during the period following the introduction of the SOPA/PIPA bills, only a few legislators took a clear stand against the issue, while several legislators' publicly supported the bills. More interestingly, campaign contributions from the copyright industry (predominantly the film, TV, and music industry) and the Internet/computer industry (or short tech company), when aggregated at the individual

search engines to remove certain hyperlinks from their search index. Such a provision is, however, part of the SOPA bill (see H.R. 3261 IH, Sec. 102, pg. 15, paragraph (B)). Yet, SOPA might be less prone to frivolous lawsuits, as it contains a provision that allows counter-claims for damages if the provider of a notification "knowingly materially misrepresents [...] that a site is an Internet site dedicated to theft of U.S. property [...]" (H.R. 3261 IS, Sec. 103, pg. 34, paragraph (5)). As PIPA does not include such a provision, it might incentivize rogue interests to strategically provide notifications on websites in order to put them out of business. Under this latter aspect, PIPA could be seen as a more extreme measure to protect intellectual property than SOPA.

[2] While the SOPA bill was immediately discussed in some well-known media outlets upon its introduction to the U.S. House in January 2011 (see, e.g., Kang 2011), wide-scale public attention to the issue only occurred during and after the service blackout in January 2012 (before any formal vote in Congress took place). As a direct reaction to the service blackout, for example, over 4 million people are reported to have signed Google's online petition to the U.S. Congress in protest against the proposed bill and during the peak of the protest, around 2,000 U.S. citizens per second were trying to call their local representative in Congress (Wortham 2012).

[3] The Combating Online Infringement and Counterfeits Act (COICA) was the predecessor bill of PIPA and was not further considered in the legislative process after 2010 (see Library of Congress 2010).

level, are a strong predictor of a legislator's stance on the issue, over and above his or her party affiliation. Before the Internet service blackout, the probability of observing a legislator's public statement in support of a stricter law against online copyright infringement increases, ceteris paribus, by around 6 percentage points if he or she received about USD 30,000 (one standard deviation) more campaign contributions from the copyright industry than from the tech industry. However, the significant statistical relationship between campaign contributions and the legislator's stated stances on the SOPA/PIPA bills evaporates almost completely after the sharp rise in public attention on the policy issue in response to the Internet service blackout.

This paper is related to several strands of research. First, it contributes to the politico-economic literature on money in politics that investigates how campaign contributions of interest groups influence legislators' policy positions (see, for example, Austen-Smith 1995, Grossman and Helpman 1994, and Kau et al. 1982 for theoretical considerations, Herndon 1982, Powell and Grimmer 2016, Schroedel 1986, Stratmann 1991, and Stratmann 2002 for empirical evidence, as well as Ansolabehere et al. 2003 and Stratmann 2005 for reviews of the literature). Second, this study relates to the literature on attention in politics (see Jones and Baumgartner 2004 for the legislative's focus on primary policy issues and Jones and Keiser 1987 for attention and campaign donations), as well as the recent contributions discussing secondary policy issues as a relevant factor in incumbents' re-elections (Bouton et al., 2014; List and Sturm, 2006). Third, our contribution is more specifically related to the law, political science, and communication studies literature discussing Internet governance, public opinion and lobbying in the context of the SOPA/PIPA bills (see, e.g., Benkler et al. 2015, Guo 2013, Lemley et al. 2011, and Powell 2013).

Theoretical framework

Positive analyses of the political process have a long tradition in research that seeks to understand which policies legislators support. Closely related to this enquiry is the question about the role that money plays in determining politicians' choices of policy positions. In particular, research needs to identify what factors determine the role played by campaign contributions in affecting the stances that politicians hold on a specific issue or bill.

We define legislators as being characterized by their history (past policy positions, long-term exchange relationship with their sponsors) and as being primarily office motivated. They are reliant on electoral

support, which in turn depends on their policy positions, as well as the campaign-financing money they have available. Clearly, the amount of campaign finance supplied by interest groups (IG) will also depend on a legislator's policy position.[4] Accordingly, a legislator can adopt a policy position that boosts his or her financial campaign support from IGs. Alternatively, she or he can approve or disapprove a policy so as to gain voter support directly. The support and acclaim that a legislator receives depends on how well informed the electorate is about the legislator's position and on how much it cares about the policy issue. Moreover, a legislator can always abstain from taking a stand in order to maintain the option to opportunistically choose a position that maximizes payoffs. Finally, a legislator might also change his or her policy position if expected payoffs can be increased. Given these considerations, we try to characterize the main trade-off as simply as possible.

Probabilistic choice of policy positions

We minimally formalize our theoretical framework with a probabilistic choice calculus in which legislators choose to publicly take up a stance on policy issues in order to maximize their chances of re-election. In the simplest possible case, legislators face four options. They can announce that they will stick to the status quo (alternative 1), they can state that they support a proposed policy change/bill (alternative 2), they can take a neutral stance (alternative 3), or not take a public stance at all (alternative 0). We assume that some policy issue/bill debated in Congress is one-dimensional and affects two IGs in such a way that one favors the bill and the other opposes it. Call these IG's A and B. Similarly, there is a segment of voters who would be positively affected by the adoption of the bill (voters A), while others (voters B) would lose. Legislators choose a strategy j out of the discrete set of alternatives.[5] Each of the possible stances on the issue can be more or less in line with what the two affected IGs as well as the two groups of voters A and B favor. Importantly, given that a conflict of interests is assumed, a position in favor of or against a policy proposal must be in line with what one IG and one group of voters wants, but in opposition to what the other IG and group of voters want. Hence, each substantive position j, i.e., alternatives 1 and 2, must be closer either to IG and voter group A or to IG and voter group B.

Legislators primarily derive utility from being in office and thus maximize their utility by acting in such a way that their chances of re-election are maximized. The chances of re-election are determined

[4] The literature on campaign finance suggests that it is very difficult to empirically separate the channel running from policy position to campaign support from that running from campaign support to the choice of policy position (see, e.g., Bronars and Lott 1997 and Stratmann 2002).

[5] Note that our theoretical framework is fairly general. The same theoretical rationale can be applied in order to model decisions in roll call votes or legislators' public statements on any political issue.

directly by how close a legislator's policy position is to that preferred by the constituents and indirectly by campaign contributions from IGs, which are instrumental to electoral success. There are thus two sources of electoral support, and legislators maximize the net support they can gain from taking a stand either by favoring the status quo or by advocating the change in the law relative to not committing to either substantive alternative. If support of either policy position generates a net loss in electoral support, the legislator will not take a stand.

We choose as IG A and as voter group A, the ones that are closer to alternative 1. Accordingly, alternative 2 is more attractive for IG B and voter group B. The calculus for legislator i to opt for alternative 1, i.e., the status quo, thus depends on the expected increase in campaign support from IG A c_{i1A} (relative to not taking a stance) minus the expected decrease in support from IG B c_{i1B}. The latter may well be zero. If we assume a common multiplier that allows campaign money to be transformed into electoral support, we obtain the first component of the net electoral support from supporting position 1, i.e., $\beta(c_{i1A} - c_{i1B})$. Similarly, legislator i expects to win additional votes v_{i1A} from group A and to lose votes v_{i1B} from group B. However, whether these vote gains and losses materialize depends on the salience of the issue. Factor ρ stands for the probability that a voter is aware of the issue (i.e., the degree of public attention). The second component thus amounts to $\rho(v_{i1A} - v_{i1B})$. Finally, we add the opportunity costs of o_{ij} related to making a public statement on the issue (i.e., the time a legislator i could spend on dealing with other policy issues and win votes). The same considerations hold for policy alternative 2 with the opposite sign. A legislator i can thus assess the net electoral support that positions $j = 0, 1, 2, 3$ yield as

$$\begin{aligned} S_{ij} &= \beta(c_{ijA} - c_{ijB}) + \rho(v_{ijA} - v_{ijB}) - o_{ij} \quad j = 0, 1, 2, 3 \\ &= \beta\Delta c_{ij} + \rho\Delta v_{ij} - o_{ij}. \end{aligned} \tag{1}$$

If $\beta \neq 0$ and $\rho \neq 0$, legislators must thus trade off the differential of the money flows from the IG opposing the issue and the IG supporting it, and the differential in electoral support from voters opposing and those supporting the issue, respectively. As Δc_{ij} and Δv_{ij} refer to the same alternative j, a legislator's decision to optimize electoral support by making a public statement aimed at increasing Δc_{ij} will also affect Δv_{ij}. However, in the case of no public attention ($\rho = 0$), the legislator's choice of policy position is solely determined by the interests of campaign donors who will potentially be affected by the bill (as opportunity costs of o_{ij} are the same for making any public statement).

From the electoral support function, we can derive a function of a legislators perceived re-election chances R^*_{ij} depending on differential money flows, voters position and voters attention on the issue. The most simple calculus emerges in the case of a general penalty (or reward) for adopting position j (i.e. $\Delta v_j = constant$) in the situation with full public attention ($\rho = 1$). In addition to the main effect of campaign donations (in the situation with no public attention), there is a general effect of public attention $\rho\Delta v_j$ summarized by the (indicator) variable pa_j as well as an interaction effect between public attention and campaign donations. The latter term captures that the strategy has changed towards some given money flows. Hence, we can specify the impact of a legislator's choice of position j on his or her perceived re-election chances R^*_{ij} as a function of Δc_{ij} dependent on public attention pa_j such that:

$$R^*_{ij} = \alpha_j + \beta_j \Delta c_{ij} + \gamma_j pa_j + \delta_j pa_j \Delta c_{ij} \quad j = 0, 1, 2, 3 \tag{2}$$

where α_j is a constant, capturing the baseline impact of j. Given this theoretical framework, we can derive hypotheses about the legislator's choices regarding his or her policy stance. Consider the two extreme cases: (a) a secondary policy issue ($pa_j = 0$), and (b) a highly salient policy issue, i.e., a primary policy issue ($pa_j = 1$). In the former case, as stated above, a legislator's choice of policy position is solely determined by the interests of campaign donors who will potentially be affected by the bill. In the latter case, the attractiveness of an alternative j also depends on the electorate's stance on the issue. If, for example, j were in line with the majority of voters, $\delta_j pa_j \Delta c_{ij}$ would be negative and would have to be more than compensated for by $\beta\Delta c_{ij}$ in order to make j an attractive alternative. Hence, j would have to be a position that is clearly in line with what one of the IGs strongly favors and is willing to reward.

Hypotheses

From the outlined theoretical framework, we derive the following two hypotheses:

H1: *A legislator's public stance on a secondary policy issue is oriented towards the position of the affected IG to which he or she maintains the strongest exchange relationship (i.e., the more the legislator relies on campaign contributions from the IG in question relative to other IGs).*

H2: *The higher the public attention/salience of an issue, the lower the impact of IGs on a legislator's position, and the closer his or her position is to the preferences of the constituents.*

Importantly, our hypotheses do not state that IGs do not have any influence on legislator's positions under high public attention. They simply state that such influence diminishes with increasing public

attention.

Empirical strategy

Baseline empirical model

Based on the theoretical framework, we derive our baseline empirical model in order to test the hypotheses in the context of the SOPA/PIPA bills. First, we extend Equation 2 with a set of L additional variables that are potentially correlated with campaign contributions as well as R^*_{ij} in order to account for confounding factors that might bias the estimation of the model coefficients.

$$R^*_{ij} = \alpha_j + \beta_j \Delta c_{ij} + \gamma_j pa_j + \delta_j pa_j \Delta c_{ij} + \sum_{l=1}^{L} \theta_{lj} x_{il}, \tag{3}$$

Second, we add a random component ε_j to the impact R^*_{ij} of position j on a legislator's perceived re-election chances. A legislator i's expected chance of re-election derived from the jth choice is then $R_{ij} = R^*_{ij} + \varepsilon_j$. As legislators are assumed to be predominantly office-motivated, utility maximization dictates that legislator i chooses the alternative j if $R_{ij} > R_{ik}$ $(j, k = 0, 1, 2, 3)$ for all $k \neq j$. By means of the random component ε_j, we can then express the probability of observing legislator i choosing position j as

$$\begin{aligned} P(y_i = j) &= P(R_{ik} - R_{ij} \leq 0, \quad \text{for all } k \neq j) \\ &= P(R^*_{ij} - R^*_{ik} \geq \varepsilon_k - \varepsilon_j, \quad \text{for all } k \neq j), \end{aligned} \tag{4}$$

and insert (3) into (4). Under the assumption of all ε_{ij} being independent and type 1 extreme value distributed, it can be shown that this yields a multinomial logit model (MNL) of the form

$$p_{ij} = P(y_i = j) = \frac{e^{\alpha_j + \beta_j \Delta c_{ij} + \gamma_j pa_j + \delta_j pa_j \Delta c_{ij} + \sum_{l=1}^{L} \theta_{lj} x_{il}}}{\sum_{k=0}^{3} e^{\alpha_k + \beta_k \Delta c_{ik} + \gamma_k pa_k + \delta_k pa_k \Delta c_{ik} + \sum_{l=1}^{L} \theta_{lk} x_{il}}}. \tag{5}$$

where p_{ij} is the probability that legislator i chooses position j, y_i is legislator i's stated position, β_j is the baseline effect of campaign contributions (i.e., the effect if a secondary policy issue is considered) on the probability of observing i to choose j, and δ_j the differential effect of the campaign contributions if the issue gains public attention.[6]

[6] The derivation of logit models from models of probabilistic choice goes back to Luce (1959). See, for example, McFadden

Identification

The proper estimation of the empirical model, i.e., identifying the impact of public attention on the relevance of strong financial ties to IGs for legislators' policy positions, poses some challenges. Consider, for example, the case of a set of bills that gain either high public attention or low public attention, and we want to test Model (5) on the basis of roll call data or stated policy positions. It would be tricky to distinguish any effect of public attention from the effect of the actual policy content of a bill if different policy issues systematically gain either high or low public attention. Hence, we cannot properly test our hypotheses if public attention does not vary for one and the same policy issue (or randomly across issues). An ideal setting would thus involve an experiment in which legislators state their positions on the same policy issue once when salience is high, and once when it is low.

We argue that the temporary shutdown of several Internet services on January 18, 2012 in protest against the stricter control of property rights on the Internet, as envisaged by the so-called SOPA/PIPA bills in the United States, approximates such a setting and can serve as a quasi-experiment.[7] While the campaign was certainly meant to lobby the users and was a strategic decision of the opponents of the two bills, the stark increase in public attention it created came as a surprise. The success of the action message can thus be regarded as an unanticipated shock in public attention for the Members of Congress. It made an issue that previously harldy got any public attention suddenly highly salient to the voters. Analyzing congressmens' public statements in the context of the SOPA/PIPA bills and the related Internet service blackout thus provides a particularly promising scenario for testing our hypotheses. Moreover, the SOPA/PIPA bills involve highly relevant content in terms of economic policy and Internet governance. Its consequences would have potentially affected a large number of U.S. residents. Many of them were only aware of the SOPA/PIPA bills after the orchestrated Internet service blackout.

On January 18, 2012, Wikipedia, Google, and several thousand smaller websites participated in a vast online protest against the SOPA/PIPA bills. While Wikipedia and other websites actually blacked out their services on their webpage, Google and other websites conspicuously posted their opposition on their home pages and motivated visitors to join the protest against SOPA/PIPA. In the case of the English-language Wikipedia page, this meant that visitors were not able to search the online encyclopedia,

(1981) for a general discussion as well as Cameron and Trivedi (2005) for a complete derivation of logit from choice models with type 1 extreme value distributed random components.

[7] An alternative way to empirically separate the role of public attention from the underlying policy content might exploit accidents and natural catastrophes as exogenous shocks to the salience of certain environmental policies. However, such events might affect the political agenda as well as several industries in various ways. Hence, any effect might be difficult to attribute solely to the change in public attention. In particular, such an event could shift risk perception rather than public attention.

but were instead confronted with a banner informing visitors about potential negative consequences of SOPA/PIPA. Figure 1 shows the Wikipedia blackout screen.

Figure 1: The English-language Wikipedia page during the service blackout on January 18, 2012

Data source: Wikipedia (`http://commons.wikimedia.org/wiki/File:Wikipedia_Blackout_Screen.jpg`)

The campaign reached many U.S. citizens within hours and generated an immense resonance on Internet portals as well as in other media.[8] With the onset of the Internet service blackout, Internet search patterns within the United States show a sharp increase in inquiries related to the SOPA/PIPA bills. The number of queries of the terms "pipa" and "sopa" vis-à-vis terms refering to other well know bills debated in Congress during the same Congress is displayed in Figure A6 in the Appendix. The figure indicates that SOPA/PIPA related search interest not only peaked during the time of the Internet service blackout, but was also very low during 2011 when the respective bills were discussed in Congress. Relative to the search volume related to SOPA, none of the terms related to other major bills have a similar magnitude of search volume at any point during the 112th U.S. Congress.

The orchestrated blackout not only strongly increased public attention to the bills, it also provoked reactions by the electorate. As mentioned above, as a direct consequence of the orchestrated service blackout, according to some estimates, about 2,000 call attempts per second were made by U.S. citizens during the peak of the protest, trying to contact their local representative in Washington D.C. (Wortham

[8] According to Wikipedia about 160 million people saw their protest message that day, not counting the visitors to other protesting sites (Waugh and Poulter 2012). **?** report a massive online mobilization following the days of the blackout, reflected in over 3000 stories surrounding the SOPA/PIPA bills and emerging during the week of the blackout.

2012). In addition to phone calls, over 400,000 Emails were sent in protest of the bills (FFTF 2012). According to Wortham (2012) over 4 million people signed Google's online petition to the U.S. Congress in protest against the proposed bills as a direct reaction to the Internet blackout. Moreover, 10 million people are reported to have signed petitions against SOPA organized by Free Press, Don't Censor the Net, Avaaz, Credo, and MoveOn (FFTF 2012). Overall, the reactions clearly reflected the opposition of large parts of the citizenry to the two bills.

We present our empirical results step by step. First, we document the statistical relationship between specific campaign contributions and the legislator's stances on SOPA/PIPA. Our two main hypotheses derived in Section are then tested with estimates of Model (5). Finally, robustness checks of our main results.

Coefficients of interaction terms are generally difficult to interpret in the case of non-linear regression models and the t-tests of individual coefficients are not sufficient to test the hypotheses for interaction effects. We therefore compute discrete effects for typical observations. The effects (and their respective confidence intervals) are computed with the method suggested by Fox and Hong (2009). Based on the estimated coefficients, we predict probabilities for choosing either alternative dependent on different levels of the campaign contribution differential while keeping all other covariates fixed at typical values.[9] In order not to overstate the computed effects, we only present effects based on the actual range of campaign contributions observed in our dataset.

Data

For our analysis, we compile and code a dataset with legislators' recorded public statements on the SOPA/PIPA bills. We link the legislators' statements with data on their political background (years in office and party affiliation), their personal background (gender and age), as well as detailed micro-data on specific campaign contributions received by them. The following subsections introduce the various data sources and explain the coding of the main variables.

Public statements on the SOPA/PIPA bills

The dataset covers the political debate from September 2010, i.e., the introduction of a preliminary version of the PIPA bill to the U.S. Senate, to the end of February 2012, i.e., a few weeks after the postponement

[9] Continuous variables are fixed at their sample means and binary or ordinal variables at their proportional distribution in the sample.

of the SOPA and the PIPA bills in January 2012. The data compilation and coding is conducted in five steps. First, we assemble a baseline sample of recorded statements from two independent secondary data sources which collected statements on SOPA/PIPA during the debate: ProPublica[10], and the Sunlight Foundation's OpenCongress platform[11]. For purposes of verification, these secondary data sources provide a primary data source (i.e., a radio interview, a newspaper article, or a tweet) for each of the recorded statements. In addition, ProPublica and OpenCongress also label each statement with the respective legislator's stance on the issue (pro/contra the bill). We extend the set of records by directly searching for additional statements in primary sources (including media outlets, the legislator's official webpages, and social media).[12] We find 97 statements not included in any of the secondary sources.[13] Second, given the baseline dataset of recorded statements, we remove overlapping records. Third, we assign each of the statements to one of three categories (in a first step ignoring the categorization provided by ProPublica and OpenCongress):

1. The legislator stated being *in favor* of the bill.
2. The legislator stated being *against* the bill.
3. The legislator stated being *undecided*.[14]

Fourth, we compare our coding to the categorization provided by the secondary data sources (ProPublica and OpenCongress) and carefully reconsider all divergent cases. The categorization by ProPublica diverges in 70 cases as this organization uses an additional category "leaning no". In our coding, these statements are coded as either "undecided", or "against", respectively.[15] Finally, for all legislators where no recorded statement was available before and/or after the service blackout, we added an entry *"no opinion recorded"*. Thus, we end up with a dataset in which each member serving in the 112th Congress

[10] ProPublica is an independent, non-profit news outlet that specializes in investigative journalism (see `http://www.propublica.org/about/`). ProPublica staff followed the SOPA/PIPA debate since the introduction of the bills and recorded legislators' public statements from various primary sources. The collected data is publicly available on `http://projects.propublica.org/sopa/timeline.html`.

[11] The Sunlight Foundation is a non-partisan, non-profit organization that promotes open government by providing data on various aspects of local, state, and federal U.S. politics via several web services (`http://sunlightfoundation.com/about`). Its OpenCongress web platform (`www.opencongress.org`) provides detailed information on the legislative process in the U.S. Congress.

[12] Importantly, in order to avoid a bias being introduced by the data compilation process, we exerted the same amount of effort when searching for statements for each legislator (i.e., we did not search longer or in different media in cases where no statement was found).

[13] However, 23 of these statements are, in terms of content, almost identical with statements made by the same legislator and captured in one of the secondary sources (based on an alternative primary source). These 23 statements are thus considered duplicates and are not used in the analyses of this study.

[14] Section A.I in the Appendix gives more details and examples of how the data was compiled and coded.

[15] Of the remaining statements, we encountered 41 divergent cases. Table A2 in the Appendix presents an overview of all coding differences.

is assigned at least one entry before the service blackout and one entry after the service blackout. Our data preparation procedure thus generates a balanced panel consisting of all Members of Congress (except for Delegates and one vacant seat in the U.S. House).[16]

Table 1 provides an overview of the number of statements assigned to each category before and after the service blackout, as well as the respective count of legislators involved. The table shows that the total number of recorded statements is rather balanced across the two periods before and after the Internet blackout. It also becomes apparent that the majority of public statements in favor of the SOPA/PIPA bills were made before the service blackout, whereas the majority of statements against the bills were made afterwards.

Table 1: Count of legislators' and statements on SOPA/PIPA before and after the Internet service blackout

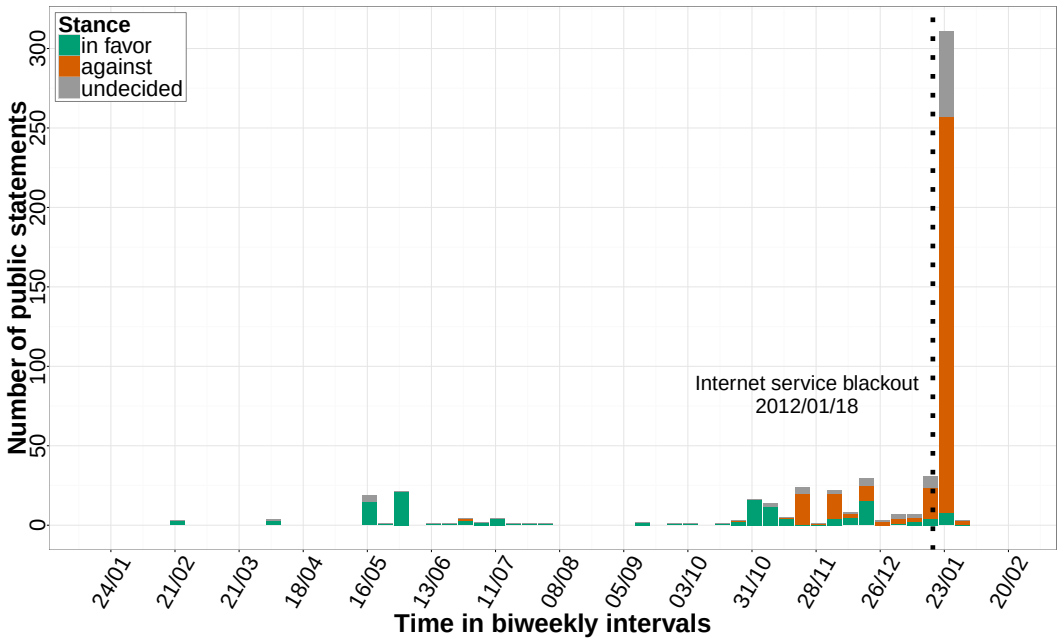
	Before		After	
Public statements *in favor*	163		6	
(No. of legislators involved)	(82)		(6)	
- final stated stance		69		3
Public statements *against*	93		240	
(No. of legislators involved)	(51)		(208)	
- final stated stance		48		205
Public statements *undecided*	45		51	
(No. of legislators involved)	(39)		(45)	
- final stated stance		30		43
No. of legislators making no public statements		387		283
Total no. of recorded statements	301		297	
Total no. of legislators		534		534

Note: Of the 69 legislators who made a public statement in favor, 21 legislators changed their position to against. *Data sources*: See Section and Section A.I in the Appendix.

The timing of the public statements in the SOPA/PIPA debate is illustrated in Figure 2. The statements are rather broadly spread over the period when the SOPA/PIPA bills were barely publicly discussed. However, when the issue suddenly received much greater public attention in response to the Internet service blackout, the number of public statements (mostly against SOPA/PIPA) increased sharply. Figure 2 indicates clearly how effective the sudden public attention was in obliging legislators to communicate their position on the issue.

[16] In total, the panel includes 534 Members of Congress and 502 individual statements in favor of or against the bills and 96 entries for "undecided". The difference to the official number of 535 voting members in the U.S. Congress is explained by a temporarily vacant seat in the 112th U.S. House. Representative David Wu (Democrat, Oregon) resigned in August 2011. His seat was later taken by Suzanne Bonamici who joined the U.S. House in February 2012 (see the official list of vacancies and successors of the 112th U.S. Congress under `http://history.house.gov/Institution/Vacancies-Successors/112/`). Thus, neither Representative was in office throughout the SOPA/PIPA debate and particularly not during the Internet service blackout and are therefore excluded from the analysis.

Figure 2: Number of stated stances of Members of the U.S. Congress on the SOPA/PIPA bills over time



Notes: The time frame includes all observations in our sample (from the introduction of the COICA bill to the postponement of SOPA/PIPA.) The black dashed vertical line indicates the Internet service blackout on January 18, 2012.
Data sources: Own compilation based on various sources. See Section and Section A.I in the Appendix for details.

Remarkably, several legislators switched with regard to their stance on Internet governance from supporting the SOPA bill to opposing it (or at least ceasing to support it) as the first row indicates. None of the legislators switched sides in the other direction. Figure A1 in the Appendix shows the count of Members of Congress' taking either position before and after the Internet blackout.

Campaign contributions

Finance data on campaign contributions come from the Center for Responsive Politics (CRP) and were collected via the Sunlight Foundation's Influence Explorer database.[17] All campaign contribution records indicate the industry with which the respective contributor is affiliated. We focus on contributions from two main industry categories: "TV/MOVIES/MUSIC" for the copyright industry and "COMPUTERS/INTERNET" for the tech industry. Contributions by these two industries are very similar in terms of magnitude and follow similar patterns over time. The monthly average total campaign contributions to Members of Congress by either of these two industries is around one million USD (see Figure A2 in

[17] The full raw dataset is available under `http://data.influenceexplorer.com/bulk/`. Specific parts of the database can be queried via the Influence Explorer API (`https://sunlightlabs.github.io/datacommons/`).

the Appendix for details). The two industries thus seem to be similarly engaged in donating money to members of the U.S. Congress.

For our main analyses, we compute the total amount of campaign contributions donated by each of the two industries to each legislator over the year before the Internet service blackout. Our main explanatory variable, in line with our theoretical considerations, is the difference between these two sums ($\Delta c_{ij} \equiv \Delta$*Contributions (USD 1,000)*, i.e., the total campaign contributions by the copyright industry minus total campaign contributions by the tech industry in USD 1,000).

Legislators' political and personal background

Some individual characteristics of the Members of Congress in the sample serve as control variables. Data on the political and personal background of legislators are derived from the Library of Congress. These characteristics include the number of years served in Congress (*Years served*), party affiliation (an indicator variable that is equal to 1 if the legislator is *Republican*, and equal to 0 otherwise), *Age*, and gender (an indicator variable that is equal to 1 if the legislator is *Male*). Table A3 in the Appendix shows some descriptive statistics for the variable campaign contributions as well as the legislators' characteristics. The biggest surplus in contributions from the copyright industry amounts to USD 275,000 in the year prior to the blackout. The respective amount for the tech industry amounts to USD 429,000. On average, the difference is about USD 3,600. 54% of the Members of Congress are Republicans. The mean age is 58 years. They have served, on average, about 12 years. The proportion of men is 83%.

Results

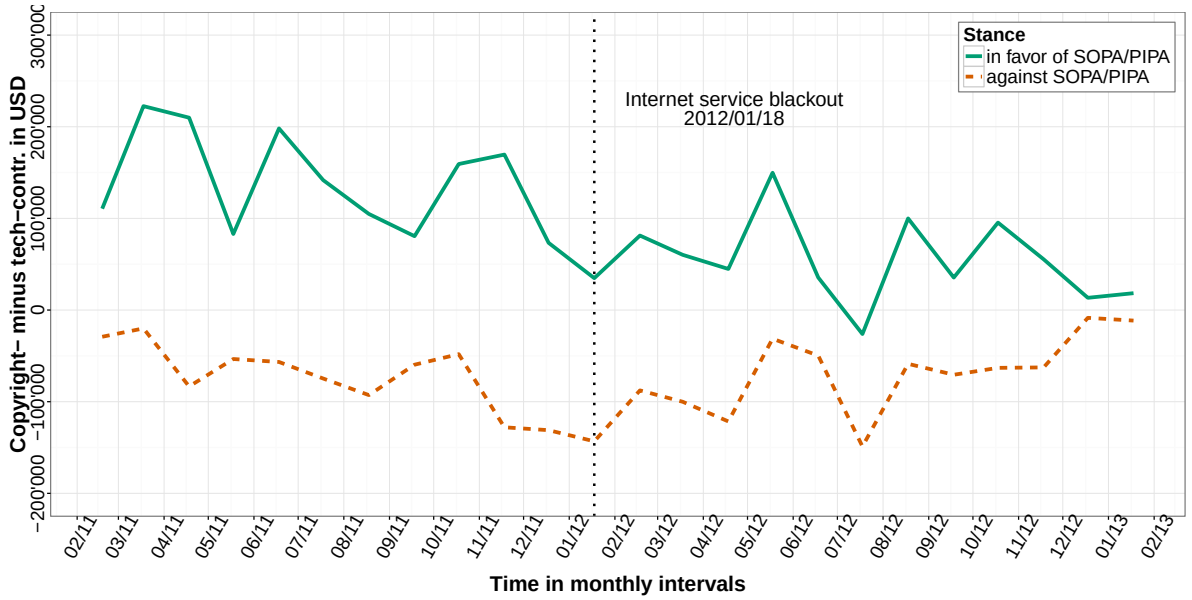
We present the results of our empirical analyses in three steps. First, we document the statistical relationship between campaign contributions and legislators' stances on SOPA/PIPA. Second, we test our two main hypotheses with estimates of the multinomial logit model (5). Third, we present complementary analyses to test whether our results are robust.

The statistical relationship between campaign finance and legislators' positions

Our descriptive analyses document the statistical relationship between campaign contributions from the tech industry and the copyright industry, and the legislators' publicly stated opinions on the issue. Figure 3 presents the aggregate surplus of copyright-industry campaign contributions (copyright minus

tech contributions) per month over the period from one year before the service blackout to one year after the service blackout. One time series is plotted for legislators whose last stance before the service blackout was in favor of SOPA/PIPA and one is for those whose last stance before the service blackout was against SOPA/PIPA. Strikingly, the supporters of the bills receive systematically more campaign contributions from the copyright industry than from the tech industry (mean difference t-value: -10.533). This is particularly the case for the time before the Internet service blackout.[18]

Figure 3: Campaign finance contributions to supporters and opponents of SOPA/PIPA



Notes: Monthly differences between the total contributions by the copyright industry and the tech industry over the period of one year before the Internet service blackout until one year after the Internet service blackout. One time series is plotted for those Members of Congress who publicly stated being in favor of the SOPA/PIPA bills before the service blackout and one for those who publicly stated their opposition before the service blackout.
Data sources: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation, and ProPublica (see Section and Section A.I in the Appendix for details).

Based on a simple linear regression analysis, we further study the correlation between campaign contributions from the two primarily affected industries and legislators' positions. In particular, we estimate the probability of observing a statement in favor of SOPA/PIPA (vs. against, undecided or no statement) before the service blackout as well as the probability of observing a statement against SOPA/PIPA (vs. in favor, undecided or no statement) before the service blackout as a function of the campaign contributions a legislator received and additional factors, most importantly his or her party affiliation. While we pool the data from both chambers, we include an indicator variable for Senators

[18] Figures A3 and A4 in the Appendix further illustrate this point.

to control for differences between the two chambers (as well as potentially relevant differneces between SOPA and PIPA). Table 2 presents the results.

Table 2: OLS estimates of stated stances on SOPA/PIPA before the Internet service blackout

	Dependent variable:					
	Stance in favor of SOPA/PIPA = 1			Stance against SOPA/PIPA = 1		
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Contributions (USD 1,000)	0.003^{***}	0.002^{**}	0.002^{**}	-0.002^{***}	-0.002^{***}	-0.002^{***}
	(0.001)	(0.001)	(0.001)	(0.0004)	(0.0004)	(0.0004)
Republican		−0.024	−0.038		-0.047^{*}	−0.033
		(0.029)	(0.029)		(0.025)	(0.025)
Male		−0.012	0.006		−0.025	−0.009
		(0.036)	(0.034)		(0.034)	(0.034)
Age		0.002	0.001		−0.002	−0.002
		(0.002)	(0.002)		(0.002)	(0.002)
Years served		−0.002	−0.0003		0.001	0.0004
		(0.002)	(0.002)		(0.002)	(0.002)
Senator (PIPA)		0.289^{***}	0.317^{***}		0.079^{**}	0.103^{***}
		(0.049)	(0.045)		(0.038)	(0.040)
Constant	0.120^{***}	0.003	-0.266^{**}	0.097^{***}	0.249^{***}	0.084
	(0.014)	(0.088)	(0.118)	(0.013)	(0.087)	(0.094)
State fixed effects	No	No	Yes	No	No	Yes
Observations	534	534	534	534	534	534
Adjusted R^2	0.055	0.173	0.218	0.051	0.062	0.076
Residual Std. Error	0.326	0.305	0.297	0.279	0.277	0.275
F Statistic	32.150^{***}	19.643^{***}	3.699^{***}	29.448^{***}	6.827^{***}	1.794^{***}

Notes: The difference in contributions is computed by subtracting the total amount of contributions a legislator received from the tech industry over a period of one year prior to the Internet service blackout from the total amount received from the copyright industry over the same period of time. The dependent variable considers the last opinion recorded before the Internet service blackout. The reference group includes legislators who stated an opposite stance, were indifferent, or did not make any public statement before the Internet service blackout. Heteroscedasticity-robust standard errors are presented in parentheses. The statistical significance of regression coefficients is indicated with * $0.1 > p > 0.05$, ** $0.05 > p > 0.01$, and *** $p < 0.001$.
Data sources: See Section Section A.I in the Appendix for details.

The estimated partial correlations show that the previously illustrated relationship between specific campaign contributions and legislators' stances on SOPA/PIPA - when there was limited attention on the issue - hold ceteris paribus. The coefficient of the difference in contributions in specification (2) indicates that an increase of one standard deviation (around USD 30,000) in the surplus of contributions received from the copyright industry increases the probability of observing a legislator making statements in favor of SOPA/PIPA by around 6 percentage points ($31.286 \times 0.002 \times 100$). The opposite holds for statements against SOPA/PIPA in column (5). In columns (3) and (6), we additionally control for state-fixed effects. These specifications thus take into account unobserved factors, such as industry structure, that might be

correlated both with campaign contributions from specific industries as well as with specific preferences for policies on Internet governance. The findings hold.

Hypotheses tests

We test our hypotheses by estimating Model (5) with our panel data set containing an observation for each Member of Congress before and after the Internet blackout. Table 3 shows the results from our baseline multinomial logit (MNL) model. The coefficients of the covariates regressed on the alternative "no opinion recorded" are normalized to 0 and are not presented in the table. The results can thus be interpreted relative to this reference category. The first specification (columns 1 to 3) only includes the variables capturing campaign finances. Columns 4 to 6 show the results of our preferred specification derived from our theoretical framework including the Senator-indicator and further control variables.

Table 3: MNL estimates of stated stances on SOPA/PIPA before/after the Internet service blackout

	Dependent variable:					
	Undecided	Against	In favor	Undecided	Against	In favor
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Contributions (USD 1,000)	0.006	-0.038^{***}	0.028^{***}	0.006	-0.039^{***}	0.022^{**}
	(0.005)	(0.003)	(0.009)	(0.006)	(0.003)	(0.010)
After	0.699^{**}	1.871^{***}	-2.633^{***}	0.583^{**}	1.886^{***}	-2.764^{***}
	(0.279)	(0.178)	(0.299)	(0.281)	(0.183)	(0.323)
Δ Contributions (USD 1,000) x after	−0.008	0.039^{***}	-0.019^{**}	−0.010	0.038^{***}	-0.019^{*}
	(0.008)	(0.006)	(0.010)	(0.009)	(0.006)	(0.011)
Republican				0.175	−0.170	−0.320
				(0.297)	(0.195)	(0.336)
Male				-0.762^{**}	0.100	−0.132
				(0.373)	(0.248)	(0.414)
Age				0.031^{*}	−0.016	0.018
				(0.018)	(0.012)	(0.020)
Years served				0.009	−0.010	−0.014
				(0.019)	(0.013)	(0.022)
Senator (PIPA)				2.128^{***}	0.960^{***}	2.417^{***}
				(0.387)	(0.259)	(0.463)
Constant	-2.580^{***}	-2.198^{***}	-1.985^{***}	-4.599^{***}	-1.308^{**}	-3.220^{***}
	(0.196)	(0.123)	(0.219)	(1.012)	(0.652)	(1.104)
N	1068	1068	1068	1068	1068	1068
Akaike Inf. Crit.	1,897.123	1,897.123	1,897.123	1,773.751	1,773.751	1,773.751

Notes: The difference in contributions is computed by subtracting the total amount of contributions that a legislator received from the tech industry over a period of one year prior to the Internet service blackout from the total amount received from the copyright industry over the same period of time. The sample contains two observations per member of Congress, i.e., the last recorded opinions before and after the Internet service blackout. The alternative 'no opinion recorded' serves as the reference category (the respective coefficients are normalized to 0, and are not shown in the table). Standard errors are presented in parentheses. The statistical significance of regression coefficients is indicated with * $0.1 > p > 0.05$, ** $0.05 > p > 0.01$, and *** $p < 0.001$.
Data sources: Own compilation from various sources. See Section and Section A.I in the Appendix for details.

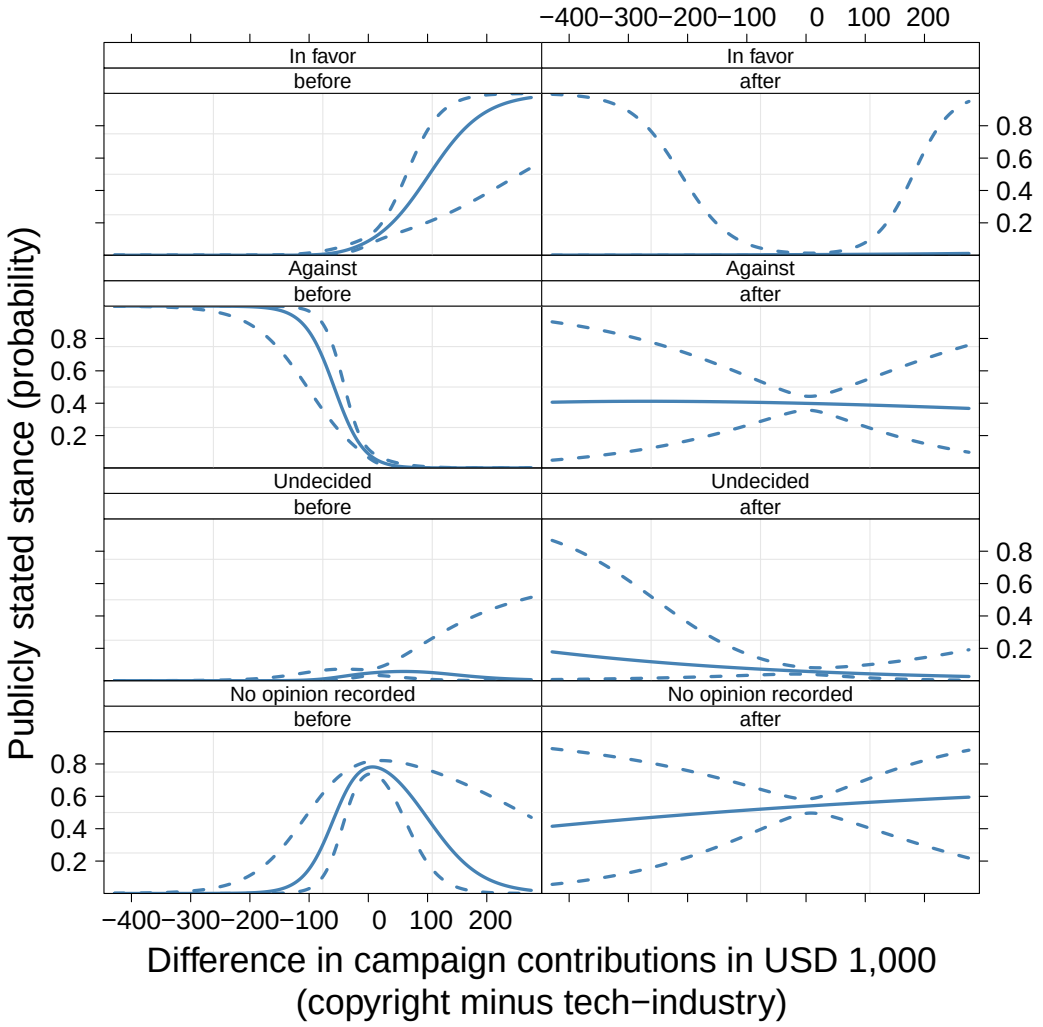
For both specifications, the results indicate that before the service blackout, the probability of observing a statement in favor of SOPA/PIPA is higher than not observing one, the more money a legislator received from the copyright industry. The opposite is the case for statements against SOPA/PIPA, which are less likely to be observed before the blackout from legislators who received more from the copyright industry. The probability of observing neutral statements on SOPA/PIPA before the Internet service blackout is not statistically significantly related to the difference in campaign contributions from the two affected industries. These findings are in line with Hypothesis 1, which posits that policy positions on secondary policy issues are ceteris paribus at least partly driven by financial ties with IGs. The sudden increase in public attention due to the service blackout has (if neither of the two industries contributes substantially more) a strong positive effect on the likelihood of observing more neutral statements as well as more statements against SOPA/PIPA, but a negative effect on the likelihood of observing statements in favor of SOPA/PIPA (see the second row of estimated coefficients). Overall, there is therefore a move in legislators' positions towards the position expressed by many constituents once salience rises.

Figure 4 presents effect plots (taking into account the interaction term in the second specification of Table 3; see Fox and Hong 2009 for details on the computation of effect plots based on MNL models) that quantify the economic significance of the shock in public attention on the role of campaign finance contributions in politicians' stances. It illustrates the ceteris paribus effect of the difference in campaign contributions from the two affected industries on the probability of observing a legislator choosing any of the four alternatives. The plots on the left-hand side show this relationship for the time before the service blackout, and the ones on the right-hand side for the time after.

The plotted effects present a rather clear picture with respect to the role of campaign contributions in motivating politicians to take a stance on SOPA/PIPA. In line with the simpler OLS models presented above, the probability of observing a politician publicly supporting SOPA/PIPA is ceteris paribus systematically higher, if he or she received more campaign contributions from the copyright industry than from the tech industry, and vice versa. However, this strong statistical relationship almost completely disappears once SOPA/PIPA becomes a primary policy issue due to the stark increase in public attention. In the context of the SOPA/PIPA bills, the empirical finding is thus consistent with Hypothesis 2, which posits that the influence that financial ties to IGs have on legislators' positions on a policy issue decreases with increasing public attention to the issue.

The presented results are robust if the sample is restricted to the legislators who made a public

Figure 4: Campaign contributions and publicly stated stances before and after the Internet blackout



Notes: Effect plots based on the estimated multinomial logit model with the interaction term Δ Contributions (USD 1,000) × after presented in Table 3, columns 4 to 6. The y-axis depicts the estimated probability of observing a legislator to take one of the alternative positions on the SOPA/PIPA bills. The dashed lines display a 95-percent confidence interval around the estimated effects.
Data sources: See Section and Section A.I in the Appendix for details.

statement before the Internet service blackout.[19]

[19] The additional results are available on request.

Robustness of Results

Additional control for the industry structure in the electoral districts

Campaign contributions from the two industries might capture the industry structure in a legislator's electoral district. While this would not invalidate our testing strategy for the theoretical hypotheses, an interpretation of the statistical regularities in the context of local political markets would be required. In order to check the scope of the trade-offs involved in the current setting, we take the industry structure into account and estimate Model (5) with two additional explanatory variables as well as their interaction with the Internet blackout indicator. These additional variables capture the fraction of geo-coded type 15 campaign donations by individuals who are employed in either the tech industry or the copyright industry per electoral district.[20]

The results (presented in Table A4 in the Appendix) show that the industry structure in the electoral district has some predictive power for legislators' stance on the issue. Members of Congress elected in a district where the copyright industry contributes a higher proportion to employment are more likely to support SOPA/PIPA before the Internet blackout. The effect of the campaign contributions, however, is not affected by the extension of the empirical model. Effect computations for typical observations reveal effects of similar size.[21]

Separate estimation

The Internet service blackout might have changed not only the role of campaign finances in the choice of policy positions, but also the role of unobserved factors that are correlated with our covariates. In order to allow for a flexible specification, we estimate our model once for the period before the Internet service blackout and once for the period after the Internet service blackout. We thus split the sample instead of using an interaction term. This addresses the issue of the potential biases that such time-variant correlations might induce for the interaction term. Moreover, these estimations have the advantage that the standard errors are not correlated over time, as each legislator is only included with one observation

[20] FEC registered type 15 transactions are "contribution[s] to political committees (other than Super PACs and Hybrid PACs) from an individual, partnership or limited liability company". In order to code the additional variables, we filter type 15 transactions for donations made by individual citizens. We then geo-code the donors' addresses via the Street Address to Coordinates API (Warden 2013) and map the coordinates of donors to the congressional election districts. The variables are then computed for each district j as the sum of all donations made by individuals working in the respective industry (i.e., tech or copyright) over the sum of all donations made by all individuals located in district j. Note that this measure does not coincide with our main explanatory variable, as it captures the local workforce employed in the industries of interest that actively donates to political campaigns. It does not capture *who* received the donations. See Figure A7 in the Appendix for details on this measure.

[21] Effect plots are available on request.

per sample.

Table A5 in the Appendix presents the results. The results are qualitatively the same as those presented in the main analysis. We again compute and illustrate the effect of campaign contributions before and after the service blackout as effect plots. These results are presented in the Appendix, Section A.III (see Figure A8 for the sample covering the time before the service blackout and Figure A9 for the sample covering the time after the service blackout, respectively). The estimated coefficients in the second model should be treated with caution, though, as the minority outcome for the category "in favor" becomes a rare event due to the splitting of the sample for some alternatives. This renders an exact estimation of the coefficients difficult.

Relaxation of the independence of irrelevant alternatives assumption

In our baseline model, we assume that the alternative specific random components ε_j are independent across alternatives j. This is a common assumption in any standard MNL. However, whether the assumption is problematic depends on the specific data and research question. In our context, the assumption of the independence of irrelevant alternatives (IIA) means that legislators make pairwise comparisons for all the alternative policy positions, and that for each comparison any characteristics of alternatives other than the pair under consideration do not matter. Thus, the choice between making a statement in favor of SOPA/PIPA and making a neutral statement does not depend on the alternative of not publicly taking a position at all. There is reasonable concern that this holds. Lying low and making a neutral statement might be rather similarly related to unobserved factors. In order to assess the robustness of our results if the IIA is relaxed, we estimate a nested MNL by grouping the alternatives 'no opinion recorded' and 'undecided' as well as 'in favor' and 'against'.[22]

We present the estimated coefficients resulting from the nested MNL model in Table A6 in the Appendix alongside the estimates from our baseline model presented in Table 3. The estimated coefficients are qualitatively similar to those in the baseline model. However, they tend to be less precisely measured than in the baseline analysis. The estimated inclusive value coefficient $\hat{\lambda}$ indicates that there is moderate correlation between the error terms within groups.[23] The null hypothesis, which posits that the true model is the standard MNL model ($\hat{\lambda} = 1$) can, however, be rejected at the 1 percent significance level. In order to quantify the effect of campaign contributions on legislators' positions conditional on the

[22] This allows correlation between $\varepsilon_{noopinionrecorded}$ and $\varepsilon_{undecided}$, as well as between $\varepsilon_{infavor}$ and $\varepsilon_{against}$, but not between these two groups.

[23] $1 - \hat{\lambda}$ measures the approximate correlation among ε_js within the same nest.

Internet service blackout, we again present plots of the computed effects. While the effects based on the nested model are smaller and less precisely measured than in the standard MNL, the evidence with respect to our main hypotheses remains qualitatively the same. Figure A10 in the Appendix presents the computed effects.

Concluding remarks

Technological change challenges established industries. Old and new players pursue strategies beyond markets and lobby legislatures for a favorable legal environment. Sometimes these factional arguments are supported by financial contributions that help legislators to fund their electoral campaigns. In this context, it is still not well understood what factors induce legislators to support specific IG interests. In our paper, we emphasize public attention to a policy issue as a crucial condition affecting whether legislators cater more to IGs or to their constituency. We present a simple calculus for the relationship between the campaign contributions that a legislator receives from a specific IG and his or her support of a specific policy issue favoring that IG. A stronger positive (statistical) relationship is predicted if the issue in question is not a salient topic of public interest than if it is.

Our empirical analysis takes up the regulation of an area that is the epitome of change, i.e., the regulation of the Internet. In this area, the protection of copyright is one specific aspect with conflicting interests within different industries as well as between some industries and consumers (see, e.g., Lessig 2004). A case in point are two bills introduced in the U.S. Congress in 2011: the Stop Online Piracy Act (SOPA) and the Protect IP Act (PIPA). They aim at strengthening law enforcement to combat online copyright infringements and online trafficking in counterfeit goods. Based on our compiled dataset that includes 598 public statements of Members of Congress regarding SOPA/PIPA, we are able to trace the policy stance of legislators on the issue over time. The results of our multinomial logit regressions reveal that the surplus in financial support from the copyright industry (relative to contributions from the tech industry) predicts the stance that legislators adopt on the two bills up to January 18, 2012. This is the date when roughly 7,000 web platforms in the United States (including Wikipedia and Google) temporarily shut down their sites to protest against the two bills. The event substantially increased public attention on this issue and thus fueled the dynamic of the political discourse. On average, legislators after the event were more likely to oppose the bills and less likely to publicly support them. More interestingly and in line with our hypothesis, campaign contributions from the involved industries no longer have

predictive power for legislators' stances on the issue.

The Internet service blackout serves as a quasi-experiment in our analysis, as we are fairly convinced that the huge increase in public attention surrounding the two bills was unexpected. However, the event also points to a strategy that some interest groups might use when pursuing their goals, which Schattschneider (1960) discussed as an expansion of the scope of conflict involving the public.[24] The coordinated action can be understood as lobbying by rousing grassroots. The actors aim to increase the salience of an issue within the electorate in order to motivate legislators to take potential voter reactions into account. In such a setting, what are primary policy issues is endogenous and might change between the introduction of a bill and the final decision on it in parliament. As recognized in the literature on campaigning, it is difficult to steer the salience that an issue will have with the public. In fact, the salience of policy issues might be understood as resulting from shocks triggered by some random events and hyped by the media (and other self-interested actors). As an optimal decision rule, lobbying by rousing grassroots is unlikely to be a commonly chosen option (as opposed to lobbying legislators). It is likely to be chosen by IGs who control (part of) the media, and for concerns that are secondary policy issues and have the potential to become primary policy issues for retrospective voters. There is still a lot to be learned about exchange in the political sphere.

[24] Related work refers to lobbying citizens and outside lobbying (see, e.g., Kollman 1998, Mahoney 2007, and Wolton 2016).

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Appendix

A.I Data appendix

Public statements on the SOPA/PIPA bills

Our data set covers the political debate on the SOPA/PIPA policy issue from September 2010 (the introduction of the COICA bill, a preliminary version of the PIPA bill, to the U.S. Senate) to the postponement of the SOPA and the PIPA bills in January 2012. Our initial baseline sample was compiled from ProPublica's website (`http://projects.propublica.org/sopa/timeline.html`) and the Sunlight Foundation's OpenCongress web platform (`https://www.opencongress.org/wiki/Protect_IP_Act_Senate_whip_count`). Note that the final overview of stances published by ProPublica available on `http://projects.propublica.org/sopa/sopa.html` turned out to be slightly problematic for research applications, as we could not find primary sources for all stances coded by ProPublica. We therefore only use the statements that are explicitly listed in ProPublica's time-line file, where each stance is clearly related to a primary source. We then reconciled, extended, and validated the baseline sample with general web searches and specific searches in media outlets via LexisNexis as well as via Project Votes Smart (PVS) (`www.votesmart.org`; i.e., we checked the PVS webpages of each Member of Congress who was in office during the period of interest for statements). We predominantly employed web scraping techniques (programmatic information extraction from webpages) to extract the raw data on legislators' stances. We provide these scripts for replication purposes on request.

Table A1 presents an excerpt from our data set. The full data set will be provided by the authors on request. Table A2 summarizes the differences between our own statement coding and the statement coding of secondary sources.

Table A1: Excerpt from data set on public stances with respect to SOPA/PIPA

bioguide_id	date	fullstatement	source	stance
B001260	1/20/12	Compares SOPA to polices of China, Iran, North Korea Buchanan said regulation of the Internet is something to be expected from restrictive societies like China, Iran, and North Korea – but not the United States. "Since its inception, the Internet has been a revolutionary tool in our society, encouraging the free exchange of information and ideas", said Buchanan. "Excessive regulations and government intrusion would only serve to hinder the innovation and progress of this cutting-edge tool. I will continue to fight for policies that preserve and protect an open and democratic Internet."	www.buchanan.house.gov	against
B001236	1/18/12	Withdraws sponsorship of PIPA. Over the past few weeks, the chorus of concerns over Congressional efforts to address online piracy has intensified. I can say, with all honesty, that the feedback I received from Arkansans has been overwhelmingly in opposition to the Senate bill (S.968, the PROTECT IP Act) in its current form. That is why I am announcing today that I intend to withdraw my support for the Protect IP Act. I will have my name removed as a co-sponsor of the bill and plan to vote against it if Majority Leader Reid brings it to the floor in its current form. The PROTECT IP Act seeks to address an issue that is of vital importance to the future of intellectual property rights in the modern era. However, the concerns regarding the unintended consequences of this particular bill are legitimate. Therefore, we should not rush to pass this bill, rather we should be working to find another solution so that the epidemic of online piracy is addressed in a manner that ensures innovation and free speech is protected. I have confidence that we can do this, but not as the PROTECT IP Act stands today.	www.facebook.com	against
K000367	9/20/10	Cosponsors Combating Online Infringement and Counterfeits Act, S. 3804. COICA contained similar provisions and battle lines as PIPA does. It never reached a full Senate vote and was re-written in 2011 as the PROTECT-IP Act (i.e. PIPA).	Library of Congress: THOMAS	in favor

— Continued on next page —

Table A1 – continued from the previous page

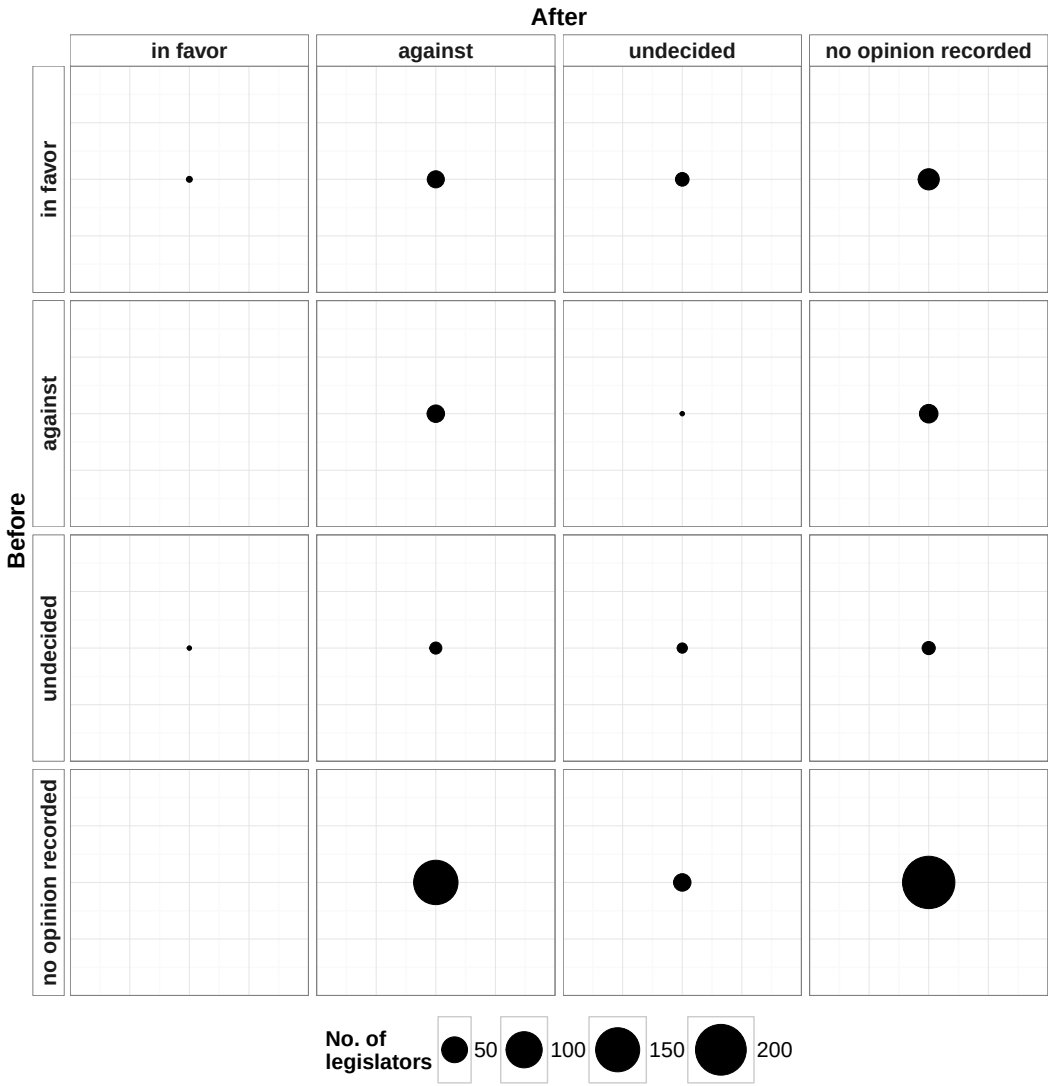
bioguide_id	date	fullstatement	source	stance
L000123	1/17/12	Letter to constituent "The Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property (PROTECT IP) Act of 2011 (S. 968) would give law enforcement additional tools to combat the illegal online sale of counterfeit or copyright infringing goods. Specifically, this bill would give the Attorney General the power to serve issued court orders on search engines, payment processors, advertising networks, and Internet service providers. It would allow suit against site operators, but would not allow law enforcement to block access to a site. This bill would also require plaintiffs to sue the owner or registrant of a domain name before bringing suit against a site itself."	www.opencongress.org	undecided
L000557	1/3/12	Reaffirms support for SOPA. "Congressman Larson believes that something must be done because under current law, many of these websites are beyond reprimand from the U.S. judiciary system simply because they operate offshore, outside the jurisdiction of our law enforcement agencies", Larson's spokesperson wrote to CT NEws Junkie.	www.ctnewsjunkie.com	in favor

Table A2: Differences in statement coding

Secondary source coding	Own coding		Total
	Against	Undecided	
Leaning No	65	5	70
No	0	9	9
Undecided	7	0	7
Yes	1	24	25
Total	73	38	111

In Figure A1, we illustrate the legislators' last recorded positions with regard to the SOPA/PIPA bills before and after the Internet service blackout. For each possible combination of positions (in favor, against, undecided; or no opinion recorded) before and after the blackout, we count the number of legislators and assign the number to the respective cell in the panel. The number of legislators for each combination is reflected in the size of the dots. The four combinations on the diagonal (from the top left-hand to the bottom right-hand cell) capture the legislators who either did not publicly change their position due to the service blackout or did not make any public statements on the issue.

Figure A1: Members of Congress' stances on SOPA/PIPA before and after the service blackout

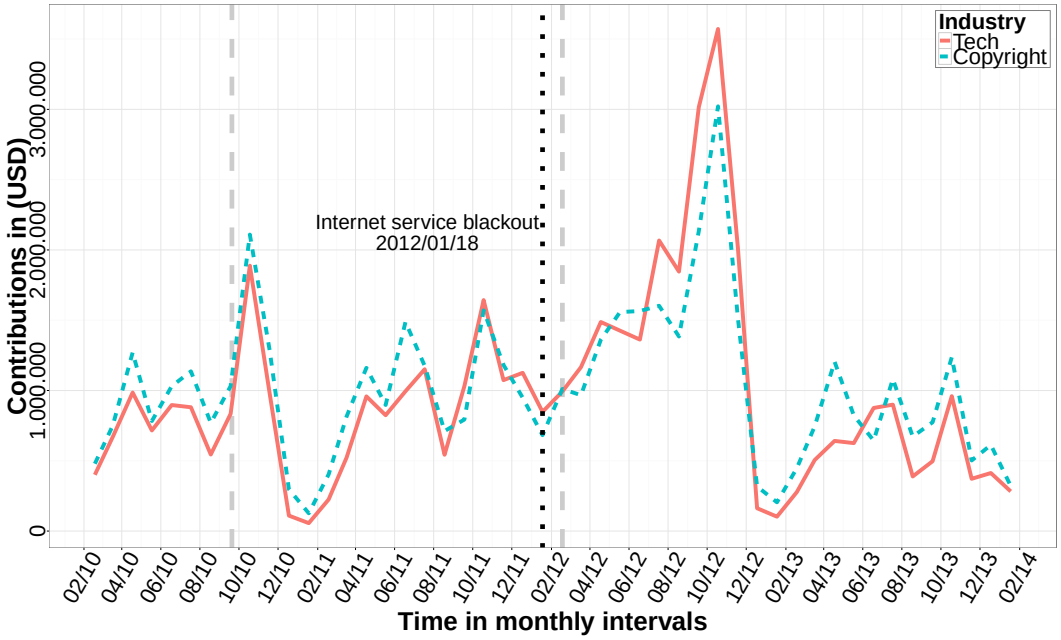


Notes: The size of the dots indicates the number of legislators taking the respective stance with regard to the SOPA/PIPA bill.
Data sources: Own compilation based on various sources. See main text and Section A.I for details.

Campaign contributions

Figure A2 shows the monthly aggregate flow of money from these two industries to the members of the 112th U.S. Congress between February 2010 and February 2014. The underlying time period considered in the plot includes two years before and two years after the Internet service blackout on January 18, 2012. The two vertical dashed lines indicate the beginning and end of the observation period in our main analysis. The black dot-dashed line indicates the date of the Internet service blackout. The monthly aggregate contributions peak during the last months of the election years (2010 and 2012).

Figure A2: Aggregate campaign finance contributions to U.S. legislators prior to and after the service blackout

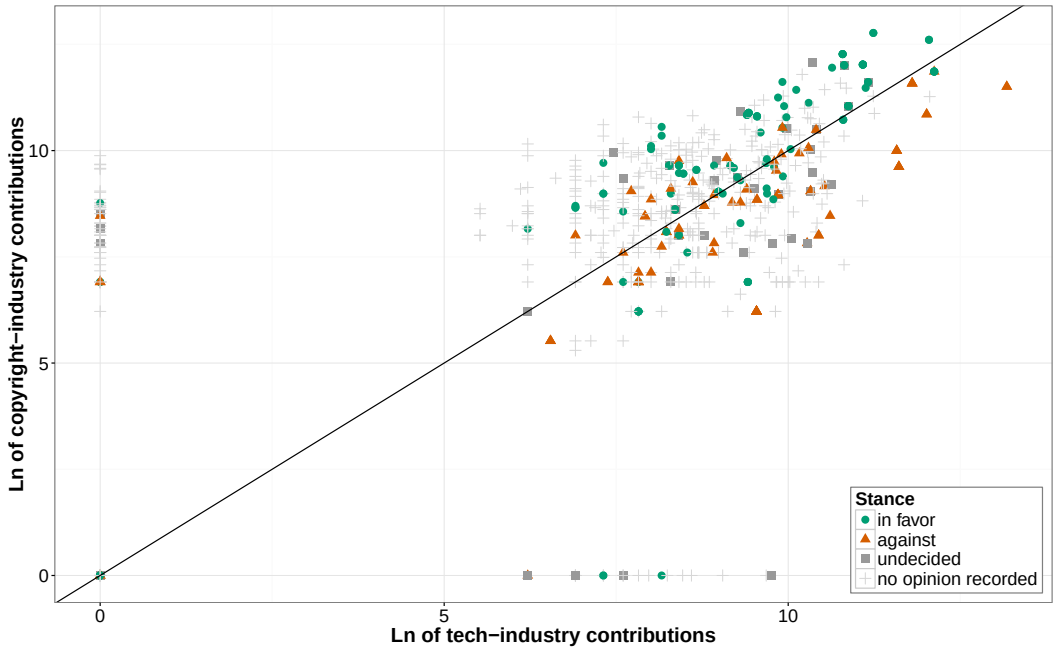


Note: The time period depicted includes two years before and two years after the service blackout.
Data sources: Center for Responsive Politics/OpenSecrets.org and Sunlight Foundation (see Section A.I for details).

Contributions to supporters and opponents of SOPA/PIPA

Figure A3 depicts the legislators' last stances before the service blackout in relation to the natural logarithm of the aggregate campaign contributions they received from the two industries over the year prior to the service blackout. Many legislators received substantial contributions from both industries. However, most supporters of the bills clearly got more money from the copyright industry. Figure A4 compares campaign contributions by the two industries to (co-)sponsors of the bills. Sponsors and co-

Figure A3: Public statements on SOPA/PIPA and financial support by industry



Notes: The natural logarithm of copyright-industry contributions received by individual legislators up to a year before the Internet service blackout is plotted against the natural logarithm of tech-industry contributions. The shape of the dots indicates the legislators' stances on SOPA/PIPA. The natural logarithm of contributions of USD 0 is not defined and has been set to 0.
Data sources: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation, and ProPublica.

sponsors received on average more campaign contributions from the copyright industry.

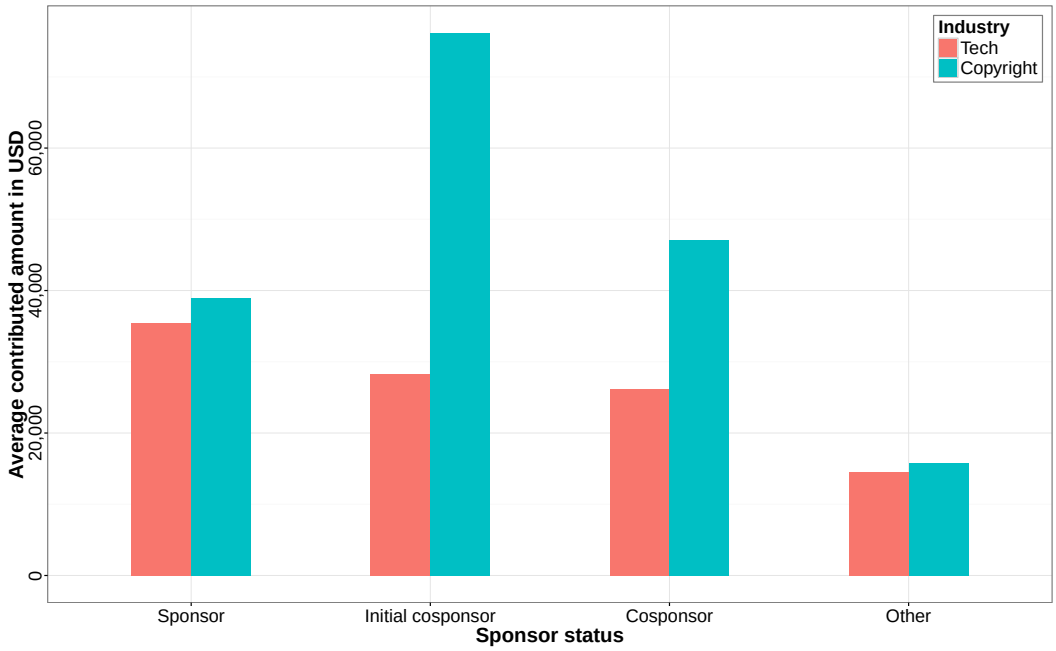
Descriptive statistics

Table A3: Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
Δ Contributions (USD 1,000)	534	3.607	31.286	−428.799	275.110
Republican	534	0.541	0.499	0	1
Age	534	58.310	10.855	30.562	88.044
Years served	534	11.760	9.779	1	58
Male	534	0.831	0.375	0	1

Note: The difference is defined as contributions from the copyright industry minus those from the tech industry.
Data sources: Own compilation based on various sources. See above for details.

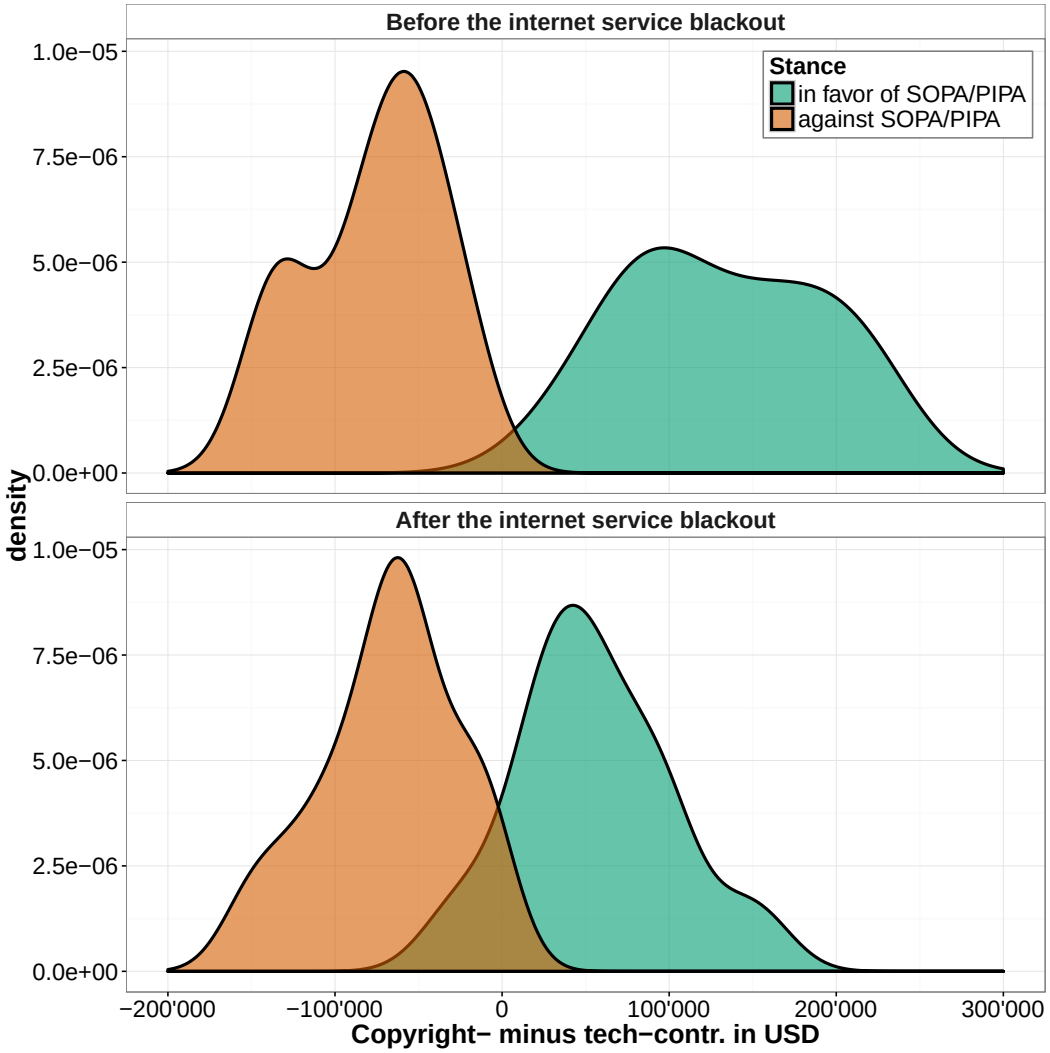
Figure A4: Average campaign contributions to (co-)sponsors of the SOPA/PIPA bills



Note: Contributions refer to those received within the year prior to the blackout.
Data sources: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation, and ProPublica.

A.II Results

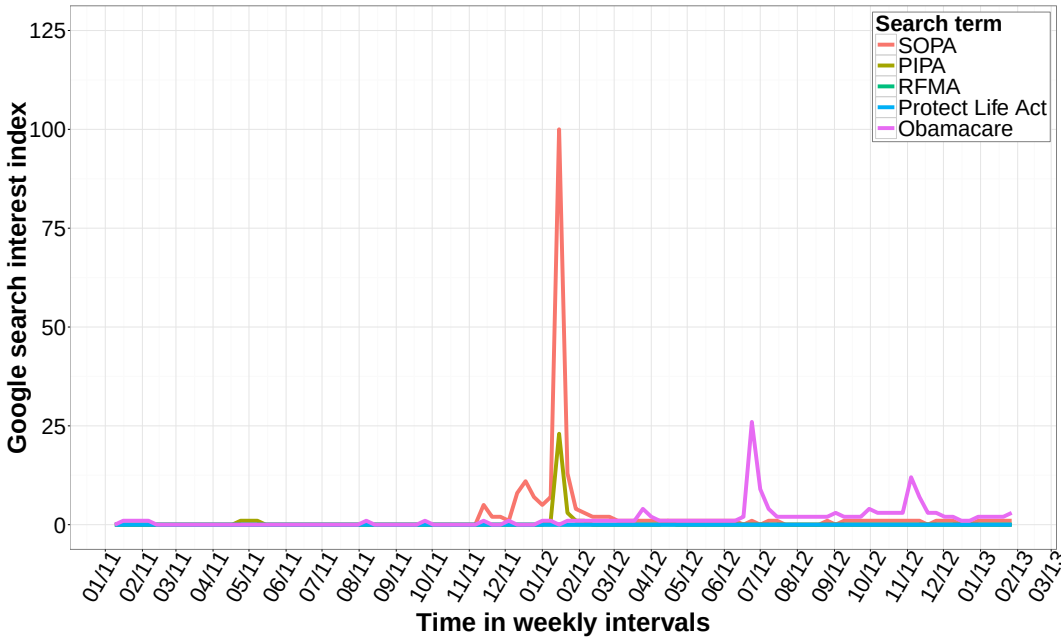
Figure A5: Kernel density of differences in campaign contributions (copyright industry minus tech industry) for supporters and opponents of SOPA/PIPA



Notes: The two samples contain the monthly differences in campaign finance contributions from the copyright industry and the tech industry to legislators who took a stance in favor of SOPA/PIPA or against SOPA/PIPA, respectively. The sample used in the first plot in the top graph covers monthly differences back to one year before January 18, 2012. The sample used in the plot in the bottom graph covers monthly differences up to one year after January 18, 2012.
Data sources: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation.

A.III Internet Blackout and attention on SOPA/PIPA

Figure A6: Google search interests with respect to SOPA/PIPA two years around the Internet service blackout

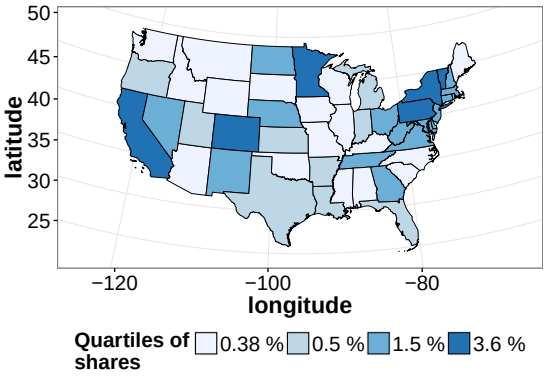


Notes: Weekly search interest for terms related to major legislation introduced and debated during the 112th U.S. Congress. The search interest index provided by Google is defined as (no. of queries for search term in week i)/(Total no. of queries in week i). The computed index is then normalized by the maximum index value within the respective time range. RFMA refers to the Respect for Marriage Act (S. 598, H.R. 1116). The search term 'Obamacare' relates to the Patient Protection and Affordable Care Act (PPACA) which passed Congress in 2010. However, during the 112th Congress, the Repealing the Job-Killing Health Care Law Act (H.R. 2), an attempt to repeal PPACA was debated in Congress. The term 'Obamacare' is searched more often during the 112th congress than the original terms 'PPACA' and 'Job-Killing Health Care Law Act', which is why we present the results for 'Obamacare' as a reference point to searches on SOPA/PIPA. Other major bills proposed during the 112th Congress were the American Jobs Act (S. 1549), the Cut, Cap, and Balance Act (H.R. 2560), the Federal Reserve Transparency Act (S. 202 H.R. 459), and the No Taxpayer Funding for Abortion Act (H.R. 3). Neither the popular names of these bills nor their widely used abbreviations (if any) were searched more often than the terms related to bills presented in this figure.
Data source: Google Trends (`www.google.com/trends/`).

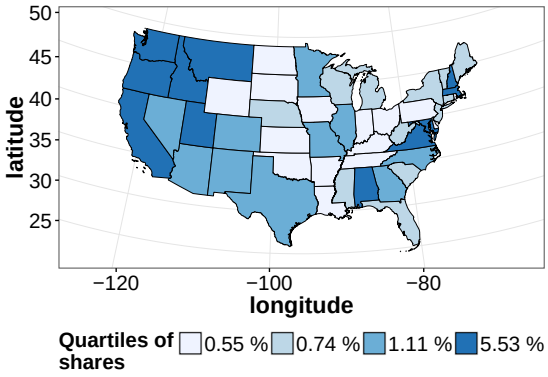
A.IV Robustness checks

Figure A7: Percentage of individual type 15 donations by copyright/tech industry employees per electoral district

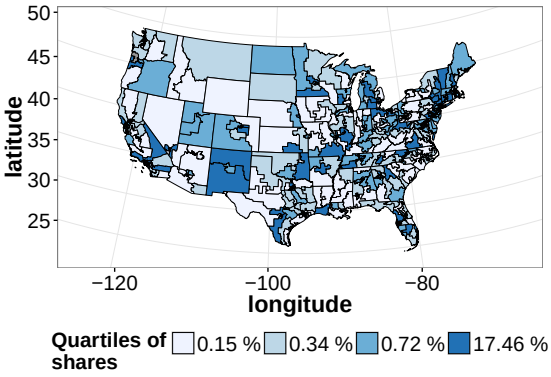
(a) Senate: copyright industry



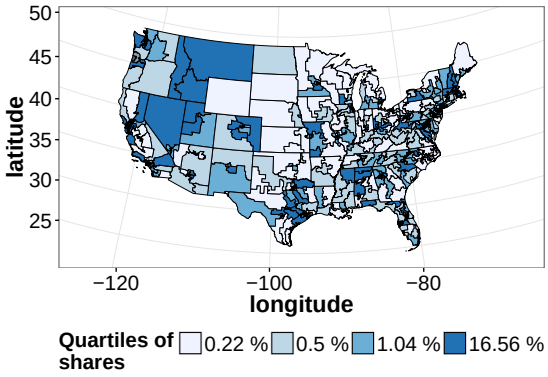
(b) Senate: tech industry



(c) House: copyright industry



(d) House: tech industry



Notes: Electoral district industry structure captured by individual type 15 donations in % of all individual type 15 donations per electoral district. All type 15 donations are first filtered for individual donors. The donors' addresses are then geocoded via the Street Address to Coordinates API (Warden 2013) and the coordinates mapped to the official congressional election districts. The variables are then computed for each district as the percentage of all donations made by individuals working in the respective industry (i.e., tech or copyright). The maps indicate in which quartile of these percentages a district is.
Data source: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation, and U.S. Census Bureau (congressional district maps).

Table A4: MNL estimates of stated stances on SOPA/PIPA with control for industry structure

	Dependent variable:					
	Undecided	Against	In favor	Undecided	Against	In favor
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Contributions (USD 1,000)	0.016^{***}	-0.027^{***}	0.029^{***}	0.015^{**}	-0.027^{***}	0.023^{**}
	(0.006)	(0.003)	(0.009)	(0.007)	(0.004)	(0.011)
After	1.395^{***}	2.429^{***}	-2.333^{***}	1.371^{***}	2.443^{***}	-2.358^{***}
	(0.360)	(0.233)	(0.402)	(0.364)	(0.241)	(0.442)
Δ Contributions (USD 1,000) x after	-0.017^{**}	0.030^{***}	-0.027^{**}	-0.019^{**}	0.028^{***}	-0.025^{**}
	(0.008)	(0.006)	(0.010)	(0.009)	(0.006)	(0.012)
Republican				0.281	−0.156	−0.258
				(0.305)	(0.199)	(0.343)
Male				-0.720^{*}	0.109	−0.119
				(0.380)	(0.253)	(0.420)
Age				0.028	−0.017	0.016
				(0.018)	(0.012)	(0.020)
Years served				0.011	−0.009	−0.017
				(0.019)	(0.013)	(0.022)
Senator (PIPA)				2.206^{***}	0.985^{***}	2.500^{***}
				(0.396)	(0.265)	(0.471)
Copyright industry (%)	0.088	0.116^{*}	0.115	0.090	0.145^{**}	0.171
	(0.120)	(0.069)	(0.215)	(0.131)	(0.073)	(0.246)
Copyright industry (%) x after	−0.133	-0.271^{**}	−0.015	−0.130	-0.274^{**}	0.011
	(0.175)	(0.122)	(0.238)	(0.189)	(0.126)	(0.271)
Tech industry (%)	0.451^{***}	0.323^{***}	0.091	0.462^{***}	0.323^{***}	0.042
	(0.113)	(0.067)	(0.182)	(0.111)	(0.071)	(0.197)
Tech industry (%) x after	-0.485^{***}	-0.346^{***}	−0.330	-0.548^{***}	-0.341^{***}	-0.480^{**}
	(0.171)	(0.112)	(0.212)	(0.164)	(0.119)	(0.230)
Constant	-3.207^{***}	-2.628^{***}	-2.156^{***}	-5.188^{***}	-1.750^{***}	-3.383^{***}
	(0.249)	(0.155)	(0.314)	(1.030)	(0.661)	(1.133)
N	1068	1068	1068	1068	1068	1068
Akaike Inf. Crit.	1,890.628	1,890.628	1,890.628	1,765.885	1,765.885	1,765.885

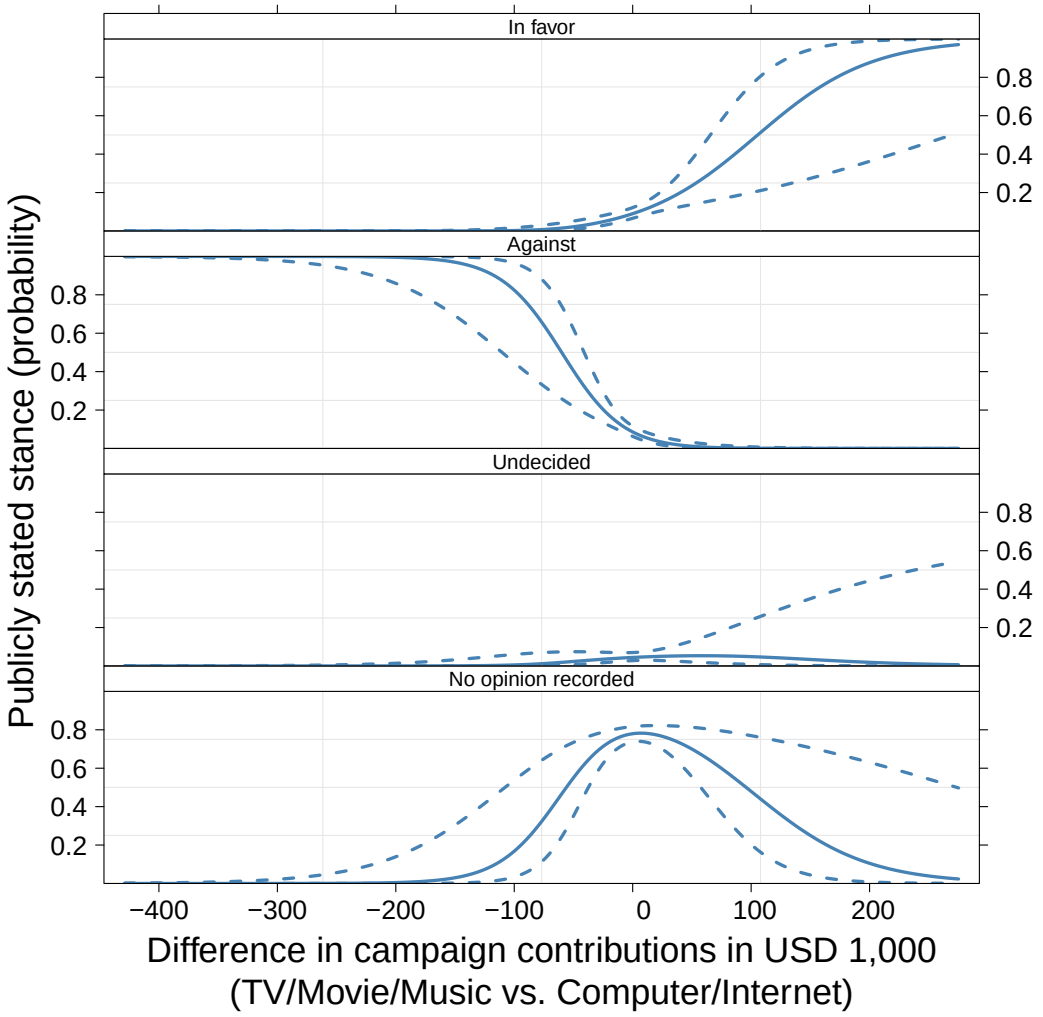
Notes: The difference in contributions is computed by subtracting the total amount of contributions that a legislator received from the tech industry over a period of one year prior to the Internet service blackout from the total amount received from the copyright industry over the same period of time. The sample contains two observations per member of Congress, i.e., the last recorded opinions before and after the Internet service blackout. The alternative 'no opinion recorded' serves as the reference category (the respective coefficients are normalized to 0, and are not shown in the table). Standard errors are presented in parentheses. The statistical significance of regression coefficients is indicated with * $0.1 > p > 0.05$, ** $0.05 > p > 0.01$, and *** $p < 0.001$.
Data sources: Own compilation from various sources. See Section A.I for details.

Table A5: Separate (before/after) MNL estimates for stated stances on SOPA/PIPA

	Dependent variable:					
	Undecided	Against	In favor	Undecided	Against	In favor
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Contributions (USD 1,000)	0.006	-0.038^{***}	0.021^{***}	-0.004	-0.0002	0.008
	(0.010)	(0.009)	(0.007)	(0.004)	(0.003)	(0.016)
Republican	0.003	-0.603^{*}	-0.288	0.320	-0.033	-9.170^{***}
	(0.418)	(0.346)	(0.316)	(0.373)	(0.201)	(0.0002)
Male	-0.661	-0.294	-0.241	-0.808^{*}	0.236	7.695^{***}
	(0.489)	(0.422)	(0.394)	(0.418)	(0.265)	(1.889)
Age	0.046^{*}	-0.023	0.022	0.020	-0.015	-0.061
	(0.028)	(0.021)	(0.020)	(0.024)	(0.012)	(0.102)
Years served	0.019	0.003	-0.018	-0.0001	-0.015	0.090
	(0.025)	(0.024)	(0.021)	(0.024)	(0.013)	(0.087)
Senator (PIPA)	1.819^{***}	1.344^{***}	2.315^{***}	2.353^{***}	0.882^{***}	11.247^{***}
	(0.434)	(0.408)	(0.330)	(0.383)	(0.271)	(1.888)
Constant	-5.534^{***}	-0.597	-3.276^{***}	-3.372^{**}	0.403	-18.044^{***}
	(1.563)	(1.118)	(1.110)	(1.328)	(0.670)	(1.882)
Sample	Before	Before	Before	After	After	After
N	534	534	534	534	534	534
Akaike Inf. Crit.	821.146	821.146	821.146	962.437	962.437	962.437

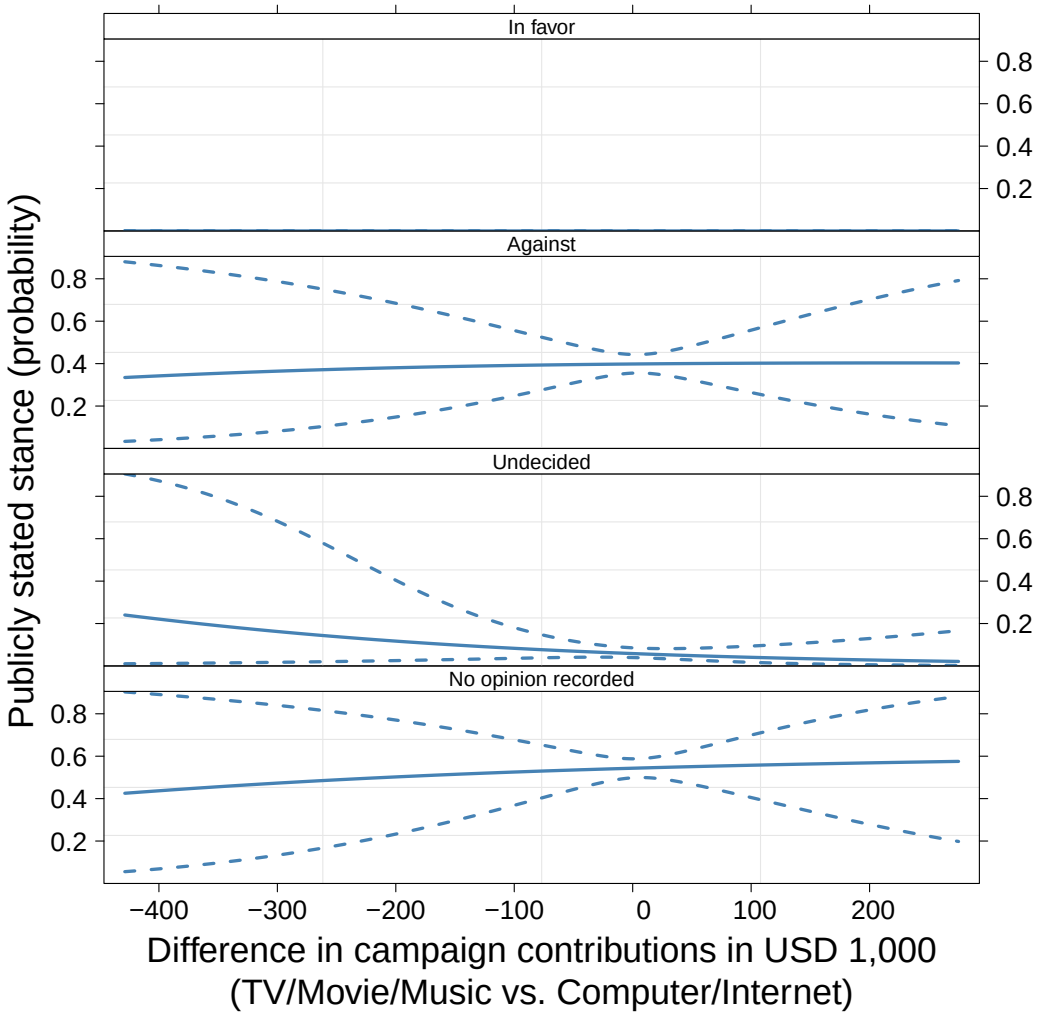
Notes: The difference in contributions is computed by subtracting the total amount of contributions that a legislator received from the tech industry over a period of one year prior to the Internet service blackout from the total amount received from the copyright industry over the same period of time.
Data sources: See main text and Section A.I.

Figure A8: Campaign contributions and publicly stated stances before the Internet blackout



Notes: Effect plots based on the first estimated multinomial logit model in Table A5. The y-axis depicts the estimated probability of observing a legislator taking one of the alternative positions on the SOPA/PIPA bills before the Internet blackout. The dashed lines display a 95-percent confidence interval around the estimated effects.
Data sources: See Section A.I.

Figure A9: Campaign contributions and publicly stated stances after the Internet blackout



Notes: Effect plots based on the second estimated multinomial logit model in Table A5. The y-axis depicts the estimated probability of observing a legislator taking one of the alternative positions on the SOPA/PIPA bills after the Internet blackout. The dashed lines display a 95-percent confidence interval around the estimated effects.
Data sources: See Section A.I.

Table A6: Separate (before/after) MNL estimates: alternative money specification

	Dependent variable:					
	Undecided	Against	In favor	Undecided	Against	In favor
	(1)	(2)	(3)	(4)	(5)	(6)
Copyright Contributions (USD 1,000)	0.007	-0.029^{**}	0.022^{***}	-0.011	-0.003	0.024
	(0.009)	(0.013)	(0.008)	(0.008)	(0.004)	(0.032)
Tech Contributions (USD 1,000)	0.006	0.040^{***}	-0.018	-0.00004	-0.004	-0.133
	(0.012)	(0.010)	(0.014)	(0.008)	(0.005)	(0.153)
Republican	-0.008	-0.603^{*}	-0.290	0.292	-0.039	-11.702^{***}
	(0.419)	(0.348)	(0.317)	(0.374)	(0.201)	(0.0001)
Male	-0.604	-0.261	-0.242	-0.895^{**}	0.196	5.922^{***}
	(0.493)	(0.428)	(0.395)	(0.422)	(0.266)	(1.951)
Age	0.051^{*}	-0.022	0.023	0.017	-0.017	-0.087
	(0.028)	(0.021)	(0.020)	(0.024)	(0.012)	(0.101)
Years served	0.015	0.003	-0.019	0.003	-0.013	0.084
	(0.025)	(0.024)	(0.021)	(0.024)	(0.014)	(0.089)
Senator (PIPA)	1.704^{***}	1.308^{***}	2.293^{***}	2.526^{***}	1.006^{***}	13.776^{***}
	(0.445)	(0.414)	(0.337)	(0.396)	(0.285)	(1.924)
Constant	-5.916^{***}	-0.768	-3.352^{***}	-2.986^{**}	0.580	-16.144^{***}
	(1.601)	(1.138)	(1.140)	(1.351)	(0.682)	(1.923)
Sample	Before	Before	Before	After	After	After
N	534	534	534	534	534	534
Akaike Inf. Crit.	824.765	824.765	824.765	961.940	961.940	961.940

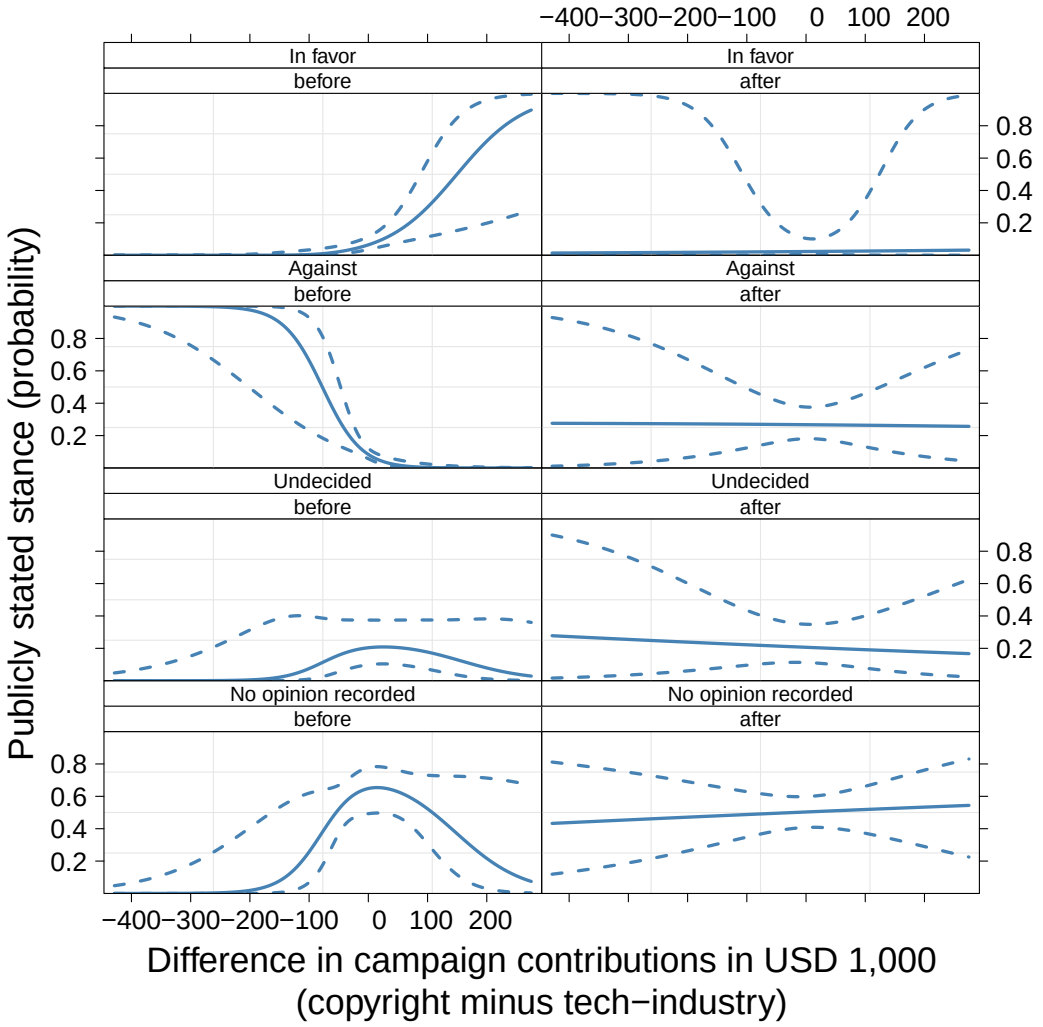
Notes: Contributions (in USD 1,000) are the total amount of contributions that a legislator received from either industry over a period of one year prior to the Internet service blackout.
Data sources: See main text and Section A.I.

Table A7: Nested MNL estimates of stated stances on SOPA/PIPA before and after the Internet service blackout

	Dependent variable:					
	Undecided	Against	In favor	Undecided	Against	In favor
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Contributions	0.006	-0.039 ***	0.022 ***	0.001	-0.030 ***	0.017 ***
(USD 1,000)	(0.010)	(0.009)	(0.007)	(0.004)	(0.009)	(0.006)
After	0.583 **	1.886 ***	-2.764 ***	0.267 *	1.414 ***	-0.780
	(0.270)	(0.192)	(0.639)	(0.156)	(0.222)	(0.693)
Δ Contributions	-0.010	0.038 ***	-0.019	-0.002	0.030 ***	-0.017
(USD 1,000) × After	(0.011)	(0.010)	(0.016)	(0.005)	(0.010)	(0.017)
Republican	0.175	-0.170	-0.320	0.098	-0.193	-0.302
	(0.277)	(0.173)	(0.305)	(0.143)	(0.160)	(0.224)
Male	-0.762 **	0.100	-0.132	-0.356 *	0.091	0.130
	(0.314)	(0.226)	(0.383)	(0.200)	(0.209)	(0.321)
Age	0.031 *	-0.016	0.018	0.014	-0.014	0.007
	(0.018)	(0.010)	(0.019)	(0.010)	(0.010)	(0.015)
Years served	0.009	-0.010	-0.014	0.004	-0.012	-0.014
	(0.017)	(0.012)	(0.020)	(0.009)	(0.011)	(0.015)
Senator (PIPA)	2.128 ***	0.960 ***	2.417 ***	0.963 **	0.922 ***	1.826 ***
	(0.284)	(0.225)	(0.314)	(0.382)	(0.194)	(0.323)
Constant	-4.599 ***	-1.308 **	-3.220 ***	-2.102 **	-0.958 *	-2.394 ***
	(1.005)	(0.578)	(1.068)	(0.914)	(0.544)	(0.889)
Model	MNL	MNL	MNL	Nested MNL	Nested MNL	Nested MNL
N	1068	1068	1068	1068	1068	1068
$1 - \hat{\lambda}$				0.549	0.549	0.549
T-test: $\hat{\lambda} = 1$ (p-value)				0.001	0.001	0.001
Akaike Inf. Crit.	1773.751	1773.751	1773.751	1771.626	1771.626	1771.626

Notes: The difference in contributions is computed by subtracting the total amount of contributions a legislator received from the tech industry over a period of one year prior to the Internet service blackout from the total amount received from the copyright industry over the same period of time. The sample contains two observations per Member of Congress, i.e., the last recorded opinions before and after the Internet service blackout. The alternative 'No opinion recorded' serves as reference category (the respective coefficients are normalized to 0, and are not shown in the table). Standard errors are presented in parentheses. The statistical significance of regression coefficients is indicated with * $0.1 > p > 0.05$, ** $0.05 > p > 0.01$, and *** $p < 0.001$.
Data sources: See main text and Section A.I.

Figure A10: Campaign contributions and publicly stated stances based on the nested MNL



Notes: Effect plots based on the estimated multinomial logit model in Table A7, columns 4 to 6. The y-axis depicts the estimated probability of observing a legislator taking one of the alternative positions on the SOPA/PIPA bills. The dashed lines display a 95-percent confidence interval around the estimated effects.
Data sources: See Section A.I.