Universität Basel
Wirtschaftswissenschaftliche Fakultät

May 2019

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WWZ Working Paper 2019/07

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A publication of the Center of Business and Economics (WWZ), University of Basel.

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

May 22, 2019

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Abstract

We investigate the role of public attention in determining the effect that campaign contributions by interest groups have on legislators' policy positions. We exploit the shock in public attention induced by the Internet service blackout of January 2012 that increased the salience of the SOPA/PIPA bills aimed at stronger protection of property rights on the Internet. Using a new dataset of U.S. congressmen's public statements, we find a 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. Our results are consistent with the 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, public attention, outside lobbying, Internet governance, mass media, policy positions, interest groups

JEL classification: D72, L82, L86

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This is a revised version for the journal *Economic Inquiry*. We are grateful to Yakov Amihud, Miguel Espinosa, Rob Faris, Urs Gasser, Armando Meier, Matthias Neuenkirch, Reto Odermatt, Michaela Slotwinski, Dennis Quinn, Catherine Sharkey, Michael Visser, David Yermack, and participants at the Kirchberger Rencontre, the Meeting of the European Public Choice Society, the Meeting of the American Law and Economics Society, the Congress of the European Economic Association, as well as seminar participants at Georgetown University and the University of Basel for helpful comments. Special thanks go to Joerg Kalbfuss for excellent research assistance. Ulrich Matter acknowledges the financial support from the Swiss National Science Foundation (grant 168848).

Introduction

Legislative policy choices can be understood as outcomes of collective decision-making based on individual legislators' policy positions. Some of these positions are strongly held, others seem rather malleable or are not revealed at all. While interest groups are affected by 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 more closely 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 about the role of money, i.e., financial support from interest groups, in the (non-)choice of policy positions. Specifically, we ask whether campaign donations predict policy positions better if a policy issue is publicly less salient and vice versa. 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 to 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 and motion picture industries, which expected a stricter protection of their intellectual property and thus potentially higher revenues.[2] 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. The public debate about SOPA/PIPA has, therefore, typically displayed the legislative process behind these bills as a fight between the entertainment media/copyright industry and the tech industry (see, e.g., Friedman 2011, Goldman 2012, and Novak 2012).

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.[3]

[1] See the Supplementary Information Section SI.I for a brief discussion of the two bills' contents.

[2] During the weeks of the debate in the US House Judiciary Committee in December 2011, the committee published a list of official supporters of the SOPA bill. The large majority of the organizations/corporations on that list are representatives of the music, motion pictures, TV, and other publishing industries. Table SI1 in the Supplementary Information links all organizations mentioned in the list to the industry codes used in campaign finance data. The original list is still available in the Internet archive: `https://web.archive.org/web/20111227040857/https://judiciary.house.gov/issues/Rogue%20Websites/SOPA%20Supporters.pdf`.

[3] While the SOPA bill was immediately discussed in some well-known media outlets upon its introduction in 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).

We exploit the Internet blackout in our empirical strategy, and consider the dramatic change in attention and the outstanding success that the blackout achieved in mobilizing citizens to be unanticipated by the congressmen. While the blackout was, of course, part of an opposition campaign, few people probably expected such an action and even fewer such a leap in public attention to the issue. The SOPA/PIPA bills thus unexpectedly changed 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.

We find that 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 study relates to several strands of research. First, and most importantly, it builds on the substantial work on how contributions from interest groups influence legislative behavior and public policy (see, e.g., 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 2019 for reviews of the literature). An important lesson from this research is to consider the conditions that moderate the influence of money from interest groups. Our emphasis is on how attention as a contextual aspect matters. It has been argued for quite some time that political action committees (PACs) are more successful in affecting policy choices in their favor if issue visibility is low. For instance, Jones and Keiser (1987) and Neustadtl (1990) study whether the partial correlation between PAC money and Members of Congress' position on particular bills differs by visibility of the respective bills. While Jones and Keiser (1987) exclusively concentrate on labor PACs, Neustadtl (1990) additionally considers business PACs. Both find that the correlation

is smaller in a subset of policy issues which were covered by at least one of the major US TV-networks and the New York Times and/or the Washington Post during the time around the vote (in comparison to another set of policy issues that were not covered accordingly). In a similar analysis for twenty roll-call votes between 1993 and 1996, Witko (2006) finds that PAC money is correlated with voting behavior for non-ideological/non-visible votes but not for ideological/visible ones. While plausible and consistent with the theoretical reasoning, the three empirical analyses cannot rule out that the substance of the policy issues drives both the visibility the votes get in the media as well as the statistical relationship between campaign money and the corresponding roll call votes. In fact, Jones and Baumgartner (2004) find in their investigation of legislature's policy priorities that, across time, there is high congruence between the issues that the public deems important (according to surveys) and what is debated in Congress (and probably also taken up in the media). However, they also point out that the public's priorities involve a rather limited set of issues (what this study refers to as primary policy issues). Congress considers many more issues that are not on the public's mind (what this study refers to as secondary policy issues). These secondary issues leave room to maneuver for politicians.[4] We aim at revealing this by studying how their policy positions change once an issue switches from being secondary to being primary.

Second, and closely related to the question of how contributions from interest groups affect legislative behavior, are the questions of why donors contribute to which campaign and how contributions increase the probability of being elected. Regarding the former, theoretical models have been developed to analyze the contributors' rationale under different institutional settings (see, e.g., Aranson and Hinich 1979, Fang et al. 2016) complemented by a growing empirical literature on the various possible motives of donors (see, e.g., Gordon et al. 2007, Bonica 2016, Barber 2016). With regard to the latter question, a substantive number of studies have empirically investigated the relationship between campaign contributions and election probabilities (see, e.g., Jacobson 1978, Jacobson 1990, Gerber 1998, and recently Spenkuch and Toniatti 2018).

[4]This aspect is exploited in recent contributions, discussing them as a relevant factor in incumbents' re-elections (Bouton et al., 2018; List and Sturm, 2006).

Third, there is a recent literature on media and politics, scrutinizing media attention as a strategic factor which political agents bear in mind when they take their decisions. These studies exploit competing news stories as exogenous variation for political news coverage. Based on this strategy, Eisensee and Strömberg (2007) analyze the relationship between natural disasters and the US government's foreign aid decisions. They find that a country is more likely to receive financial support if the disaster is covered by the US evening news. Applying a similar approach, Garz and Sörensen (2017) find that politicians resign with a higher probability (after their political immunity is lifted) if their cases receive more media attention. Finally, Durante and Zhuravskaya (2018) show that Israeli attacks on Palestinians are more likely to occur one day before a newsworthy US event takes place. While these studies show the powerful role of traditional media, our study foreshadows that attention effects might be even more important with a prevalence of the Internet and social media.

Finally, 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 Benkler et al. 2015, Guo 2013, Lemley et al. 2011, and Powell 2013).

Theoretical framework

Economic analyses of the political process have a long tradition in research that seeks to understand which policies Members of Congress support. Closely related to this inquiry 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.

For the theoretical framework of this study, we define Members of Congress 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

Member of Congress's policy position.[5] Accordingly, a Member of Congress 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 Member of Congress receives depends on how well informed the electorate is about the Member of Congress's position and on how much voters care about the policy issue. Moreover, a Member of Congress can always abstain from taking a stand in order to maintain the option to opportunistically choose a position that maximizes payoffs. Finally, a Member of Congress 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.[6] 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

[5]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).

[6]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.

be in line with what one IG and one group of voters wants, but the contrary of 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 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.

Suppose IG A and voter group A have policy preferences close 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 legislator's perceived re-election chances R^*_{ij} depending on differential money flows, voters' position and voters' attention on the issue. The simplest 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 first 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 theoretical framework outlined, 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 constituents' preferences.*

Note that our hypotheses do not state that IGs have no 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.[7]

[7] The derivation of logit models from models of probabilistic choice goes back to Luce (1959). A general discussion is provided by McFadden (1981) (see also Cameron and Trivedi 2005 for a complete derivation of logit from choice models with type 1 extreme value distributed random components).

Identification

Identifying the impact of public attention on the relevance of strong financial ties to IGs for Members of Congress' 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 test our hypotheses if public attention does not vary for one and the same policy issue (or randomly across issues).

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.[8] While the campaign was certainly meant to lobby the users and was a strategic decision of the opponents of the two bills, the action as well as the stark increase in public attention it created came as a surprise. The overwhelming reach of the action message can thus be regarded as an unanticipated shock in public attention for the Members of Congress. Moreover, the SOPA/PIPA bills involve highly relevant content in terms of economic policy and Internet governance. The 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.

The vast online protest against the SOPA/PIPA bills involved Wikipedia, Google, and several thousand smaller websites. While Wikipedia and other websites actually blacked out their services on their web pages, 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-

[8] 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.

language Wikipedia page, this meant that visitors were not able to search the online encyclopedia, 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 immense resonance on Internet portals as well as in other media.[9] 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 on the terms "pipa" and "sopa" vis-à-vis terms referring to other well-know bills debated in the House and Senate during the same Congress is displayed in Figure SI6 in the Supplementary Information. 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 being discussed in Congress. As to the search volume

[9]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). Benkler et al. (2015) report massive online mobilization following the days of the blackout, reflected in over 3000 news stories surrounding the SOPA/PIPA bills and emerging during the week of the blackout.

related to SOPA, none of the terms related to other major bills show similar magnitude (such as "Obamacare") of search volume at any point during the 112th U.S. Congress.

As a direct consequence of the orchestrated service blackout, according to some estimates, about 2,000 phone calls per second were attempted by U.S. citizens during the peak of the protest, who were trying to contact their local representative in Washington D.C. (Wortham, 2012). In addition, over 400,000 Emails were sent in protest against the bills (FFTF, 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 (Wortham, 2012). 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.

Data

We compile and code a dataset with Members of Congress' recorded public statements on the SOPA/PIPA bills. We link the Members of Congress' 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 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[11].[12] 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 s/he was *in favor* of the bill.

2. The legislator stated s/he was *against* the bill.

3. The legislator stated s/he was *undecided*.

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.[13] 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 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).[14]

[10]ProPublica is an independent, non-profit news outlet that specializes in investigative journalism (see `http://www.propublica.org/about/`)

[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]See Section SI.II in the Supplementary Information for a detailed description of the data gathering and data preparation process.

[13]Of the remaining statements, we encountered 41 divergent cases. Table SI2 in the Supplementary Information presents an overview of all coding differences.

[14]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

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

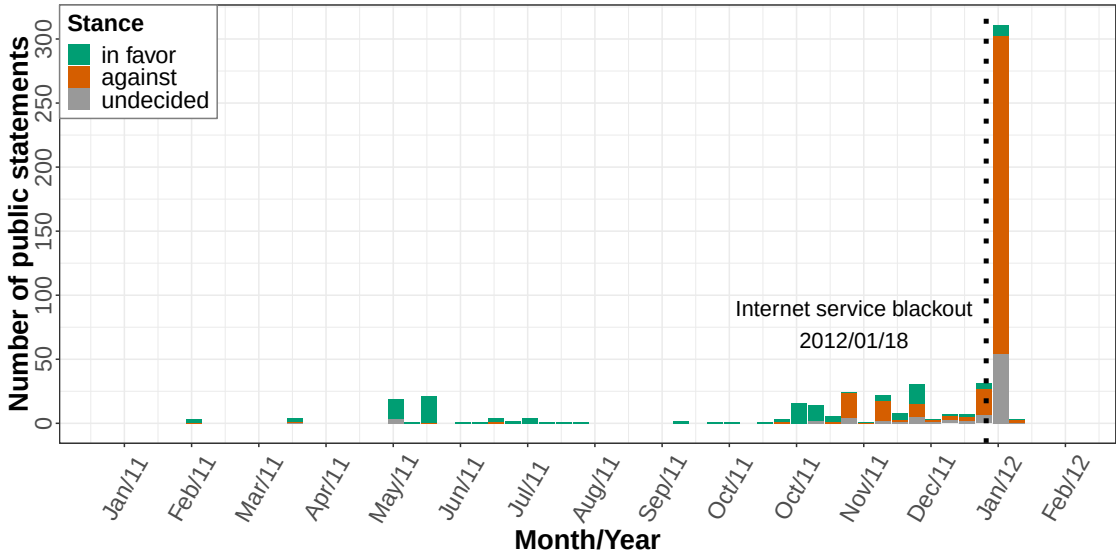
Notes: Of the 69 Members of Congress who made a public statement in favor, 21 changed their position to against. Of all the Members of Congress making public statements about their position on SOPA/PIPA, 60 made more than one statement before the Internet service blackout and 41 made more than one statement after the blackout. Tables SI3 and SI4 in the Supplementary Information show a detailed account of the number of statements by each Member of Congress in our sample (before and after the Internet service blackout).
Data sources: See Section SI.III in the Supplementary Information.

The timing of the public statements in the SOPA/PIPA debate is illustrated in Figure 2. The

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.

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.

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 SI.III in the Supplementary Information for details.

In addition, Figure SI1 in the Supplementary Information shows the count of Members of Congress' taking either position before and after the Internet blackout. When the exact counts are examined, the pattern revealed shows that many of them actually changed their position. Remarkably, several Members of Congress switched with regard to their stance on Internet governance from supporting the SOPA bill to opposing it (or at least ceasing to support it). None of them switched sides in the other direction.

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.[15] 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 SI2 in the Supplementary Information 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*). In addition, our pooled data set (combining stances on SOPA and PIPA) contains an indicator variable that is equal to 1 for Senators (PIPA) and 0 for Representatives (SOPA). Table SI6 in the Supple-

[15] The full raw dataset is available under `https://sunlightlabs.github.io/datacommons/bulk_data.html`. Specific parts of the database can be queried via the Influence Explorer API (`https://sunlightlabs.github.io/datacommons/`).

mentary Information 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 corresponding amount for the tech industry amounts to USD 429,000. On average, the difference is about USD 3,600. In all, 54% of the Members of Congress were 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 briefly discuss the results of various robustness checks.

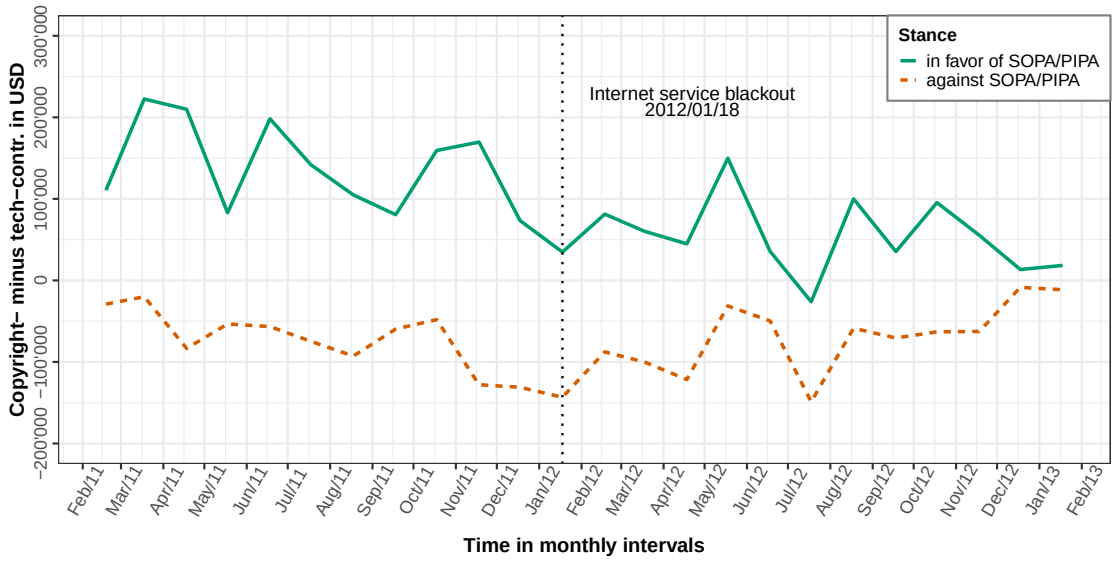
Statistical relationship between campaign finance and policy positions

Our descriptive analyses document the statistical relationship between campaign contributions from the tech industry and the copyright industry, and the Members of Congress' 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).[16] This is particularly the case for the

[16]Figures SI3 and SI5 in the Supplementary Information further illustrate this point. Particularly, Figure SI5 shows that both sponsors and cosponsors of SOPA/PIPA received substantially more campaign finance money from the copyright industry than from the tech industry.

time before the Internet service blackout.

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 they were in favor of the SOPA/PIPA bills before the service blackout and one for those who publicly indicated their opposition before the service blackout.
Data sources: Center for Responsive Politics/OpenSecrets.org, Sunlight Foundation, and ProPublica (see Section 'Data' and Section SI.III in the Supplementary Information 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 to control for differences between the two chambers (as well as potentially relevant differences between SOPA and PIPA).[17] Table 2 presents the results.

[17] In addition, we also estimate the simple linear regression model separately for the House and the Senate. The results are qualitatively the same and can be provided on request.

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 Member of Congress 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 time period. The dependent variable considers the last opinion recorded before the Internet service blackout. The reference group includes Members of Congress who had 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.
Data sources: See Section 'Data' Section SI.III in the Supplementary Information 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. 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.[18] Based on the estimated coefficients, we predict that probabilities for choosing either alternative are dependent on different levels of the campaign contribution differential, while keeping all other covariates fixed at typical values.[19] In order not to overstate the computed effects, we only present effects based on the actual range of campaign contributions observed in our data set.

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.

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

[18]The effects (and their respective confidence intervals) are computed with the method suggested by Fox and Hong (2009).

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

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
	(0.006)	(0.004)	(0.004)	(0.006)	(0.005)	(0.005)
After	0.699	1.871	−2.633	0.583	1.886	−2.764
	(0.279)	(0.178)	(0.300)	(0.281)	(0.183)	(0.321)
Δ Contributions (USD 1,000) x after	−0.008	0.039	−0.019	−0.010	0.038	−0.019
	(0.008)	(0.005)	(0.009)	(0.009)	(0.006)	(0.010)
Republican				0.175	−0.170	−0.320
				(0.297)	(0.195)	(0.334)
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)	(0.260)	(0.464)
Constant	−2.580	−2.198	−1.985	−4.599	−1.308	−3.220
	(0.197)	(0.126)	(0.213)	(1.013)	(0.649)	(1.112)
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.
Data sources: Own compilation from various sources. See Section 'Data' and Section SI.III in the Supplementary Information for details.

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.

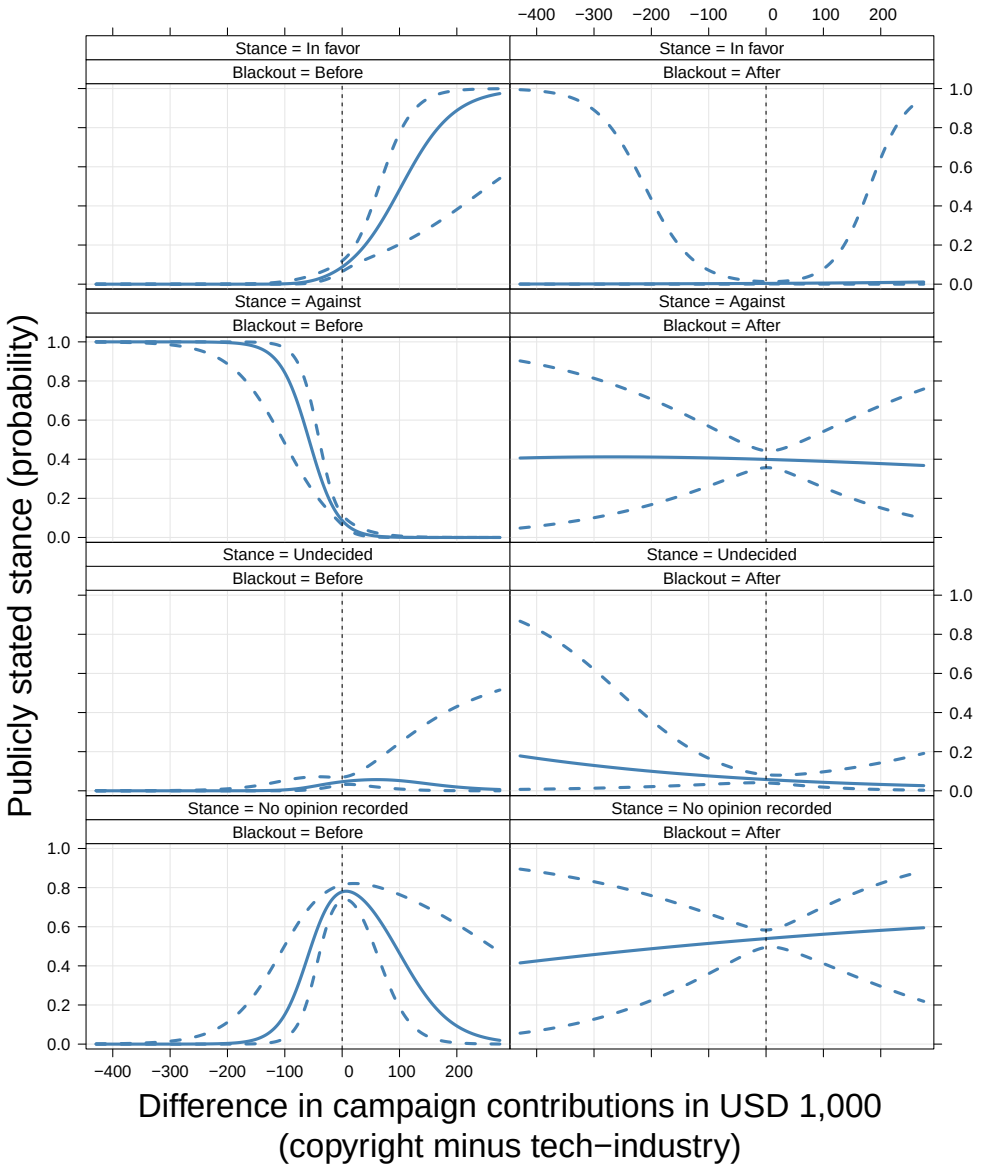
Figure 4 presents effect plots (taking into account the interaction term in the second specification of Table 3; see Fox and Hong 2009 for details on the computation of effect plots based on MNL models) that quantify the economic significance of the shock in public attention on the role of campaign finance 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 results presented are robust if the sample is restricted to the legislators who made a public statement before the Internet service blackout.[20]

[20]The additional results are available on request.

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 'Data' and Section SI.III in the Supplementary Information for details.

Robustness Checks

We check the robustness of our empirical findings with five supplementary analyses (see Section SI.VI in the Supplementary Information for a thorough discussion of these analyses). First, we additionally control for the industry structure in electoral districts. Second, in order to allow for a more 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. This addresses the potential issue that the internet blackout might have changed the role of unobserved factors that might be correlated with our covariates. Third, we also re-estimate our baseline MNL by including the gross campaign donations of both industries instead of the difference between the two. Fourth, we estimate our baseline MNL separately for the Senate (PIPA) and the House (SOPA). Finally, we re-estimate our baseline MNL as a nested MNL in order to relax the independence of irrelevant-alternatives assumption (implied by standard MNLs). None of these robustness checks qualitatively changes the main findings presented here.

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 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 and has

potentially far-reaching consequences for many citizens, 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, 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 industries involved no longer have predictive power for legislators' stances on the issue.

Besides serving as an interesting case in point to test our hypothesis, the Internet service blackout also points to a strategy that some interest groups might use when pursuing their goals. This has previously been discussed by Schattschneider (1960) as an expansion of the scope of conflict involving the public.[21] 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, the question of what are primary policy issues is endogenous and might change between the introduction of a bill and the final decision on it in the legislature. As recognized in the literature on campaigning, it is difficult

[21] Related work refers to lobbying citizens and outside lobbying (see, e.g., Kollman 1998, Mahoney 2007, and Wolton 2018). In the particular context of this study, the success of outside lobbying might well depend on how civic engagement is related to Internet usage more generally (see, e.g., Jennings and Zeitner 2003).

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 grass-roots 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 the Internet), 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.

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