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Impact of Inequality-Related Media Coverage on the Concerns of the Citizens[1]

Matthias Diermeier[2], Henry Goecke[3], Judith Niehues[4] & Tobias Thomas[5]

July 2017

Abstract

Income distribution and inequality play a central role in the public and political debate in many developed and democratic countries. An increasing literature on (mis)perception of the distribution of income reveals that people have very little knowledge about the degree of inequality in the society and its development over time. The jury is still out on what actually drives the perception of inequality and related fairness evaluations. In this paper, we use data on the intensity of media coverage on inequality-related topics on a daily basis and match it with daily varying survey responses with respect to the concerns about the economic situation as well as the perceived fairness within the society. Our regression results suggest that first, cumulated media coverage on inequality during the last couple of days before an interview has a significant negative impact on the concerns about the economic situation of the society and second, that media coverage on inequality has a significant negative effect on the perception of social fairness. The effects remain significant when using varying definitions of inequality related media coverage and different estimation methods. Taking all results into account, our paper provides evidence that media coverage is well likely to form perception at the individual level – detached from real world developments.

JEL Classification: D63, D84, H23

Keywords: Inequality, inequality perception, media bias

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[1] The authors are grateful to the participants of the annual meeting of the European Public Choice Society (EPCS) in Budapest (Hungary) in April 2017 as well as to the participants of the Economics of Media Bias-Workshop at the Düsseldorf Institute for Competition Economics (DICE) in October 2016 in Düsseldorf (Germany) for useful hints and comments.

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1 Introduction

Economic inequality plays a central role in the public and political debate of many countries.[6] This is particularly true for Germany where a majority of citizens sees the society as rather unfair and social inequality as one of the major challenges for the future.[7] However, from an international comparative perspective the overwhelming scepticism towards inequality in Germany is rather surprising as there are only a few countries which achieve more effective redistribution by the government, resulting in an income distribution after tax and transfer which is more equal than in most industrial countries (e.g. Leventi and Vujackov, 2016).[8] In addition, although inequality increased in Germany from the mid-1990ties until 2005, the data on inequality shows a rather stable inequality level since at least 2005.[9] This holds for indicators of income distribution and wealth inequality measures likewise. However, German citizens do not *perceive* stable income differences: As an international survey by the Pew Research Center reveals, 88 percent of Germans stated that the gap between the rich and the poor increased over the five years before 2013. This indicates that people are not fully aware of the degree and development of inequality in the society.

An increasing literature on perception of the income distribution, inequality and wages shows,[10] that there seems to be no direct relation between the actual distribution of income and its perception. For example, Gimpelson and Treisman (2015, 1) reveal in a comparative meta-study on the (mis)perception of inequality that "ordinary people have little idea about such things". Moreover, the authors show that it is perceived inequality rather than actual inequality that drives the demand for redistribution and critical views on income differences (Gimpelson and Treisman 2015; Niehues, 2014). This might have an important impact on the demand for redistribution policies.

Examplary, on a first glance the median voter theorem, which predicts a positive relationship between income inequality and state redistribution, performs rather poorly when it is confronted with data:[11] Although income inequality is high in the US, support for welfare state programmes is relatively low. In contrast, despite the fact, that income differences in European

[6] For instance, in various publications the OECD states that inequality has been increasing in most industrialized countries over the last decades (OECD, 2008; 2010).

[7] According to the ALLBUS ("Allgemeine Bevölkerungsumfrage der Sozialwissenschaften") 2014, more than two-thirds of the Germans either disagree or strongly disagree that the social differences in their country are by and large fair.

[8] For an unconventional view on the impact of family allowances on the welfare see Felderer and Ritzberger (1995).

[9] The OECD Income Distribution Database (IDD) reports a Gini of after tax and transfer inequality of 0.297 for 2005 and 0.292 for 2013, respectively.

[10] In fact, the literature on perception of inequality differentiates between one strand, that deals with the self-perceived income position (e.g. Cruces et al., 2013; Engelhardt and Wagener, 2014), and another strand, that deals with the overall assessment of inequality within the society (Norton and Ariely, 2011; Niehues, 2014, Gimpelson and Treisman, 2015; Engelhardt and Wagener, 2016).

[11] See for example Congleton (2002) in favour of the median voter model. However, Eichenberger et al. (2012) are already questioning the explanatory power of the model.

countries are substantially lower, the European welfare states tend to be far more generous.[12] To explain this puzzle, having a look at the perception of social inequality is promising: As the data from the International Survey Programme 2009 reveals, more US-Americans believe to live in a typical middle-class society than Germans or French people do. However, with respect to the actual income distribution the middle class is by far the largest group in Germany and France, whereas the income distribution in the US is considerably more polarized (Niehues 2014).

This research finding on the misperceived degree of societal inequality raises the question, what actually explains the differences in the perception of social inequality: Why are Americans more likely to perceive their society as a middle-class model than many Europeans? Why does a majority of German citizens believe that most people are located in the lower income quantile despite the fact that Germany is without doubt a middle-class society?

One possible explanation for the observed flawed perceptions of inequality may be differences in the media coverage on inequality. Hence, in this paper we use the variation in the coverage on inequality-related topics in the media on a daily basis matched with daily survey responses on the subjective concerns about the economic situation in general as well as the views on societal fairness in Germany to identify the possible impact of media coverage on inequality perceptions.

Our contribution is structured as follows: First section 2 provides an overview over the related literature before the data are introduced in section 3. Then, section 4 describes our estimation strategy and presents the regression results. Finally, section 5 concludes.

2 Related Literature

In the economic and political context, media play an important role in the perception and decisions of individuals, as people often do not interact with each other through direct communication and information exchange. Instead, information and opinions are usually exchanged in an indirect manner through media channels. This is highly critical because media never depict the complete reality, but only paint a partial picture. In addition, the portrayed reality is prone to various types of distortions, so called media biases (Entman 2007).[13] As a

[12] For an investigation of the regional convergence in Europe see Goecke and Hüther (2016).

[13] From the various types of media biases, the most prominent are: advertising bias, when media change their news coverage in tone or volume in favour of their advertising clients (see Dewenter and Heimeshoff, 2014, 2015; Gambaro and Puglisi 2015 or Reuter and Zitzewitz 2006); newsworthiness bias, when news on certain issues crowd out coverage on other issues, because they are seen as more newsworthy (see Durante and Zhuravskaya, 2015 or Eisensee and Strömberg, 2007); negativity bias, when media focus more on catastrophes, crime and threatening political or economic developments and events in comparison to more positive news (see Garz, 2013, 2014; Soroka, 2006; Friebel and Heinz, 2014; or Heinz and Swinnen, 2015; or Kholodilin et al. 2015; or Hüther, 2016); and political bias, when media coverage favours one or another side of the political spectrum (see Groseclose and Milyo, 2005; Gentzkow and Shapiro, 2010; as well as Greenstein and Zhu, 2012).

consequence, individual's perception and decisions based on information provided by media might deviate from those based on a more unbiased set of information.

Consequentially, a growing literature uses media data to explain for instance economic sentiment. According to Nadeau et al. (2000), Soroka (2006), and van Raaij (1989), the assessment of the state of the economy and economic expectations depend at least in parts on media reports. Alsem et al. (2008), Doms and Morin (2004), as well as Goidel and Langley (1995) show the impact of media reporting on consumer climate. Lamla and Maag (2012) analyse the role of media reporting for inflation forecasts of households and professional forecasters. However, as perception and sentiment can form expectations and decisions, Helmenstein et al. (2016) use media coverage as a proxy for the international perception of business locations to analyse investment activities, and Dewenter et al. (2016) find evidence that the number of car sales depends at least in parts on the media coverage on the automotive industry.[14]

In the political context, Bernhardt et al. (2008), D'Alessio and Allen (2000), DellaVigna and Kaplan (2007), Druckman and Parkin (2005), Gentzkow et al. (2011), Morris, (2007), as well as Snyder and Strömberg (2010) focus on the impact of media coverage on political attitudes, voter's decisions, and political accountability. Again, the media coverage and its impact on the reality perception also affects decisions and behaviours: In their seminal work, Eisensee and Strömberg (2007) analyse the effects of media coverage of natural disasters on relief decisions, and Beckmann et al. (2017) show that media coverage of terror attacks causes further terroristic activities in terms of number of incidents as well as on the severity of terror acts.

Our work is grounded in the field of economic perceptions and related to Garz (2012) who analyses the impact of distorted unemployment media coverage on job insecurity perceptions by using media data as well as aggregated survey data from the German Socio Economic Panel (SOEP). In contrast, we analyse the impact of inequality media coverage on concerns of the German citizens on a daily basis by using media data as well as SOEP-data.

3 The Data

3.1 Media Data

Our contribution is based on the media content analysis by Media Tenor International. The institute evaluates all types of media (print, TV, radio and online) and shows how the media reflect reality. Each report is coded and categorized by media type (TV, print, general and specialized press, etc.), evaluated theme (such as unemployment, inflation, inequality),

[14] Consequentially, Kholodilin et al. (2016) use media data to improve economic forecasts, in particular in the field of industrial production.

participating persons (such as politicians, entrepreneurs, managers, celebrities) and institutions (such as political parties, companies, football clubs), region of reference (such as Germany, EU, USA, UK, world), time reference (future, present and past), and the source of information (such as journalist, politician, expert). In addition, the analysts capture if the relevant protagonists and institutions receive positive, negative or neutral coverage. Media Tenor guarantees an accuracy of more than 0.85. That means that the coding of their agents deviate at most by 0.15 from the trainers' master-versions. In contrast, computer linguistic approaches achieve accuracy of not more than 0.60-0.70, especially when it comes to topical context as well as tonality. As a consequence, Grimmer and Steward (2013) conclude that in political text analysis there is no substitute for human reading.[15]

Our sample of media outlets consists of seven different opinion-leading media outlets from Germany, such as TV news shows (ARD Tagesschau, ARD Tagesthemen, ZDF heute, ZDF heute Journal), daily newspapers (Bild), as well as weeklies and magazines (Focus, Spiegel). News items were analysed over the period January 2001 to December 2016. Overall, 644,443 news items are included in the analysis. Skipping all items, that were not on inequality and related issues, resulted in a total of 3,867.[16] Knowing both, the total number of news items per medium and day as well as the number of news items on inequality per medium and day, enables us to calculate the share of reports which was dedicated by the media to inequality on each day.

3.2 SOEP-Data

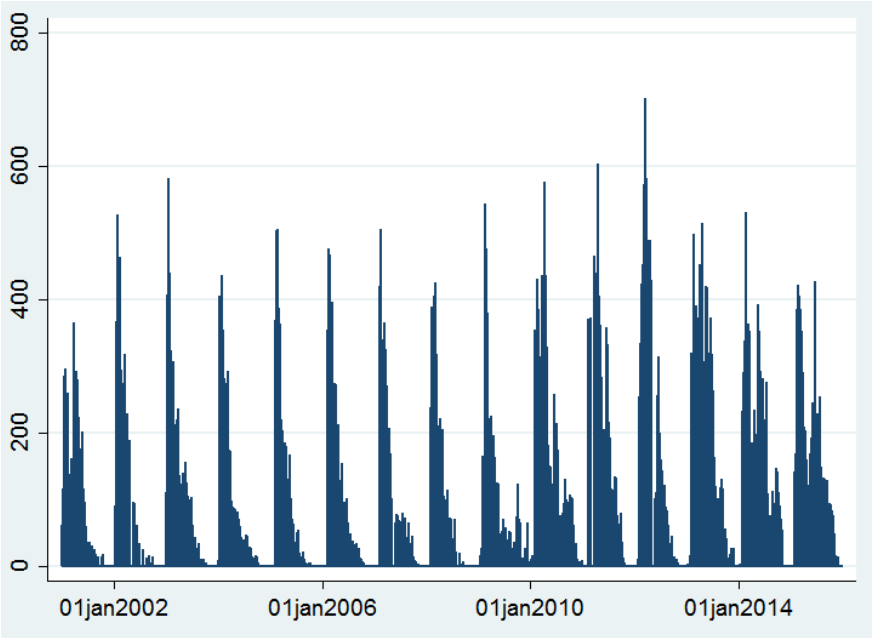
In order to measure people's concerns and perception of social inequality, we exploit SOEP-data. We use all SOEP-interviews between 2001 and 2015. The questionnaire takes place on a yearly basis and indicates the specific date and time an interview was carried out. Nevertheless, interviews are not carried out on every day of our sample period. Recently, the distribution of interviews over the year has become more even; over the entire observation period, however, most interviews were carried out between February and September (see Figure 1). Similarly to Doerrenberg and Siegloch (2014), in our identification strategy we exploit the random distribution of interview dates – meaning that the exact timing of an interview is independent from any individual characteristics – a point which is confirmed by the scientist administrating the SOEP.

[15] To keep the data on a high quality level, the reliability of the coding is checked on an ongoing monthly basis both with quarterly standard tests and random spot checks. Only coders that achieved a minimum reliability of 0.85 are cleared for coding. For each month and coder, three analyzed reports are selected randomly and checked. Coders scoring lower than 0.80 are removed from the coding process. In none of the months the mean deviation among all coders was above 0.15. As a result Media Tenor's data achieve an accuracy of minimum 0.85.
[16] See Table A1 in the Appendix.

For a first glance on people's economy related concerns, we employ the SOEP question on respondent's concerns about the economy in general („How concerned are you about the following issues? …The economy in general"), before we focus on inequality-related worries in particular. The possible answers are "very concerned", "somewhat concerned" and "not concerned at all". With the SOEP 2015 wave, a question regarding respondent's satisfaction with social justice has become available ranging on a 0 to 10 scale from "completely dissatisfied" to "completely satisfied". Furthermore, we extract the respondent's following time-varying control variables: household equivalent net income, number of children, marital status, region and occupational status.

With the aim of a coherent fixed-effect panel data analysis, we eliminate respondents with less than five observations between 2001 and 2015. Hence, we keep 30,700 individuals which results in a panel of 303,100 observations.

Figure 1: SOEP-Interview distribution



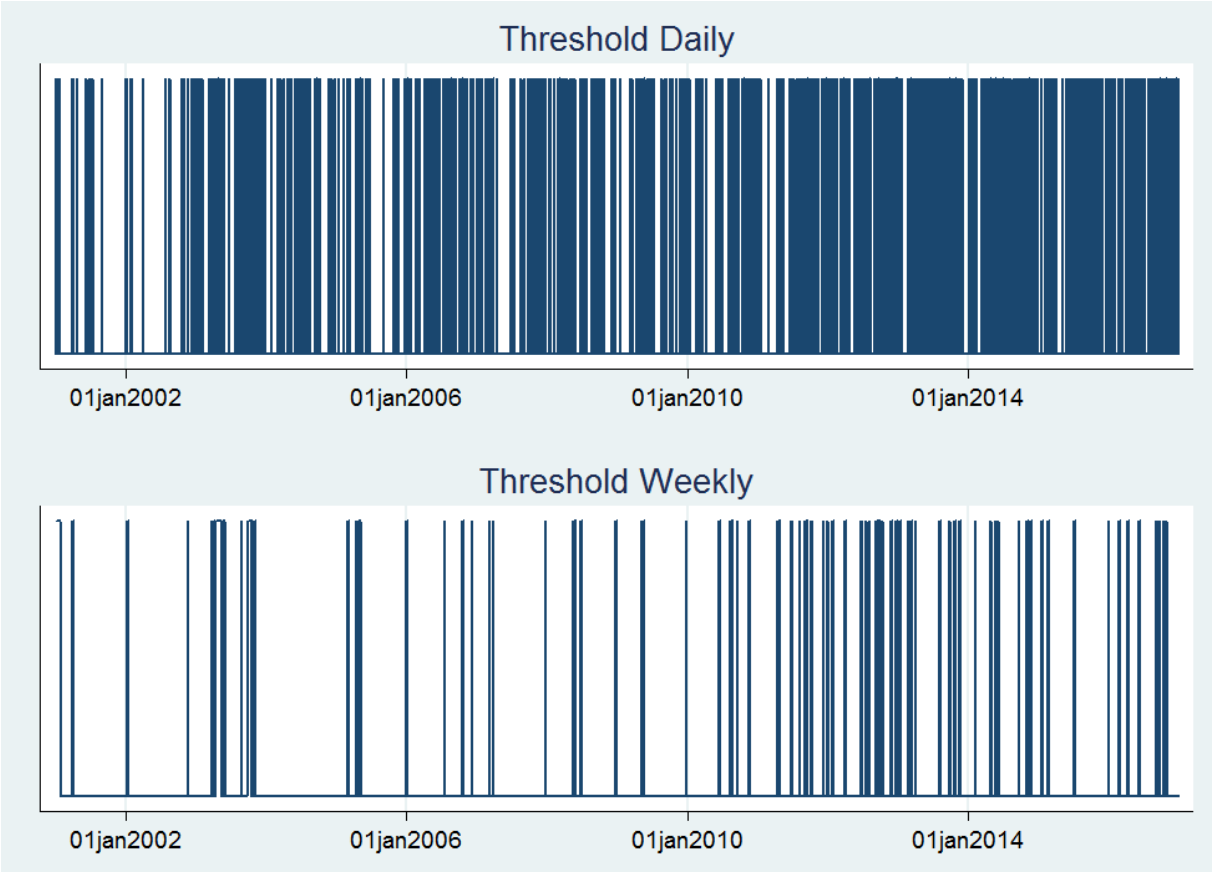
Source: SOEP; own calculations

4 Estimation Strategy and Results

According to findings from communication science, media coverage in a specific topic, institution or person only has an impact on the perception and behavior of broader parts of the society if the coverage exceeds a certain amount and by doing so crosses the awareness threshold (Neumann 1990). Practically, the awareness threshold in media analyses is often assumed to be 1.5 percent of all media reports. Hence, for the further analysis, in a first step we code this threshold as a binary variable, defined as 1 if media coverage on inequality exceeds 1.5 percent

of our sample's total media coverage and 0 if inequality coverage does not cross this threshold. Furthermore, we use the non-binary share of coverage, the quotient of media coverage on inequality and total media coverage.

Figure 3: Daily and weekly threshold concerning inequality-related topics



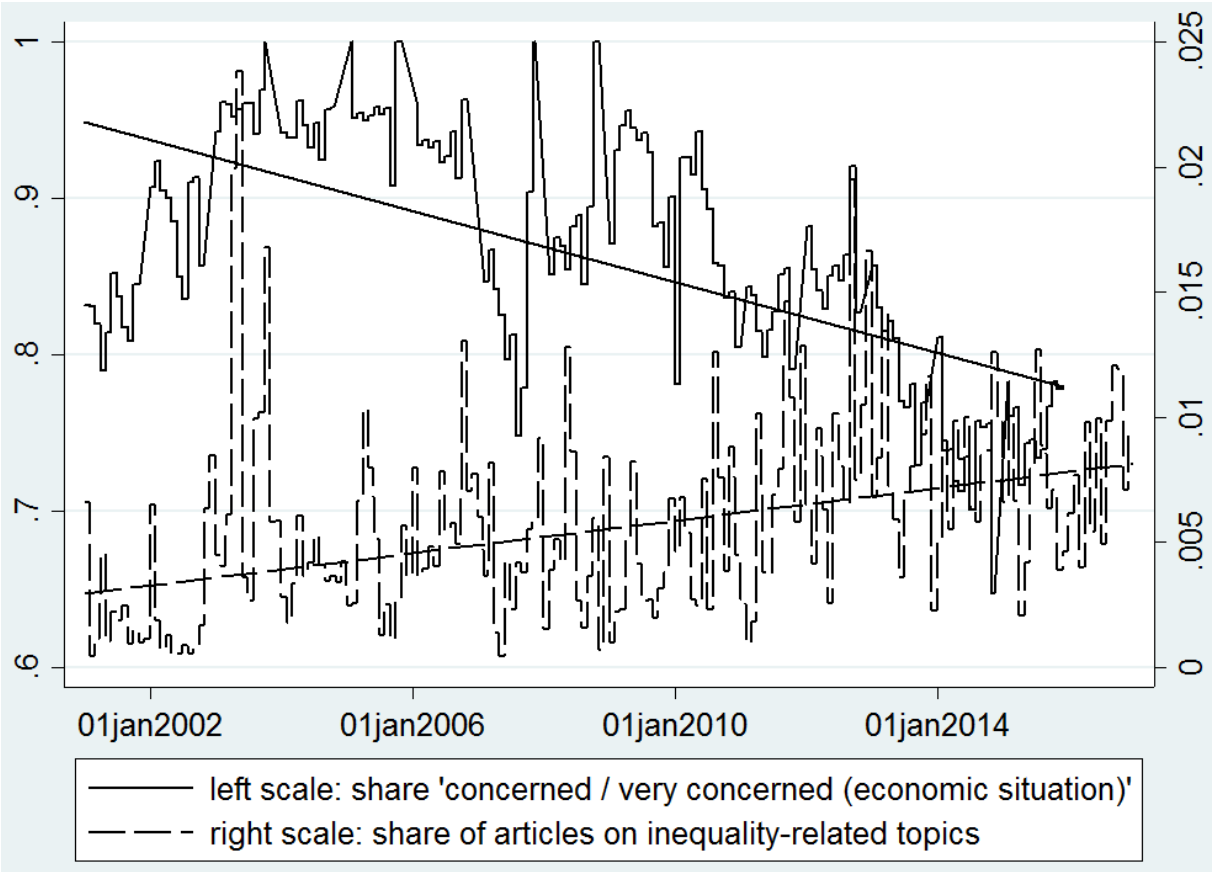
Source: Media Tenor; own calculations

Figure 3 depicts the frequency of awareness threshold crossings (>1.5% of all reports), defined on a daily and weekly basis[17], respectively. In our estimations, we additionally calculate the corresponding thresholds for several differing time periods before the interview. It can be observed that media coverage of inequality crosses the awareness threshold more frequently during the recent years: After 2010, the daily threshold is exceeded on 396 days representing more than 50 percent of the total 792 crossings in our sample. During this time period, for 268 days more than 1.5 percent of the last week's media coverage was related to inequality-related topics. Of the 482 weekly crossings in the full sample period, this represents more than 55 percent.

[17] The weekly threshold is crossed if the sum of inequality related articles during seven days divided by the sum of all articles published during seven days is higher than 1.5 percent.

Merging SOEP and media data by the interview date, we obtain, on the one hand, a dataset with the share of German inequality-related media coverage from 2001 and 2016 and, on the other hand, concerns about the general economic situation in Germany for every day a SOEP interview was carried out between 2001 and 2015. Merging the two datasets by this approach allows us to compare the impact of an intensive inequality-related media coverage on the very same day as well as during a varying preceding time period.

Figure 4: Concerns about the economic situation and articles on inequality-related topics[18]



Source: SOEP; Media Tenor; own calculations

Figure 4 presents the time trend of the two variables of interest aggregated on a monthly basis. The left-hand scale refers to the share of respondents that are "concerned and very concerned" about the general economic situation in Germany, represented by the solid line. The right-hand scale refers to the share of inequality-related media coverage in Germany, represented by the dashed line. On the whole, concerns about the economic situation are decreasing. In 2014 only

[18] We include the 2016 data on inequality coverage in this graph, in order to show that there was no current drop in the topic's importance.

13 percent of the respondents reported to be "very concerned" about the general economic situation, 27 percent reported to be "not concerned at all" – the all-time low and high, respectively. In 2015 the concerns stayed particularly low with only 15 percent of the respondents having ticked "very concerned" and 25 percent reporting "not concerned at all". Following the awareness threshold frequency analysis in Figure 3, from 2001 till 2016 the share of coverage of inequality-related topics is successively increasing – even when including the outlier of 2003. On average inequality-related media coverage made up 0.55 percent of the total media coverage. After 2012 the average share of inequality-related media coverage fluctuates around a mean of 0.8 percent of total media coverage.

4.1 Concerns about the economic situation

Although media coverage of inequality and concerns about the economic situation in Germany seem to be negatively related on an aggregated basis, high media coverage might ceteris paribus still influence people individually the other way around. We test the following hypothesis:

H1: "People are more concerned about the economic situation, the more media reports on broadly defined inequality-related topics are released."

To test this hypothesis, we run the following model:

$$y_{i,s,t} = \alpha + \beta T_{s,t} + \boldsymbol{\gamma X}_{i,s,t} + \boldsymbol{\delta W}_t + \tau_i + \mu_{i,s,t}.$$

With $i = 1, \dots, 30{,}700$ representing the respondents, s the date of the interview and $t = 2001, \dots, 2015$, the SOEP survey year. y represents the respondent's concern about the general economy. For our logit panel specification, we aggregate the categories "very concerned" and "somewhat concerned" and code it with a 1. Thus, we distinguish the categories not concerned at all and any form of concerns. The remaining category, "not concerned at all", is coded as a 0. T isolates the treatment effect, the inequality-related media coverage on the interview day. In the following regressions, we will vary T between the binary threshold variable and the metric quotient variable. $\boldsymbol{X}$ stands for the individual control variables such as household equivalent net income, number of children, marital status, region, occupational status, $\boldsymbol{W}$ for Germany's overall quarterly unemployment rate extracted from the Federal Employment Agency and a yearly time trend. τ is the time-invariant unobserved individual fixed-effect, μ the unobserved idiosyncratic error term.

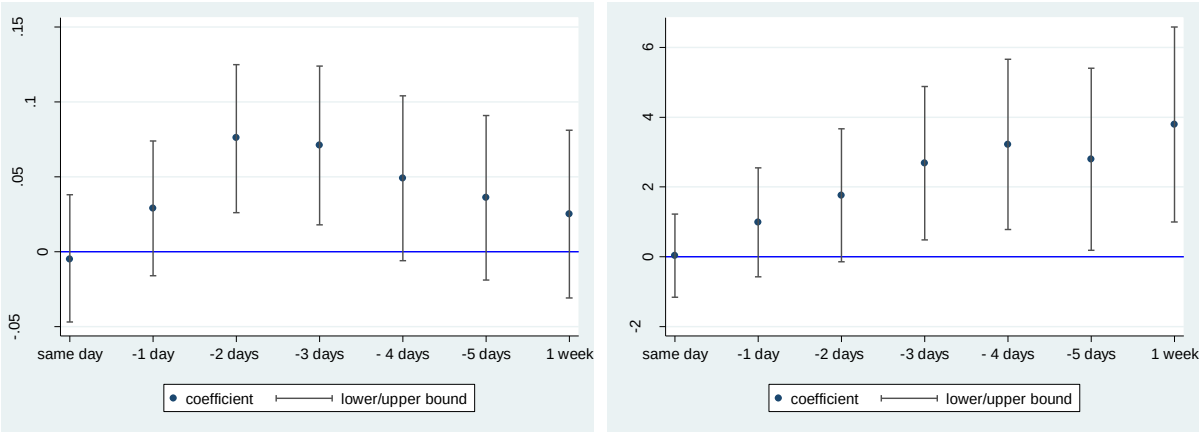
Table A2 shows the logit panel model's regression outcomes with the treatment variable T being defined as the binary threshold coded as 1 if inequality-related media coverage is above 1.5 percent of total media coverage. In column 1 the respondent's concerns are regressed on the

awareness threshold variable defined by media coverage on the same day, in column 2 the respondent's concerns are regressed on the cumulated inequality-related media coverage in terms of crossing the awareness threshold on the same day and the day before and so on. Around 150.000 observations are dropped in the panel logit estimation process due to insufficient within-group variation in the dependent variable over time.

The awareness threshold coefficient becomes statistically significant on a 1 and 10 percentage level, respectively, for the cumulated media coverage between the last two to four days before the interview. The coefficient peaks for the threshold variable that covers all three days before the respondent's interview. Enlarging the period results in smaller and more statistically insignificant coefficients (see figure 5).

The control variables have the expected signs and are mostly significant: A higher national unemployment rate goes along with more concerns. Respondents observing an increasing net income have less concerns, the same holds for an increasing number of children. Respondents with a partner have more concerns than singles. Migrating to the east of Germany is associated with more concerns. Also, switching to the status of being unemployed or to a blue collar job is related to more concerns.

Figure 5: Logit regression general economic concerns: Threshold (left) and share of coverage (right) for different media coverage intervals



The vertical capped spikes represent the upper and lower 95% confidence limits.

Source: SOEP; Media Tenor; own calculations

Table A3a follows the same logic and contains the logit model's regression outcomes with X being represented by the share of coverage. The quotient is logically limited between 0 and 1 if none or the entire media coverage deals with inequality-related topics. On 198,807 days there was no inequality-related media coverage on the interview day. The columns represent the respective effects of the cumulated share of coverage of inequality from the interview day until

six days before the interview day. This weekly analysis is particularly coherent as our data include weekly magazines such as Focus and Spiegel. Adding control dummies for each day of the week did not alter the results. Hence, no such dummies were included in the final specifications.

Analogous to the awareness threshold's coefficient, the share of coverage's coefficient increases gradually over the enlarged time period. However, no fade-out process can be observed. The coefficient becomes significantly different from zero on a 90, 95 and 99 percent confidence interval for the cumulated coverage going back to two or more days before the interview (Figure 6). Analysing a longer time period up to sixty days before the interview date still yields statistically significant results for the share of coverage coefficient. This result indicates that especially an ongoing high share of coverage of a certain issue affects people's concerns and no adaptation effect takes place. We will discuss this observation in more detail in the chapter on robustness checks. The control variables' signs are as expected.

In order to allow for a straight forward interpretation of the regression outcomes in Table A3a, Table A3b reproduces the respective models in odds ratios.[19] The share-of-coverage coefficients increase as the coverage time period is extended and become significant. The regression indicates that a one percentage point increase in inequality coverage over an entire week increases the probability that a respondent declares medium or high concerns by 3.9 percent.

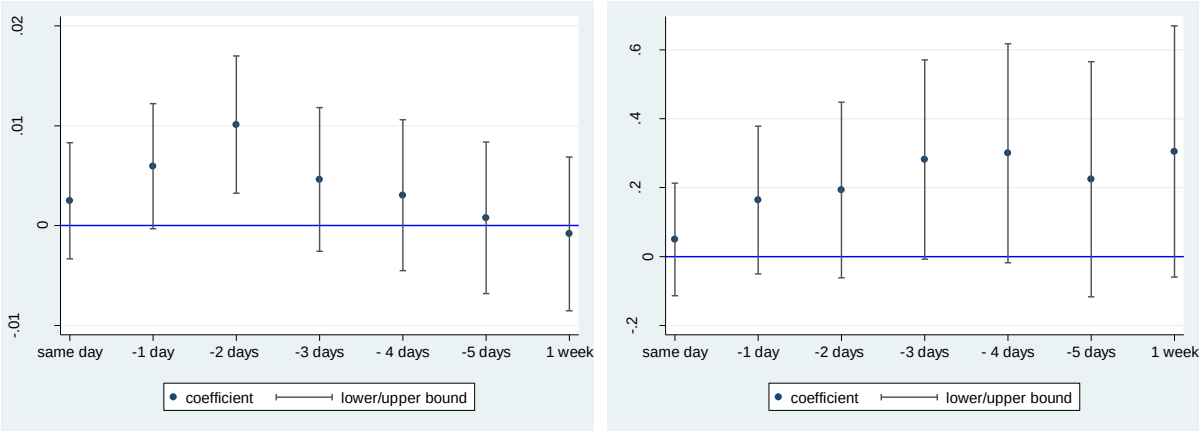
In our model's linear specification y represents the respondent's concern about the general economy coded as 2 for "very concerned", 1 for "somewhat concerned" and 0 for "not concerned at all. In general, the linear panel specifications do not rely on with-variation in the endogenous variable and is therefore based on much more observations. Table A4 shows the regression outcomes, with the treatment variable X being defined as the binary threshold variable. Again, in column one to seven the time span from the interview day until six days before the interview is covered. It can be found that inequality coverage above the media threshold impacts respondents' concerns significantly on a 90 (99) percent confidence level only if inequality was covered in more than 1.5 percent of the cumulated media coverage between the interview day and a day (two days) before the interview. During the other time periods tested, the coefficient's sign is positive as expected, but statistically insignificant. The coefficients show the same pattern as in figure 5. The control variables have the expected signs.

Table A5 shows the regression outcomes with the treatment variable X being defined as the share of coverage. The columns indicate once again the time span before the interview day. The share of coverage of inequality does only relate with respondent's concerns on a 90 percent

[19] Note, that we rescaled the share of coverage variable by multiplication with the factor 100, in order to facilitate its coefficients' interpretation.

significance level for the time period of up to three to four days before the interview. The effect has the expected positive sign. Again, our control variables have the expected signs.[20]

Figure 6: Linear regression general economic concerns: Threshold (left) and share of coverage (right) for different media coverage intervals



The vertical capped spikes represent the upper and lower 95% confidence limits.

Source: SOEP; Media Tenor; own calculations

The findings with respect to general economic concerns can be summarised by three aspects: First, the result indicates the importance of the awareness threshold for a limited time period of media coverage of two to three days. Second, mixed evidence can be found with regard to a strong inequality-related media penetration over a longer period in the past. The logit specification indicates that a high penetration of inequality media coverage during a longer time period affects people's perception of the economic situation, rather than very recent media coverage. The linear regression points into the same direction, however, the results from these regressions are hardly statistically significant for the coverage of one week before the interview. Third, information must have been distributed for a certain amount of time before it affects the perception and worries of the citizens (Carroll, 2003).

4.2 Concerns about fairness in the society

In 2015, for the first time, the SOEP also includes a question about the perceived degree of social fairness within the society. This enables us to test a more specific hypothesis:

[20] Note that the share of coverage coefficient becomes significant on a 99 percent level after enlarging the time period up to longer than nine days before the interview. We discuss this observation in the chapter on robustness checks.

H2: "People are more concerned about the German society's fairness, the more media reports on inequality-related topics are released."

As this question has been only available for one year, here we have to rely on cross-sectional regression design to test this hypothesis:

$$y_{i,s} = \alpha + \sum \beta_t T_{s,t} + \boldsymbol{\gamma X}_{i,s,t} + \varepsilon_{i,s}$$

Where subscripts indicate the respondent i, surveyed on day s, in the year 2015. In total 17,307 respondents were surveyed and answered the question on social fairness. The dependent variable of this analysis is y, a categorical variable which takes the value 0 when a respondent is "completely satisfied" with the level of social justice in Germany and 10 when the respondent is "completely dissatisfied" with the level of social justice.[21] T is the treatment variable, which is either the share of coverage or the awareness threshold, meaning a dummy-variable indicating whether the share of inequality media coverage exceeds 1.5 percent of all media coverage. The subscript $t, \dots, t-6$ indicates the underlying time period of media coverage (see above). The vector X includes additional individual control variables such as socio-economic characteristics such as age, gender and employment status. Note, that due to the cross-sectional design, here we can also include time-invariant individual characteristics. $\varepsilon_{i,s,t}$ is the unobserved idiosyncratic error term.

Table A6 illustrates the results of a linear regression of the media coverage thresholds on the perceived level of social fairness for the year 2015. The threshold is crossed on 41 of the 248 interview days in 2015. The weekly threshold is crossed only on 12 days. The threshold coefficient is positive for all time periods analyzed indicating that inequality-related media coverage of above 1.5 percent of total media coverage impairs respondents' perception of social fairness in Germany. However, the coefficient is statistically significant only for the time period including the interview day and the day before on a 90 percent significance level (with the p-value of 0.056 it only marginally misses the 5 percent significance level). The coefficients for all other time intervals do not yield statistically significant effects (see figure 7).

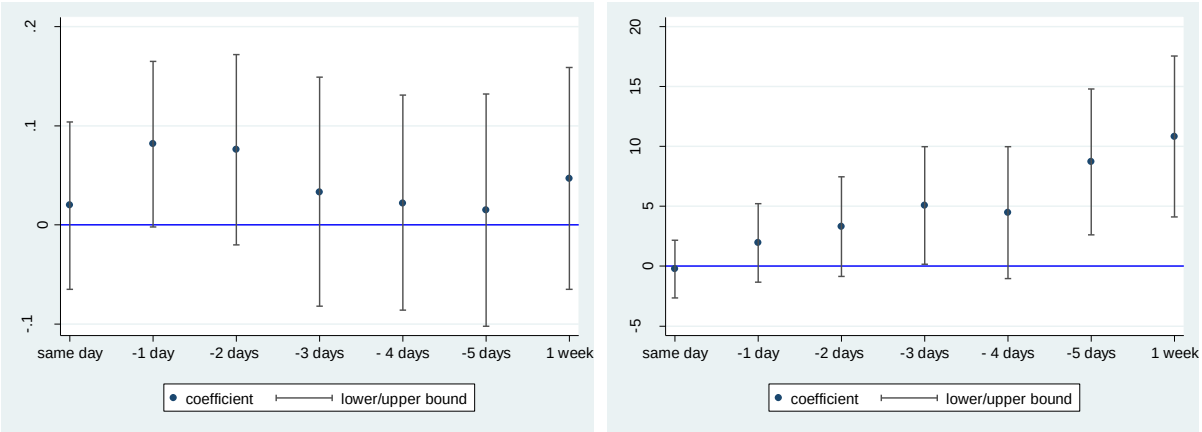
Table A7 illustrates the linear regression outcomes from the share of inequality coverage on the perceived level of social fairness. In contrast to the threshold regressions the share of coverage coefficient increases over the considered time period and becomes statistically significant on a 95 percent significance level after including the last three days before the interview and on a 99

[21] Note, that we recoded the dependent variable from the original survey in a way that our results are in line with our hypothesis when we identify a positive coefficient.

percent significance after including six to seven days before the respective interview. The coefficient remains significant for longer time periods.[22]

For both independent treatment variables, the threshold and the share of coverage, the control variables mostly have the expected signs: Higher income, the number of children, and being a retiree ameliorates respondents' view on social fairness. Having a partner or being married, living in Eastern Germany or being unemployed deteriorates people's perception.

Figure 7: Cross-sectional fairness regression: Threshold (left) and quotient (right) for different media coverage intervals



The vertical capped spikes represent the upper and lower 95% confidence limits.

Source: SOEP; Media Tenor; own calculations

Several conclusions can be drawn from the regressions testing the impact of inequality media coverage on respondents' perception of social fairness. First, with respect to inequality-related media coverage the awareness threshold of 1.5 percent cannot be pinned down statistically as the major driver of people's fairness perception. However, this result could be driven by too few threshold crossings especially when analysing longer time periods of media coverage. Second, the intensity of inequality coverage in general has an impact of people's perception of social fairness. Third, this impact unfolds over longer time rather than over shorter time periods of coverage: penetrating people over several days or weeks with inequality-related news changes their perception more significantly than coverage limited to only a few days. Hence, media play a role in forming opinions and views of social justice, especially if inequality coverage is high over several days.

[22] These results can be qualitatively reproduced by ordered logit regressions. Regression outputs are available upon request.

5. Robustness Checks

In our baseline regressions reported in Figure 5, we tested the impact of aggregated media coverage on economic concerns up to one week before an interview, because beside daily news(papers) our media set also contains weekly magazines. However, since we observed no fade out of the media impact over time, the first robustness check is the investigation of the effect of even longer time spans on general economic concerns and the perception of fairness. Therefore Table A8 reports the results for an averaged share of inequality media coverage from 8 up to 60 days. As the results reveal, the impact remains significant and seemingly even steadily rises with increasing time period. However, the standard deviation of the share of coverage steadily decreases at the same time. If standardized regression coefficients are used instead, the (economic) size of coefficients converges after approximately one week. With respect to the interpretation of the different time spans, it should be noted that although the length of average coverage varies, higher coverage ceteris paribus meets higher reported concerns. However, the increasing impact of media coverage might seem to contradict the observed asymmetric trends of general economic concerns and inequality coverage in Figure 4. Though, this general trend is depicted by the included period dummies as shown in rows three and four in Table A8. If period dummies are omitted, the positive impact vanishes after a coverage span of one month and switches to the negative coefficient from a time span of about two months onwards. This emphasizes that higher media coverage can influence concerns on an individual level, although the general trend is driven by other factors. Some macro-level correlations show, for instance, that the degree of inequality coverage is the higher, the better the economic situation in terms of unemployment and industry production.

In our baseline regressions, we use all identified topics around inequality and related social issues – related to events in Germany and other countries as well. If we restrict inequality coverage to domestic inequality-related topics only, the impact becomes less significant and decreases in size. This hints on a topic-specific impact of media coverage even if the individual cannot be affected directly because the story simply takes place in another country. If we further restrict the identification to very narrowly defined inequality topics, the impact on reported economic concerns slightly increases.

The last rows of Table A8 report the results of so-called Placebo-regressions. Here we analyze the impact of inequality-related media coverage on reported concerns about the environment and subjective health status where we expect no effect. Indeed, we do not find any significant effects independent from the time period investigated. As Table A9 shows, rerunning these robustness checks for respondents' perceptions of the degree of social fairness reveals broadly

the same results. Only, here we also find significant effects for the impact of domestic inequality-related media coverage from a time period of six days and longer.

The regression outcomes in section 4 show mixed evidence for the importance of a 1.5 percent awareness threshold in the context of inequality-related media coverage. Hence, Table A10 maps regression outcomes for different threshold definitions between 0.5 and 3 percent of inequality media coverage. We find evidence for a longer lasting and more significant threshold effect for a lower threshold definition of 1 and especially 0.75 percent. In the context of the perception of social fairness, we find highly significant effects even at threshold levels of 0.5 percent (Panel B of Table A10). Evidently, lower thresholds are crossed more often and entail more variation, particularly for longer time periods where high thresholds are very rarely crossed. Having in mind that the share of coverage coefficients become significant for periods of 3 days (see Table A3 and Table A8), the significant very low threshold of 0.5 percent coverage coefficient for these time periods indicates some existence of a threshold. Although we are not able to distinctively identify the inequality coverage threshold level, we conclude that at least with respect to inequality-related media coverage it is somewhere in the range between 0.5 and 1 percent – significantly lower than the assumed 1.5 percent. We leave it to further research to determine the reasons for different topic's varying threshold levels.

6. Conclusion

Individuals (mis)perceive the distribution of income within a society. In fact, people's redistributive preferences and judgments on the degree of social fairness are driven by perceived rather than by actual inequality. Whereas people assume to know the income distribution, a broad majority misjudges the actual distribution.

This paper analyses if media coverage on inequality drives people's perceptions and concerns. Although inequality has not significantly altered since 2005 in Germany, the share of media coverage dedicated to inequality-related topics has significantly increased.

In order to exploit day-by-day information on the degree of media-coverage on inequality-related topics, we merge media data with daily interviews on people's concerns and fairness perceptions. First, we use the SOEP question on the concerns about the general economic situation in combination with media coverage on inequality. We find that high inequality-related media coverage over a couple of days before the interview significantly triggers higher concerns about the general economic situation in Germany among the respondents.

Being more specific, we also investigate the impact of reporting on inequality-related topics on the perception of social justice, a question which was introduced in the SOEP 2015. Again, we

find a significant aggravation in the respondents' answers concerning the fairness of social differences in Germany if there was a peak in the inequality media coverage during the days or weeks before the interview.

All in all, although the length of the relevant time interval of media coverage slightly differs between estimations, we find significant impacts of media coverage on reported concerns on the economic situation and on perceived social fairness likewise.

Therefore, although on the macro level less concerns about the economic situation are correlated with higher media coverage on inequality, our paper provides evidence that media coverage is well likely to form opinions at the individual level – and this widely detached from reality. Thus, media coverage seems to play an important role in biasing individual inequality perception, but also in aggravating people's view on their economic situation at least in the short-run – nevertheless, with regard to worries about the perceived economic situation, the overall trend seems to be driven by other factors most likely anchored in the real economy. As the SOEP-question on social fairness has become available in 2015, hence, conclusions about the determinants of fairness perception over time cannot be drawn by now and remain a question to be addressed in future research.

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Appendix

Table A1: Analyzed media set

Media	**Observations: News items on inequality**	**Observations: News items on all topics**
TV news shows		
Tagesthemen	665	123,085
Tagesschau	2268	102,770
heute	2,351	121,046
heute journal	2,402	110,614
Daily newspaper		
Bild	2,250	109,239
Magazines and weeklies		
Focus	654	40,349
Spiegel	704	37,344
Total		
number of observations	3,523	644,447

Table A2: Logit regression general economic worries awareness threshold

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Awareness Threshold	-0.005	0.029	0.076***	0.071***	0.049*	0.036	0.025
	(0.022)	(0.023)	(0.025)	(0.027)	(0.028)	(0.028)	(0.028)
Unemployment rate	0.266***	0.267***	0.267***	0.266***	0.266***	0.265***	0.266***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Log(Equiv. net income)	-0.027	-0.027	-0.027	-0.027	-0.027	-0.027	-0.027
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Number of children	-0.048***	-0.048***	-0.048***	-0.048***	-0.048***	-0.048***	-0.048***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Partner	0.193***	0.192***	0.192***	0.193***	0.192***	0.193***	0.193***
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Married	0.077	0.076	0.076	0.077	0.076	0.076	0.077
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)
East	0.237**	0.237**	0.236**	0.236**	0.237**	0.237**	0.237**
	(0.100)	(0.100)	(0.100)	(0.100)	(0.100)	(0.100)	(0.100)
Self-employed	-0.022	-0.022	-0.022	-0.023	-0.022	-0.022	-0.022
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
White collar	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
Clerk	-0.011	-0.012	-0.012	-0.013	-0.012	-0.011	-0.012
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
Unemployed	0.150***	0.150***	0.151***	0.151***	0.150***	0.151***	0.151***
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Retiree	-0.193***	-0.193***	-0.193***	-0.193***	-0.193***	-0.193***	-0.193***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
Other occupation	-0.262***	-0.262***	-0.262***	-0.262***	-0.263***	-0.262***	-0.262***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
No. of Observations	138530	138530	138530	138530	138530	138530	138530

Note: Standard errors in brackets
* p<0.1, ** p<0.05, *** p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree, and other occupation is blue collar worker.

Table A3a: Logit regression general economic worries share of coverage

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Share of Coverage	0.029	0.987	1.759*	2.681**	3.217***	2.797**	3.788***
	(0.609)	(0.798)	(0.973)	(1.124)	(1.246)	(1.332)	(1.426)
Unemployment rate	0.267***	0.268***	0.266***	0.265***	0.261***	0.262***	0.260***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Log(equiv. net income)	-0.026	-0.028	-0.030	-0.028	-0.028	-0.031	-0.031
	(0.026)	(0.026)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Number of children	-0.049***	-0.048***	-0.049***	-0.050***	-0.051***	-0.050***	-0.047***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Partner	0.198***	0.196***	0.191***	0.192***	0.186***	0.190***	0.175***
	(0.054)	(0.054)	(0.054)	(0.055)	(0.055)	(0.055)	(0.055)
Married	0.082	0.077	0.068	0.075	0.078	0.088	0.075
	(0.068)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.070)
East	0.236**	0.235**	0.243**	0.235**	0.238**	0.244**	0.240**
	(0.100)	(0.100)	(0.100)	(0.100)	(0.101)	(0.101)	(0.101)
Self employed	-0.021	-0.022	-0.030	-0.029	-0.024	-0.022	-0.015
	(0.062)	(0.062)	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)
White collar	-0.010	-0.009	-0.011	-0.014	-0.013	-0.012	-0.012
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
Clerk	-0.010	-0.009	-0.008	-0.009	-0.004	-0.003	0.001
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.087)
Unemployed	0.153***	0.156***	0.154***	0.147***	0.149***	0.150***	0.150***
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Retiree	-0.188***	-0.187***	-0.189***	-0.191***	-0.186***	-0.186***	-0.180***
	(0.053)	(0.053)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Other occupation	-0.260***	-0.261***	-0.265***	-0.261***	-0.260***	-0.259***	-0.257***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
No. of Observations	138368	137992	137583	137066	136491	136108	135547

Note: Standard errors in brackets
* p<0.1, ** p<0.05, *** p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree, and other occupation is blue collar worker.

Table A3b: Logit regression general economic worries share of coverage, odds ratios

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Share of Coverage	1.000	1.010	1.018*	1.027**	1.033***	1.028**	1.039***
	(0.006)	(0.008)	(0.010)	(0.012)	(0.013)	(0.014)	(0.015)
Unemployment rate	1.306***	1.307***	1.305***	1.303***	1.298***	1.299***	1.297***
	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)
Log(equiv. net income)	0.974	0.973	0.970	0.972	0.972	0.970	0.969
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Number of children	0.953***	0.953***	0.952***	0.951***	0.950***	0.951***	0.954***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)
Partner	1.218***	1.217***	1.211***	1.212***	1.204***	1.209***	1.191***
	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)
Married	1.086	1.080	1.070	1.077	1.081	1.092	1.078
	(0.074)	(0.074)	(0.074)	(0.074)	(0.075)	(0.076)	(0.075)
East	1.266**	1.265**	1.275**	1.265**	1.269**	1.276**	1.271**
	(0.126)	(0.126)	(0.127)	(0.127)	(0.128)	(0.128)	(0.128)
Self employed	0.980	0.978	0.971	0.971	0.976	0.978	0.986
	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.062)
White collar	0.991	0.991	0.989	0.987	0.988	0.988	0.988
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
Clerk	0.990	0.991	0.992	0.991	0.996	0.997	1.001
	(0.085)	(0.085)	(0.085)	(0.085)	(0.086)	(0.086)	(0.087)
Unemployed	1.165***	1.169***	1.167***	1.159***	1.161***	1.162***	1.161***
	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)
Retiree	0.828***	0.829***	0.828***	0.827***	0.830***	0.830***	0.835***
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)	(0.045)	(0.045)
Other occupation	0.771***	0.771***	0.767***	0.770***	0.771***	0.772***	0.773***
	(0.031)	(0.032)	(0.031)	(0.032)	(0.032)	(0.032)	(0.032)
No. of Observations	1.432**	1.434**	1.419*	1.405*	1.384*	1.384*	1.351

Note: Standard errors in brackets
* p<0.1, ** p<0.05, *** p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree, and other occupation is blue collar worker.

Table A4: Linear regression general economic worries awareness threshold

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Awareness Threshold	0.00249	0.00594*	0.01011***	0.00462	0.00304	0.00077	-0.00083
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Unemployment rate	0.05167***	0.05156***	0.05126***	0.05145***	0.05162***	0.05177***	0.05189***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Log(equiv. net income)	-0.00681	-0.00679	-0.00680	-0.00681	-0.00680	-0.00680	-0.00680
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Number of children	-0.0112***	-0.0112***	-0.0112***	-0.0112***	-0.0112***	-0.0112***	-0.0112***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Partner	0.03940***	0.03936***	0.03935***	0.03941***	0.03939***	0.03940***	0.03940***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Married	0.01867*	0.01861*	0.01862*	0.01869*	0.01866*	0.01866*	0.01866*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
East	0.04235**	0.04237**	0.04228**	0.04231**	0.04234**	0.04233**	0.04232**
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Self employed	0.00471	0.00475	0.00475	0.00471	0.00470	0.00469	0.00468
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
White collar	0.00230	0.00230	0.00227	0.00229	0.00229	0.00230	0.00229
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Clerk	-0.00657	-0.00660	-0.00662	-0.00656	-0.00654	-0.00652	-0.00652
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Unemployed	0.05819***	0.05819***	0.05820***	0.05821***	0.05820***	0.05819***	0.05819***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Retiree	-0.01565**	-0.01563**	-0.01561**	-0.01564**	-0.01565**	-0.01565**	-0.01566**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Other occupation	-0.0298***	-0.0298***	-0.0298***	-0.0298***	-0.0298***	-0.0298***	-0.0298***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	1.57264***	1.57323***	1.57548***	1.57418***	1.57280***	1.57175***	1.57091***
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
R-squared	0.129	0.129	0.129	0.129	0.129	0.129	0.129
No. of Observations	291195	291195	291195	291195	291195	291195	291195

Note: Clustered standard errors in brackets
* p<0.1. ** p<0.05. *** p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree, and other occupation is blue collar worker.

Table A5: Linear regression general economic worries share of coverage

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Share of Coverage	0.04940	0.16400	0.19309	0.28160*	0.30002*	0.22481	0.30507*
	(0.082)	(0.108)	(0.128)	(0.145)	(0.160)	(0.172)	(0.184)
Unemployment rate	0.05183***	0.05136***	0.05100***	0.05060***	0.05041***	0.05060***	0.05030***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Log(equiv. net income)	-0.00659	-0.00647	-0.00676	-0.00699*	-0.00720*	-0.00747*	-0.00759*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Number of children	-0.0113***	-0.0115***	-0.0116***	-0.0118***	-0.0119***	-0.0118***	-0.0117***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Partner	0.04012***	0.03974***	0.03977***	0.03988***	0.03928***	0.03874***	0.03762***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Married	0.01933*	0.01896*	0.01874*	0.01913*	0.01950*	0.02007*	0.01899*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
East	0.04183**	0.04115**	0.04159**	0.04131**	0.04318**	0.04256**	0.04260**
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Self employed	0.00489	0.00504	0.00452	0.00503	0.00545	0.00589	0.00607
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
White collar	0.00273	0.00289	0.00294	0.00279	0.00306	0.00336	0.00310
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Clerk	-0.00646	-0.00570	-0.00527	-0.00459	-0.00465	-0.00433	-0.00385
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Unemployed	0.05811***	0.05848***	0.05813***	0.05759***	0.05821***	0.05867***	0.05832***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Retiree	-0.01548**	-0.01526**	-0.01509*	-0.01496*	-0.01501*	-0.01460*	-0.01442*
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Other occupation	-0.0295***	-0.0294***	-0.0297***	-0.0291***	-0.0289***	-0.0284***	-0.0285***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	1.56860***	1.57137***	1.57779***	1.58496***	1.58773***	1.58986***	1.59569***
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
R-squared	0.129	0.129	0.128	0.128	0.128	0.128	0.127
No. of Observations	291013	290581	290038	289478	288886	288446	287937

Note: Clustered standard errors in brackets
* p<0.1. ** p<0.05. **p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree, and other occupation is blue collar worker.

Table A6: Linear regression fairness awareness threshold

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Threshold	0.020	0.082*	0.076	0.033	0.022	0.015	0.047
	(0.043)	(0.043)	(0.050)	(0.061)	(0.057)	(0.060)	(0.057)
Log(Equiv. Net Income)	-0.500***	-0.499***	-0.498***	-0.500***	-0.500***	-0.500***	-0.500***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Female	0.022	0.022	0.023	0.022	0.022	0.022	0.023
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Age	0.077***	0.077***	0.077***	0.077***	0.077***	0.077***	0.077***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Age Squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Migrant	-0.535***	-0.536***	-0.535***	-0.535***	-0.535***	-0.535***	-0.535***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Number of children	-0.053***	-0.055***	-0.054***	-0.053***	-0.053***	-0.053***	-0.053***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Partner	-0.382***	-0.380***	-0.380***	-0.382***	-0.382***	-0.382***	-0.382***
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Married	0.176***	0.177***	0.177***	0.176***	0.176***	0.176***	0.176***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
East	0.305***	0.306***	0.306***	0.305***	0.305***	0.305***	0.304***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
Self Employed	0.015	0.017	0.015	0.016	0.016	0.015	0.016
	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)
White Collar	-0.217***	-0.216***	-0.216***	-0.216***	-0.216***	-0.216***	-0.217***
	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
Clerk	-0.414***	-0.414***	-0.414***	-0.414***	-0.414***	-0.414***	-0.415***
	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)
Unemployed	0.553***	0.554***	0.554***	0.554***	0.554***	0.554***	0.554***
	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)
Retiree	-0.052	-0.050	-0.051	-0.052	-0.052	-0.052	-0.053
	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)
Other Occupation	-0.183**	-0.182**	-0.183**	-0.182**	-0.183**	-0.183**	-0.183**
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
Constant	8.533***	8.518***	8.519***	8.534***	8.535***	8.537***	8.536***
	(0.379)	(0.379)	(0.378)	(0.378)	(0.378)	(0.379)	(0.379)
R-squared	0.0655	0.0657	0.0656	0.0655	0.0655	0.0655	0.0655
No. of Observations	17528	17528	17528	17528	17528	17528	17528

Note: Robust standard errors in brackets
* p<0.1. ** p<0.05. **p<0.01
No. of Observations

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree and other occupation is blue collar worker. The omitted category of female is male. The omitted category of migrant is no migrant.

Table A7: Linear regression fairness share of coverage

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Share of Coverage	-0.237	1.959	3.317	5.082**	4.482	8.713***	10.837***
	(1.236)	(1.693)	(2.156)	(2.536)	(2.833)	(3.123)	(3.430)
Log(Equiv. Net Income)	-0.500***	-0.499***	-0.498***	-0.498***	-0.498***	-0.497***	-0.495***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Female	0.022	0.023	0.023	0.023	0.023	0.022	0.022
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Age	0.077***	0.077***	0.077***	0.077***	0.077***	0.076***	0.076***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Age-Squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Migrant	-0.535***	-0.535***	-0.535***	-0.535***	-0.535***	-0.534***	-0.534***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Number of children	-0.053***	-0.053***	-0.054***	-0.054***	-0.054***	-0.055***	-0.055***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Partner	-0.383***	-0.381***	-0.380***	-0.380***	-0.380***	-0.379***	-0.379***
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Married	0.175***	0.177***	0.177***	0.177***	0.177***	0.177***	0.177***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
East	0.305***	0.305***	0.305***	0.304***	0.304***	0.304***	0.304***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
Self Employed	0.015	0.015	0.016	0.017	0.017	0.019	0.019
	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)
White Collar	-0.216***	-0.217***	-0.217***	-0.216***	-0.216***	-0.217***	-0.217***
	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
Clerk	-0.414***	-0.414***	-0.414***	-0.413***	-0.414***	-0.414***	-0.416***
	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)	(0.085)
Unemployed	0.553***	0.553***	0.554***	0.555***	0.555***	0.555***	0.556***
	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)
Retiree	-0.052	-0.052	-0.051	-0.051	-0.051	-0.051	-0.051
	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)
Other Occupation	-0.183**	-0.183**	-0.184**	-0.183**	-0.183**	-0.182**	-0.182**
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
Constant	8.541***	8.516***	8.503***	8.487***	8.494***	8.456***	8.431***
	(0.379)	(0.379)	(0.379)	(0.379)	(0.379)	(0.380)	(0.380)
R-squared	0.0655	0.0655	0.0656	0.0657	0.0656	0.0659	0.0660
No. of Observations	17528	17528	17528	17528	17528	17528	17528

Note: Robust standard errors in brackets
* p<0.1. ** p<0.05. **p<0.01

The omitted category of partner and married is single. The omitted category of east is west. The omitted category of self-employed, white collar, clerk, unemployed, retiree and other occupation is blue collar worker. The omitted category of female is male. The omitted category of migrant is no migrant.

Table A8: Different economic concerns - different definitions of the share of coverage (only logit models)

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Baseline (Logit)	0.029	0.987	1.759*	2.681**	3.217***	2.797**	3.788***
	(0.609)	(0.798)	(0.973)	(1.124)	(1.246)	(1.332)	(1.426)
	t=[-8:0]	t=[-9:0]	t=[-10:0]	t=[-15:0]	t=[-20:0]	t=[-30:0]	t=[-60:0]
Longer time span	4.791***	4.889***	5.516***	5.487***	6.819***	11.388***	21.96***
(8 9 10 15 20 30 60)	(1.512)	(1.577)	(1.652)	(1.926)	(2.157)	(2.588)	(3.790)
Without period	0.021	0.743	1.786**	3.086***	4.053***	3.833***	4.947***
Dummies	(0.582)	(0.755)	(0.913)	(1.045)	(1.147)	(1.219)	(1.295)
	t=[-8:0]	t=[-9:0]	t=[-10:0]	t=[-15:0]	t=[-20:0]	t=[-30:0]	t=[-60:0]
… longer	5.967***	5.940***	6.344***	4.849***	3.615**	0.889	-4.509**
Timespan (8d – 60d)	(1.364)	(1.414)	(1.472)	(1.670)	(1.830)	(2.091)	(2.645)
Only domestic	0,275	0.585	1.236	2.393*	2.624*	2.140	2.806
	(0.685)	(0.891)	(1.084)	(1.256)	(1.391)	(1.481)	(1.584)
Specific topics	0.792	1.412	2.276	3.804**	4.092**	3.530*	4.338**
(domestic)	(0.896)	(1.176)	(1.417)	(1.648)	(1.833)	(1.952)	(2.077)
Concerns	0.229	-0.235	-1.068	-1.257	-1.789	-1.294	-0.986
environment[23]	(0.647)	(0.835)	(0.989)	(1.121)	(1.226)	(1.326)	(1.419)
Concerns	-0.213	0.740	-0.453	-0.496	0.154	-0.340	-0.756
health [24]	(0.558)	(0.736)	(0.883)	(1.022)	(1.133)	(1.225)	(1.314)

Note: Standard errors in brackets
* p<0.1, ** p<0.05, *** p<0.01

Table A9: Robustness checks social fairness regressions (cross-sectional linear models)

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
Baseline (Logit)	-0.237	1.959	3.317	5.082**	4.482	8.713***	10.837***
	(1.236)	(1.693)	(2.156)	(2.536)	(2.833)	(3.123)	(3.430)
	t=[-8:0]	t=[-9:0]	t=[-10:0]	t=[-15:0]	t=[-20:0]	t=[-30:0]	t=[-60:0]
Longer time span	11.852***	13.473***	16.894***	19.241***	22.336***	27.429***	34.648***
(8 9 10 15 20 30 60)	(3.660)	(3.832)	(4.110)	(4.994)	(5.800)	(7.121)	(10.025)
Only domestic	1.095	1.518	4.177	5.38*	6.073*	11.687***	14.667***
	(1.600)	(2.113)	(2.773)	(3.263)	(3.545)	(3.879)	(4.307)
Specific topics	-2.024	0.658	5.213	7.085	5.575	12.713**	20.869***
(domestic)	(2.600)	(3.506)	(4.711)	(5.650)	(6.092)	(6.790)	(7.474)
Concerns	-0.21	-3.011	-3.274	-4.046	-4.182	-2.749	-1.455
Environment (logit)	(1.699)	(0.500)	(0.628)	(0.740)	(0.821)	(0.909)	(0.990)
Concerns	-1.897	-3.378*	-4.395*	-3.812	-1.131	-1.478	-3.676
health (logit)	(0.380)	(1.831)	(2.315)	(2.739)	(3.111)	(3.430)	(3.777)

Note: Robust standard errors in brackets
* p<0.1, ** p<0.05, *** p<0.01

[23] Dependent variable original question: How concerned are you about the following issues? Environmental protection.
[24] Dependent variable original question: How concerned are you about the following issues? Your health.

Table A10: Different Threshold (Panel A: economic concerns, panel logit models; Panel B: social fairness, cross-sectional linear models)

	t=0	t=[-1:0]	t=[-2:0]	t=[-3:0]	t=[-4:0]	t=[-5:0]	t=[-6:0]
PANEL A							
Threshold 0.5 percent	-0.008**	0.026*	0.030**	0.036	0.041***	0.027*	0.030
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Threshold 0.75 percent	-0.005	0.014	0.039**	0.038**	0.053***	0.06***	0.047***
	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.018)
Threshold 1 percent	-0.007	0.009	0.054***	0.067***	0.051**	0.049**	0.039*
	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.020)
Threshold 1.25 percent	-0.005	0.019	0.077***	0.071**	0.052**	0.029	0.020
	(0.021)	(0.021)	(0.022)	(0.023)	(0.024)	(0.024)	(0.024)
Threshold 1.5 percent	**-0.005**	**0.029**	**0.076*** **	**0.071*** **	**0.049***	**0.036**	**0.025**
	(0.022)	(0.023)	(0.025)	(0.027)	(0.028)	(0.028)	(0.028)
Threshold 1.75 percent	0.009	0.054**	0.057**	0.063**	0.044	0.009	0.044
	(0.024)	(0.027)	(0.029)	(0.032)	(0.031)	(0.033)	(0.032)
Threshold 2 percent	-0.001	0.030	0.040	0.039	0.021	0.012	-0.004
	(0.026)	(0.029)	(0.033)	(0.034)	(0.036)	(0.038)	(0.039)
Threshold 3 percent	0.002	-0.024	-0.016	0.055	0.021	-0.014	-0.073
	(0.034)	(0.044)	(0.050)	(0.053)	(0.055)	(0.056)	(0.057)
PANEL B:							
Threshold 0.5 percent	-0.015	0.044	0.089***	0.109***	0.072**	0.095***	0.095***
	(0.032)	(0.032)	(0.031)	(0.032)	(0.032)	(0.032)	(0.033)
Threshold 0.75 percent	0.001	0.049	0.082**	0.079**	0.068**	0.093***	0.099***
	(0.033)	(0.033)	(0.033)	(0.032)	(0.032)	(0.032)	(0.032)
Threshold 1 percent	0.011	0.063*	0.059*	0.047	0.048	0.124***	0.096***
	(0.034)	(0.034)	(0.036)	(0.035)	(0.035)	(0.038)	(0.037)
Threshold 1.25 percent	-0.006	0.066	0.019	0.107**	0.076	0.071	0.094**
	(0.042)	(0.042)	(0.041)	(0.044)	(0.048)	(0.045)	(0.046)
Threshold 1.5 percent	**0.020**	**0.082***	**0.076**	**0.033**	**0.022**	**0.015**	**0.047**
	(0.043)	**(0.043)**	**(0.050)**	**(0.061)**	**(0.057)**	**(0.060)**	**(0.057)**
Threshold 1.75 percent	0.038	0.039	0.035	0.012	-0.057	-0.005	0.046
	(0.046)	(0.050)	(0.063)	(0.065)	(0.063)	(0.062)	(0.062)
Threshold 2 percent	0.041	0.027	0.017	-0.022	-0.023	-0.047	0.120
	(0.046)	(0.054)	(0.074)	(0.071)	(0.071)	(0.098)	(0.233)
Threshold 3 percent	0.031	-0.053	0.020	0.072	.	.	.
	(0.062)	(0.092)	(0.116)	(0.124)	.	.	.

Note: Standard errors in brackets (in Panel B robust standard errors)
* p<0.1, ** p<0.05, *** p<0.01

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