The interactions of social norms about climate change: science, institutions and Economics*

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March 4, 2022.

Abstract

We study the evolution of interest about climate change between different actors of the population, and how the interest of those actors affect one another. We first document the evolution individually, and then provide a model of cross influences between them, that we then estimate with a VAR. We find large swings over time of said interest for the general public (measured by news media mentions) and little interest among economists (measured by publications in top journals of the discipline). The general interest science journals and policymakers have a more steady interest, although policymakers get interested much later.

JEL Classification: Q54, Q58, D85, A13.

Keywords: Climate change, social norms, text analysis.

*We gratefully acknowledge the financial help of the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 891124.

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1 Introduction

Tackling climate change requires that regulators of different sorts take decisions that provide incentives for abatement. But they are being very slow in doing this. The science about climate change is there. So why is it not already happening?

A first answer is that this is already happening to some extent. Some regulators are aware of the problem. The European Commission has a Technical Expert Group on sustainable finance (TEG) which has produced several reports. For example, an EU taxonomy – to determine whether an economic activity is environmentally sustainable; an EU Green Bond Standard; methodologies for EU climate benchmarks and disclosures for benchmarks; and guidance to improve corporate disclosure of climate-related information. All of this suggests that perhaps in the future we will have a stronger reaction by regulators to climate change. But there is still the question why this has not happened much earlier and how long it will take until there are significant effects.

Our hypothesis is that the evolution of social norms is a slow process, and the transmission between different social groups is also complicated. We start from a situation in which, as Carney says "The horizon for monetary policy extends out to 2-3 years. For financial stability it is a bit longer, but typically only to the outer boundaries of the credit cycle – about a decade." If that is the status quo, it is difficult to expect the regulators to start taking a view that goes perhaps to half a century or more. Particularly considering the attitudes towards uncertain risks that we also study.

But even if norms are slow in changing, they do change. A recent study shows that women are now seen as equal or more competent than men, something that did not happen half a century ago. A similar thing happens with same-sex marriage. These changes in attitudes are now encoded in regulations fostering gender equality in corporate boards, or laws allowing same-gender marriage. But it gets even better. For environmental protection both farmers, and businesses in general, often go beyond legal mandates. And as Gunningham et al. (2004) say: "the increasing incidence of

"beyond compliance" corporate behavior can be better explained in terms of the interplay between social pressures and economic constraints."

Our project approach to answering the question for how norms change and diffuse between groups starts by proposing a model of norms transmission in social networks. We assume that individuals take actions that have an (idiosyncratic) benefit and a cost. In addition, there is a complementarity between the actions of the individual and those of others in her group and in other groups that are "close" to them or whose opinions are important. The model has a simple linear quadratic structure (as in Ballester et al. (2006)) and delivers a unique equilibrium where the actions of group members depend on their idiosyncratic preferences and those of others in close groups. Given its structure, the model's parameters can be easily identified through an econometric model.

We complement the analytical progress in the study of the problem with its empirical analysis. The aim of this part of the project is to ascertain the web of influences between different actors in climate change policy. We have collected information (using advanced web-scraping methods) about mentions to climate change in mainstream news media (from the US, UK, Germany, and Spain), general interest scientific journals (Nature, Science, PNAS, Physical Review Letters), top Economics journals,[1] European Parliament questions, and European Central Bank presidential speeches, since the 1980s. We then build a Vector Auto Regressive model (VAR) to estimate how the mentions in one of these actors in one period are correlated with lagged mentions by other actors.

In terms of descriptive evidence, we have found that natural scientists have been concerned with the problem since almost half a century ago, academic economists are unconcerned even now, the mainstream media started worrying seriously about the problem about the turn of the century, and the European Parliament and the ECB increased their concern after the mainstream media.

In terms of the analytical results from the VAR, we study the data at

[1]The so-called top 5: Quarterly Journal of Economics, American Economic Review, Journal of Political Economy, Econometrica and Review of Economic Studies.

quarterly frequency. Our five variables are mentions about climate change in five outlets: the news media, Euro parliament, GDP and general interest scientific journals. We find that media is affected by the scientific community and the parliament, and parliament is affected by the media. Other than that, we also find strong interactions with GDP fluctuations. This is a concern. A long term problem like climate change should not ebb and flow with relatively small (in the grand scheme of things) output fluctuations. But the finding can be a tool for concerned organizations to focus the resources at times of social inattention.

1.1 Related literature

This paper contribute to several strands of the literature. One of them is the one related to social norms. Fehr and Schurtenberger (2018) have argued that many regularities regarding cooperation can be explained if individuals hold a social norm of conditional cooperation (Kimbrough and Vostroknutov (2016) and Kölle et al. (2020), Szekely et al. (2021) provide evidence of norm-following htat leads cooperation). In fact, social norms have been proposed as a key instrument to solve social dilemmas (Ostrom (2000); Bicchieri (2005); Biel and Thøgersen (2007)) in general, and climate change in particular Riehm et al. (2020). We contribute to this literature by providing a model and evidence showing how those norms spread in the population.

We also contribute to a large literature about the media communication of climate change (Wilson (2013), Gavin (2009)). To this literature we provide a comprehensive view of the evolution of the coverage and its interaction with other domains. A similar contribution is provided to the literature on scientific journals coverage of climate change (including the pitiful coverage in top economics journals) as in Nielsen and Schmidt Kjærgaard (2011), Ladle et al. (2005), Oswald and Stern (2019), or in political circles Willis (2017), Willis (2018), and central banks Olovsson (2018), Skinner (2021).

Our method for creating indices is taken from Baker et al. (2016) and Ghirelli et al. (2021) applied to a different field. Our theoretical model is inspired by the work in social networks pioneered by Ballester et al. (2006)

2 Evolution over time of mentions to climate change in different sectors

In this section we provide a visual description of the evolution of climate change mentions in different sectors: the news media, the Euro parliament, scientific journals, and ECB speeches. This is our proxy for the preoccupation about climate change in those sectors.

2.1 Climate Change and Media

We analize the presence of Climate Change and related keywords in different countries and their evolution over time for the main European newspapers. Following Baker et al. (2016), we develop a media index for the keywords "global warming" and "climate change".

From Baker et al. (2016): We standardize each monthly newspaper-level series to unit standard deviation from XX to YY and then average across the ZZ papers by month. Finally, we normalize the ZZ-paper series to a mean of 100 from XX to YY.

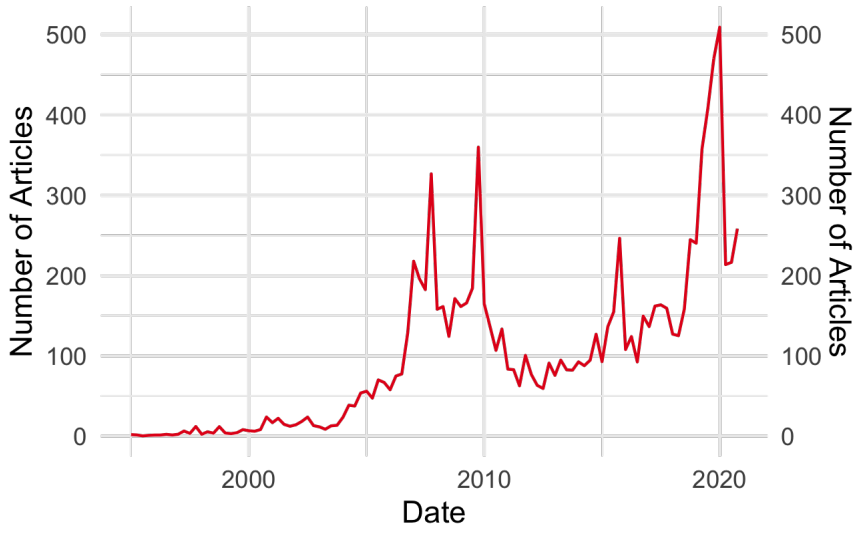

Figure 1: Media index for "Climate Change"

United Kingdom We use the keywords "Climate Change" and "Global Warming" and how much they have been used in The Guardian, The Times, The Sun, and The Independent.

Spain We use the keywords "Cambio Climático (Climate Change)" and "Calentamiento Global (Global Warming)" and how much they have been used in El Mundo, El País, and ABC.

Germany We use the keywords "Klimawandel ()", "Globale Erwärmung (Global Warming)", and "Erderwärmung ()" and how much they have been used in Bild, DIE ZEIT, and Frankfurter Allgemeine Zeitung.

France We use the keywords "Changement Climatique (Climate Change)", "Réchauffement Climatique (Global Warming)", and how much they have been used in Le Figaro.

Italy We use the keywords "Cambiamento Climatico (Climate Change)", "Riscaldamento Globale (Global Warming)", and how much they have been used in Corriere della Sera, and La Repubblica.

2.2 Climate Change and Top 5 journals in Economics

We count the number of papers published in Top 5 journals in Economics that use "Global Warming" or "Climate Change" in their abstract for the period 2002-2020. The results speak for themselves, and not particularly well, about economists' interest in the topic.

Table 1: Count of words in the Top-5 Journals in Economics

	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
climate change	0	0	0	0	0	1	0	0	0	1	2	0	1	2	2	0	0	1	0
global warming	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
systemic risk	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0
countercyclical	1	1	4	2	1	3	0	2	1	0	8	2	3	1	2	5	5	1	1
unconventional monetary policy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
risk management	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
risk governance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
risk culture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
remuneration	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
shadow banking	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
parallel banking	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
fit-and-proper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
fintech	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
techfin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
regtech	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
disintermediation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
monetary policy	5	10	4	10	4	3	4	4	5	6	7	4	3	3	10	7	8	8	12
optimal taxation	0	0	0	0	1	2	1	1	2	0	0	0	0	0	3	0	0	2	2
game theory	3	2	1	1	1	3	0	0	1	2	1	1	0	1	2	0	0	0	0
optimal policy	1	1	0	1	1	1	4	2	4	2	5	2	1	1	4	0	2	3	2
tax	9	10	4	13	10	5	11	13	8	9	11	21	11	16	20	19	14	28	12
n	234	242	264	250	261	261	258	281	291	336	337	296	321	310	322	351	346	350	293

2.3 Climate Change and general inteerest scientific journals

Science We count the number of articles (total) published in Science that use "Global Warming" or "Climate Change" in their abstract for the period 1995Q1-2021Q3.

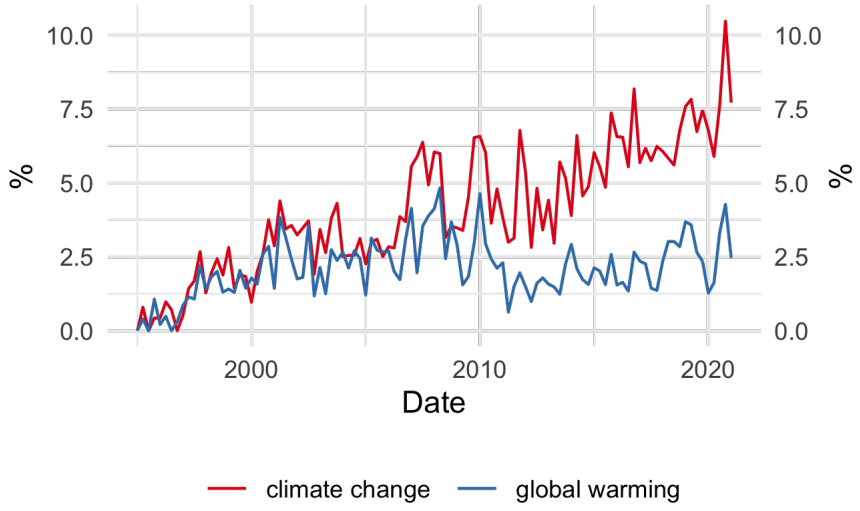

Figure 2: Share of Articles in Nature containing the words "Climate Change" and "Global Warming"

We count the number of Research Articles published in Science that use "Global Warming" or "Climate Change" in their abstract for the period 1995Q1-2021Q3.

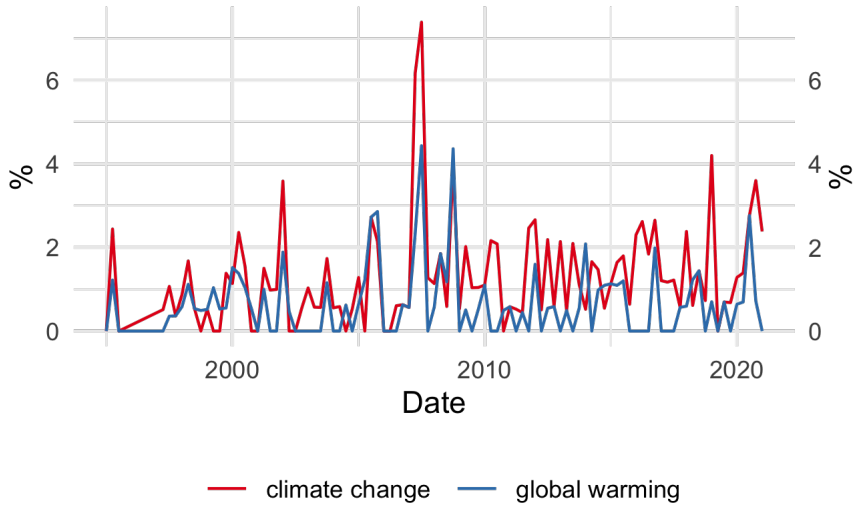

Figure 3: Share of Articles in Nature containing the words "Climate Change" and "Global Warming"

Nature We count the number of articles (total) published in Nature that use "Global Warming" or "Climate Change" in their abstract for the period 1995Q1-2021Q3.

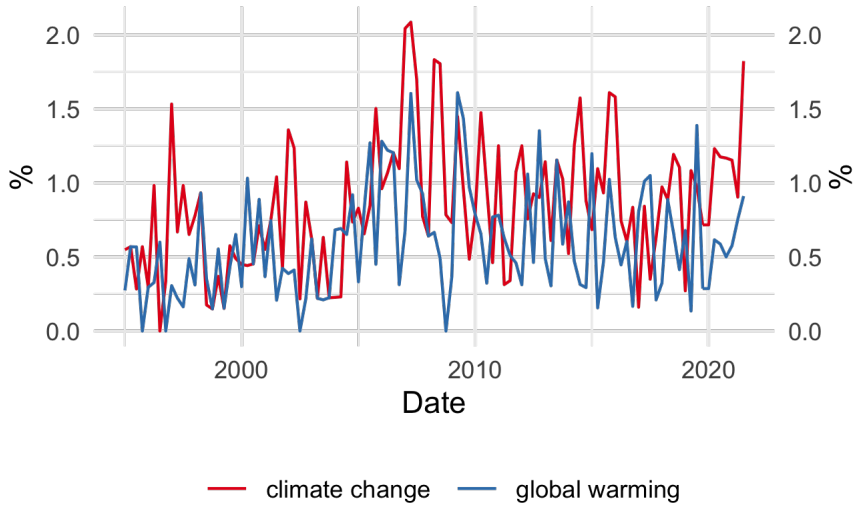

Figure 4: Share of Articles in Nature containing the words "Climate Change" and "Global Warming"

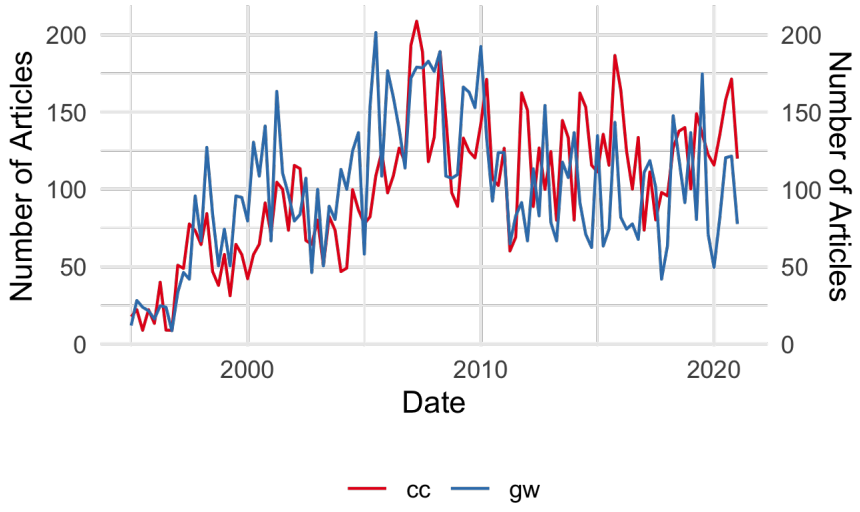

Figure 5: Index of the Number of articles in Science Journals containing the words "Climate Change" and "Global Warming"

2.4 European Parliament

We count the number of questions made in the European Parliament that use "Global Warming" or "Climate Change" for the period 1995Q1-2021Q3.

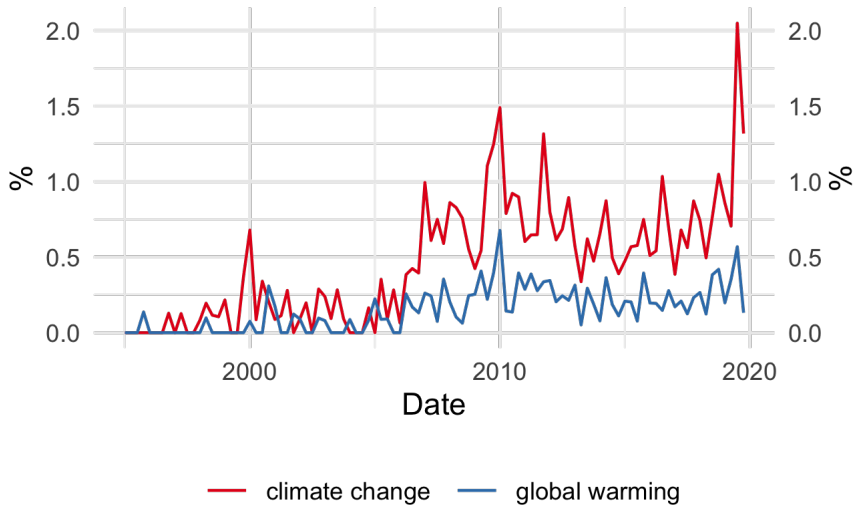

Figure 6: Share of Question in the European Parliament containing the words "Climate Change" and "Global Warming"

2.5 FOMC

We count the number of questions made in the transcripts from the FOMC for the words "Global Warming" or "Climate Change" for the period 1975-2015 (the transcripts are available only 5 years after). The words climate change appear only once (related to climate) here.

Global warming appears 4 times: in 1991, 1996, 1997, 2000, 2011.

Also, in the minutes published by the Federal Reserve Board from 1993 to 2015, none of those terms appear.

2.6 ECB speeches

We count the share of ECB presidential speeches mentioning the words "Global Warming" or "Climate Change" for the period since its creation.

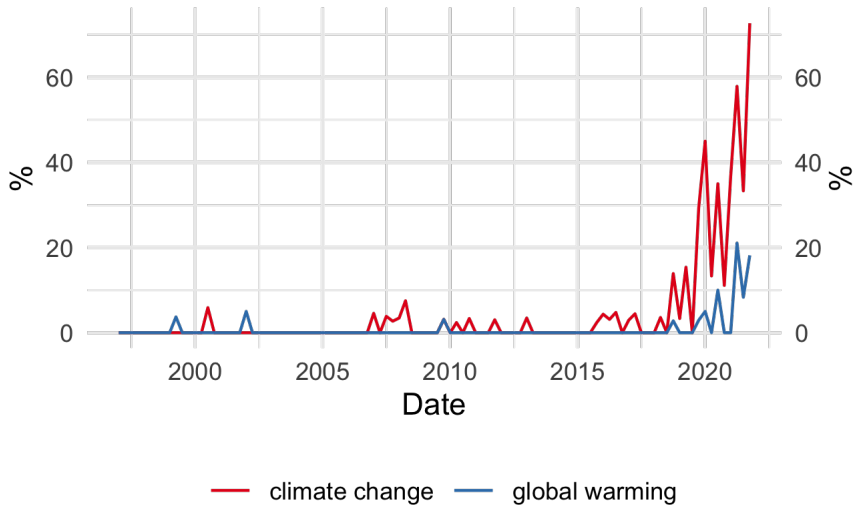

Figure 7: Share of Speeches from the ECB containing the words "Climate Change" and "Global Warming"

In the Appendix, we compare mentions of climate change in ECB speeches with mentions of other relevant terms, like "taxes" or "inequality". Taxation is mentioned very frequently from the beginning, inequality is less frequent, but it starts earlier than climage change. Strikingly, climate change is now more frequently mentioned than either taxes or inequality.

3 A simple theoretical framework

In order to understand the relationship between the different institutions and social group whose preoccupation with climate we characterize with their public utterances, we first describe a tractable model, which we later estimate using a vector auto-regression (VAR).

Every individual j belongs to some group G_j where $|G_j| \in R$. A parameter $\lambda_{G_iG_j}$ measures how a group i person cares about a group j person Every individual experiences an idiosyncratic amount of intrinsic interest in the policy b_i. There is a costly action a_{i_t} that each individual takes in every period t. This action has a cost per unit c_i. With these elements in place, we can write the utility function as:

$$U_i\left(a_{i_t}, \mathbf{a}_{t-1}\right) = a_{i_t}\left(b_i + \sum_{j \in R} \lambda_{G_iG_j} a_{j_{t-1}}\right) - \frac{c_i}{2} a_{i_t}^2$$

Then, the optimal action for each individual can be written as:

$$a_{it} = \frac{1}{c_i}\left(b_i + \sum_{j \in R} \lambda_{G_iG_j} a_{j_{t-1}}\right)$$

And since the individual actions are linear in others' previous actions, we can aggregate to an institutional level (a key assumption in this case is that the interaction parameters $\lambda_{G_iG_j}$ are common within groups). Given this, in the VAR the constant in the equation for each group's "action" (the number of messages) is b_i/c_i, i.e. the intrinsic interest in the policy (relative to the cost of messaging) and the coefficient of the action of other groups is $\lambda_{G_iG_j}/c_i$ i.e. the impact on the marginal benefit of group G_i of an increase in G_j action (relative to the cost). We have introduced just one lag in this descripton, but of course we can write as many as we want. Also, we have written lagged actions in the utility function, but we can also write expectations and say that the expectations are formed naively so that

$$E\left(\mathbf{a}_t\right) = \mathbf{a}_{t-1}.$$

4 VAR model estimation

To understand the interconnection between the different actors, we estimate a VAR, micro-founded from the model in section 3. It can be written as $X_t = \Pi(L)X_t + \epsilon_t$, where X_t is a set of endogenous variables, Π is a matrix of VAR coefficients capturing the dynamics of the system, and $\epsilon_t : N(0, \Sigma)$ is a vector of shocks having zero mean and variance–covariance matrix Σ. The variables in X_t are the following: x_1 is the mentions of climate change in the media (bloom index), x_2 mentions in the Europarliament questions (normalized), x_3 is GDP (normalized), x_4 mentions in science journals (bloom index).

Table 1 displays the results. To read the table, note that the notation ARx(y,z) means that "x" is the lag, "y" the index of the variable whose effect we measure, and z is the index of the variable affected by it.

The data is quarterly, and at one quarter all variables are affected by their own lags except the Euro Parliament. The Euro Parliament affects positively the media. There is also a negative effect of GDP on media mentions. In a boom, they forget about climate change, and they mention it more in a recession. Mentions in the media also affect positively the GDP, which can be interpreted as some sort of leading indicator. When journalist anticipate good times, they talk more about climate change.

At two quarters, only media mentions affect themselves. There is now an effect of GDP on media mentions, in this case pro-cyclical, and also of scientific journals on media. We also find an effect of Euro Parliament on GDP, which we again interpret as a leading indicator.

At three quarters, the only own effect is given by scientific journals. There is a negative effect of media en Euro parliament. Media and GDP affect negatively the Euro parliament mentions. And media and Euro parliament affect negatively GDP.

At four quarters, the only own effect comes from the Euro parliament. There is also a positive effect of GDP on Euro parliament, positive effects of media and Euro parliament on GDP and negative of GDP on scientific journals.

Generally speaking, we find that media is affected by the scientific com-

munity and the parliament, and parliament is affected by the media. Other than that, we also find very strong interactions with GDP fluctuations. This is worrying, since attention in a long term issue like climate change, should not be driven by short time fluctuations. But it is an important finding, as it suggests a time when activists should concentrate their efforts.

Table 2: VAR: ARx(y,z) "x" is the lag, "y" is affecting variable affecting, and "z" is affected variable

	Value	Standard Error	TStatistic	PValue
Constant(1)	34.518	23.836	1.4482	0.14757
Constant(2)	-0.19721	0.29362	-0.67164	0.50181
Constant(3)	0.056244	0.066837	0.84151	0.40006
Constant(4)	39.22**	13.862	2.8293	0.0046657
AR1(1,1)	0.48177***	0.10658	4.5203	0.0000061762
AR1(2,1)	0.0030542*	0.0013129	2.3263	0.020001
AR1(3,1)	-0.0011756***	0.00029885	-3.9336	0.0000837
AR1(4,1)	-0.010652	0.061985	-0.17186	0.86355
AR1(1,2)	-0.4019	9.7053	-0.04141	0.96697
AR1(2,2)	0.093003	0.11955	0.77792	0.43662
AR1(3,2)	-0.02281	0.027214	-0.83815	0.40195
AR1(4,2)	2.8511	5.6445	0.50512	0.61348
AR1(1,3)	89.114*	36.565	2.4371	0.014805
AR1(2,3)	0.46006	0.45043	1.0214	0.30708
AR1(3,3)	0.83368***	0.10253	8.1309	4.2598E-16
AR1(4,3)	4.3279	21.266	0.20351	0.83873
AR1(1,4)	-0.010698	0.18058	-0.059242	0.95276
AR1(2,4)	-0.0002058	0.0022245	-0.092515	0.92629
AR1(3,4)	0.00069416	0.00050636	1.3709	0.17042
AR1(4,4)	0.41463***	0.10502	3.948	0.000078819
AR2(1,1)	0.37849**	0.13021	2.9068	0.0036517
AR2(2,1)	-0.00071258	0.001604	-0.44426	0.65686
AR2(3,1)	0.00083101*	0.00036511	2.2761	0.022843
AR2(4,1)	0.15985*	0.075727	2.1109	0.03478
AR2(1,2)	-8.1993	9.0837	-0.90264	0.36672
AR2(2,2)	0.13142	0.1119	1.1745	0.2402
AR2(3,2)	-0.013042	0.025471	-0.51204	0.60863
AR2(4,2)	-5.1543	5.2829	-0.97565	0.32924

Table 3: VAR: ARx(y,z) "x" is the lag, "y" is affecting variable affecting, and "z" is affected variable

	Value	StandardError	TStatistic	PValue
AR2(1,3)	32.373	63.685	0.50833	0.61123
AR2(2,3)	1.6678*	0.7845	2.126	0.033506
AR2(3,3)	-0.076774	0.17858	-0.42992	0.66725
AR2(4,3)	-53.032	37.038	-1.4318	0.15219
AR2(1,4)	0.22552	0.18872	1.195	0.23208
AR2(2,4)	-0.00142	0.0023247	-0.61083	0.54131
AR2(3,4)	0.00049429	0.00052918	0.93406	0.35027
AR2(4,4)	-0.072384	0.10976	-0.65949	0.50958
AR3(1,1)	-0.031266	0.13731	-0.2277	0.81988
AR3(2,1)	0.0015029	0.0016914	0.88857	0.37423
AR3(3,1)	0.00010669	0.00038502	0.27711	0.7817
AR3(4,1)	-0.13898	0.079856	-1.7404	0.081793
AR3(1,2)	-24.082**	9.1335	-2.6367	0.0083716
AR3(2,2)	-0.11262	0.11251	-1.001	0.31685
AR3(3,2)	-0.11191***	0.025611	-4.3695	0.000012456
AR3(4,2)	3.3517	5.3119	0.63098	0.52805
AR3(1,3)	-380.57*	160.02	-2.3783	0.017395
AR3(2,3)	-4.9367*	1.9712	-2.5045	0.012264
AR3(3,3)	0.52948	0.4487	1.18	0.23799
AR3(4,3)	66.063	93.065	0.70987	0.47779
AR3(1,4)	-0.10768	0.18143	-0.59351	0.55284
AR3(2,4)	0.0018093	0.002235	0.80952	0.41822
AR3(3,4)	0.000096147	0.00050875	0.18899	0.8501
AR3(4,4)	0.25447*	0.10552	2.4116	0.015883
AR4(1,1)	0.060462	0.13772	0.43902	0.66065
AR4(2,1)	0.00063214	0.0016965	0.37261	0.70944
AR4(3,1)	-0.00018332	0.00038618	-0.4747	0.635
AR4(4,1)	-0.00053671	0.080096	-0.0067008	0.99465

Table 4: VAR: ARx(y,z) "x" is the lag, "y" is affecting variable affecting, and "z" is affected variable

	Value	StandardError	TStatistic	PValue
AR4(1,2)	9.8359	9.5203	1.0331	0.30154
AR4(2,2)	0.25046*	0.11728	2.1357	0.032705
AR4(3,2)	0.11313***	0.026696	4.2378	0.000022571
AR4(4,2)	-5.9178	5.5369	-1.0688	0.28516
AR4(1,3)	295**	108.69	2.7141	0.0066458
AR4(2,3)	3.0249*	1.3389	2.2592	0.023872
AR4(3,3)	-0.25382	0.30478	-0.83279	0.40496
AR4(4,3)	-5.9318	63.214	-0.093836	0.92524
AR4(1,4)	-0.25746	0.17248	-1.4927	0.13551
AR4(2,4)	-0.0016613	0.0021247	-0.7819	0.43427
AR4(3,4)	-0.0010621*	0.00048364	-2.196	0.028095
AR4(4,4)	0.030849	0.10031	0.30753	0.75844

5 Conclusion

We have documented the evolution of mentions to climate change in different environments: policy, sciences, and the general public (proxied by news media). We have also postulated a model about how those different environments influence one another and then estimated the model's parameters. we find large fluctuations of interest and interesting cross influences. A particularly salient one relates to how GDP evolution affects the interest of climate change. These observations could be a useful tool for timing activists and other groups interested in influencing social debate.

Future research could expand our results by doing a more fine grained analysis of the connections inside the different groups, potentially using tools from social complex network analysis.

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Appendix

In the following table we show a comparison of mentions over time in ECB presidential speeches of climate change with taxex and inequality.

	date	n	climate change	global warming	tax	taxes	inequality
1	1997 Q1	2	0	0	2	0	0
2	1997 Q2	6	0	0	1	1	0
3	1997 Q3	2	0	0	0	0	0
4	1997 Q4	9	0	0	4	1	0
5	1998 Q1	7	0	0	2	1	0
6	1998 Q2	1	0	0	0	0	0
7	1998 Q3	8	0	0	1	1	0
8	1998 Q4	22	0	0	9	6	0
9	1999 Q1	20	0	0	8	4	0
10	1999 Q2	27	0	1	14	3	0
11	1999 Q3	18	0	0	7	3	0
12	1999 Q4	27	0	0	11	3	0
13	2000 Q1	14	0	0	7	2	0
14	2000 Q2	18	0	0	8	3	0
15	2000 Q3	17	1	0	8	2	0
16	2000 Q4	21	0	0	8	2	0
17	2001 Q1	14	0	0	9	2	1
18	2001 Q2	16	0	0	8	3	0
19	2001 Q3	13	0	0	3	0	0
20	2001 Q4	22	0	0	4	1	0
21	2002 Q1	20	0	1	9	4	0
22	2002 Q2	18	0	0	6	1	0
23	2002 Q3	8	0	0	3	2	0
24	2002 Q4	19	0	0	5	1	0
25	2003 Q1	12	0	0	5	3	0
26	2003 Q2	18	0	0	5	3	0
27	2003 Q3	10	0	0	2	0	0
28	2003 Q4	24	0	0	7	3	0
29	2004 Q1	16	0	0	9	6	0
30	2004 Q2	31	0	0	18	9	0

	date	n	climate change	global warming	tax	taxes	inequality
31	2004 Q3	14	0	0	6	6	0
32	2004 Q4	30	0	0	12	7	0
33	2005 Q1	13	0	0	7	2	0
34	2005 Q2	29	0	0	13	9	1
35	2005 Q3	13	0	0	5	4	0
36	2005 Q4	26	0	0	8	5	0
37	2006 Q1	20	0	0	12	5	0
38	2006 Q2	31	0	0	16	7	0
39	2006 Q3	16	0	0	9	5	0
40	2006 Q4	29	0	0	14	7	0
41	2007 Q1	22	1	0	7	3	1
42	2007 Q2	33	0	0	8	4	2
43	2007 Q3	26	1	0	6	3	0
44	2007 Q4	37	1	0	14	4	1
45	2008 Q1	29	1	0	7	6	0
46	2008 Q2	40	3	0	10	6	0
47	2008 Q3	29	0	0	11	4	1
48	2008 Q4	34	0	0	13	3	2
49	2009 Q1	26	0	0	7	1	0
50	2009 Q2	34	0	0	5	2	0
51	2009 Q3	20	0	0	6	1	0
52	2009 Q4	32	1	1	7	0	0
53	2010 Q1	22	0	0	7	2	0
54	2010 Q2	42	1	0	14	2	0
55	2010 Q3	24	0	0	10	4	1
56	2010 Q4	30	1	0	6	1	4
57	2011 Q1	28	0	0	11	3	1
58	2011 Q2	45	0	0	11	2	1
59	2011 Q3	13	0	0	5	0	1
60	2011 Q4	33	1	0	13	3	0

	date	n	climate change	global warming	tax	taxes	inequality
61	2012 Q1	11	0	0	5	0	0
62	2012 Q2	33	0	0	13	5	0
63	2012 Q3	17	0	0	6	1	0
64	2012 Q4	30	0	0	17	4	1
65	2013 Q1	29	1	0	12	5	0
66	2013 Q2	42	0	0	22	3	3
67	2013 Q3	25	0	0	10	1	1
68	2013 Q4	37	0	0	20	4	3
69	2014 Q1	20	0	0	6	3	1
70	2014 Q2	31	0	0	14	3	1
71	2014 Q3	23	0	0	10	3	0
72	2014 Q4	30	0	0	9	4	1
73	2015 Q1	20	0	0	6	1	1
74	2015 Q2	25	0	0	12	3	3
75	2015 Q3	17	0	0	5	0	1
76	2015 Q4	42	1	0	12	3	1
77	2016 Q1	23	1	0	9	5	0
78	2016 Q2	32	1	0	12	1	3
79	2016 Q3	21	1	0	10	1	1
80	2016 Q4	34	0	0	19	2	4
81	2017 Q1	34	1	0	9	1	2
82	2017 Q2	45	2	0	10	3	1
83	2017 Q3	30	0	0	6	1	4
84	2017 Q4	39	0	0	10	2	4
85	2018 Q1	29	0	0	8	1	2
86	2018 Q2	28	1	0	13	8	4
87	2018 Q3	20	0	0	5	0	1
88	2018 Q4	36	5	1	11	1	2
89	2019 Q1	30	1	0	9	1	3
90	2019 Q2	26	4	0	8	1	2

	date	n	climate change	global warming	tax	taxes	inequality
91	2019 Q3	17	0	0	4	0	1
92	2019 Q4	34	10	1	13	6	6
93	2020 Q1	20	9	1	8	2	3
94	2020 Q2	15	2	0	1	0	0
95	2020 Q3	20	7	2	6	0	3
96	2020 Q4	27	3	0	6	0	3
97	2021 Q1	19	7	0	4	2	1
98	2021 Q2	19	11	4	5	0	2
99	2021 Q3	12	4	1	4	1	3
100	2021 Q4	11	8	2	3	0	1