Appendix A: Newspaper Corpus

Factor Analysis Results

Table 1: Factor Loadings Results of *New York Times*

	Factor 1	Factor 2	Factor 3
Fall	0.554	0.440	
Recess	-0.475	0.654	
Problem			0.267
Unemploy	-0.593		
Slump	0.172	0.535	0.126
Slow	0.511		
Drop	0.200	0.293	0.693
Fear	0.262	0.117	0.288
Debt			-0.391
Bad	0.293	0.532	-0.538
Plung	0.441	0.423	0.269
Jobless	-0.374	0.188	-0.365
Loss	0.178	0.618	
Bear	0.406	0.236	
Layoff		0.653	
Profit	0.568		0.132
Bull	0.428		0.123
Growth	0.411	- 0.599	
Grow	0.551	-0.381	-0.300
Inflat		-0.380	0.713
Invest	0.675		-0.226
Cumulative var	0.162	0.304	0.399

Note: This table displays the results of a factor analysis of the *New York Times* articles.

Media Source Description

Table 2: Media Sources and Data Missingness

	Media Source	# of Index	Start	End	Missing Periods
1	ABC News	248	1985/01	2008/12	1987/07,1987/09, 1988/01-1989/08, 1989/10-1989/11, 2001/07-2002/07, 2007/02-2007/04
2	Arkansas Democrat-Gazette	242	1985/01	2008/12	1987/10-1987/11, 1988/08-1989/01, 1989/10-1989/12, 1990/10-1990/12, 1991/10-1993/11, 2004/03-2004/08
3	Atlanta Journal-Constitution	208	1991/01	2008/12	1997/01-1997/08
4	Boston Globe	173	1989/01	2003/12	1989/11-1989/12, 1995/06-1995/08, 2002/11-2002/12
5	CBS News	227	1990/02	2008/12	NA
6	Chattanooga Times Free Press	162	1995/01	2008/12	1999/08-1999/11, 2001/02-2001/03
7	Chicago Sun-Times	202	1992/01	2008/12	1992/11, 2005/11
8	Cleveland Plain Dealer	135	1992/02	2003/12	1992/03-1992/10
9	Columbus Dispatch	195	1992/01	2008/12	2005/11-2006/07
10	Herald Sun	168	1995/01	2008/12	NA
11	Houston Chronicle	144	1992/01	2003/12	NA
12	Minnesota Star Tribune	156	1996/01	2008/12	NA
13	New York Daily News	166	1995/03	2008/12	NA
14	New York Times	427	1980/06	2015/12	NA
15	Omaha World-Herald	161	1994/01	2008/12	1994/03, 1994/05-1994/06, 2004/09-2005/12
16	Oregonian	247	1987/08	2008/12	1999/01-1999/02,2003/10-2003/11, 2004/02, 2004/05-2004/06, 2004/09-2004/11
17	Pittsburgh Post-Gazette	190	1993/03	2008/12	NA
18	San Diego Union Tribune	288	1985/01	2008/12	NA
19	San Francisco Chronicle	163	1990/01	2003/12	1992/02-1992/06
20	Seattle Post-Intelligencer	219	1986/12	2008/12	1987/01-1989/12, 2001/05,2001/08-2001/09, 2001/11-2001/12, 2003/07-2003/11
21	St. Petersburg Times	204	1987/01	2003/12	NA
22	Virginia Pilot	107	1994/01	2003/12	1994/09-1995/05, 1995/07-1996/04, 1999/04-2000/02, 2000/04-2000/12, 2002/03-2004/06, 2005/04-2005/09
23	Washington Post	456	1978/01	2015/12	NA
24	USA Today	336	1989/01	2016/12	NA

This table describes the media sources we used to construct the *media economic concern* indices. For specific outlets and time periods, we were unable to retrieve coverage via Lexis Nexis.

Media Economic Concern (Additive Index)

We constructed a monthly newspaper sentiment index calculated as

= sum of the frequency of negative words – sum of the frequency of positive words.

Descriptive Statistics

Table 3: Chosen Words/Word Stems

Negative Words/Word Stems (15)	Positive Words/Word Stems (6)
fall, recess, problem, unemploy, slump, slow, drop, fear, debt, bad, plung, jobless, loss, bear, layoff	profit, bull, growth, grow, inflat, invest

Table 4: Media Economic Concern Index

	Source	Min	Median	Mean	Max
1	ABC News	-0.67	1.64	1.79	10.00
2	Arkansas Democrat-Gazette	-0.27	0.89	0.93	2.51
3	Atlanta Journal-Constitution	-0.19	0.75	0.82	2.12
4	Boston Globe	0.01	0.84	0.86	2.75
5	CBS News	-1.00	1.00	1.02	2.95
6	Chattanooga Times Free Press	0.03	1.01	1.13	9.00
7	Chicago Sun-Times	-0.29	0.76	0.81	2.32
8	Cleveland Plain Dealer	-2.00	0.72	0.77	2.08
9	Columbus Dispatch	-0.13	0.86	0.86	2.00
10	Herald Sun	-1.50	0.73	0.72	2.20
11	Houston Chronicle	-0.06	0.99	0.99	2.14
12	Minnesota Star Tribune	-0.38	0.79	0.84	2.10
13	New York Daily News	-0.73	0.69	0.76	2.20
14	New York Times	0.11	1.09	1.13	2.33
15	Omaha World-Herald	-1.00	0.53	0.58	1.82
16	Oregonian	-1.00	1.02	1.25	10.00
17	Pittsburgh Post-Gazette	-0.31	0.82	0.89	2.21
18	San Diego Union Tribune	0.09	1.03	1.04	2.28
19	San Francisco Chronicle	-0.10	1.12	1.11	2.39
20	Seattle Post-Intelligencer	-0.38	0.87	1.12	10.00
21	St. Petersburg Times	-0.14	1.00	1.05	2.04
22	Virginia Pilot	-0.25	0.86	1.05	9.00
23	Washington Post	0.31	1.17	1.26	3.28
24	USA Today	-0.45	1.07	1.06	2.37

This table summarizes the *media economic concern* index for 24 national and local newspapers. The index can range from -6 (with no negative words) to 15 (with no positive words).

Appendix B: Public Opinion Data

Public Economic Concern Index

The Surveys of Consumer Attitudes and Behavior interviews a nationally representative sample of about 500 households each month. We use four survey questions (two about egotropic economic assessments and two about sociotropic economic assessments—coded so that higher values means negative evaluations) to construct an additive *public economic concern* index that ranges from 4 to 20. (January 1978-Dec 2013)

Questionnaire
[PEXP] Now looking ahead–do you think that a year form now you (and your family living there) will be better off financially, or worse off, or just about the same as now?
1. Will be better off
3. Same
5. Will be worse off
8. Don't Know
9. NA

[PAGO] We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?
1. Better now
3. Same
5. Worse now
8. Don't Know
9. NA

[BAGO] Would you say that at the present time business conditions are better or worse than they were a year ago?
1. Better now
3. About the same
5. Worse now
8. Don't Know
9. NA

[BEXP] And how about a year from now, do you expect that in the country as a whole business conditions will be better, or worse than they are at present, or just about the same?
1. Better a year from now
3. About the same
5. Worse a year from now
8. Don't Know
9. NA

Descriptive Statistics

Table 5: Summary, Public Economic Concern Index

Sample Group	Min	Median	Mean	Max	N
All Sample	8.70	11.12	11.29	14.99	432
Above median income	8.34	10.88	11.05	15.02	432
Below median income	8.81	11.11	11.31	15.01	432
Less than high school	9.61	12.24	12.35	16.34	432
High school/some college	8.70	11.31	11.41	15.06	432
College and above	7.82	10.65	10.78	14.78	432

Figure 1: Trends in Public Economic Concern

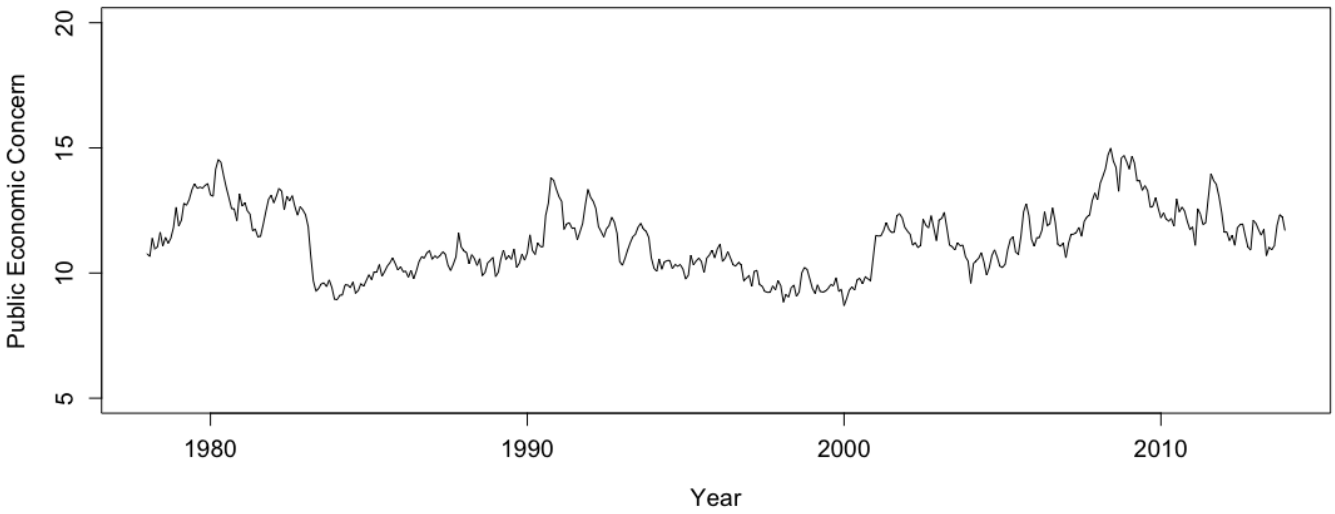


Figure 1 plots the *public economic concern* index from January 1978 to Dec 2013. The index is reverse coded such that higher values indicate more negative economic assessments.

Figure 2: Monthly Public Economic Concern Index By Income Level

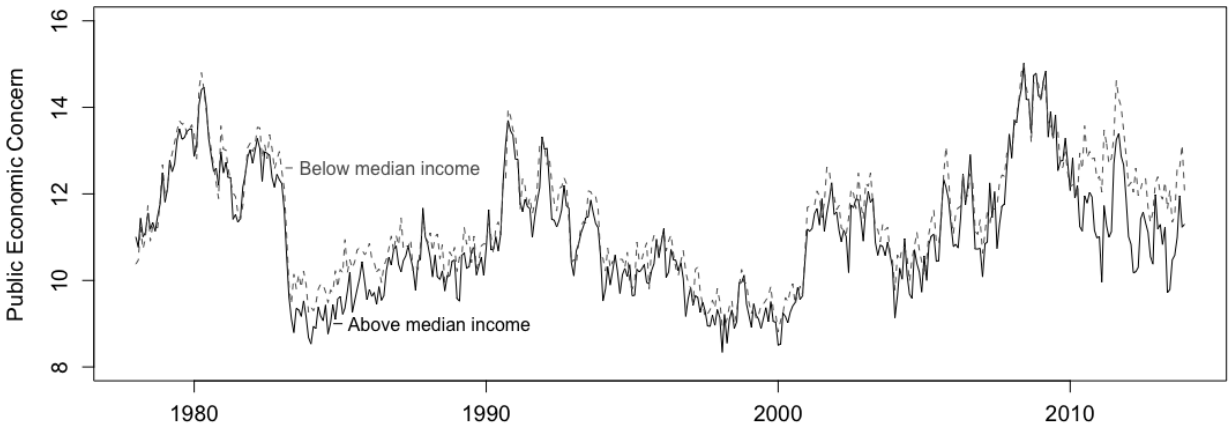


Figure 2 plots the monthly *public economic concern* index, this time broken into two groups based on median family income. The overall trends are similar, but survey respondents whose annual family income is below the median have more negative economic assessments on average.

Figure 3: Monthly Public Economic Concern Index By Education Level

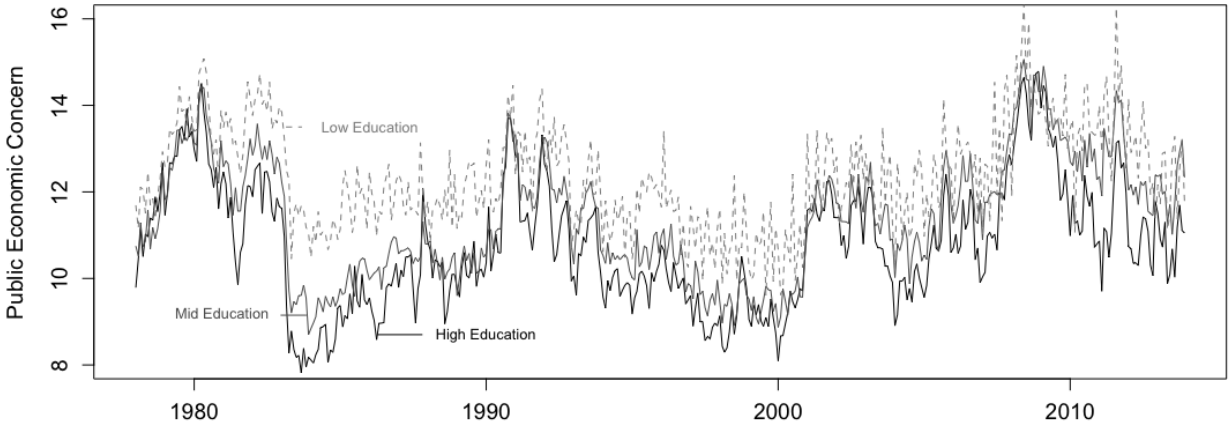


Figure 3 plots the monthly *public economic concern* index, here broken into three groups based on education levels (less than high school, high school/some college, college and above). The low-education group displays the most negative economic assessments.

Appendix C: Additional Statistical Analyses

Granger Test Results (New York Times)

Table 6: Granger Test Results (Using First Factor Score of *Times*)

Media Economic Concern → Public Economic Concern		
Subgroup	Model	F-Statistic
All	Lag 1	3.527
	Lag 2	2.391
	Lag 3	1.803
Low Education	Lag 1	2.963
	Lag 2	0.902
	Lag 3	0.188
Mid Education	Lag 1	2.572
	Lag 2	2.836
	Lag 3	1.935
High Education	Lag 1	3.441
	Lag 2	2.705
	Lag 3	2.262
Low Income	Lag 1	1.942
	Lag 2	1.840
	Lag 3	1.177
High Income	Lag 1	1.941
	Lag 2	2.790
	Lag 3	1.963

Public Economic Concern → Media Economic Concern		
Subgroup	Model	F-Statistic
All	Lag 1	10.232**
	Lag 2	5.306**
	Lag 3	4.623**
Low Education	Lag 1	16.186**
	Lag 2	7.538**
	Lag 3	5.316**
Mid Education	Lag 1	8.862**
	Lag 2	4.572*
	Lag 3	3.978**
High Education	Lag 1	6.743**
	Lag 2	4.145*
	Lag 3	4.059**
Low Income	Lag 1	9.420**
	Lag 2	4.803**
	Lag 3	4.127**
High Income	Lag 1	9.191**
	Lag 2	4.820**
	Lag 3	4.543**

Note: For lags of one, two, and three months, this table shows the results of Granger tests considering the possibility that public assessments of the economy move prior to the tone of newspaper coverage, here measuring newspaper coverage via a factor analysis of *New York Times* articles. The table presents the F-statistic and the p-value corresponding to the hypothesis that there is no directional relationship.

Granger Test Results (New York Times/Washington Post)

Table 7: Granger Test Results (Using Additive *Media Economic Concern Index*)

Media Economic Concern → Public Economic Concern

Subgroup	Model	*New York Times* F-Statistic	*Washington Post* F-Statistic
All	Lag 1	0.978	0.000
	Lag 2	3.570*	2.090
	Lag 3	3.223*	2.308
Low Education	Lag 1	13.953***	17.034***
	Lag 2	2.916	3.287*
	Lag 3	1.900	4.071**
Mid Education	Lag 1	1.620	0.486
	Lag 2	4.032*	1.895
	Lag 3	3.218*	1.900
High Education	Lag 1	2.529	0.000
	Lag 2	3.329*	1.372
	Lag 3	4.370*	1.755
Low Income	Lag 1	1.372	8.534**
	Lag 2	3.112*	2.772
	Lag 3	2.665*	1.930
High Income	Lag 1	4.286*	0.173
	Lag 2	6.555**	1.131
	Lag 3	5.254**	1.997

Public Economic Concern → Media Economic Concern

Subgroup	Model	*New York Times* F-Statistic	*Washington Post* F-Statistic
All	Lag 1	9.365**	17.771***
	Lag 2	3.321**	6.754**
	Lag 3	2.394*	4.864**
Low Education	Lag 1	11.102***	23.584***
	Lag 2	4.489**	9.743***
	Lag 3	3.160**	8.323**
Mid Education	Lag 1	8.694**	22.102***
	Lag 2	2.606	7.967***
	Lag 3	1.852	5.183**
High Education	Lag 1	8.597**	9.921**
	Lag 2	2.576	3.433*
	Lag 3	1.806	2.189
Low Income	Lag 1	4.285*	9.849**
	Lag 2	6.555**	3.123*
	Lag 3	5.254**	2.290
High Income	Lag 1	9.849**	15.281***
	Lag 2	3.123*	5.676**
	Lag 3	2.290	3.738*

Note: For lags of one, two, and three months, this table shows the results of Granger tests considering the possibility that public assessments of the economy move prior to the tone of newspaper coverage. The table presents the F-statistic and the p-value corresponding to the hypothesis that there is no directional relationship.

OLS Results

Table 8: OLS Results (Public Economic Concern)

DV=Media Economic Concern	*New York Times*		*Washington Post*	
	Estimate	Std. Error	Estimate	Std. Error
Intercept	-0.090	0.097	-0.201	0.118
Public Economic Concern, 1 month lagged	0.030	0.010	0.050	0.012
Media Economic Concern, 1 month lagged	0.778	0.032	0.707	0.034

Table 9: OLS Results (Unemployment)

DV=Media Economic Concern	*New York Times*		*Washington Post*	
	Estimate	Std. Error	Estimate	Std. Error
Intercept	0.142	0.045	0.142	0.06
Unemployment Rate, 1 month lagged	0.012	0.007	0.033	0.010
Media Economic Concern, 1 month lagged	0.805	0.030	0.719	0.034

Granger Test Results (Economic Performance, Media Economic Concern, and Public Economic Concern)

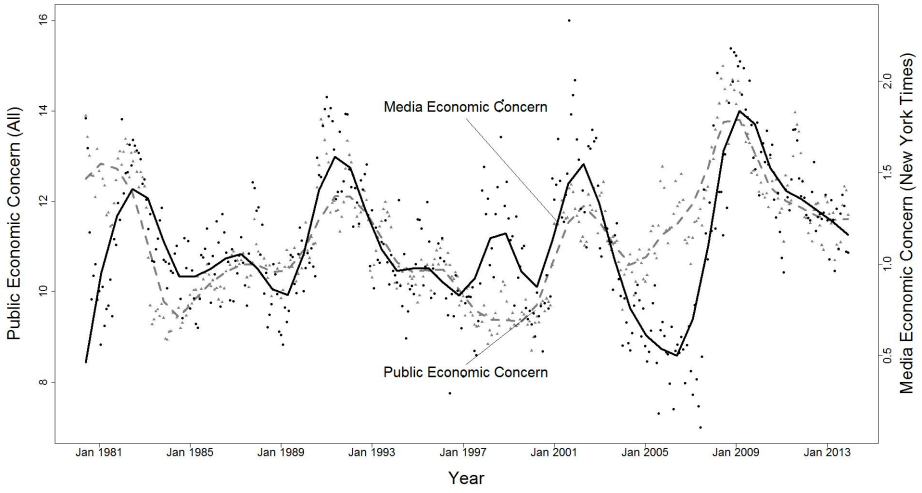
Table 10: Granger Test Results (Economic Performance, Media Economic Concern, and Public Economic Concern)

Model	Granger Test	F-Statistic	p-value
Lag 1	Unemployment Rate → Public Economic Concern	2.462	0.117
	Public Economic Concern → Unemployment Rate	91.724	0.000
Lag 2	Unemployment Rate → Public Economic Concern	2.153	0.117
	Public Economic Concern → Unemployment Rate	40.111	0.000
Lag 3	Unemployment Rate → Public Economic Concern	2.574	0.054
	Public Economic Concern → Unemployment Rate	20.057	0.000
Lag 1	Unemployment Rate → Media Economic Concern (*Times*)	2.719	0.100
	Media Economic Concern (*Times*) → Unemployment Rate	51.013	0.000
Lag 2	Unemployment Rate → Media Economic Concern (*Times*)	2.311	0.100
	Media Economic Concern (*Times*) → Unemployment Rate	21.082	0.000
Lag 3	Unemployment Rate → Media Economic Concern (*Times*)	3.916	0.009
	Media Economic Concern (*Times*) → Unemployment Rate	9.791	0.000
Lag 1	Unemployment Rate → Media Economic Concern (*Post*)	10.450	0.001
	Media Economic Concern (*Post*) → Unemployment Rate	27.197	0.000
Lag 2	Unemployment Rate → Media Economic Concern (*Post*)	2.993	0.051
	Media Economic Concern (*Post*) → Unemployment Rate	12.397	0.000
Lag 3	Unemployment Rate → Media Economic Concern (*Post*)	2.451	0.063
	Media Economic Concern (*Post*) → Unemployment Rate	7.014	0.000

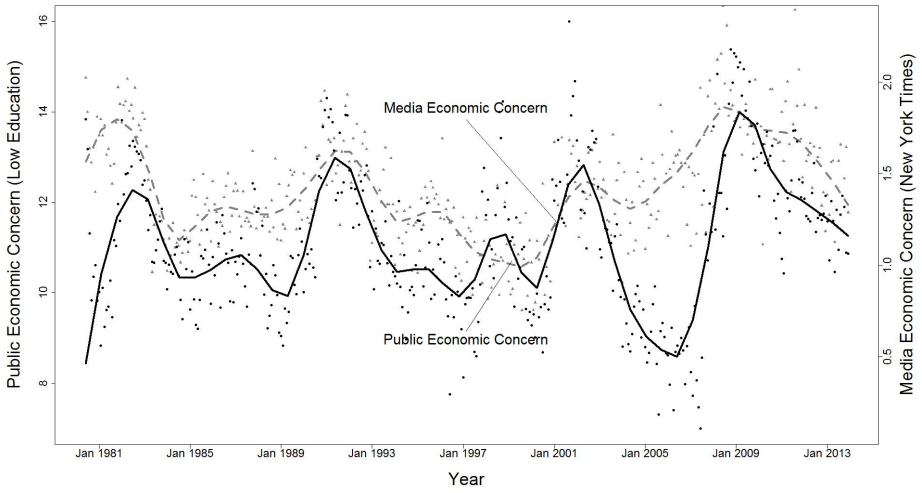
Appendix D: Additional Graphical Evidence

Trends in Public and Media Economic Concern over Time

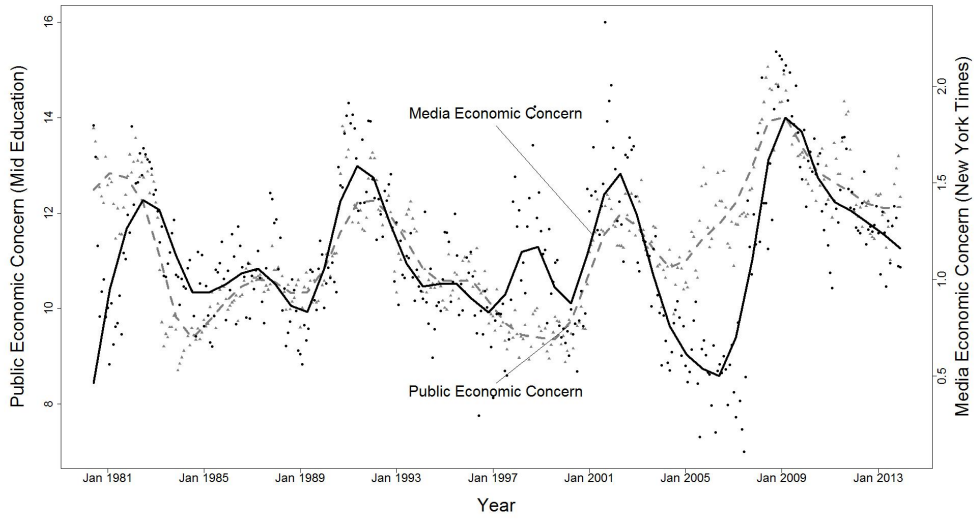
Public Economic Concern (All Sample)



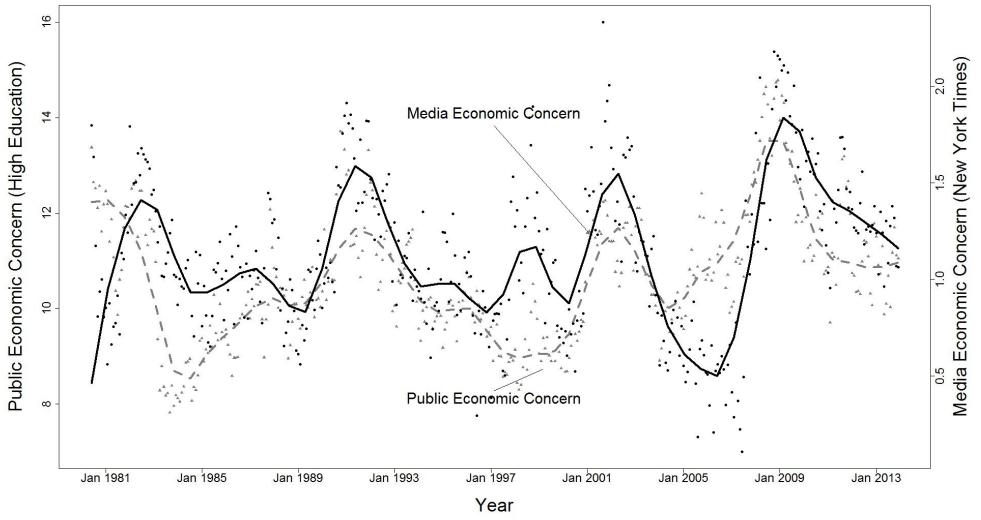
Public Economic Concern (Low Education)



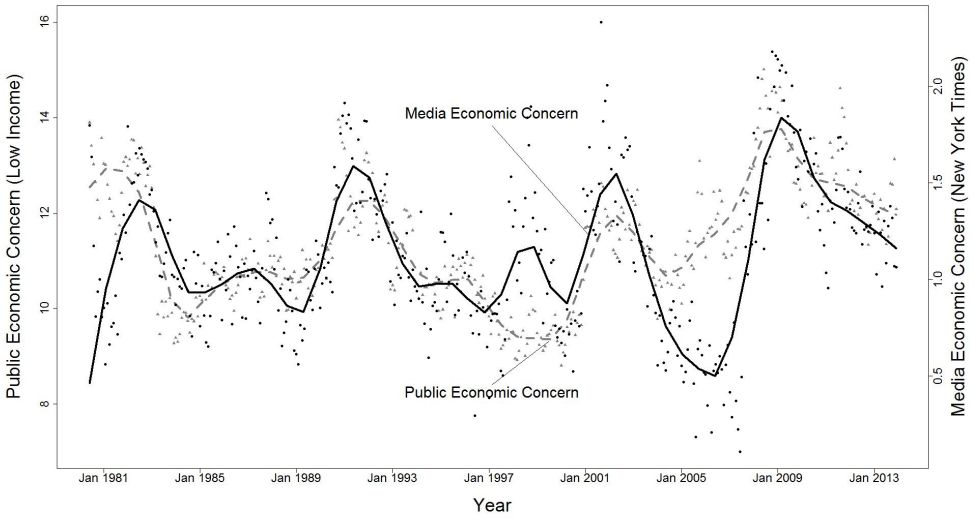
Public Economic Concern (Mid Education)



Public Economic Concern (High Education)



Public Economic Concern (Low Income)



Public Economic Concern (High Income)