## Econ 219B

Psychology and Economics: Applications (Lecture 13)

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## Outline

# 1. Welfare Response to Biases 

2. Media Data
3. Media Bias
4. Media and Consumer Behavior
5. Imitation?
6. Persuasion

# 1 Welfare Response to Biases 

- General idea:
- Leverage biases to help biased agents
- Do not hurt unbiased agents (cautious paternalism)
- Research agenda:
- Identify biases (persuasion? reference dependence?)
- Design contract/institution
- Offer to agents
- BUT: Worry about political economy
- Politicians/firms often have strong incentives in implementing reforms
- They may not pursue voters/consumers welfare maximization
- Glaeser (2002), Political Economy of Hatred
- Demand side:
* Voters are susceptible to hatred
* Media can istigate hatred
- Supply side:
* Politicians maximize chances of reelection
* Set up a hatred media campaigned toward certain groups for electoral gain
* In particular, may target non-median voter
- Idea:
* Group hatred can occur, but does not tend to occur naturally
* Group hatred can be due to political incentives
- Examples:
* African American hatred: South, 1865-1970
- No hatred before Civil War
- Conservative politicians foment it to lower demand for redistribution
- Diffuse stories of violence by Blacks
* Hatred of Jews: 1930s
- No hatred before 1920
- Jews disproportionately left-wing
- Right-wing Hitler made up Protocal of Elders of Zion


## 2 Media Data

- Media deliver information:
- TV
- Radio
- Newspapers
- Internet
- Media data is fairly easily available:
- Lexis-Nexis: Newspaper (TV) Content
- Vanderbilt data set: TV news stories
- Warren News: Cable channels
- Local monopolies in media markets:
- Towns have 1 (rarely 2) newspapers (Genesove, 2000)
- Towns have 1 (rarely 2 ) cable providers
- Only two national papers (from late 80s): USA Today, NYT
- Owners can spin news
- Last lecture: Look at the effect of media information on behavior of politicians
- (Also paper by Jakob Svennson in Development Seminar)
- Today: Consider media content: media bias?


## 3 Media Bias

- Saurabh

Economics 219B

# A Measure of Media Bias 

TIM GROSECLOSE \& JEFF MILYO SEPTEMBER 2003

SAURABH BHARGAVA
April 22, 2004

The authors first discuss some of the past research on media bias

## PLAN OF DISCUSSION

- Background and vocabulary
- Data and empirical strategy
- Results and analysis
- Conclusions and comments


## Past attempts to study media bias have sought to confirm the existence and identify

 the direction of bias, but have largely avoided clarifying its definition
## PAST RESEARCH ON MEDIA BIAS



## THE ABCs OF ‘A MEASURE OF MEDIA BIAS’



ADA

Balance

Congressional Record

Drudge Report

- Americans for Democratic Action is the nation's oldest liberal advocacy group. It assigns annual ratings to congressional voting records. These "ADA Scores" are often cited measures of ideological leaning.
- Just needed a 'B’...
- Official, government sanctioned, published account of congressional proceedings from 1873 to the present. The record is updated daily and includes transcripts from all House and Senate sessions as well as various extended remarks. A searchable copy is available online.
- News/entertainment website operated by Matt Drudge since 1995. Updated every several minutes, the single page site collects over 1.4 billion hits a year and reports on a wide subject matter including politics. Gained fame for breaking a number of high profile news stories including that of Monica Lewinsky.

Next the authors outline a basic empirical strategy through which to capture bias

## PLAN OF DISCUSSION

- Background and vocabulary
- Data and empirical strategy
- Results and analysis
- Conclusions and comments

The authors pursue an empirical strategy consisting of three simple stages

## EMPIRICAL STRATEGY

| Create Congressional <br> Scores | Assign Media Scores |  | Benchmark <br> Comparison |
| :--- | :--- | :--- | :--- |
| Adjust ADA $>$ Count Cites | Count Cites $\rangle$ Map to ADA |  |  |

Objective

- Calculate adjusted ADA score for each congressional member
- Record think-tank citations for each congressional member
- Record think-tank citations for each media outlet
- Infer ADA from congressional ADA/cite scores
- Infer ADA through MLE
- Interpret ideological leaning through comparison of inferred ADA to some centrist baseline


An often cited measure of ideological leaning is assigned by the Americans for Democratic Action (ADA)

## CONSTRUCTING ADA MEASURES FOR CONGRESS



Adj.* ADA Score:
(1993-1999)
Joe Lieberman (d) - 66
Arlen Specter (d) - 44
Sam Nunn (d) - 41
Olympia Snowe (r) - 36
(John Kerry** (d) - 85)

* Scores adjusted for annual chamber mean **2003 score
/ 1


The authors use think-tank citations in order to map congressional ADA scores to media outlets

## CONSTRUCTING BACK OF ENVELOPE ADA MEASURE FOR MEDIA

```
Record Congressional
Cites
- Congressional Record:
    1993-2002
- Count references to top 200 think tanks (TT) excluding: reporting of activities, rhetorical mentions, references with acknowledged bias
- Measure at level of citation and sentence
```


## Bifurcate Think-Tanks

- Assign to each think tank average ADA score of referring legislators
- Separate TTs into two groups based on position relative to the House and Senate ADA average (42.2)


## Record Media Cites

- Monitor period yielding at least 1200 sentences of media content ("all dates available" collected for magazines and television shows - Lexus Nexus)
- Count all references to TT except: reporting of activities, rhetorical mentions, references with acknowledged bias. Exclude editorial content
- Measure at level of citation and sentence

Approximate ADA

- Calculate \% of liberal cites for each media outlet
- Map citation rate of media to an ADA score by calculating ideological distance from Congressional chamber and party means
- Method involves linear extrapolation from citation patterns of media and of Congress


A second mapping strategy of ADA scores does not rely on dichotomous classification of think tanks

## CONSTRUCTING MLE ADA MEASURE FOR MEDIA

## Modeling Congressional Cites

- Utility of congressmen $i$ from citing think tank $j$ :

$$
U_{i j}=a_{j}+b_{j} y_{i}+e_{i j}
$$

Where $y_{i}$ is the avg. ADA score for congressman $i$, and $e_{i j}$ is distributed according to a Weibull distribution

- Probability of member $i$ choosing think tank $j$ :
$P_{i j}=\exp \left(a_{j}+b_{j} y_{i}\right) / \Sigma_{k, j} \exp \left(a_{k}+b_{k} y_{i}\right)$


## Modeling Media Cites

- Utility of media outlet $m$ from citing think tank $j$ :

$$
U_{m j}=a_{j}+b_{j} c_{m}+e_{m j}
$$

Where $y_{i}$ is the avg. ADA score for congressman $i$, and $e_{m j}$ is distributed according to a Weibull distribution

- Probability of media outlet $m$ choosing think tank $j$ :
$P_{m j}=\exp \left(a_{j}+b_{j} c_{m}\right) / \Sigma_{k, j} \exp \left(a_{k}+b_{k} c_{m}\right)$


## Estimation

- Construct likelihood function from the joint probability distribution
- Estimate the likelihood function using ML
- Choose baseline think tank, set $\mathrm{a}_{j}, \mathrm{~b}_{j}$ to zero (Heritage foundation)
- Due to computational restraints, constrict estimation to top 25 TTs
- Captured excluded TTs through constructions


The definition of the ideological center is critical to the interpretation of these results

## FINDING THE CENTER

ADA Distribution


Estimated ADA Scores for FoxTV News

ROC

Note: ADA distributions are for 1993-1999 averages as calculated by the authors; (*) Sanders, Jeffords ADA is for 2003 only

The authors then compare ADA scores from media outlets to those of Congressional leaders

## PLAN OF DISCUSSION

- Background and vocabulary
- Data and empirical strategy
- Results and analysis
- Conclusions and comments

The consistency in relative ADA ranks across the multiple estimation methods is mixed but ratings for outlets below are all significantly different

## MLE ADA SCORES OF MEDIA OUTLETS

ADA Score
Fox News 29.0 (.51)

Drudge Report
44.9 (1.98)


Min Rank: 2
Max Rank: 4


Min Rank: 6
Max Rank: 8

USA Today
59.9 (1.23)


Min Rank: 3 Max Rank: 7

Inferred ADA scores of media outlets suggests that major media is left of congressional center

## ADJUSTED ADA SCORES OF MEDIA OUTLETS VS. CONGRESS



- Fox News maps slightly right of House median
- All other media outlets are far left of House median

Finally some conclusions and short comments . . .

## PLAN OF DISCUSSION

- Background and vocabulary
- Data and empirical strategy
- Alternative estimation techniques
- Results and analysis
- Conclusions and comments

G\&M conclude by asserting that the media is biased and that such a bias is largely LOC

## CONCLUSIONS

- A statistically significant ideological bias does exist in the major media outlets
- The bias is decidedly left-leaning, with the exception of Fox News and possibly the Drudge Report
- The paper's novel methodology (exogenous baselining) could be used to calibrate other tests of bias

The study is however open to conceptual and methodological critique

## COMMENTS

- G\&M methodology lacks any reasonable transparency
- ADA scores may not be appropriate for establishing centrist position
- Think tank citations may be less representative of ideology for major media than for congress
- Is it useful to reduce the dimensionality of bias to a single measure?
- Ideology-specific differences in nature and volume of think tank publications may exist-- Lakoff critique: Conservative think tanks are better framers, structurally better suited to guiding discourse
- Specific filtering criteria is important for media outlets e.g. how were "editorial" segments defined?

One could imagine a number of other possible instruments through which to measure different forms of bias

## APPENDIX: POSSIBLE ALTERNATIVE MEASURES (CAUSES) OF BIAS



There are a number of independent media watchdogs which monitor major media

## APPENDIX: THIRD PARTY MEDIA MONITORS

## Columbia Journalism Review

- Monitors news reporting, analysis, commentary of major media new coverage
- The Campaign Desk focuses on political coverage
- www.cjr.org
- www.campaigndesk.org


## Other Watchdog Sites

- PoynterOnline: www.poynter.org
- Conservative media monitor (1) www.mrc.org
- Liberal media monitor www.fair.org
- Conservative media monitor (2) www.aim.org

- Related issue: Biases may rest with listeners
- Information from media is manipulated in self-serving manner:
- Lord, C. G., Ross, L., \& Lepper, M. R. (1979)
- Subjects have to evaluate methodologies of two scientific studies, one procapital punishment conclusions and one anticapital punishment
- Death penalty proponents accept the results of the procapital punishment study (death penalty effectively reduces crime)
- Same students reject the results of anticapital punishment study
- Opponents of the death penalty rate studies in opposite manner.
- After evaluating the two studies, participant attitudes toward capital punishment had become more extreme.
- Giner-Sorolla and Chaiken (1994).
- Subjects on both sides of the Israeli-Palestinian conflict shown television news coverage of both issues.
- Tested for memory of program content and judgments of bias and imbalance in coverage.
- Mideast partisans judged coverage to be biased against their own side
- What do people look for in media?
- Does media bias change opinions of people (or make them more extreme)?


## 4 Media and Consumer Behavior

- Does media affect consumer behavior?
- Channels:
- Persuasion. How easy is to convince people?
- Attention. Focus attention on certain topics
- George and Waldfogel (2002): New York Times and voter behavior
- (Exogenous?) expansion in NYT circulation in mid90s
- Data:
- MSA circulation (NYT) and zip-code circulation (ABC) in 1995, 1997, 1999
- Voting data from CPS: about 45,000 individuals/year
- NYT emphasizes national stories
- Are readers distracted from local politics?
- Identification strategy.
- NYT readership at MSA level: $N Y T_{M t}$
- Use proxy for ZIP-code circulation: $e_{z}$, share of highschool grads in Zip-code
- Dependent variable $y_{z t}$ (readership of local papers, voter turnout)
- Regression:

$$
\begin{aligned}
y_{z t}= & \beta_{0}+\beta_{1} N Y T_{M t}+\beta_{2} e_{z}+\beta_{3} N Y T_{M t} * e_{z} \\
& +\beta_{4} X_{z t}+\varepsilon_{z t}
\end{aligned}
$$

- Relevant coefficient is $\beta_{3}$ : Is there more effect of changes in NYT circulation in areas with higher (potential circulation)
- Table 3.
- Large (too large?) Effect on circulation of local papers
- Careful: T-stats in parethesis (should have s.e.s)
- Should have put in also year fixed effect in Column 3
- Table 4. Change in content of local papers
- Last Column: Fixed effect specification
- Change in content of local papers: more local, less foreign news

Table 1: Sample Statistics

|  | N | Mean | SD | 5\% | 25\% | 50\% | 75\% | 95\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newspaper Readership (ABC) |  |  |  |  |  |  |  |  |
| MSA Per Capita NYT Sales (1995) | 259 | 0.0027 | 0.0065 | 0.00005 | 0.0003 | 0.0009 | $9 \quad 0.0026$ | 0.0095 |
| MSA Per Capita NYT Sales (1999) | 259 | 0.0028 | 0.0057 | 0.00007 | 0.0004 | 0.0010 | 00.0028 | 0.0095 |
| Zip Per Capita Local Newspaper Sales (1995) | 8,990 | 0.1880 | 0.1106 | 0.02305 | 0.1098 | 0.1809 | 9 0.2498 | 0.3765 |
| Zip Per Capita Local Newspaper Sales (1998) | 8,990 | 0.1838 | 0.1102 | 0.02132 | 0.1072 | 0.1751 | 10.2420 | 0.3737 |
| Zip Code Demographics (Census) |  |  |  |  |  |  |  |  |
| Zip Fraction College Educated | 8,990 | 0.1961 | 0.1355 | 0.0496 | 0.0985 | 0.1552 | 20.2577 | 0.4820 |
| Zip Fraction White | 8,990 | 0.8645 | 0.1935 | 0.4099 | 0.8296 | 0.9464 | 40.9840 | 0.9984 |
| Zip Fraction Black Pop | 8,990 | 0.0828 | 0.1668 | 0.0000 | 0.0026 | 0.0149 | $9 \quad 0.0727$ | 0.4542 |
| Zip Fraction Asian Pop | 8,990 | 0.0201 | 0.0431 | 0.0000 | 0.0014 | 0.0065 | 50.0190 | 0.0847 |
| Zip Fraction Indian Pop | 8,990 | 0.0066 | 0.0302 | 0.0000 | 0.0007 | 0.0025 | $5 \quad 0.0059$ | 0.0183 |
| Zip Fraction Other Pop | 8,990 | 0.0261 | 0.0684 | 0.0000 | 0.0004 | 0.0035 | 50.0153 | 0.1446 |
| Zip Fraction Young (<30) | 8,990 | 0.4388 | 0.0812 | 0.3228 | 0.3973 | 0.4370 | $0 \quad 0.4756$ | 0.5605 |
| Zip Fraction Old (=65) | 8,990 | 0.1661 | 0.0715 | 0.0701 | 0.1229 | 0.1584 | $4 \quad 0.2001$ | 0.2811 |
| $\underline{\text { Zip Median Income ( } \$ 1,000 \text { ) }}$ | 8,990 | 33.25 | 12.13 | 17.27 | 25.35 | 31.54 | 488.96 | 54.61 |
|  | $\begin{gathered} 1994 \\ (N=45,456) \end{gathered}$ |  |  | $\begin{gathered} 1996 \\ (N=43,769) \end{gathered}$ |  |  | $\begin{gathered} 1998 \\ (N=42,564) \end{gathered}$ |  |
| Individual Data(CPS) | Mean | $S D$ |  | Mean | SD |  | Mean | $S D$ |
| Voting Probability (All) | 0.525 | 0.499 |  | 0.642 | 0.479 |  | 0.506 | 0.500 |
| Voting Probability (No College Degree) | 0.469 | 0.499 |  | 0.581 | 0.493 |  | 0.448 | 0.497 |
| Voting Probability (College Degree) | 0.704 | 0.457 |  | 0.821 | 0.384 |  | 0.666 | 0.472 |
| Fraction College Degree | 0.239 | 0.427 |  | 0.254 | 0.436 |  | 0.265 | 0.441 |
| Fraction Black | 0.119 | 0.323 |  | 0.108 | 0.310 |  | 0.108 | 0.310 |
| Fraction Asian | 0.025 | 0.155 |  | 0.029 | 0.168 |  | 0.032 | 0.175 |
| Fraction Indian | 0.007 | 0.083 |  | 0.008 | 0.087 |  | 0.009 | 0.092 |
| Fraction Hispanic | 0.051 | 0.220 |  | 0.054 | 0.227 |  | 0.065 | 0.247 |
| Fraction Female | 0.462 | 0.499 |  | 0.465 | 0.499 |  | 0.467 | 0.499 |
| Fraction Under 30 | 0.216 | 0.412 |  | 0.212 | 0.409 |  | 0.204 | 0.403 |
| Fraction Over 64 | 0.168 | 0.374 |  | 0.160 | 0.366 |  | 0.163 | 0.369 |

Notes: New York CMSA excluded from all estimates.

Table 3: Does the New York Times Depress Local Newspaper Circulation?

|  | Cross Sectional Results |  | Longitudinal Results |
| :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 1995 \\ (1) \end{gathered}$ | $\begin{gathered} 1998 \\ (2) \end{gathered}$ | 1995-1998 <br> (3) |
| Per Capita NYT ( $\beta_{1}$ ) |  |  | $\begin{gathered} \hline \hline 1.5572 \\ (1.95) \end{gathered}$ |
| Zip Fraction High Ed ( $\beta_{2}$ ) | $\begin{gathered} 0.1926 \\ (6.57) * * \end{gathered}$ | $\begin{gathered} 0.1875 \\ (7.04)^{* *} \end{gathered}$ | $\begin{gathered} 0.1628 \\ (16.80) * * \end{gathered}$ |
| 1998 Year Dummy |  |  | $\begin{gathered} -0.0117 \\ (9.53)^{* *} \end{gathered}$ |
| Zip High Ed * 1998 |  |  | $\begin{gathered} 0.0105 \\ (3.01)^{* *} \end{gathered}$ |
| Zip Fraction High Ed * NYT ( $\beta_{3}$ ) | $\begin{gathered} -4.6355 \\ (1.64) \end{gathered}$ | $\begin{gathered} -5.2955 \\ (2.03) * \end{gathered}$ | $\begin{aligned} & -10.9005 \\ & (4.31) * * \end{aligned}$ |
| Zip Fraction Black | $\begin{aligned} & -0.0664 \\ & (7.01)^{* *} \end{aligned}$ | $\begin{aligned} & -0.0614 \\ & (7.55)^{* *} \end{aligned}$ | $\begin{gathered} -0.0574 \\ (13.03)^{* *} \end{gathered}$ |
| Zip Fraction Asian | $\begin{aligned} & -0.1129 \\ & (3.07)^{* *} \end{aligned}$ | $\begin{aligned} & -0.1418 \\ & (4.07)^{* *} \end{aligned}$ | $\begin{aligned} & -0.1032 \\ & (4.30)^{* *} \end{aligned}$ |
| Zip Fraction Native American | $\begin{gathered} -0.0978 \\ (1.61) \end{gathered}$ | $\begin{gathered} -0.0890 \\ (1.79) \end{gathered}$ | $\begin{aligned} & -0.0867 \\ & (4.41)^{* *} \end{aligned}$ |
| Zip Fraction Other Race | $\begin{gathered} 0.0001 \\ (0.00) \end{gathered}$ | $\begin{gathered} 0.0079 \\ (0.12) \end{gathered}$ | $\begin{aligned} & -0.0994 \\ & (7.62)^{* *} \end{aligned}$ |
| Zip Fraction Age>=65 | $\begin{gathered} 0.2373 \\ (4.91)^{* *} \end{gathered}$ | $\begin{aligned} & 0.1299 \\ & (2.68)^{* *} \end{aligned}$ | $\begin{gathered} 0.1895 \\ (5.23)^{* *} \end{gathered}$ |
| Zip Fraction Age<30 | $\begin{aligned} & -0.1752 \\ & (2.99)^{* *} \end{aligned}$ | $\begin{aligned} & -0.2330 \\ & (4.39)^{* *} \end{aligned}$ | $\begin{gathered} -0.2007 \\ (7.93)^{* *} \end{gathered}$ |
| Zip Median Income (\$1,000) | $\begin{gathered} 0.0002 \\ (0.61) \end{gathered}$ | $\begin{gathered} 0.0005 \\ (1.59) \end{gathered}$ | $\begin{aligned} & 0.0003 \\ & (2.45)^{*} \end{aligned}$ |
| Constant | $\begin{gathered} 0.1912 \\ (4.62)^{* *} \end{gathered}$ | $\begin{gathered} 0.2180 \\ (5.74)^{* *} \end{gathered}$ | $\begin{gathered} 0.2061 \\ (10.31)^{* *} \end{gathered}$ |
| Fixed Effects | MSA | MSA | MSA x Education |
| Observations | 8,993 | 8,990 | 17,983 |
| MSA's | 259 | 259 | 259 |

Notes: Dependent variable is per capita local newspaper sales in the zip code. All specifications are populationweighed, with standard errors clustered by MSA for cross-sectional specifications and MSA x year for longitudinal specifications. T-statistics in parentheses: * significant at $5 \%$ level; ${ }^{* *}$ significant at $1 \%$ level. Constants in fixed effects regressions represent the average value of the fixed effects.

Table 4: Do Local Newspapers Respond to New York Times Penetration?

| Beat Category | Mean | 1993 | 1999 | $1993-1999$ |
| :--- | :---: | :---: | :---: | :---: |
| Art \& Literature | 0.023 | 0.193 | 0.130 | $1.942^{*}$ |
| Business | 0.140 | -0.018 | -1.419 | -3.199 |
| Entertainment | 0.122 | 0.845 | 1.046 | 0.402 |
| Home | 0.027 | -0.626 | -0.309 | -0.833 |
| Local News | 0.181 | -0.410 | 1.572 | $14.169^{* * *}$ |
| National \& Foreign News | 0.088 | -0.001 | 0.466 | $-6.107^{* *}$ |
| Opinion | 0.063 | 0.185 | 0.783 | $-3.798^{*}$ |
| Science \& Technology | 0.025 | $0.765^{*}$ | 0.119 | 0.566 |
| Special Issues | 0.119 | -1.694 | -1.209 | $-5.249^{*}$ |
| Sports | 0.076 | -0.438 | 0.746 | 2.029 |
| Style | 0.040 | 0.869 | -0.461 | 0.230 |
| Travel \& Leisure | 0.059 | 0.125 | $-1.441^{* *}$ | 1.383 |

Notes: Dependent variables are shares of reporters and editors in each category. Special Issues considers topics such as environment, labor, consumer affairs, real estate and other topics that individually represent a small fraction of resources at individual papers. T-statistics in parentheses: * significant at $10 \%$ level; ${ }^{* *}$ significant at 5\%; $* * *$ significant at $1 \%$ level. $\mathrm{N}=250$.

- Table 5. Voting probability in non-Pres. election:
- Columns 1-2: Cross-Section
- Column 3: Pooled Cross-Section (CPS not a panel)
- Large negative effects
- Table 6. Voting behavior also in Pres. Election
- Interact dummy for 1996 with all variables
- Columns 1-3: Effect is zero for 1996 election

Table 5: Does the New York Times Depress Voting among the College Educated?

|  | Voting Probability Non-Presidential Elections |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1994 $(1)$ | 1998 (2) | Pooled $(94,98)$ <br> (3) | Pooled $(94,98)$ <br> (4) | $\begin{gathered} \text { Pooled } \\ (94,98) \\ (5) \end{gathered}$ |
| Per Capita NYT ( $\gamma_{1}$ ) | - | - | -9.818 | -1.562 | -5.647 |
|  | - | - | (1.81) | (0.71) | (1.21) |
| High Ed ( $\gamma_{2}$ ) | 0.147 | 0.136 | 0.169 | 0.156 | - |
|  | (6.18)** | (4.29)** | (7.07)** | (6.68)** | - |
| NYT*High Ed ( $\gamma_{3}$ ) | -4.568 | -3.531 | -4.108 | -3.824 | -22.054 |
|  | (3.26)** | (1.89) | (3.78)** | (3.43)** | (2.69)** |
| 1998 Year Dummy | - | - | -0.067 | -0.110 | -0.048 |
|  | - | - | (1.40) | (2.04)* | (0.94) |
| High Ed*1998 | - | - | -0.046 | -0.023 | -0.115 |
|  | - | - | (1.24) | (0.63) | (4.07)** |
| Black | 0.041 | 0.097 | 0.069 | 0.066 | 0.067 |
|  | (2.69)** | (5.21)** | (5.45)** | (5.21)** | (5.36)** |
| Asian | -0.163 | -0.186 | -0.177 | -0.166 | -0.175 |
|  | (6.13)** | (5.73)** | (7.73)** | (6.40)** | (7.70)** |
| Indian | -0.072 | -0.086 | -0.080 | -0.077 | -0.079 |
|  | (3.02)** | (2.71)** | (4.06)** | (3.80)** | (4.00)** |
| Hispanic | -0.069 | -0.043 | -0.054 | -0.056 | -0.058 |
|  | (4.00)** | (3.04)** | (5.02)** | (5.07)** | (5.52)** |
| Sex | -0.017 | -0.020 | -0.018 | -0.018 | -0.018 |
|  | (4.22)** | (4.61)** | (6.25)** | (6.20)** | (6.16)** |
| Age < 30 | -0.223 | -0.233 | -0.229 | -0.228 | -0.228 |
|  | (28.68)** | (33.74)** | (43.87)** | (43.71)** | $(43.90)^{* *}$ |
| Age 65+ | 0.200 | 0.218 | 0.209 | 0.209 | 0.208 |
|  | (28.35)** | (24.21)** | (36.23)** | (36.48)** | (36.05)** |
| Constant | 0.433 | 0.300 | 0.284 | 0.336 | 0.386 |
|  | (8.33)** | (14.07)** | (5.81)** | (6.62)** | (8.00)** |
|  | Income, | Income, | Income, | Income, | Income, |
| Other Variables | Statewide | Statewide | Statewide | Statewide | Statewide |
|  | Elections | Elections | Elections | Elections | Elections |
| Fixed Effects | MSA | MSA | MSA | MSA x Year | $\text { MSA } x$ <br> Education |
| Observations | 45,456 | 42,564 | 88,020 | 88,020 | 88,020 |

Notes: Linear probability models with standard errors clustered by MSA for cross-sectional estimates and MSA x Year for pooled estimates. T-statistics in parentheses: * significant at $5 \%$ level; ** significant at $1 \%$ level. Constants in fixed effects regressions represent the average value of the fixed effects. Fourteen income dummy variables and statewide election variables not shown. State election variables include a dummy variable for statewide races alone, interacted with high education, interacted with year dummies, and interacted with both high education and year.

Table 6: Does Distraction Drop in Presidential Years?

|  | Voting Probability |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1996 | $\begin{gathered} \text { Pooled } \\ (94,96,98) \end{gathered}$ | $\begin{gathered} \text { Pooled } \\ (94,96,98) \end{gathered}$ | $\begin{gathered} \text { Pooled } \\ (94,96,98) \end{gathered}$ |
|  | (1) | (2) | (3) | (4) |
| Per Capita NYT ( $\gamma_{1}$ ) | - | -1.331 | 0.637 | 1.961 |
|  | - | (0.30) | (0.36) | (0.47) |
| NYT*1996 | - | -2.797 | 1.240 | -2.510 |
|  | - | (1.47) | (0.35) | (1.43) |
| High Ed ( $\gamma_{2}$ ) | 0.167 | 0.171 | 0.163 | 0.000 |
|  | (13.17)** | (6.76)** | (6.72)** | (.) |
| High Ed*1996 | (13.17) | 0.001 | 0.008 | -0.004 |
|  | - | (0.04) | (0.30) | (0.17) |
| High Ed* 1998 | - | -0.045 | -0.031 | -0.085 |
|  | - | (1.20) | (0.84) | (3.18)** |
| 1996 Year Dummy | - | 0.172 | 0.102 | 0.172 |
|  | - | (4.12)** | (1.64) | (3.89)** |
| 1998 Year Dummy | - | -0.043 | -0.069 | -0.032 |
|  | - | (0.91) | (1.11) | (0.64) |
| NYT*High Ed ( $\gamma_{3}$ ) | -0.680 | -4.117 | -4.119 | -17.790 |
|  | (0.34) | (3.76)** | (3.58)** | (2.47)* |
| NYT*High Ed*1996 |  | 3.441 | 4.139 | 2.305 |
|  | - | (1.69) | (1.95)* | (1.47) |
| Black | 0.077 | 0.072 | 0.069 | 0.071 |
|  | (5.24)** | (7.35)** | (7.14)** | (7.30)** |
| Asian | -0.132 | -0.162 | -0.157 | -0.160 |
|  | (4.94)** | (9.06)** | (8.67)** | (9.08)** |
| Indian | -0.038 | -0.067 | -0.064 | $-0.066$ |
|  | (1.37) | (4.09)** | (3.82)** | (4.03)** |
| Hispanic | $-0.056$ | $-0.055$ | $-0.060$ | $-0.059$ |
|  | (5.15)** | (6.86)** | (6.88)** | (7.44)** |
| Sex | -0.041 | -0.025 | -0.025 | -0.025 |
|  | $(10.02) * *$ | (11.12)** | (10.98)** | (11.04)** |
| Age < 30 | -0.176 | -0.211 | -0.211 | -0.211 |
|  | (25.06)** | (47.45)** | (47.49)** | (47.63)** |
| Age 65+ | 0.162 | 0.194 | 0.194 | 0.193 |
|  | (22.79)** | (43.32)** | (43.58)** | $(43.18){ }^{* *}$ |
| Constant | 0.488 | 0.244 | 0.292 | 0.292 |
|  | (33.87)** | (5.59)** | (4.83)** | (6.50)** |
|  | Income, | Income, | Income, | Income, |
| Other Variables | Statewide | Statewide | Statewide | Statewide |
|  | Elections | Elections | Elections | Elections |
| Fixed Effects | MSA | MSA | MSA x Year | MSA x |
| Observations | 43,769 | 131,789 | 131,789 | 131,789 |

Notes: Linear probability models with standard errors clustered by MSA for cross-sectional estimates and MSA x Year for pooled estimates. T-statistics in parentheses: * significant at 5\% level; ** significant at $1 \%$ level. Constants in fixed effects regressions represent the average value of the fixed effects. Fourteen income dummy variables and statewide election variables not shown. State election variables include a dummy variable for statewide races alone,

- Conclusion:
- NYT appears to focus attention on national politics
- (Even though local papers then go more local)
- Crowds out local informational sources
- Decreases voter turnout to local elections
- Other outcomes? Political bias?
- Obvious confound:
- NYT expanded in areas that were becoming more 'national'-oriented.
- Need to control for time trends in voting
- (Was not difficult, should have been done)
- Does media convince people?
- Can media content be manipulated?
- Dyck and Zingales (2002): Manipulation of news about earnings
- Earning announcements in two formats:
- GAAP (certified) earnings
- Street earnings: GAAP minus one-time charges
- Company press release spins GAAP or street earnings
- Media can feature more prominently GAAP or street earnings
- Investors react to information with trading
- Data:
- PR Newswire: Company release (first item)
- Factiva: Newspaper coverage (first item)
- Earning announcements:
* 600 hand-searched
* Stree earning from I/B/E/S
* GAAP earnings from Compustat
- Stock returns: Excess returns $(-1,3)$
- Use measure 1 of earning surprise for both Street and GAAP earnings (although forecasts are for street earnings)
- Form $s_{t, k}^{1, G}$ and $s_{t, k}^{1, S}$
- Define $d_{t, k}^{j}=1$ if news is in media and presents first earning measure $j(j=S, G)$
- Specification:

$$
\begin{aligned}
r_{t, k}^{(, 1,3)}= & \alpha+\beta_{0} s_{t, k}^{1, G}+\beta_{1} s_{t, k}^{1, S}+ \\
& \beta_{2} s_{t, k}^{1, G} d_{t, k}^{S}+\beta_{3} s_{t, k}^{1, S} d_{t, k}^{G}+ \\
& \beta_{4} s_{t, k}^{1, G} d_{t, k}^{S}+\beta_{5} s_{t, k}^{1, S} d_{t, k}^{G}+\varepsilon_{t, k}
\end{aligned}
$$

- Is there more response to Street (GAAP) earning when Street (GAAP) earnings are spinned?
- Table 3. Effect of Media Spin on stock response
- Too many variables. Could have more parsimoniou spec.

Table 3 - Does Media Coverage affect Asset Prices?

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |

- Table 5. Response is mainly to media spin, not company spin per se
- Table 6. Company spin affects media spin

Table 5 - Do Company Press Releases affect Asset Prices?

|  |  |  | Firms with below median number of analysts | Firms with above median number of analysts |
| :---: | :---: | :---: | :---: | :---: |
| dependent variable = cumulative excess return |  |  |  |  |
|  | (1) | (2) | (3) | (4) |
| GAAP earnings surprise | 0.081 | -0.052 | 0.018 | -0.087 |
|  | [0.107] | [0.089] | [0.088] | [0.137] |
| Street earnings surprise | 0.145 | 0.424 | 0.344 | 0.412 |
|  | [0.215] | [0.266] | [0.327] | [0.342] |
| Spin on Street in Company press release*GAAP earnings surprise | 0.007 | 0.141 | 0.207 | 0.119 |
|  | [0.108] | [0.091] | [0.121]* | [0.132] |
| Spin on Street in Company press release*Street earnings surprise | 0.303 | 0.217 | 0.213 | 0.052 |
|  | [0.265] | [0.374] | [0.550] | [0.565] |
| Spin on GAAP*GAAP earnings surprise |  | 0.255 | 0.292 | 0.265 |
|  |  | [0.105]** | [0.117]** | [0.138]* |
| Spin on GAAP*Street earnings surprise |  | -0.607 | -0.689 | -0.326 |
|  |  | [0.297]** | [0.365]* | [0.379] |
| Spin on Street*Street earnings surprise |  | 0.565 | 6.369 | 0.365 |
|  |  | [0.770] | [2.883]** | [0.667] |
| Spin on Street*GAAP earnings surprise |  | -0.521 | -2.265 | -0.446 |
|  |  | [0.261]** | [0.823]*** | [0.327] |
| Observations | 426 | 426 | 165 | 261 |
| R -squared | 0.03 | 0.06 | 0.15 | 0.05 |
| Robust standard errors in brackets <br> * significant at 10\%; ** significant at 5\%; *** significant at $1 \%$ |  |  |  |  |

## Table 6 - Firm Spin and Media Spin

|  | dependent <br> variable: <br> media report <br> street first=1 | dependent <br> variable: <br> media report <br> street only | dependent <br> variable: <br> media report <br> GAAP only |
| :--- | :---: | :---: | :---: |
|  | $(1)$ | $(2)$ | $(3)$ |
| Company reports street first | 1.684 |  |  |
| [0.393] |  |  |  |

Robust standard errors in brackets

* significant at 10\%; ** significant at 5\%; *** significant at $1 \%$
- Overall, media appear to:
- focus attention (earning surprises)
- provide incentives (politician response)
- affect consumer behavior (voter turnout)
- Is this mainly attention?
- Is it social learning?
- Is it persuasion?
- Open question


## 5 Imitation?

- Stylized fact. In similar places people take actions
- number of hours worked
- effort at workplace
- grades in school
- Peer effect literature:
- Sacerdote (2001) - peer effects between Dartmouth undergrads. Small effect on grades
- Kremer and Levy (2002) - peer effects among college student from alsohol use
- Udry - social learning in pineapple fields
- Ichino-Maggi (2001) - Peer effects in Italian bank - higher shirking in South
- (Bunch of other papers - no peer effects)
- What determines similarity of actions?
- Social learning?
- Persuasion? (distaste for social disapproval coming from doing different things form social group)
- Finding clear example of persuasion withour social learning is first-order task


## 6 Persuasion

- A clear psych. example
- Milgram experiment: post-WWII
- Do Germans yield to pressure more than others?
- Subjects: Adult males
- Recruitement: experiment on punishment and memory
- Roles:
- teacher (subjects)
- learner (accomplice)
- Teacher asks questions
- Teacher administers shock for each wrong answer
- Initial shock: 15V
- Increase amount up to 450V (not deadly, but very painful)
- Learner visible through glass (or audible)
- Leaner visibly suffers and complains
- Results.
- $62 \%$ subjects reach 450 V
- Subjects regret what they did ex post
- When people asked to predict behavior, almost noone predicts excalation to 450 V
- It's not the Germans - most people yield to social pressure
- Furthermore, naivete'
- A clear econ example
- Garicano, Palacios-Huerta, and Prendergast, Favoritism Under Social Pressure
- Soccer games in Spanish league
- Injury time at end of each game (0 to 5 min .)
- Make up for interruptions of game
- Injury time: last chance to change results for teams
- Do referees provide more injury time when it benefits more the home team?
- Yielding to social pressure of public
- Note: referees professionals, are paid to be independent
- Results:
- Figure 1
- Table 2. Restrict sample to games with home team ahead by 1 or behind by 1 .

Figure 1.
Injury Time Awarded by Score Margin

Number of minutes awarded by referees as a function of the margin in favor of the home team at the end of the match (goals scored by home team - goals scored by visitors).


Note: $3.3 \%$ of the matches ended with score differences smaller than $-2.5 .2 \%$ of the matches ended with score differences larger than 3.

## Table 2.

## Minutes of Injury Time At End of Match in Close Matches

The dependent variable is the length of injury time in matches that ended with a 1 goal difference. Controls are included for variables that may affect 'true' stoppages in the match. Score difference is 1 if home team finished ahead by 1 goal, 0 if home team finished behind by 1 goal.

|  | Score Difference | Yellow Cards | Red Cards | Player Substituti ons | Year Effect | Budget Home | Budget Visitor | Rank Home | Difference in Rank ${ }^{+}$ (home-vis) | Team Fixed Eff. | Constant | $\begin{aligned} & \text { R Sq } \\ & (\mathrm{N}) \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | $\begin{gathered} -1.88^{\star \star} \\ (0.12) \end{gathered}$ |  |  |  |  |  |  |  |  |  | $\begin{aligned} & 3.98^{\star *} \\ & (0.09) \end{aligned}$ | $\begin{gathered} 0.4852 \\ (268) \end{gathered}$ |
| (2) | $\begin{gathered} -1.86^{\star *} \\ (0.11) \end{gathered}$ | $\begin{aligned} & 0.08^{* *} \\ & (0.02) \end{aligned}$ | $\begin{gathered} -0.2 \\ (0.13) \end{gathered}$ | $\begin{aligned} & 0.14^{* *} \\ & (0.05) \end{aligned}$ |  |  |  |  |  |  | $2.94{ }^{* *}$ | $\begin{gathered} 0.5221 \\ (268) \end{gathered}$ |
| (3) | $\begin{gathered} -1.86^{\star \star} \\ (0.11) \end{gathered}$ | $\begin{aligned} & 0.07^{* *} \\ & (0.02) \end{aligned}$ | $\begin{gathered} -0.2 \\ (0.13) \end{gathered}$ | $\begin{gathered} 0.03 \\ (0.07) \end{gathered}$ | $\begin{aligned} & 0.37^{*} \\ & (0.15) \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & 3.28^{\star *} \\ & (0.31) \end{aligned}$ | $\begin{gathered} 0.5328 \\ (268) \end{gathered}$ |
| (4) | $\begin{aligned} & -1.8^{\star *} \\ & (0.11) \end{aligned}$ | $\begin{aligned} & 0.06^{* *} \\ & (0.02) \end{aligned}$ | $\begin{gathered} -0.19 \\ (0.13) \end{gathered}$ | $\begin{gathered} 0.04 \\ (0.07) \end{gathered}$ | $\begin{gathered} 0.29 \\ (0.17) \end{gathered}$ | $\begin{gathered} -0.03 \\ (0.02) \end{gathered}$ | $\begin{gathered} 0.05^{*} \\ (0.02) \end{gathered}$ |  |  |  | $\begin{aligned} & 3.21^{* *} \\ & (0.31) \end{aligned}$ | $\begin{gathered} 0.5492 \\ (268) \end{gathered}$ |
| (5) | $\begin{gathered} -1.78^{\star *} \\ (0.11) \end{gathered}$ | $\begin{aligned} & 0.06^{*} \\ & (0.02) \end{aligned}$ | $\begin{gathered} -0.19 \\ (0.12) \end{gathered}$ | $\begin{gathered} 0.04 \\ (0.07) \end{gathered}$ | $\begin{gathered} 0.11 \\ (0.19) \end{gathered}$ | $\begin{gathered} 0 \\ (0.02) \end{gathered}$ | $\begin{aligned} & 0.05^{\star *} \\ & (0.02) \end{aligned}$ | $\begin{gathered} 0.02 \\ (0.01) \end{gathered}$ | $\begin{gathered} -0.03^{*} \\ (0.01) \end{gathered}$ |  | $\begin{aligned} & 3.23^{\star *} \\ & (0.33) \end{aligned}$ | $\begin{gathered} 0.5637 \\ (268) \end{gathered}$ |
| (6) | $\begin{gathered} -1.77^{* *} \\ (0.12) \end{gathered}$ | $\begin{aligned} & 0.05^{*} \\ & (0.03) \end{aligned}$ | $\begin{gathered} -0.17 \\ (0.13) \end{gathered}$ | $\begin{gathered} 0.04 \\ (0.07) \end{gathered}$ | $\begin{gathered} -0.09 \\ (0.37) \end{gathered}$ | $\begin{aligned} & 0.06 \\ & (0.1) \end{aligned}$ | $\begin{aligned} & 0.05^{\star *} \\ & (0.02) \end{aligned}$ | $\begin{gathered} 0.01 \\ (0.03) \end{gathered}$ | $\begin{gathered} -0.03^{\star *} \\ (0.01) \end{gathered}$ | yes home | $\begin{gathered} 3.28^{\star *} \\ (0.6) \end{gathered}$ | $\begin{gathered} 0.6025 \\ (268) \end{gathered}$ |
| (7) | $\begin{gathered} -1.76^{\star \star} \\ (0.12) \\ \hline \end{gathered}$ | $\begin{aligned} & 0.06^{\star} \\ & (0.03) \end{aligned}$ | $\begin{gathered} -0.16 \\ (0.13) \\ \hline \end{gathered}$ | $\begin{gathered} 0.02 \\ (0.07) \end{gathered}$ | $\begin{gathered} 0.52 \\ (0.37) \\ \hline \end{gathered}$ | $\begin{gathered} -0.01 \\ (0.02) \\ \hline \end{gathered}$ | $\begin{gathered} -0.02 \\ (0.08) \end{gathered}$ | $\begin{gathered} 0.02 \\ (0.01) \end{gathered}$ | $\begin{aligned} & -0.02^{*} \\ & (0.01) \end{aligned}$ | yes visitor | $\begin{aligned} & 3.01^{* *} \\ & (0.44) \end{aligned}$ | $\begin{gathered} 0.6063 \\ (268) \\ \hline \end{gathered}$ |

