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A Friendly Turn: Advertising Bias in the News Media

Florens Focke, Alexandra Niessen-Ruenzi, Stefan Ruenzi

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Are news reports biased?

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I headed the "Wall Street Journal" for 16 years. We made money from advertising and we constantly wrote about our advertising clients. Sometimes we criticized them harshly, sometimes they threatened us to stop advertising, sometimes they stopped advertising. However, we didn't allow them to bias our reports.

- Paul Steiger

Der Spiegel, Vol. 44, October 2013.

Are news reports really not biased?

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"The new General Motors is about to roll off the assembly line as a new kind of model, maybe even a profitable one, too. Once the world's largest and most powerful automaker, the troubled company was expected to **emerge from bankruptcy protection early today cleansed of massive debt and burdensome contracts** that would have sunk it without federal loans." (Memphis Commercial Appeal, 10 July 2009)

General Motors responsible for 18.65% of newspaper revenue

"General Motors is headed for a new life as a slimmed-down company owned by the U.S. and Canadian governments. **But the auto maker's business in bankruptcy court is hardly finished**. GM's undesirable remnants -- the "old GM" -- could languish in bankruptcy court for years. Unsecured creditors, including GM bondholders, are promised an eventual 10% stake in the new GM." (Wall Street Journal, 10 July 2009)

General Motors responsible for 2.50% of newspaper revenue

Previous evidence and our contribution

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- **Magazines with advertising clients from tobacco industries reported less about smoking causing lung cancer** (Weis and Burke (1986))
- **Funds are mentioned more positively in personal finance magazines in which they advertise** (Reuter and Zitzewitz (2006))
- **Wine ratings are more positive for advertising clients** (Reuter (2009))
- **Local media outlets report more favorably about local firms** (Gurun and Butler (2012))

- In contrast to these studies, the granularity and size of our dataset allows us make a big step towards establishing causality in the relationship between advertising and media coverage for the first time.
  - → **Coverage of the entire US newspaper market**
  - → **Weekly firm-newspaper advertising expenditures**
  - → **Coverage of all industries**
  - → **Linguisitic analysis of the tone of an article**

Methodological approaches

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- **The impact of advertising on press coverage and news tone**
  - Main results: Fixed effects estimation
  - Temporal dynamics
  - National vs. local newspapers
- **Advertising bias around corporate news events**
  - Earnings announcements
  - Extreme stock returns

Dataset

- **Advertisement data from Kantar Media Stradegy**
  - Tracks advertising spending in 155 US newspapers. Link to permco's established via SOUNDEX codes, CRSP & Compustat names, and product and industry descriptions.
  - Contains the advertisement's publication date, the news outlet in which it is published, its cost using "rate cards", and the firm that commissioned the advertisement.
  - Available from 1999 – 2012.
- **Newspaper articles from LexisNexis**
  - 41 of the newspapers covered by Kantar Media Stradegy. Includes national newspapers like New York Times, USA Today, Wall Street Journal, and the Washington Post.
  - 1,489,610 articles on 3,739 different companies.
  - Tone is measured by the Loughran and McDonald (2011) word dictionaries.
  - Coverage is measured by the number of articles and words written about a company in a newspaper.

Summary statistics

	Mean	Median	SD	75%ile	25%ile	N
Panel A: Conditional on at least one article						
1-week Ads ($'000)	21.04	0	91.16	0	0	960,109
4-week Ads ($'000)	84.10	0	334.42	8	0	955,394
Article #	1.55	1	1.41	2	1	961,529
Word # ('000)	0.79	1	1.03	1	0	961,529
Tone (LMD^-)	1.87	2	1.58	3	1	961,529
Tone (LMD^+)	0.70	1	0.63	1	0	961,529
Panel B: All observations						
1-week Ads ($'000)	2.03	0	24.07	0	0	36,008,522
4-week Ads ($'000)	8.14	0	87.18	0	0	35,837,885
Article #	0.04	0	0.34	0	0	36,065,394
Word # ('000)	0.02	0	0.21	0	0	36,065,394

Unit of observation is the firm-newspaper-week.

Fixed effects estimation

Panel A: Media coverage						
	Art. # (1)	Word # (2)	Art. # (3)	Word # (4)	Art. # (5)	Word # (6)
Log(4-week Ads)	0.0234***	0.0436***	0.0155***	0.0297***	0.0030**	0.0038*
	(8.39)	(9.10)	(4.77)	(5.40)	(2.46)	(1.90)
Firm-week FE	Yes	Yes	Yes	Yes	Yes	Yes
Newspaper FE	Yes	Yes	–	–	–	–
Newspaper-SIC2 FE	–	–	Yes	Yes	–	–
Newspaper-firm FE	–	–	–	–	Yes	Yes
No. obs.	955,394	955,394	610,622	610,622	955,394	955,394
R^2	0.386	0.647	0.475	0.691	0.556	0.718
Panel B: Media tone						
	LMD^- (1)	LMD^+ (2)	LMD^- (3)	LMD^+ (4)	LMD^- (5)	LMD^+ (6)
Log(4-week Ads)	-0.0134***	0.0029***	-0.0125***	0.0035***	-0.0066**	-0.0001
	(-4.63)	(2.93)	(3.00)	(2.82)	(-2.38)	(-0.10)
Firm-week FE	Yes	Yes	Yes	Yes	Yes	Yes
Newspaper FE	Yes	Yes	–	–	–	–
Newspaper-SIC2 FE	–	–	Yes	Yes	–	–
Newspaper-firm FE	–	–	–	–	Yes	Yes
No. obs.	955,394	955,394	610,622	610,622	955,394	955,394
R^2	0.531	0.455	0.549	0.487	0.566	0.492

Temporal dynamics

	VAR2: Media tone	
	LMD⁻	Log(Ads)
	(3)	(4)
LMD⁻		
Lag 1	0.0381***	-0.0006
Lag 2	0.0258***	0.0005
Lag 3	0.0224***	0.0005
Lag 4	0.0203***	0.0012**
Lag 5	0.0196***	0.0003
Lag 6	0.0172***	-0.0001
Log(Ads)		
Lag 1	-0.0009***	0.2736***
Lag 2	-0.0007**	0.1870***
Lag 3	-0.0002	0.0647***
Lag 4	0.0005	0.1053***
Lag 5	0.0001	0.0524***
Lag 6	-0.0004	0.0522***
N	35,640,757	35,640,757
F-Stat (Media=0)	1,247.73	1.21
p-value (Media=0)	0.00	0.30
F-Stat (Ads=0)	5.03	125434.09
p-value (Ads=0)	0.00	0.00

- Two possible (non-mutually exclusive) explanations for the above results. Newspapers might report more favorably on advertisers
  1. to avoid losing advertising revenue in the future ("advertiser pressure" channel).
  2. to attract future advertising revenue ("anticipatory obedience" channel).
- Estimate a Panel VAR model as described in Holtz-Eakin, Newey, and Rosen (1988): variables are time-demeaned by firm-newspaper.

→ "Advertiser pressure" is much stronger than "anticipatory obedience" channel

National vs. local newspapers

	Panel A: Regressions on subsamples			
	Log(Article #)		LMD-	
	Local	National	Local	National
Log(4-week Ads)	0.0280***	0.0120***	-0.0186***	-0.0139***
	(6.69)	(4.04)	-(5.36)	-(2.72)
Firm-week FEs	Yes	Yes	Yes	Yes
Newspaper FEs	Yes	Yes	Yes	Yes
No. obs.	748,208	207,186	748,208	207,185
R^2	0.386	0.721	0.551	0.786

- National newspapers: WSJ, **NYT**, **USA Today**, Washington Post
- Results are robust to using a regression on the whole sample :

$$LMD^{-} = \alpha_0 + \alpha_1 * Ads + \beta * Ads * \mathbf{Paper} + \mathbf{Paper}.$$

Advertising bias around corporate news events

	Panel A: Earnings surprise quintiles			
	Log(Article #)		LMD$^-$	
	1st	5th	1st	5th
Log(30-day Ads)	0.0175***	0.0179***	-0.0444***	0.0043
	(6.20)	(5.70)	(-2.80)	(0.24)
Firm-event FEs	Yes	Yes	Yes	Yes
Newspaper FEs	Yes	Yes	Yes	Yes
No. obs.	12,022	11,858	12,022	11,858
R^2	0.370	0.364	0.539	0.514
	Panel B: Extreme stock returns			
	Log(Article #)		LMD$^-$	
	1st	99th	1st	99th
Log(30-day Ads)	0.0290***	0.0256***	-0.0275**	-0.0148
	(8.32)	(5.97)	(-2.54)	(-1.42)
Firm-event FEs	Yes	Yes	Yes	Yes
Newspaper FEs	Yes	Yes	Yes	Yes
No. obs.	19,672	17,036	19,672	17,036
R^2	0.440	0.440	0.605	0.619

- SUE is defined following DellaVigna and Pollet (2009) as $\frac{A_q - E_q}{P_q}$, where A_q are actual quarterly earnings, E_q the median analyst forecast in the 30 days prior from I/B/E/S, and P_q the stock price 5 days prior to the earnings announcement.
- Extreme stock returns are defined using the 1st and 99th percentiles from the preceding calendar month.

Summary

- We investigate whether an advertising bias exists in the US newspaper industry.
- We find that newspapers report more frequently and more favorably about their corporate advertising clients.
- This effect seems to be particularly driven by “advertiser pressure” and is more pronounced after bad corporate news events than after good corporate news events.
- Our results suggest that economic incentives have an adverse impact on the independence of the news media.

Thank you for your attention and comments!

BACKUP

Motivation

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- **70% of newspapers' revenues are obtained from advertising, while only about 30% are obtained from circulation** (Newspaper Association of America (2012))
- **Magazines that had a high part of their revenues coming from tobacco companies did report less about smoking causing lung cancer** (Weis and Burke (1986)).
- **70 to 90% of US newspaper editors had experienced pressure by advertisers, but that the overwhelming majority indicate that they do not bend to such pressure according to survey results** (Nyilasy and Reid (2011)).

Dataset

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Summary statistics – Conditional means

Measure	Advertiser	Non-Advertiser	Difference	t-stat
Panel B: 4-week Advertising				
Article #	1.87	1.42	0.45	6.01
Word #	1,000.94	708.67	292.27	6.40
Tone (LMD^{-})	1.80	1.90	-0.10	-2.97
Tone (LMD^{+})	0.72	0.69	0.03	2.79
MC1	2.88	2.76	0.12	3.81
MC2	0.45	-0.17	0.62	2.89

Standard errors adjusted for clustering by firm.

(High-dimensional) fixed effects

Standard panel	Our panel
2 dimensions (firm, time)	3 dimensions (firm, newspaper, time)
Can include firm and time dummies	Can include 2 interacted fixed effects: firm-week and firm-newspaper