How do analysts forecast earnings and what do they do with these forecasts?

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CARE Conference

April 8, 2006

Hearsay

- **“Every paper this semester has been on analysts”**
  - *Chicago GSB faculty (various), seminar, 2005*
- **“No analyst papers”**
  - *Ron Dye, Emory, 2006*
- **“Long in the tooth”**
  - *John Hand, FARS meeting, 2006*
- **“You have been given the topic held in the most disdain by researchers”**
  - *Jeff Abarbanell, recent phone conversation*

Assigned questions

- **1. How do analysts forecast earnings?**
- **2. What do they do with these forecasts?**

- **Prelude of conclusions:**
  - *We don't really know*
  - *Are we on track to find out?*

Caveat

- **Not a literature review**
- **Many comments applicable to other research**

- **Reviews in print**
  - Givoly, D. and J. Lakonishok, 1984, “Properties of Analysts’ Forecasts of Earnings: A Review and Analysis of the Research,” *Journal of Accounting Literature*.
  - Schipper, K., 1991, “Commentary on Analysts’ Forecasts.” *Accounting Horizons*.
  - Brown, L.D., 1993, “Earnings Forecasting Research: Its Implications for Capital Markets Research.” *International Journal of Forecasting*.
    - incl. discussions by J. O’Hanlon, J. Thomas, P. Brown, and M. Zmijewski
  - Ramnath, S., S. Rock, and P. Shane, 2006, “A Review of Research Related to Financial Analysts’ Forecasts and Stock Recommendations.” *Working paper*.

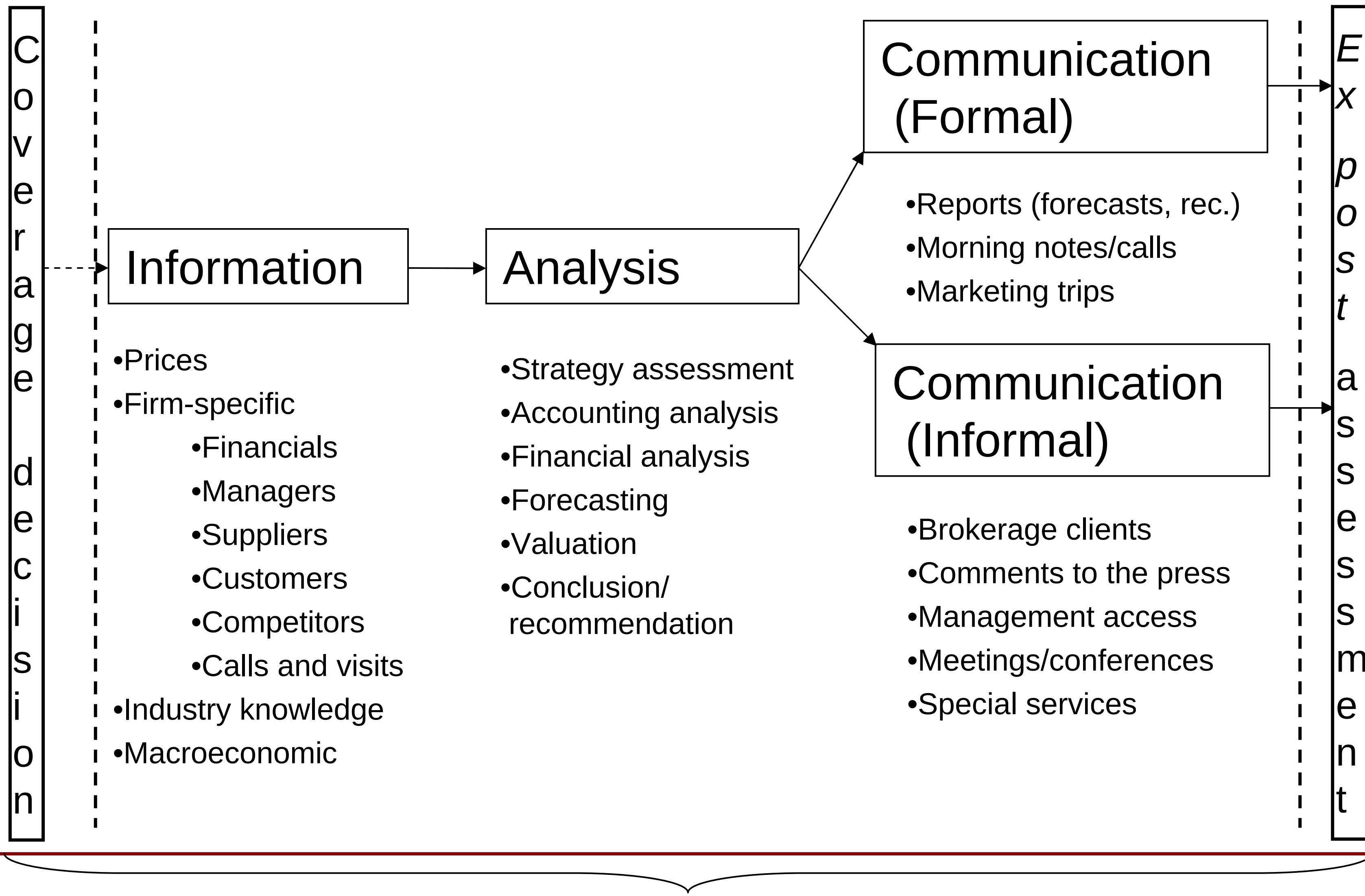
Why <u>did</u> we study analysts?

- **Early research on valuation and ERCs**
  - *Expectations drive prices*
  - *Time-series earnings models*
- **Analysts' forecasts deemed a better substitute**
  - *Fried and Givoly (1982)*

Why do we still study analysts?

- **Data availability**
  - *FirstCall-I/B/E/S, Value Line, Zacks, others*
- **Distributions to analyze**
  - *Forecast accuracy, bias, dispersion, etc.*
- **Correlations to compute**
  - *forecasts and prices, forecasts and ______, etc.*
- **Our interest in how capital markets operate**
- **Birth of a new literature**
  - *Analysts as an economic agent*
  - *Incentives, information processing, use of accounting data, etc*

Schematic



Ability, incentives, integrity/professionalism, responsiveness, etc.

Schematic

Coverage decision

Information

[redacted]

Communication (Formal)

- Reports (forecasts, rec.)
- Morning notes/calls
- Marketing trips

Communication (Informal)

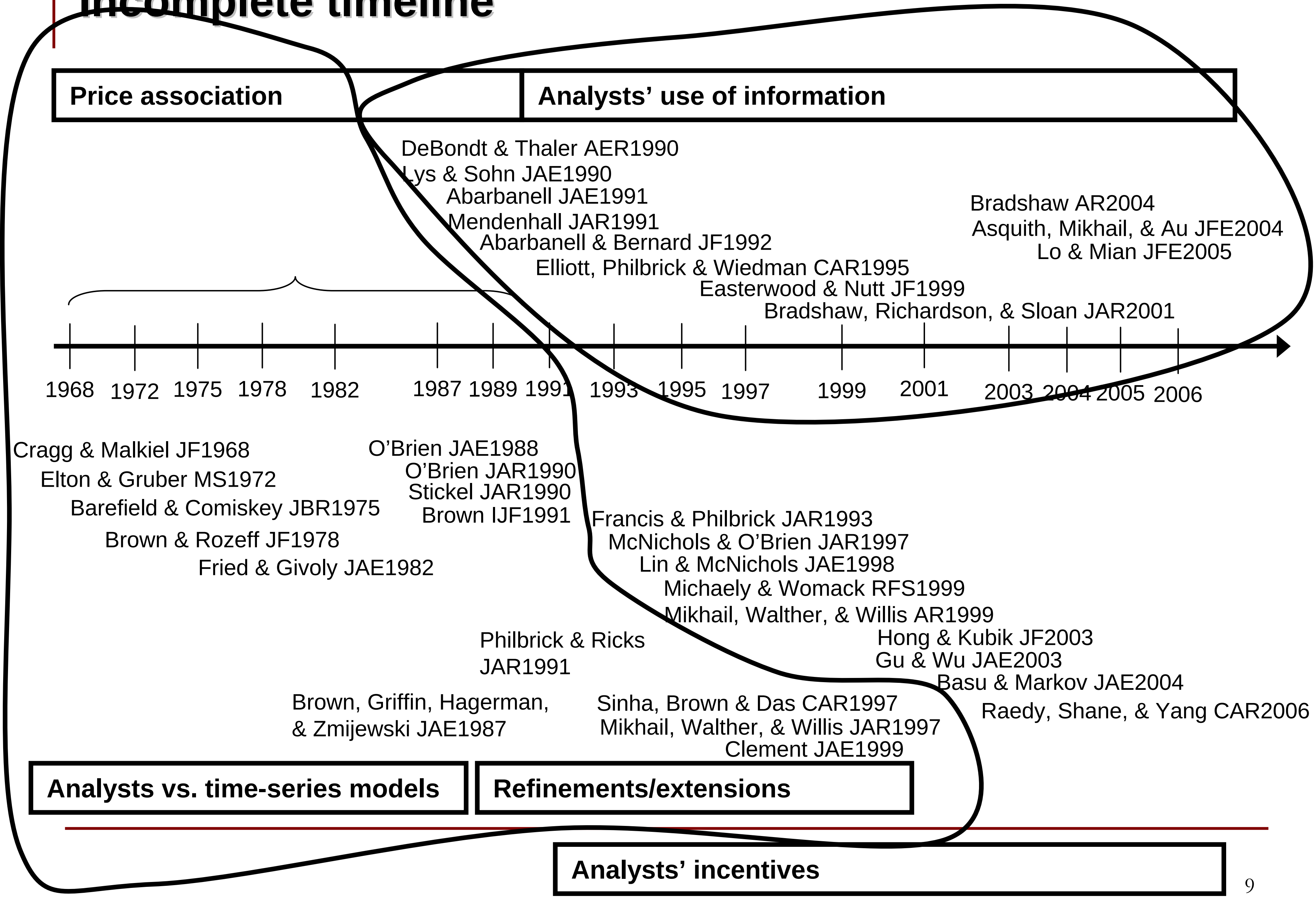
- Brokerage clients
- Comments to the press
- Management access
- Meetings/conferences
- Special services

- Prices
- Firm-specific
    - Financials
    - Managers
    - Suppliers
    - Customers
    - Competitors
    - Calls and visits
- Industry knowledge
- Macroeconomic

Ex post assessment

Ability, incentives, integrity/professionalism, responsiveness, etc.

Incomplete timeline



#1 “Analysts’ forecasts are optimistic”

- **What forecasts?**
  - *Quarterly, annual, growth, target prices*
- **At what horizon?**
  - *Months, years*

- **Selection bias**
  - *Absence of bad news*
  - *Longer time to downgrades*
- **Data issues**
  - *Actual earnings*
  - *1992*
  - *‘Tail asymmetry’ (Abarbanell and Lehavy JAE2003)*

#2 "Analysts are better than time-series models"

- **Again, horizon is important**
  - *Information vs. timing advantages*
- **Define 'better'**
  - *16% vs. 19%?*
- **Other forecasting literature concludes opposite**
  - *Interest rates (Belongia 1987)*
  - *GDP (Loungani 2000)*
  - *Recessions (Fintzen and Stekler 1999)*
  - *Turning points of business cycles (Zarnowitz 1991)*
- **With/without management assistance**
  - *Soffer, Thiagarajan, and Walther (2000)*

#3 We think we know how analysts forecast

- **Correlations**
  - *Contemporaneous public information* $\Leftrightarrow$ *Forecast error*
  - *Most studies take the form,* *Forecast Error* = $\alpha+\beta X$
    - where X=
      - Past Δearnings, Δprices, or forecast errors
      - Financial statement variables, footnotes
      - Management forecasts
      - Macroeconomic variables, etc.
  - *Associations, not behavior*
- **Do we believe analysts forecast like we teach our MBAs to forecast?**
  - *Top-line forecasts, line-items, net=EPS forecast*
  - *Role of management forecasts*

#4 “Analysts’ forecasts are inefficient”

- **Over- vs. underreaction**
  - *Past earnings, past prices, past forecast errors*
  - *Financial statements, management forecasts, etc.*

- **“Not fully” conclusions**
  - *Instead of measuring*

    corr(AV, V_of_I)

    we measure

    corr(AV, V_of_I)

    where

    V_of_I=V_of_I+error
  - *Correlations based on latter << 1*

- **Data issues problem (again)**

#5 Limited evidence on what analysts do with forecasts

- **Trade-off accuracy for optimism**
  - *Francis and Philbrick (1993)*
- **Earnings explain price forecasts**
  - *Bandyopadyhay, Brown, and Richardson (1995)*
- **More accurate forecasts ⇒ more profitable recommendations**
  - *Loh and Mian (2005)*
- **P/E multiples**
  - *Previts et al. (1994), Bradshaw (2002)*
- **PEG heuristics**
  - *Bradshaw (2004)*
- **Emphasis on qualitative factors**
  - *Barker (1999), Asquith, Mikhail, and Au (2005)*

#6 Most research ignores analysts' multi-tasking

- **Schipper (1991)**

- **Analysts provide numerous (quantitative) data points**
  - *Earnings forecasts (quarterly, annual)*
  - *Recommendations*
  - *Growth projections (of earnings)*
  - *Target prices*
  - *Risk ratings*

- **Exceptions**
  - *Prior slide*
  - *Recent attempts to penetrate the black box*

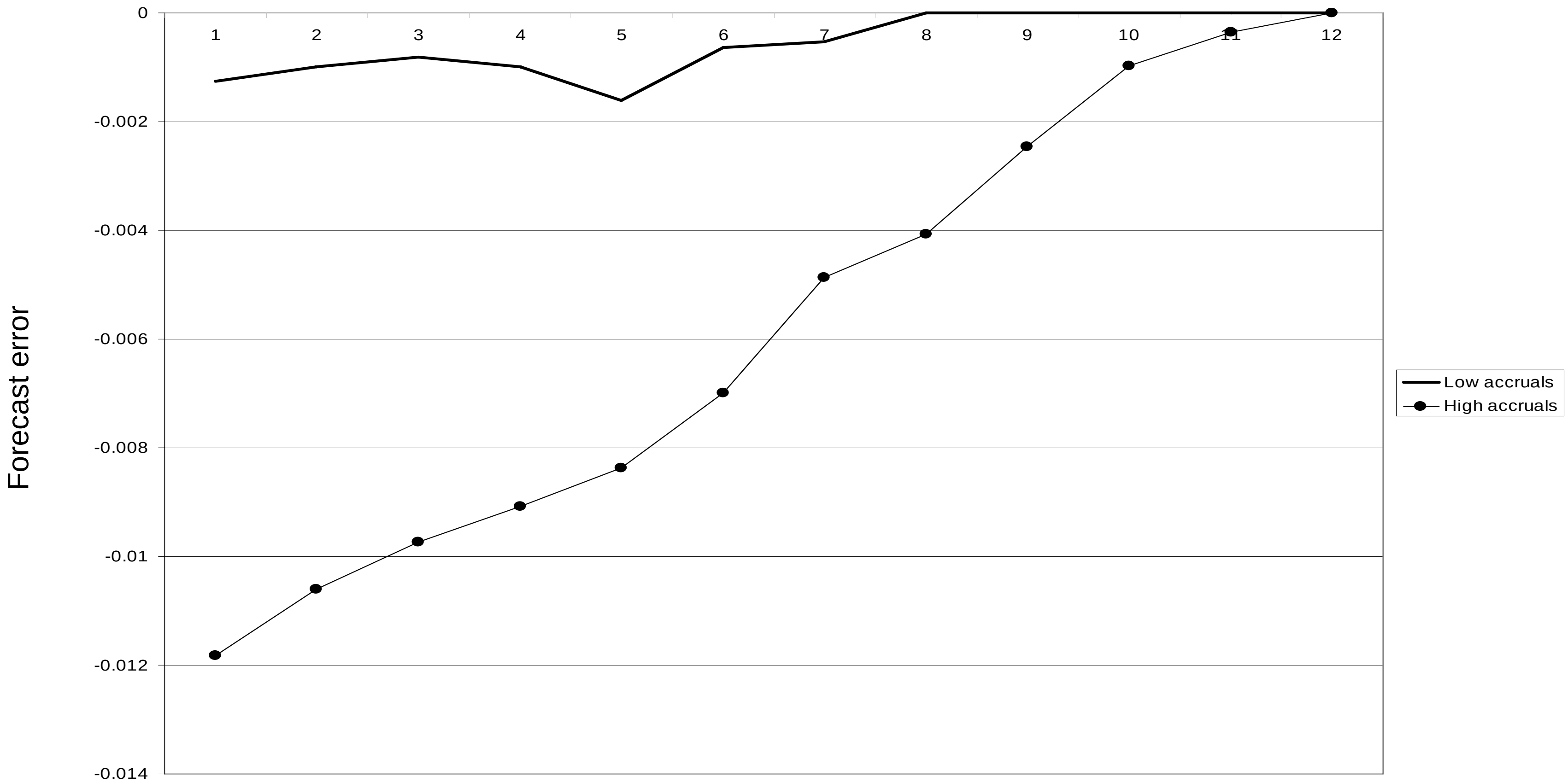
Unscientific/imperfect measure of single variable vs. multi-tasking analyses

- **ABI/INFORM Global search of abstracts within 'Scholarly Journals'**
  - *analyst+earnings* — *867 articles*
  - *analyst+recommendation* — *149 articles*
  - *analyst+long+term+growth* — *54 articles*
  - *analyst+target+price* — *14 articles*

  - *analyst+earnings+recommendation* — *27 articles*
  - *analyst+earnings+long+term+growth* — *22 articles*
  - *analyst+earnings+target+price* — *3 articles*
  - *analyst+earnings+recommendation+long+term+growth* — *1 article*

#7 Analyst data are helpful for capital markets literature

- e.g., PEAD, IPO/SEO, value/glamour, accruals, etc.



#8 “Analysts are dominated by conflicts of interest”

- **Investment banking**
  - *Forecasts of affiliated analysts are too optimistic*
- **Curry favor with management**
  - *Analysts are most optimistic when they are less likely to be held accountable*
  - *Analysts censor negative views on a firm*
- **Trade generation incentives**
  - *Smaller brokerages issue more optimistic forecasts and recommendations*

- **However, reputation matters**

Prior results on affiliation effects

Paper	Event	Time period	N	Results				
					FE1*	**REC***		
Dugar & Nathan (1995)	IB relation	1983-1988	102 firms	**Non-IB**	-0.028	3.511		
				IB	-0.040	3.760		
					FY1	**FY2**	**Growth***	**REC***
Lin and McNichols (1998)	SEOs	1989-1994	2400 SEOs	**Non-Aff**	0.071	0.098	0.207	3.901
				Aff.	0.070	0.099	0.213	4.259
					FE1			
Hansen and Sarin (1998)	SEOs	1980-1991	909 SEOs	**All**	-0.050			
				Lead	-0.050			
					LTG*	**Error***		
Dechow, Hutton, and Sloan (2000)	SEOs	1981-1990	1179 SEOs	**Unaff.**	0.150	-0.105		
				Aff.	0.186	-0.143		
Michaely and Womack (1999)	IPOs	1990-1991	391 IPOs	**Non-UW**	<limited distribution data provided>			
				UW				

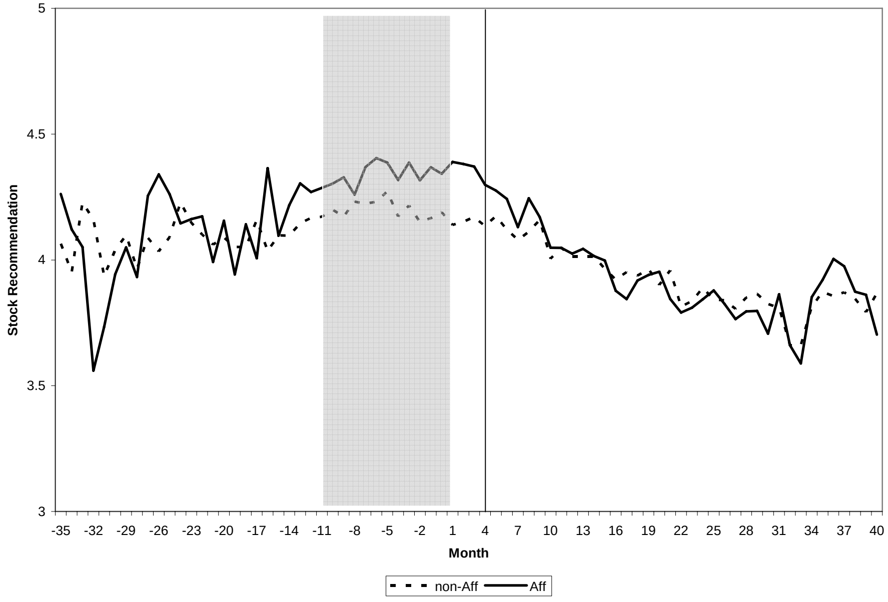
No Diff.

0.6%

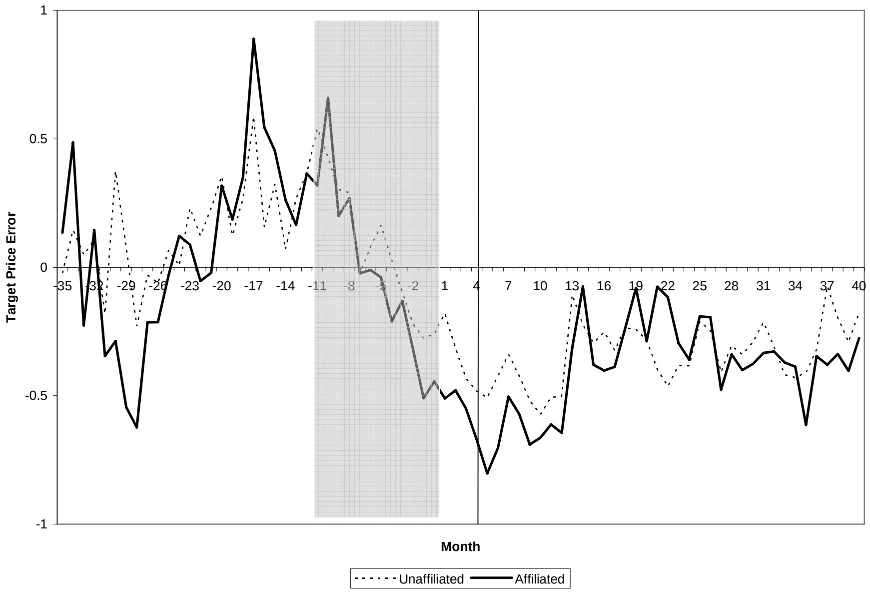
0.358

Everyone is optimistic around IPOs and SEOs

Stock recommendations



Target price forecast errors



#9 We may be focusing on the least important activities

- **Accountants like measurement**

- **Measurement is ‘easy’ for:**
  - *Earnings forecasts, forecast revision, forecast error*
  - *Returns*
  - *Stock recommendations, etc.*

- **Measurement is not so easy for:**
  - *Analysis of strategy, industry dynamics, competition*
  - *Assessment of quality of management*
  - *Providing management access*
  - *Being accessible/responsive*
  - *Performing special services*

What consumers of analyst research want

(Institutional Investor Rankings)

	1998	1999	2000	2001	2002	2003	2004	2005
Industry knowledge	1	1	1	1	1	1	1	1
Integrity/professionalism					2	2	2	2
Accessibility/responsiveness				2	3	3	3	3
Management access				7	5	5	4	4
Special services	4	3	2	5	7	6	5	5
Written reports	3	2	4	6	8	7	7	6
Timely calls and visits				4	4	4	6	7
Communication skills					10	9	8	8
Financial models			3	8	9	10	10	9
Management of conflicts of interest				3	6	8	9	10
Stock selection	2	5	7	10	11	11	11	11
Earnings estimates	5	6	5	9	12	12	12	12
Quality of sales force	7	7	8	11	13	13	13	
Market making	8	8	9	12	14	14	14	
Primary market services			10		15	15	15	
Servicing	6	4	6					

What consumers of analyst research want (cont.)

(Institutional Investor Rankings)

	1998	1999	2000	2001	2002	2003	2004	2005
Industry knowledge	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Integrity/professionalism					0.93	0.93	0.93	0.91
Accessibility/responsiveness				0.91	0.86	0.86	0.86	0.82
Management access				0.45	0.71	0.71	0.79	0.73
Special services	0.57	0.71	0.89	0.64	0.57	0.64	0.71	0.64
Written reports	0.71	0.86	0.67	0.55	0.50	0.57	0.57	0.55
Timely calls and visits				0.73	0.79	0.79	0.64	0.45
Communication skills					0.36	0.43	0.50	0.36
Financial models			0.78	0.36	0.43	0.36	0.36	0.27
Management of conflicts of interest				0.82	0.64	0.50	0.43	0.18
Stock selection	0.86	0.43	0.33	0.18	0.29	0.29	0.29	0.09
Earnings estimates	0.43	0.29	0.56	0.27	0.21	0.21	0.21	0.00
Quality of sales force	0.14	0.14	0.22	0.09	0.14	0.14	0.14	
Market making	0.00	0.00	0.11	0.00	0.07	0.07	0.07	
Primary market services			0.00		0.00	0.00	0.00	
Servicing	0.29	0.57	0.44					

What consumers of analyst research want (cont.)

(Institutional Investor Rankings)

		Avg. rank change, 98-05
	(#2) Integrity/professionalism	0.13
	(#3) Accessibility/responsiveness	0.12
↑	Management access	0.11
	Timely calls and visits	0.07
	Communication skills	0.06
	Financial models	0.05
	Management of conflicts of interest	0.04
	Special services	0.01
∅	(#1) Industry knowledge	0.00
	Primary market services	0.00
↓	Market making	-0.02
	Written reports	-0.02
	Quality of sales force	-0.04*
	Servicing	-0.05
	Earnings estimates	-0.06*
	Stock selection	-0.10***

#10 Empirical financial researchers eschew alternative methodologies

- **First, Larcker and Lessig (AR1983)**
  - *Experimental task: ‘BUY’/’NO-BUY’ decision on 45 stocks*
  - *Linear models vs. retrospective process tracing*
    for predictive validity and cue importance identification
  - *Findings*
    - Both had reasonable predictive validity
    - Measures of cue importance often dissimilar
  - *If research goal is prediction of judgment,*
    - Either method is reasonable;
      linear model preference given lower cost and complexity
  - *If research goal is understanding what information is used and how it is used,*
    - “[A] process tracing procedure seems to be required”

#10 Empirical financial researchers eschew alternative methodologies (cont.)

- **Multi-method research strategies**
  - *Archival studies that go beyond regressing forecast error on* __________
  - *Surveys/interviews*
  - *Process tracing methods*
  - *Transcript or content analysis*
  - *Experiments*
- **Well-known criticisms**
  - *Small sample sizes*
  - *Non-rigorous methodologies*
  - *The 'Descriptive' denigration*
- **Costly, messy, or simply new**
  - *Mayew (2006) is a recent example*

Conclusion

- **We have learned a lot**
- **Analyst-specific research focuses on a narrow set of analyst outputs to draw conclusions about**
  - *what they do; and*
  - *how they do it and how well they do*
- **Focus of our research has been**
  - *mostly restricted to variables that can be quantified*
  - *typically on one variable in isolation*
  - *disproportionately on a possibly low importance activity (i.e., earnings forecasts)*
- **Studies that attempt to penetrate the ‘black box’ have (in the past) received less attention**
- **Interesting juncture**
  - *$1.4B settlement*
  - *NASD2711/NYSE472*
  - *Independent research requirement*
  - *Trend towards paying for coverage*

Conclusion (last slide)

- **"That is not to say, however, that researching the 'same old' issues using the 'same old' methodologies will be informative. For example, it is unlikely that another study …**
  [correlating forecast errors and _FILL IN THE BLANK_] **… will provide any useful insights."**

- **"It will, naturally, become more and more challenging to identify interesting questions and to design interesting and meaningful empirical tests."**

Mark Zmijewski, 1993