Econ 219B
Psychology and Economics: Applications
(Lecture 14)

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Outline

1. Persuasion and Retirement Benefits
2. Social Approval: Two Experiments
3. Overconfidence: Introduction
4. Overconfidence: Mergers
5. Overconfidence: Excess Market Entry

1 Persuasion and retirement benefits

- How do employees choose their savings plan?
- Take 'advice' of firm?
- Benartzi and Thaler (2001)
- Zack

- Interpretation:

    1. Bounded rationality

    2. Persuasion – take advice of company

- Does more choice of plans translate into less saving?

- Do employees take advice of co-workers?

- What are the effects of taking this advice?

- Duflo and Saez, *The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence From a Randomized Experiment*

  - Target staff in prestigious university (Harvard? MIT?)

  - Randomized Experiment in a university:

    * 1/3 of 330 Departments control group

    * 2/3 of 330 Departments treatment group:

      · 1/2 not-enrolled staff: letter with $20 reward for attending a fair

      · 1/2 not-enrolled staff: no reward

- Measure of attendance to the fair

- Measure of effect on retirement savings

- Summary of effects:
  - Large effect of subsidy on attendance
  - Large peer effects of subsidy on attendance
  - People are willing to go along with colleagues
  - Small effects of attendance on retirement savings

- Just explaining retirement savings not very effective at getting people to save

- Effect of changing default much larger

- Interesting variation: give opportunity to sign up at fair

TABLE I
DESCRIPTIVE STATISTICS, BY GROUPS

	Treated departments			
	All (group $D = 1$)	Treated (group $D = 1$, $L = 1$)	Untreated (group $D = 1$, $L = 0$)	Untreated departments (group $D = 0$)
	(1)	(2)	(3)	(4)
PANEL A: BACKGROUND CHARACTERISTICS				
TDA participation before the fair (Sept. 2000)	0.010	0.009	0.011	0.012
	(.0015)	(.0021)	(.0022)	(.0024)
Observations	4168	2039	2129	2043
Sex (fraction male)	0.398	0.400	0.396	0.418
	(.0076)	(.0109)	(.0107)	(.011)
Years of service	5.898	5.864	5.930	6.008
	(.114)	(.161)	(.16)	(.157)
Annual salary	38,547	38,807	38,297	38,213
	(304)	(438)	(422)	(416)
Age	38.3	38.4	38.2	38.7
	(.17)	(.24)	(.24)	(.24)
Observations	4126	2020	2106	2018
PANEL B: FAIR ATTENDANCE (REGISTRATION DATA)				
Fair attendance rate among non-TDA enrollees	0.214	0.280	0.151	0.049
	(.0064)	(.01)	(.0078)	(.0048)
Observations	4126	2020	2106	2018
Fair attendance rate for all staff employees	0.192			0.063
	(.0132)			(.0103)
Observations	6687			3311
PANEL C: TDA PARTICIPATION (ADMINISTRATIVE DATA)				
TDA participation rate after 4.5 months	0.049	0.045	0.053	0.040
	(.0035)	(.0049)	(.0051)	(.0045)
Observations	3726	1832	1894	1861
TDA participation rate after 11 months	0.088	0.089	0.088	0.075
	(.005)	(.0071)	(.007)	(.0065)
Observations	3246	1608	1638	1633

a. Standard errors are in parentheses.
b. The first part of Panel B includes all individuals not enrolled in the TDA by September 2000. The second part includes all employees (enrolled or not in the TDA).
c. The average fair participation in the nontreated departments was obtained from the registration information collected at the fair. Since only 75 percent of the participants registered, the participation was adjusted by a proportionality factor.
d. Demographic information and TDA participation are all obtained from administrative data.

In Panel B we can see that our inducement strategy had a dramatic effect on the probability of attending the fair: in treated departments, as many as 21.4 percent of individuals attended the

TABLE II
REDUCED-FORM ESTIMATES (OLS)

	Dependent variable		
		TDA enrollment after	
	Fair attendance (1)	4.5 months (2)	11 months (3)
PANEL A: Average effect of department treatment			
Treated	0.166	0.0093	0.0125
Department dummy D	(.013)	(.0043)	(.0065)
Observations	6144	5587	4879
PANEL B: Effect of letter and department treatment			
Letter dummy L	0.129	−0.0066	0.0005
	(.0226)	(.0061)	(.0102)
Treated	0.102	0.0125	0.0123
Department dummy D	(.0139)	(.0054)	(.0086)
Observations	6144	5587	4879

a. Dependent variables are individual fair participation (column (1)), TDA enrollment 4.5 months and 11 months after the fair (columns (2) and (3)).
b. Independent variable in Panel A is the department treatment dummy D.
c. Independent variables in Panel B are the individual letter dummy L and the department treatment dummy D.
d. All regressions control for the triplet of the department, gender, year of service, age, and salary.
e. Standard errors (in parentheses) are corrected for clustering at the department level.

$$y_{ij} = \alpha_2 + \beta_2 D_j + \eta_{ij}. \tag{2}$$

The estimates for β_1 and β_2 are reported on Panel A of Table II for fair attendance, (column (1)), and TDA enrollment after 4.5 months (column (2)) and 11 months (column (3)). These estimates correspond to the difference in fair attendance and TDA enrollment between treated and untreated departments reported in columns (1) and (4) of Table I, respectively. The regressions also include fixed effects for the stratification triplet (see Section III), as well as controls for background variables—gender, year of service, age, and salary. All standard errors are corrected standard errors for clustering at the department level.[14] Being in a treated department increases the probability of attending the fair by 16.6 percentage points. It also increases significantly the TDA

14. Adding the triplet dummies reduces the standard errors, by absorbing some unexplained differences across departments of similar size and prefair TDA enrollment rates. Baseline covariates are also included to improve the precision of our estimates.

2 Social Approval: Two Experiments

- Last lecture: Referee grants extra time to favor home team

- Accomodate demands of audience

- How far do we go to get approval of others?

- Huberman, Loch, Onculer (2002)

- (Sociology and economics)

- Two-stage procedure:

  1. compete to earn right to participate in lottery

2. Winner of first-stage participates in lottery

- Between-subject experiment.
- Treatment 1: As described
- Treatment 2: Winner of first stage publicly announced, given tag "winner", applauded

- Endowment of 30 cards
- Player i allocates amount x_i to stage 1

- Probability of winning first-stage increasing in x_i:

$$\frac{x_i}{x_i + \sum_{j \neq i} x_j}$$

- Second-stage: win \$20 with probability

$$\frac{30 - x_i}{30}$$

- Denote by U_a the utility of applause in treatment 2

- Player maximizes

$$\frac{x_i}{x_i + \sum_{j \neq i} x_j} \left(\frac{30 - x_i}{30} 20 + U_a \right).$$

- Nash equilibrium for x_i^* interior

- x_i^* should be increasing in U_a

- Results:
  - Large effect of Treatment
  - Differential effect by gender
  - Differential effect by country

contribution as the status condition is introduced in the game. To test this claim we compared the Stage I rent-seeking contributions across the two conditions in each country. As can be seen from the table, the average contributions are systematically higher in the status condition compared to the no-status condition in four countries, Hong Kong, Turkey, the US, and Germany (for instance, 19.32 versus 16.17 points in the Turkey treatment). The Kruskal-Wallis test shows that this increase is statistically significant ($p < .05$) except for Germany ($p = .22$). The lower significance in the Germany treatment can be explained the fact that the subject pool was considerably smaller than the other treatments, leading to a higher p-value. Even though the statistical significance is not very strong, the difference still points in the right direction.

Experiment	Contribution US	Contribution Turkey	Contribution Hong Kong	Contribution Germany	Contribution Sweden/Finland
No Status	16.09 (3.67) *n*=44	16.17 (5.27) *n*=36	14.32 (3.39) *n*=28	10.85 (6.45) n=20	14.51 (5.06) n=76
Status	17.72 (3.41) *n*=36	19.32 (5.19) *n*=32	18.17 (4.65) *n*=24	13.26 (5.81) n=19	13.38 (3.75) n=80

Table 1: Average Rent-Seeking Contributions (and standard deviations)

Thus, the results in the first four countries support our first hypothesis. In contrast, the Swedish/Finnish contributions stay constant over the two conditions (the difference is slightly negative, but is not statistically different from zero, $p = .81$). From Hypothesis 2, we expected the status effect to be weakest in this treatment. In addition, Scandinavians are strongly adverse to being publicly acknowledged (this is called "jantelagen" in Swedish, based on Sandemose 1933, see also Schneider & Barsoux 1997, 8). We discuss this further in Section 4.4.

	Men		Women	
	No Status	Status Increase	No Status	Status Increase
Hong Kong	15.78	4.16	11.70	2.16
Turkey	20.17	1.30	15.75	0.79
US	16.70	3.0	15.31	-.06
Sweden/Finland	16.19	-2.82	12.33	1.05

Table 3: Average Stage I Contributions in No Status Condition and Average Increase in Status Condition

Anthropologists (e.g., Barkow 1989, Wilson & Daly 1985, Maccoby 1998, Pawlowski *et al.* 2000) also argue that men are more sensitive to status considerations, again because of sexual selection: while men tend to choose women on the basis of personal and physical attributes, women tend to choose men not only on these attributes, but also on social status (Geary 1998, Chapter 5 and references therein).

In our experiment, men did react more strongly to a salient status symbol than women in all countries (even the small German sample), except in the Swedish/Finnish sample, where men actually "shun away" from a public status acknowledgement and *reduce* their contribution (see Table 3). We discuss possible reasons for this below.

In the other countries, the evidence is further strengthened by the comments in the after-game questionnaires. For instance, in the US treatment, of the five first-round male winners, three commented "it's nice to get applause," and none made a negative comment. Of the four female first-round winners, only one made a positive comment, and one stated "I was a bit embarrassed."

A possible explanation for the male "shyness" in the Swedish/Finnish treatment lies in the highly egalitarian nature of Scandinavian culture. Specifically, this culture has a feature

- Effect of implicit expectations by others

- Falk and Ichino (2003)

- Field experiment in Switzerland
  - High School students
  - Stuffing letters into envelopes

- Two versions of this paper:
  1. Old version: Manipulate expectations by showing pile of previous worker. BUT: Previous pile is fake – BAD!
  2. New version with two treatments:
  - $*$ Single subject (N=8)

    * Pair of subjects (can see each other, no work together) (N=16)

- Results of new version:
  - Productivity on average higher for pairs
  - Effect is at bottom: No shirkers
  - Substantial reduction in within-pair s.d.

Table 1: Quantiles of the output distribution in each treatment

Quantile	single treatment	pair treatment	difference
10th	133	175	42
25th	173	207	34
50th	194	212	18
75th	213	236	23
90th	256	265	9

Note: columns 1 and 2 of the table report the quantiles of the output distribution for the single and the pair treatments, estimated using a quantile regression of output on a dummy for the pair treatment plus a constant. Column 3 reports the absolute value of the difference between the quantiles estimated for the two treatments.

Fig. 1: The desk

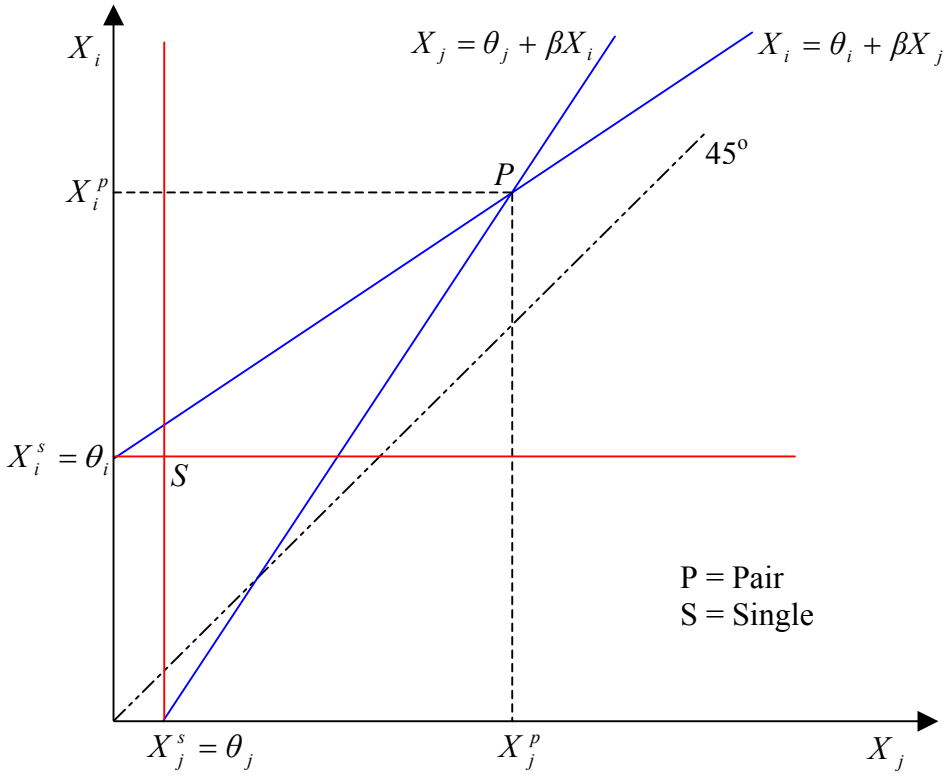


Fig. 2: Reaction curves and equilibria in the pair and in the single treatment

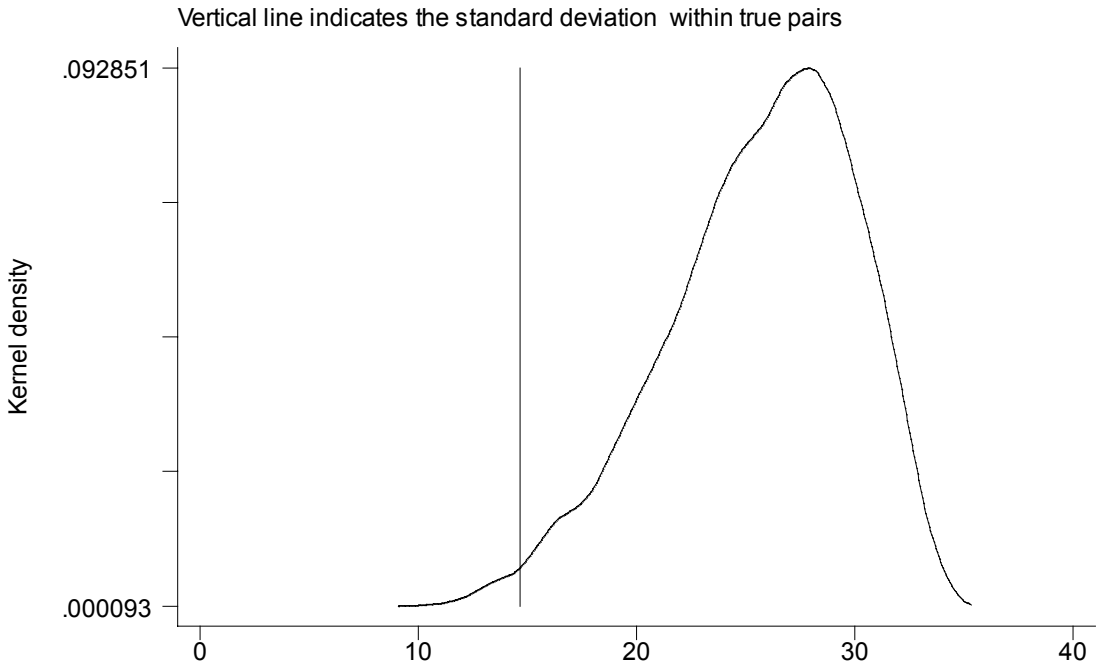


Fig. 3: St. dev. within true and hypothetical pairs in pair sample

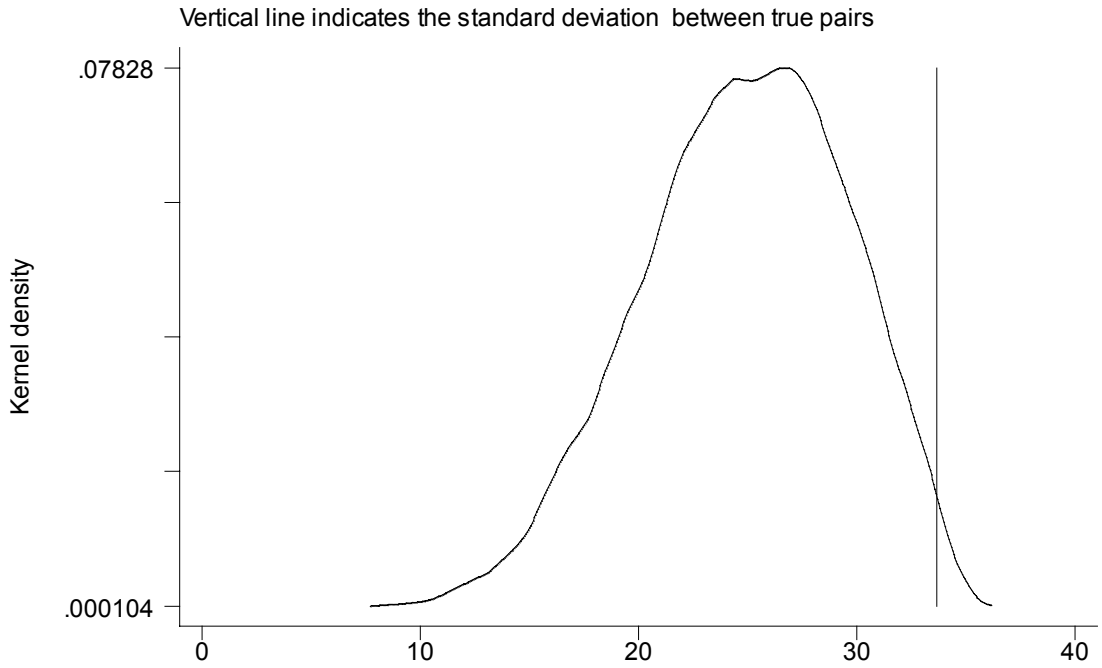


Fig. 4: St. dev. between true and hypothetical pairs in pair sample

3 Overconfidence: Introduction

- So far (mostly) technological deviations from standard model:

$$\max \sum_{i=1}^{N} p_i U\left(x|s_i, r\right)$$

  where $p_i = P\left(s_i\right)$ and r indexes the technological deviation:

  - self-control
  - reference dependence
  - social pressure
  - imperfect knowledge –> social learning

- What is importance of wrong expectations?

$$\max \sum_{i=1}^{N} \tilde{p}_i U\left(x|s_i\right)$$

  where $\tilde{p}$ is the subjective distribution of states S_i for agent.

- Distribution for agent may differ from actual distribution: $\tilde{p} \neq p$.

- Last semester: quasi-Bayesian updating

- Today: (static) focus on overestimation of good outcomes

- Example:

  - Overestimate self-control (β and $\hat{\beta}$)

  - Underestimate response to social pressure

4 Overconfidence: Mergers and Investment

- Malmendier and Tate (2003)

What Causes Mergers and Acquisitions?

Standard Stories

1. "Synergies"
2. Market Power (1920s)
3. Diversification (1960s)
4. Market Discipline (1980s)
5. Deregulation (1990s)

} Efficiency-Driven

Alternatives: Departures from Rationality

Biased Market	Biased Managers
Stock Price Bubbles (Shleifer and Vishny 2001)	**The Hubris Hypothesis** (Roll 1986)

Many managements apparently were overexposed in impressionable childhood years to the story in which the imprisoned handsome prince is released from a toad's body by a kiss from a beautiful princess. Consequently, they are certain their managerial kiss will do wonders for the profitability of Company T[arget]…

We've observed many kisses but very few miracles. Nevertheless, many managerial princesses remain serenely confident about the future potency of their kisses—even after their corporate backyards are knee-deep in unresponsive toads.

-Warren Buffet
(Berkshire Hathaway Inc. Annual Report, 1981)

Overconfidence

Overconfident CEOs overestimate their ability to generate returns

- In their own company
- In other companies

<u>Implication for Mergers</u>

Overvalue future returns of combined company → Too eager to merge

Overvalue future returns of current company → Reluctant to issue equity

Evidence from Psychology on Overconfidence

1. "Better-than-average effect"
   - Abilities and Skills (IQ, driving skills)
   - Personal Situation (no severe illness, no divorce)

   } permanent, first moment

2. Overconfidence when
   - Noisy or Infrequent Feedback
   - (Illusion of) Control
   - Commitment

3. Other aspects of overconfidence
   (NOT in this paper)
   - overconfidence in precision (calibration)
   - time-variation

   } transitory, second moment

Evidence from Economics & Finance

- Overconfidence about abilities and self-control
  (Camerer-Lovallo 1999; O'Donoghue and Rabin 1999)

- Overconfidence of corporate decision-makers
  - Takeovers (Roll 1986)
  - Corporate Investment (Malmendier and Tate 2002)
  - Risk-tolerance (Goel and Thakor 2000)

Evidence from "the real world:" The AT&T Case

Takeover of NCR in 1990/91

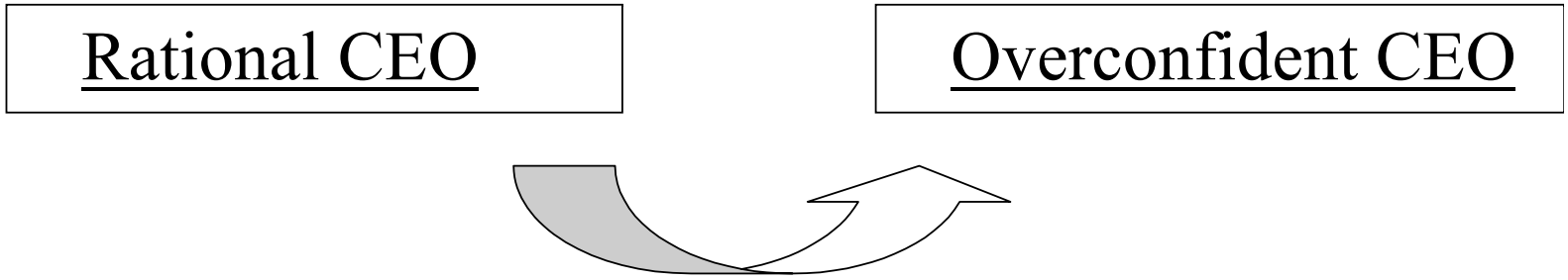
- Red Flags of analysts
  - *Every* merger between telecommunication/computer technology firms had failed (e.g. IBM and Rolm; Burroughs Inc. and Sperry Univac).
  - *"No one I know can think of a single example of where a large high-technology merger has been really successful. And it's hard to see how AT&T's play for NCR would be any different."* (L.A. Times, 12/30/91)
- Target (NCR) Chairman Charles Exley: *"History has shown that such takeovers turn out to be calamities!"*
- Acquiring (AT&T) CEO Robert Allen: *"It's going to be tough not to repeat history. But the NCR deal offers AT&T unique opportunities ..."*

→ Acquisition of NCR in 1991.

→ By 1996, AT&T lost $7 billion on its investment in NCR.

→ Spin-off of NCR in 1996.

Empirical Predictions



1. On average?
2. Overconfident CEOs do more mergers that are likely to destroy value
3. Overconfident CEOs do more mergers when they have abundant internal resources
4. The announcement effect after overconfident CEOs make bids is lower than for rational CEOs

Data

Data on private accounts

1. Hall-Liebman (1998)
   Yermack (1995)

Key: Panel data on stock and option holdings of CEOs of Forbes 500 companies 1980-1994

2. Personal information about these CEOs from
   - Dun & Bradstreet
   - Who's who in finance

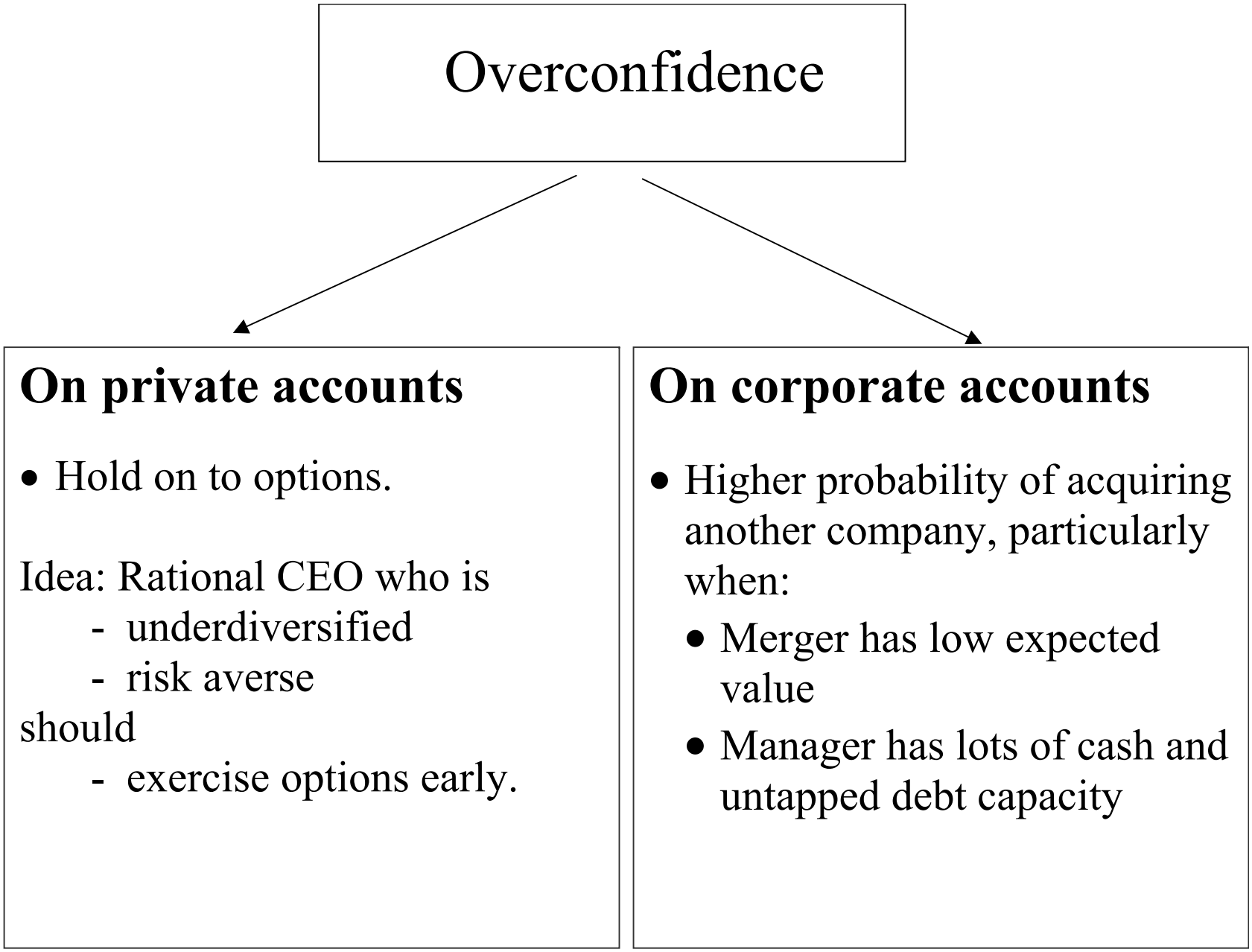
Data on corporate accounts

1. CRSP/COMPUSTAT

   Cash flow, Q, stock price…

2. CRSP/SDC-merger databases

   Acquisitions


Overconfidence
On private accounts
• Hold on to options.
Idea: Rational CEO who is
- underdiversified
- risk averse
should
- exercise options early.
On corporate accounts
• Higher probability of acquiring another company, particularly when:
• Merger has low expected value
• Manager has lots of cash and untapped debt capacity

Primary Measure of Overconfidence

"Longholder"

(Malmendier and Tate 2003)

CEO holds an option until the year of expiration.

CEO displays this behavior at least once during sample period.

→ minimizes impact of CEO wealth, risk aversion, diversification

Robustness Checks:

1. Require option to be at least *x*% in the money at the beginning of final year
2. Require CEO to *always* hold options to expiration
3. Compare "late exercisers" to "early exercisers"

Empirical Specification

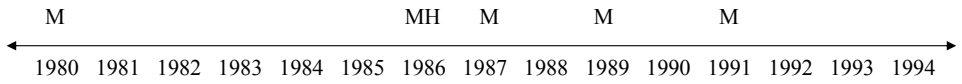
$$\Pr\{Y_{it} = 1 \mid X, O_{it}\} = G(\beta_1 + \beta_2 \bullet O_{it} + X'\boldsymbol{\gamma})$$

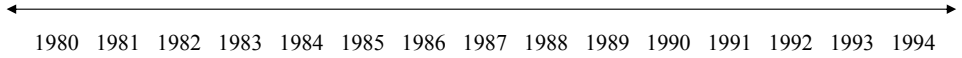
with
- i company
- t year
- Y acquisition (yes or no)
- O overconfidence
- X controls

- H_0: $\beta_2 = 0$ (overconfidence does not matter)
- H_1: $\beta_2 > 0$ (overconfidence does matter)

Identification Strategy

	Logit & Random Effects Logit	Fixed Effects Logit
Case 1:		
David C. Farrell (May Department Stores) • CEO for all 14 years of sample • Longholder	Yes	No
J Willard Marriott (Marriott International) • CEO for all 15 years of sample • Not a Longholder		
Case 2:		
Colgate Palmolive • Keith Crane CEO from 1980-1983 (Not a Longholder) • Reuben Mark CEO from 1984-1994 (Longholder)	Yes	Yes





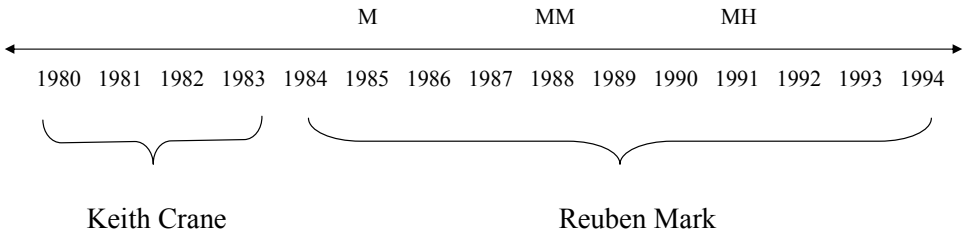


Table 4. Do Overconfident CEOs Complete More Mergers?

Longholder = holds options until last year before expiration (at least once)
Distribution: Logistic. Constant included.
Dependent Variable: Acquistion (yes or no)**; Normalization:** Capital.

	logit with controls	random effects logit	logit with fixed effects
Size	**0.8733**	**0.8600**	**0.6234**
	(1.95)*	(2.05)**	(2.60)***
Q_{t-1}	**0.7296**	**0.7316**	**0.8291**
	(2.97)***	(2.70)***	(1.11)
Cash Flow	**2.0534**	**2.1816**	**2.6724**
	(3.93)***	(3.68)***	(2.70)***
Ownership	**1.2905**	**1.3482**	**0.8208**
	(0.30)	(0.28)	(0.11)
Vested Options	**1.5059**	**0.9217**	**0.2802**
	(1.96)*	(0.19)	(2.36)**
Governance	**0.6556**	**0.7192**	**1.0428**
	(3.08)***	(2.17)**	(0.21)
Longholder	**1.5557**	**1.7006**	**2.5303**
	(2.58)***	(3.09)***	(2.67)***
Year Fixed Effects	yes	yes	yes
Observations	3690	3690	2192
Firms	327	327	184

Alternative Explanations

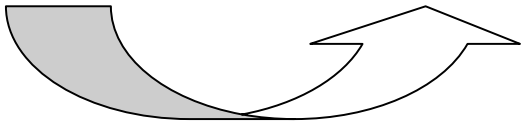
1. Inside Information or Signalling
   - Mergers should "cluster" in final years of option term
   - CEOs should "win" by holding
   - Market should react favorably on merger announcement

2. Stock Price Bubbles
   - Year effects already removed
   - All cross-sectional firm variation already removed
   - Lagged stock returns should explain merger activity

Empirical Predictions

Rational CEO

Overconfident CEO



On average?

1. Overconfident CEOs do more mergers that are likely to destroy value
2. Overconfident CEOs do more mergers when they have abundant internal resources
3. The announcement effect after overconfident CEOs make bids is lower than for rational CEOs

Table 9. Diversifying Mergers

Longholder = holds options until last year before expiration (at least once)
Distribution: Logistic. Constant included; **Normalization:** Capital.
Dependent Variable: Diversifying merger (yes or no).

	logit	logit with random effects	logit with fixed effects
Longholder	**1.6008**	**1.7763**	**3.1494**
	(2.40)**	(2.70)***	(2.59)***
Year Fixed Effects	yes	yes	yes
Observations	3690	3690	1577
Firms	327	327	128

Dependent Variable: Intra-industry merger (yes or no).

Longholder	**1.3762**	**1.4498**	**1.5067**
	(1.36)	(1.47)	(0.75)
Year Fixed Effects	yes	yes	yes
Observations	3690	3690	1227
Firms	327	327	100

Regressions include Cash Flow, Q_{t-1}, Size, Ownership, Vested Options, and Governance.
Industries are Fama French industry groups.

Empirical Predictions

Rational CEO

Overconfident CEO

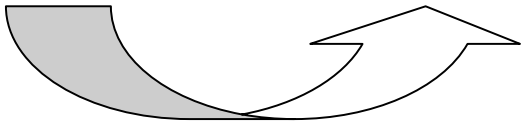


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Table 10. Kaplan-Zingales Quintiles

Longholder = holds options until last year before expiration (at least once)
Distribution: Logistic. Constant included.
Dependent Variable: Acquistion (yes or no)**; Normalization:** Capital.
All regressions are logit with random effects.

Least Equity Dependent ----------> Most Equity Dependent

All Mergers

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Longholder	**2.2861**	**1.6792**	**1.7756**	**1.9533**	**0.8858**
	(2.46)**	(1.48)	(1.54)	(1.50)	(0.33)
Year Fixed Effects	yes	yes	yes	yes	yes
Observations	718	719	719	719	718
Firms	125	156	168	165	152

Diversifying Mergers

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Longholder	**2.5462**	**1.8852**	**1.7297**	**1.0075**	**1.0865**
	(1.89)*	(1.51)	(1.36)	(0.01)	(0.18)
Year Fixed Effects	yes	yes	yes	yes	yes
Observations	718	719	719	719	718
Firms	125	156	168	165	152

Regressions include Cash Flow, Q_{t-1}, Size, Ownership, Vested Options, and Governance.

Table 11. Do Overconfident CEOs Use More Cash?

Longholder = holds options until last year before expiration (at least once)
Distribution: Logistic. Constant included.
Dependent Variable: Acquistion (yes or no)**; Normalization:** Capital.

	logit (1)	logit (2)	logit (3)	logit (4)
Undervalued (UV)	**1.1016**	**0.6976**	**0.7037**	**1.0911**
	(0.39)	(1.31)	(1.17)	(0.25)
Q_{t-1}		**0.5218**	**0.5201**	**0.5025**
		(3.61)***	(3.22)***	(3.38)***
Stock Ownership			**1.7834**	**1.1349**
			(0.35)	(0.06)
Vested Options			**0.7112**	**0.5941**
			(0.84)	(1.27)
Merger Size			**1.0011**	**1.0012**
			(1.24)	(0.95)
Longholder	**0.7653**	**0.782**	**0.6909**	**0.6456**
	(1.14)	(1.09)	(1.52)	(1.70)*
UV * Longholder	**4.2664**	**4.2177**	**3.9958**	**2.4728**
	(2.71)***	(2.72)***	(2.57)**	(1.61)
Year Fixed Effects	no	no	no	yes
Observations	441	441	394	394

Do Outsiders Recognize CEO Overconfidence?

Portrayal in Business Press:

1. Articles in
   - New York Times
   - Business Week
   - Financial Times
   - The Economist
   - Wall Street Journal
2. Articles published 1980-1994
3. Articles which characterize CEO as
   - Confident or Optimistic
   - Not confident or not optimistic
   - Reliable or Conservative or Cautious or Practical or Steady or Frugal

Measuring Press Portrayal

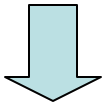
TOTALconfident =

1	if [“confident” + “optimistic”] > [“not confident” + “not optimistic + “reliable, conservative, cautious, practical, steady, frugal]
0	otherwise

Independent of the effects of coverage frequency

Market Perception versus CEO beliefs

- TOTALconfident positively and statistically significantly correlated with Longholder
  - Farrell and Mark are TOTALconfident
  - Marriott and Crane are *not* TOTALconfident
- TOTALconfident CEOs (like Longholders) are more acquisitive on average
  - Especially through diversifying mergers
  - Especially when they are financially unconstrained



- Outsiders recognize CEO overconfidence
- Overconfidence – identified by CEO *or* market beliefs
  - leads to heightened acquisitiveness

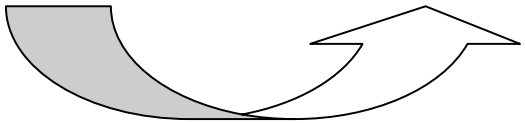
Table 13. Press Coverage and Diversifying Mergers

Distribution: Logistic. Constant included; **Normalization:** Capital. **Dependent Variable:** Diversifying merger (yes or no).	logit	logit with random effects	logit with fixed effects
TOTALconfident	**1.6971**	**1.7826**	**1.5077**
	(2.95)***	(3.21)***	(1.48)
Year Fixed Effects	yes	yes	yes
Observations	3690	3690	1577
Firms	326	326	128
Dependent Variable: Intra-industry merger (yes or no).			
TOTALconfident	**1.0424**	**1.0368**	**0.8856**
	(0.20)	(0.16)	(0.31)
Year Fixed Effects	yes	yes	yes
Observations	3690	3690	1227
Firms	326	326	100
Regressions include Total Coverage, Cash Flow, Q_{t-1}, Size, Ownership, Vested Options, and Governance. Industries are Fama French industry groups.			

Empirical Predictions

Rational CEO

Overconfident CEO



On average?

1. Overconfident CEOs do more mergers that are likely to destroy value
2. Overconfident CEOs do more mergers when they have abundant internal resources
3. The announcement effect after overconfident CEOs make bids is lower than for rational CEOs

Market Reaction

Does the stock price react differently following the announcement of a takeover bid by a CEO who excessively holds options?

Yes. The stock price drop following a takeover announcement from an overconfident CEO is 150% larger than for other CEOs

Table 14. Market Response

Longholder = holds options until last year before expiration (at least once)
Dependent Variable: Cumulative abnormal returns [-1,+1]

	OLS (1)	OLS (2)	OLS (3)
Relatedness	**0.0057**	**0.0050**	**0.0053**
	(1.67)*	(1.30)	(1.56)
Corporate Governance	**0.0079**	**0.0036**	**0.0073**
	(2.18)**	(0.64)	(1.98)**
Cash Financing	**0.014**	**0.0127**	**0.0145**
	(3.91)***	(2.60)***	(3.99)***
Age			**-0.0005**
			(1.46)
Boss			**0.0001**
			(0.04)
Longholder	**-0.0067**	**-0.0099**	**-0.0079**
	(1.81)*	(2.33)**	(2.00)**
Year Fixed Effects	yes	yes	yes
Industry Fixed Effects	no	yes	no
Industry*Year Fixed Effects	no	yes	no
Observations	673	673	673
R-squared	0.06	0.14	0.09

Regressions include Ownership and Vested Options.

Conclusions

- Overconfident managers are more acquisitive.
- Much of this acquisitiveness is in the form of diversifying mergers.
- Overconfidence has largest impact if CEO has abundant internal resources.
- The market reacts more negatively to the mergers of overconfident CEOs