Outline

1. Who am I?

2. Who are you? (Prerequisites)

3. What is this course?

4. Getting started!
   Psychology and Economics by Field

5. Two Examples of Applied P&E (Good and Bad)

6. Present Bias — Status Quo Effect
1 Who am I?

Stefano DellaVigna

- Assistant Professor, Department of Economics
- Bocconi (Italy) undergraduate (Econ.), Harvard PhD (Econ.)
- Psychology and Economics, Applied Microeconomics, Behavioral Finance, Aging
- Evans 515
2 Who are you?

- PhD student 2nd year and higher

- Graduate courses in
  - Econometrics
  - Micro Theory (Contract Theory, Game Theory)
  - Psychology and Economics – Theory (219A)

- Interest in
  - Psychology and Economics
  - Applied, empirical microeconomics (io, labor, public finance, finance)
3 What is this course?

- Syllabus

- Reading list:
  - photocopy of required (*) papers for students enrolled (courtesy of Judi Chan)
  - complete, updated list on course webpage

- Please email me (sdellavi@econ.berkeley.edu) for any issue with course
• Weekly homework assignment:
  – 8 one-page discussion reports
  – empirical problem set on stock response to earnings announcements

• One class presentation

• Paper
• Deadlines:

1. Homework Assignments: Tuesday by noon

2. Presentations: 25 minutes at beginning of class

3. Paper
   (a) Meet with me about your paper by 2/18
   (b) Brief summary of your research idea by 3/17
       (2 pages, research question, data availability)
   (c) Paper due on 5/14

• Grading: 30% (5 best) written discussions, 15% problem set, 15% presentation, 40% paper
• (Free) Coffee after class

• Information sheet
4 Psychology and Economics by Field

• Protypical economist conception of human behavior (aka “Classical Model according to Matt Rabin”):

\[
\max_{l \in L} U := \sum_{t=1}^{\infty} \sum_{s \in S_t} \delta^t p(s) u(\cdot, s, t)
\]

• \(L\) is set of “life-time strategies”

• \(S_t\) is set of state spaces

• \(p(s)\) are rational beliefs

• \(\delta \in (0, 1)\) is time-consistent discount factor

• \(u(\cdot, s, t)\) is true utility at time \(t\) in state \(s\)
- **Improving Psychological Realism:**

1. Present-Biased Preferences: time inconsistency $\beta, \delta$

2. Reference Dependence: $u(\cdot, r)$ with $r$ reference point

3. Narrow Framing: maximization set $\neq L$

4. Attention (cousin of Narrow Framing)

5. Social Preferences: $u(\cdot, x)$ where $x$ represents allocation of others

6. Persuasion (cousin of social preferences)

7. Overconfidence: beliefs $\tilde{p}(s) \neq p$

8. Heterogeneity and Firm Reaction
• Psychology and Economics by Field:

1. Consumer Choice:
   (a) Time preferences (health clubs, credit cards)
   (b) Reference Dependence (housing purchases)
   (c) Persuasion (advertisement)

2. Public Finance:
   (a) Time preferences (addiction, taxes, retirement savings)
   (b) Social preferences (charitable contributions)
   (c) Narrow framing (flypaper effect, incidence of taxes)
(d) (Social welfare)

3. Environmental Economics:
   (a) Narrow Framing (WTA/WTP, value of a life)

4. Labor Economics — Development Economics:
   (a) Time preferences (job search)
   (b) Social learning (choice of job, choice of crops)
   (c) Social capital (trust)

5. Industrial organization:
(a) Market Reaction
(b) Time preferences (teaser rates, mail-in rebates)
(c) Attention (complex products)

6. Political Economy:
   (a) Market Reaction (manipulation of hatred)
   (b) Welfare Enhancement (SMT plan)

7. Finance – asset pricing:
   (a) Overconfidence (overtrading)
   (b) Heterogeneity and Market Reaction (noise traders)
(c) Attention (footnotes in accounting, demographics, large events)

8. Corporate finance:

   (a) Overconfidence of CEOs (investment, mergers, options)

   (b) Attention (media)
5 Two Examples of Applied P&E

5.1 Michael Rashes: MCI-MCIC

5.1.1 Facts

- See handout for description of companies.

- Different companies, similar ticker name

- Do investors confuse companies with similar names?

- If investors confuse companies, correlation in trading volumes
<table>
<thead>
<tr>
<th></th>
<th>MCI</th>
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<tbody>
<tr>
<td>Full Name:</td>
<td>Massmutual Corporate Investors</td>
<td>MCI Communications</td>
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<tr>
<td>Industry:</td>
<td>Mutual Fund (closed end)</td>
<td>Telecommunications 2\textsuperscript{nd} largest US long-distance phone company (before acquisition Worldcom)</td>
</tr>
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<td>Volume:</td>
<td>4,100 trades per day (average)</td>
<td>4.1 million trades per day (average)</td>
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<tr>
<td>Return:</td>
<td>0.078% per day (average)</td>
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“Top MCI Volume Days”
10,000 to 59,200 trades
- Table III.

- What if two stocks have similar underlying fundamentals?

- Table III. Check correlation of MCI with another telephone company.

- Table III, inclusion of AT&T. (Could also include other companies)
• Go further.

• Predict returns of smaller company with bigger company (Why?)

• Which assumptions do we need to make predictions about returns?
● Returns Regression:

\[ r_{MCI,t} = \alpha_0 + \alpha_1 r_{MCIC,t} + \beta X_t + \varepsilon_t \]

● Table IV. Positive \( \alpha_1 \).
• Difference between reaction to positive and negative news? Returns Regression:

\[ r_{MCI,t} = \alpha_0 + \alpha_1 r_{MCIC,t} + \alpha_2 r_{MCIC,t} \cdot 1(r_{MCIC,t} < 0) + \beta X_t + \varepsilon_t \]

• Asymmetry of arbitrage

• Returns Regression:

• Table IV. Negative \( \alpha_2 \). Effect of arbitrage.
• Conclusions.

• Important deviation from standard model: confusion.

• Large effect of confused investors (noise traders):
  – Volume of MCI trades triples:
    * = 5845 to 55045 “additional” trades
    * = 140% to 1325% above MCI mean

• Positive correlation of returns despite arbitrage

• Biases matter in the market
5.1.2 Bad economics

1. Size of the effects. Are the effects large?

- Calibrate results relative to larger firm!

- “Conspicuously well-chosen example” (aka data-mining): fraction of large-firm investors act upon small firm.
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<td>= 1.3 - 12.2 SDs above MCI mean</td>
<td>= 0.001 – 0.01 MCIC-SDs</td>
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<td></td>
<td>MCI</td>
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<tr>
<td><strong>Daily Return Regressions (Table IV)</strong></td>
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<tr>
<td><strong>Size:</strong></td>
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<tr>
<td>- Magnitude MCIC: 0.086 (t=2.28)</td>
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<tr>
<td>- Magnitude S&amp;P Smallcap: 0.107 (t=2.03)</td>
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<tr>
<td>- Magnitude Lehman Long Bond Index: 0.091 (t=2.28)</td>
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<td><strong>Why higher correlation when good news?</strong></td>
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<td><strong>Good News</strong></td>
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<td>Arbitrageur who does not own MCI tries to sell</td>
<td>short-selling constraints</td>
</tr>
<tr>
<td><strong>Bad News</strong></td>
<td>Noise trader who owns MCI tries to sell – realizes mistake</td>
<td></td>
</tr>
<tr>
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<td>Noise trader who does not own MCI tries to sell</td>
<td>short-selling constraints</td>
</tr>
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<td>Arbitrageur buys MCI</td>
<td>limits to arbitrage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>limits to noise-trading!</td>
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2. Are the effects significant?

- Standard errors count! (sometimes)

- Where can apply same model?
4. Overblown conclusions:

- “Small changes in sentiment affect stock prices significantly and persistently.” Neither significantly nor persistently is obvious.

- Significantly only if relative to small firm.

- Persistently: “These results are consistent with the ... evidence that abnormal returns due to investor confusion tend to be reversed within a short period of time ..”
5. Dangerous emphasis.

- Emphasize data, size of effects, explanation

- Do NOT emphasize irrationality, massive confusion, etc.

- Do NOT pick up fights!
5.1.3 Good Economics

- Neat idea, easy to remember

- Allocation of cognitive resources:
  - costs of monitoring;
  - benefits of monitoring

- Heterogeneity: Noise traders and arbitrageurs
5.2 Huberman-Regev: Cancer Cure

5.2.1 Facts

- Stock market valuation of company EntreMed (biotech)

- Effect of news

→ small jump from $11.875 to $15.25 (28%)


→ big jump from $12.063 to $51.81 (330%)

November 12, 1998: *Wall Street Journal* front page about failed replication

→ plunge to $24.875 (24%)
5.2.2 Bad economics

• Case study

• Is this one observation?
5.2.3 Good economics

- Great idea: use media data.

- Wildly underappreciated source of data. Find new data sources!

- Large size of effects

- Limited attention: First order, generalizable phenomenon
6 Present Bias – Status Quo Effect

• Start from intertemporal preferences

• Three names, one object: Present bias – (quasi-)hyperbolic discounting – \((\beta, \delta)\) preferences

• Present bias + naivete’ \(\rightarrow\) status quo bias (procrastination)

• (Next lecture: calibrated model)

• Status Quo in Retirement Savings (Madrian and Shea, 2001)
• Single most important piece of field evidence on P&E

• Health Care company

• Switch of 401(k) plan features for new hires (Table 1)
• OLD Cohort hired 4/1/96-3/31/97:
  – default: no enrollment
  – 1-year wait period for eligibility

• WINDOW Cohort hired 4/1/97-3/31/98:
  – default: no enrollment
  – wait period for eligibility till 4/1/98

• NEW Cohort hired 4/1/98-3/31/99:
  – default: enrollment in 3 percent money market fund
  – immediate eligibility
• Summary Stats. Different cohorts not too different from each other (Table 3)

• Results:

1. Participation rates in 401(k) by June 30, 1999 (Figure 1 and Table 4):
   • OLD: 57%
   • WINDOW: 49%
   • NEW: 86%

2. Contribution level (Figures 2b and 2c):
   • WINDOW: 63% are at 0 percent, 4% at 3 percent
NEW: 65% are at default (3 percent)

3. Allocation of funds in stocks (Figure 3):
   - OLD: 75%
   - WINDOW: 73%
   - NEW: 16%

   Results equally strong with controls (Table 6)

   Results replicated in samples of other companies (Choi et al., 2002)
• Interpretation:
  
  – Status-quo

  – Power of suggestion

• Can status-quo effect be rational?

• Hard sell: large magnitudes, opportunity of social learning, persistent effect

• Present-Bias + (Partial) Naivete $\rightarrow$ Status-quo effect

• Next lecture!