Main question & results

- Industry-specific experience = experience of (relatively) bad industry return while being invested
- Finding: Managers with more experience in industry A than in B tend to outperform in A more so than in B
  - (Some of it) driven by better buy/sell decisions, especially around earnings announcements
- Baseline regression with quarterly alpha estimates (from daily returns)

$$\hat{\alpha}_{m,i,t} = a_{m,t} + \beta E_{m,i,t-1} + \theta S_{i,t} + \epsilon_{m,i,t}$$

with experience dummy $E_{m,i,t}$ and contemporaneous negative industry shock dummy $S_{i,t}$.
- Huge effects: Experience seems to raise (industry-specific) performance by roughly 100bp per quarter
Concern 1: Contemporaneous industry shocks dummy

- Null hypothesis of effect of $E$ on skill would suggest that $b = 0$ in
  $$\hat{\alpha}_{m,i,t} = a_{m,t} + bE_{m,i,t-1} + \eta_{m,i,t}$$
  with $\text{Cov}(E_{m,i,t-1}, \eta_{m,i,t}) = 0$

- But authors include contemporaneous industry shock dummy $S_{i,t}$, i.e.,
  $$\hat{\alpha}_{m,i,t} = a_{m,t} + \beta E_{m,i,t-1} - \theta S_{i,t} + \epsilon_{m,i,t}$$
  with $\theta > 0$

- Problem: $\text{Cov}(E_{m,i,t-1}, \epsilon_{m,i,t}) > 0$ if $\text{Cov}(E_{m,i,t-1}, S_{i,t}) > 0$
- Then $\beta > b$.

- Example where $\beta > b$: Industries heterogeneous in volatility
  - High volatility industries: more likely to show up in the negative tail in the past and in the future
  - Thus, $E$ (which summarizes past $S$) is positively correlated with future $S$
- Thus: Potentially biased estimates

Concern 1: Contemporaneous industry shocks in DiD

- Similar issue in diff-in-diff analysis: Authors test whether alpha of treatment group
  $$E[\hat{\alpha}_{m,i,t+j}|S_{i,t} = 1, S_{i,t+j} = 0], \quad j > 0$$
  exceeds that of control group
  $$E[\hat{\alpha}_{m,i,t+j}|S_{i,t} = 0, S_{i,t+j} = 0], \quad j > 0$$

- Conditioning on $S_{i,t+j} = 0$ – Is this a problem when this is done both for treatment and control group?
- Yes – if the resulting bias is different for treatment and control group.
- Example: Industries with different return volatility
  - Treatment group: Experienced big negative shock $\rightarrow$ More likely to be high volatility $\rightarrow$ bigger bias
  - Control group: Did not experience big negative shock $\rightarrow$ Less likely to be high volatility $\rightarrow$ smaller bias
Correlation between industry volatility and the number of negative industry shocks

Data: 12 Fama-French industries from 1992q1 to 2012q1

Correlation between industry volatility and the bias in mean return from excluding negative shock observations

Data: 12 Fama-French industries from 1992q1 to 2012q1
Concern 2: Industry alpha correlated with industry volatility

- Null hypothesis of effect of $E$ on skill would suggest that $b = 0$ in
  \[ \hat{\alpha}_{m,i,t} = a_{m,t} + bE_{m,i,t-1} + \eta_{m,i,t} \]

- Could $E_{m,i,t-1}$ be correlated with $\eta_{m,i,t}$?
- Example: High volatility industries have high alphas
  - High volatility industries: more likely to show up in the negative tail in the past and in the future
  - Thus, $E$ (which summarizes past $S$) is positively correlated with future $\eta_{m,i,t}$

- Thus: Potentially biased estimates

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Correlation between industry volatility and industry market-adjusted return

Data: 12 Fama-French industries from 1992q1 to 2012q1
Simulation: Artificial passive industry funds

- 12 Fama-French industries, 1992q1 - 2012q1
- Each quarter start a new fund that invests in equal-weighted portfolio of 12 industries
- Fund life-time 20 quarters
- Completely passive, no skill
- Use data to re-run authors’ regressions with and without inclusion of contemporaneous industry shock dummy

Simulation: Regression results

(1) as in the paper, (2) without conditioning on contemporaneous absence of negative industry shocks

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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<tbody>
<tr>
<td>Intercept</td>
<td>0.58</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(5.34)</td>
<td>(-0.59)</td>
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<tr>
<td>E</td>
<td>0.76</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>(3.19)</td>
<td>(0.60)</td>
</tr>
<tr>
<td>S</td>
<td>-11.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-16.42)</td>
<td></td>
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</table>

T-stats in parentheses, clustering by time
Do robustness checks in paper take care of these potential biases?

- Placebo tests: **No**
- Industry return and volatility as control? (Table X)
  - **Yes** for bias from industry volatility - mean return correlation
  - **No** for bias from inclusion of contemporaneous \( S \)
- Industry × date dummies? **Yes** – completely removes any industry-level effects, but magnitude of effect now drops by 80%!
  - Remaining effect of 22bp per quarter is more plausible
- Results on performance of buys vs. sells? **Yes** – but magnitude of the effect is much smaller (more plausible?)
  - Inexperienced: alpha of buys about 250bp/2 = 125bp
  - Experienced: alpha of buys about 300bp/2 = 150bp

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### Table X: Experience and Omitted Industry-Level Variables

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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<td>Experience</td>
<td>1.233</td>
<td>1.091</td>
<td>1.240</td>
<td>1.219</td>
<td>1.093</td>
<td>0.220</td>
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<td></td>
<td>(4.77)</td>
<td>(4.64)</td>
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<td>(5.41)</td>
<td>(5.00)</td>
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<td>Industry Return</td>
<td>0.245</td>
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<td></td>
<td>(5.46)</td>
<td>(5.80)</td>
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<tr>
<td>Industry Volatility</td>
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<td>1.504</td>
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<td></td>
<td>(1.72)</td>
<td>(0.67)</td>
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<td>8 Lags of Industry Return</td>
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<td>No</td>
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<td>8 Lags of Industry Volatility</td>
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<td>Manager × Date FE</td>
<td>Yes</td>
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<tr>
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<td>No</td>
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<tr>
<td>( N )</td>
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<tr>
<td>( R^2 )</td>
<td>0.18</td>
<td>0.20</td>
<td>0.16</td>
<td>0.17</td>
<td>0.20</td>
<td>0.34</td>
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Conclusion

- Experience effect is probably robust, but current baseline estimates may substantially overstate the magnitude.
- It is important to get the magnitude right in the baseline estimates!
- Recommendation: Report tests that are robust to these biases as baseline tests:
  - Do not condition on contemporaneous $S$ in regressions.
  - Use industry $\times$ date FE in baseline regression and discuss their importance in the paper.
  - Do not condition on absence of $S$ shocks in event window in DiD analysis.
- Consequence will be smaller magnitudes of effects, but smaller effects are more plausible and easier to reconcile with smaller magnitudes in buy/sell analysis.