Discussion of

Learning By Doing: The Value Of Experience And The Origins Of Skill For Mutual Fund Managers

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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 $\mathrm{Cov}(E_{m,i,t-1}, \eta_{m,i,t}) = 0$

- But authors include contemporaneous industry shock dummy $S_{i,t}$, i.e.,

  $$\hat{\alpha}_{m,i,t} = a_{m,t} + \beta E_{m,i,t-1} - \theta S_{i,t} + \epsilon_{m,i,t} \text{ with } \theta > 0$$

  - Problem: $\mathrm{Cov}(E_{m,i,t-1}, \epsilon_{m,i,t}) > 0$ if $\mathrm{Cov}(E_{m,i,t-1}, S_{i,t}) > 0$
  - 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

  $$E[\hat{\alpha}_{m,i,t+j} | S_{i,t} = 1, S_{i,t+j} = 0], \quad j > 0$$

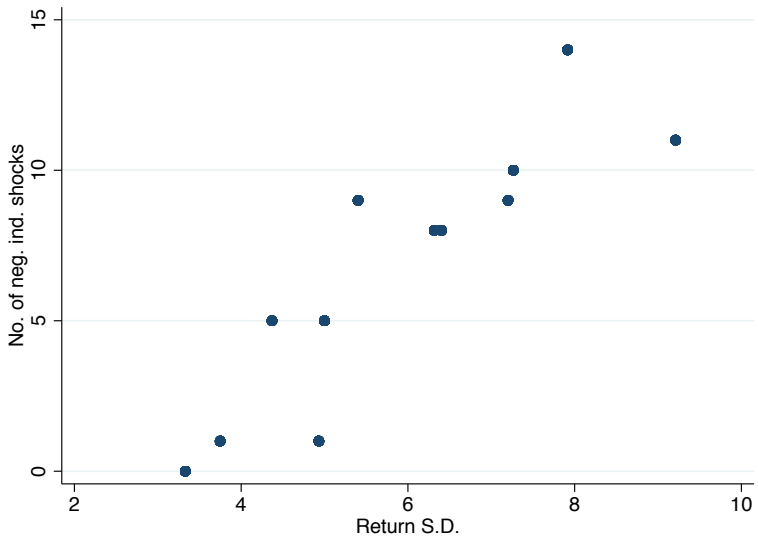
  exceeds that of control group

  $$E[\hat{\alpha}_{m,i,t+j} | S_{i,t} = 0, S_{i,t+j} = 0], \quad j > 0$$

- 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

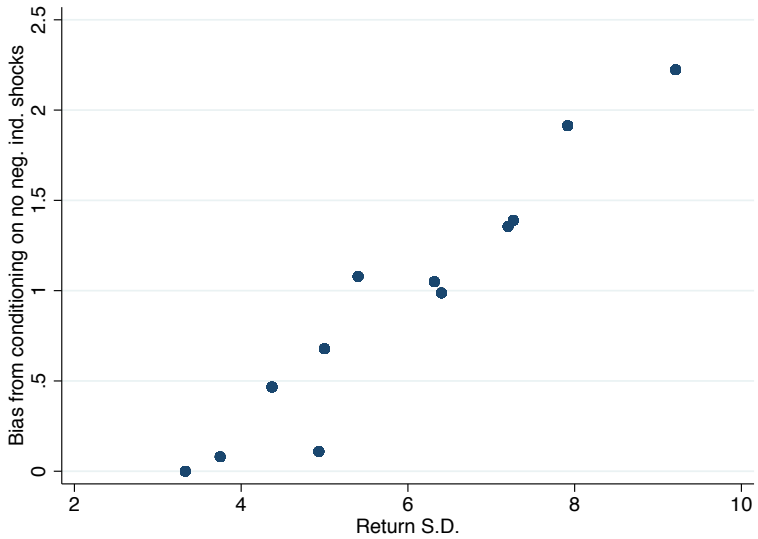
Correlation between industry volatility and the number of negative industry shocks

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

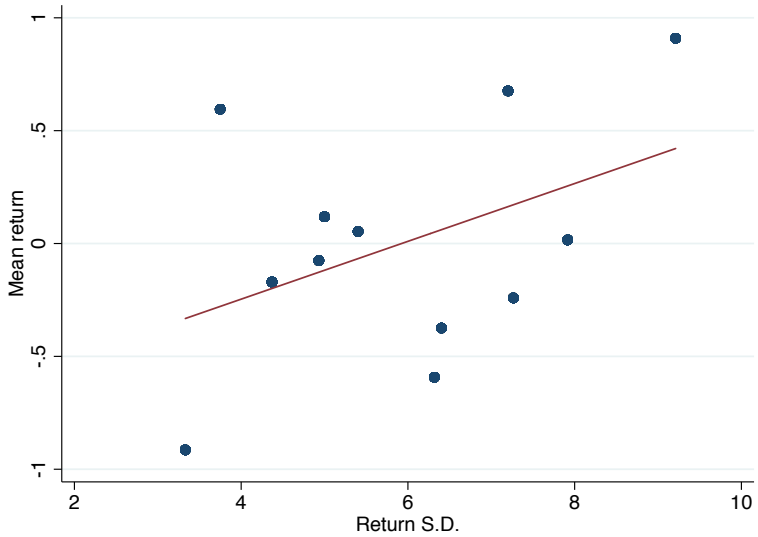
- Null hypothesis of effect of E on skill would suggest that $b = 0$ in

$$\hat{\alpha}_{m,i,t} = a_{m,t} + bE_{m,i,t-1} + \eta_{m,i,t}$$

- 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

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 comtemporaneous absence of negative industry shocks

	(1)	(2)
Intercept	0.58	-0.08
	(5.34)	(-0.59)
E	0.76	0.18
	(3.19)	(0.60)
S	-11.02	
	(-16.42)	

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 $\times$ 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

Do robustness checks in paper take care of this?

	(1)	(2)	(3)	(4)	(5)	(6)
Experience	1.233	1.091	1.240	1.219	1.093	0.220
	(4.77)	(4.64)	(5.34)	(5.41)	(5.00)	(2.96)
Industry Return	0.245	0.258			0.267	
	(5.46)	(5.80)			(6.28)	
Industry Volatility			1.368	1.238	1.504	
			(1.72)	(0.67)	(0.82)	
8 Lags of Industry Return	No	Yes	No	No	Yes	No
8 Lags of Industry Volatility	No	No	No	Yes	Yes	No
Manager $\times$ Date FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry $\times$ Date FE	No	No	No	No	No	Yes
N	441,282	205,960	441,282	205,960	205,960	441,282
R^2	0.18	0.20	0.16	0.17	0.20	0.34

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