Time-Varying Skill & An Attention Allocation Theory of Mutual Funds

Marcin Kacperczyk, Stijn Van Nieuwerburgh, Laura Veldkamp

NYU Stern School of Business

Do Mutual Fund Managers Have Skill?

- Big debate in the finance literature.
- Partial consensus: some stock-picking skill, no market timing.
- Skill has been regarded as immutable.

- But what is skill?
  - Skill is information.
  - Only information allows you to systematically bet in the right direction.

- Might managers acquire different information at different times? Time-varying skill?

New Fact: Time-Varying Skill
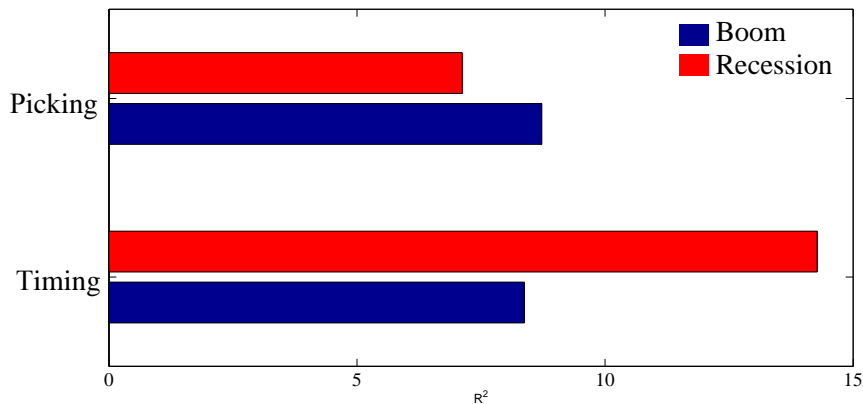
Picking = ability to buy assets before earnings rise
Timing = ability to buy market risk before the economy turns up

Main Results

- Empirical findings:
  - Fund managers are good stock-pickers, but only in booms.
  - Fund managers are good market-timers, but only in recessions.
  - Managers who switch strategies earn excess returns.

    Time-variation makes skill hard to detect.
    Skill is more salient in recessions.

- Why vary skill? (The theory)
  - In recessions: 1) volatile macro shocks + 2) high price of risk.
    - 1) and 2) make macro information valuable (timing is everything).
    - Info is more valuable ↔ Skill is more observable

  - A tool to describe how funds add value:
    Rational information choices explain many fund patterns.

The Theory: A New Model of Mutual Funds

- **Model:**
  1. Managers choose information precision.
  2. They choose portfolios to maximize risk-adjusted expected return.

- It teaches us:
  - Managers should switch strategies (change info processing). Volatility and price of risk work in the same direction.
  - Strategy switching ↑es portfolio dispersion in recessions
  - Makes outperformance rise in recessions (info is more valuable).

- Test all three predictions. Tease out volatility and price of risk effects.

Measures of Skill / Information

- We can't see information processing. How do we measure it?
- Classic skill measures (picking / timing) are info measures. Reason: Actions cannot systematically covary with an outcome that is not known by the actor.

- $picking_t^j$: covariance between portfolio and idiosyncratic return. measures information about firm-specific risk.

- $timing_t^j$: covariance between portfolio and market return. measures information about aggregate risk

"portfolio" here means fund j's portfolio weight, in excess of the market weight: $w_{ti}^j - w_{ti}^m$

Data description

- Actively managed open-end U.S. equity mutual funds (3,477)

- CRSP survivorship bias-free mutual fund database, January 1980 until December 2005 (312 months), merged with holdings data from Thomson Financial

- CRSP/Compustat stock-level database:
  return, market cap, book-to-market, momentum, liquidity, SUE

- Recessions: NBER dates (38 months)
  Alternatives: months with 1) highest 12% cash-flow volatility; 2) negative real consumption growth; 3) lowest 25% market returns; 4) real-time recc probability.

Main findings

	Picking		Timing	
Recession	**-0.068**	**-0.070**	**0.011**	**0.011**
	(0.016)	**(0.015)**	**(0.004)**	**(0.004)**
Constant	0.308	0.309	-0.001	-0.001
Controls	N	Y	N	Y

Control variables: Log(Age), Log(Assets), Expenses, Turnover, Flow, and Load

- Magnitude: recession effect is 10% of cross-fund stdev (both).
- Other model predictions: Dispersion and performance ↑ in recessions.

Punchline: Stock picking in booms and market timing in recessions.

Could it Be ... Instead?

- A Composition Effect
  - Observable manager characteristics do not change over the cycle.
  - Results survive manager fixed effects.
  - The best stock pickers in booms are the same managers who are the best market timers in recessions.
- Mechanical Effects
  - Simple fund strategies (pick randomly, pick high-α stocks, mixed) do not generate cyclical skill in simulations.
- Career concerns
  - Young managers should herd more in recessions. We find the opposite.

Skill Index Predicts Performance

$$Skill\ Index_{t+1}^{j} = w_t Timing_t^{j} + (1 - w_t) Picking_t^{j}$$

	One Month Ahead		One Year Ahead	
	CAPM alpha	4-factor alpha	CAPM alpha	4-factor alpha
Skill Index	0.202	0.094	0.197	0.091
	(0.038)	(0.017)	(0.028)	(0.013)

- w_t is real-time recession probability.
- Timing and picking normalized to mean $= 0$ and *stdev* $= 1$.
- Alphas from a 12-month rolling window regression. Controls as before.

Punchline: Time-varying skill predicts 1-year fund performance.

Takeaways

- Stock-picking and market-timing are not immutable skills. Skill is more general cognitive (or information-processing) ability that can be applied to different tasks at different times.

- Financial models should incorporate not just the risks of assets, but also how others pay attention to or process those risks.

- A more flexible, time-varying measure of skill does predict future returns.