Discussion of:

The Granular Nature of Large Institutional Investors

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Motivating question

- This paper addresses whether the presence of Large Asset Managers (LAMs) destabilize markets:

  > *From a policy perspective, the relevant question is whether moving to a market populated by smaller firms would be beneficial from the point of view of volatility. (p. 22)*

- The authors address this question using 13F data on holdings.
- Clearly a really important question.

OFR Mission

The Financial Stability Oversight Council (the Council) decided to study the activities of asset management firms to better inform its analysis of whether—and how—to consider such firms for enhanced prudential standards and supervision under Section 113 of the Dodd-Frank Act.[1] The Council asked the Office of Financial Research (OFR), in collaboration with Council members, to provide data and analysis to inform this consideration. This study responds to that request by analyzing industry activities, describing the factors that make the industry and individual firms vulnerable to financial shocks, and considering the channels through which the industry could transmit risks across financial markets.

† From "Asset Management and Financial Stability," Office of Financial Research, Department of the Treasury, 2013.

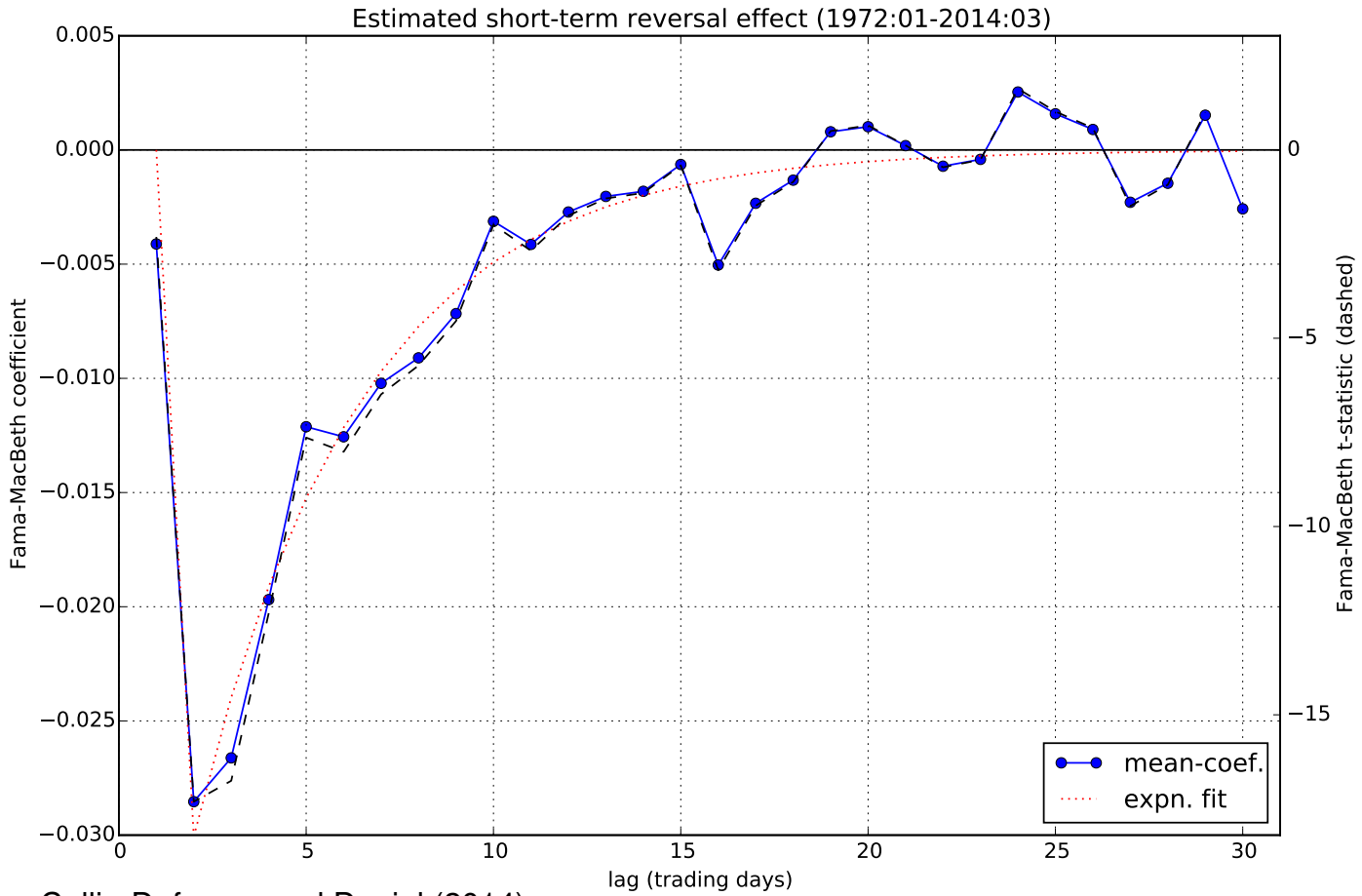
Top 15 Asset Managers, by total AUM

	Asset Managers	Worldwide (WW) AUM *$ in billions*	WW Registered Funds AUM[1] *$ in billions*	Registered Funds AUM *as % of WW AUM*	WW Unregistered AUM[2] *$ in billions*	Unregistered AUM *as % of WW AUM*
1	BlackRock Inc.	$3,791.6	$2,114.8	55.8%	$1,676.8	44.2%
2	Vanguard Group Inc.	$2,215.2	$2,124.3	95.9%	$90.9	4.1%
3	State Street Global Advisors	$2,086.2	$608.8	29.2%	$1,477.4	70.8%
4	Fidelity Investments	$1,888.3	$1,436.3	76.1%	$452.0	23.9%
5	Pacific Investment Management Company LLC	$1,624.3	$1,054.1	64.9%	$570.2	35.1%
6	J.P. Morgan Asset Management	$1,426.4	$742.1	52.0%	$684.3	48.0%
7	BNY Mellon Asset Management	$1,385.9	$490.7	35.4%	$895.2	64.6%
8	Deutsche Asset & Wealth Management	$1,244.4	$298.1[3]	24.0%	$946.4	76.0%
9	Prudential Financial	$1,060.3	$273.1	25.8%	$787.2	74.2%
10	Capital Research & Management Company	$1,045.6	$1,045.6	100.0%	$0.0	0.0%
11	Amundi	$959.8	$363.0	37.8%	$596.8	62.2%
12	The Goldman Sachs Group Inc.	$854.0	$338.0	39.6%	$516.0	60.4%
13	Franklin Templeton Investments	$781.8	$617.2	79.0%	$164.6	21.0%
14	Northern Trust Global Investments	$758.9	$152.9	20.1%	$606.0	79.9%
15	Wellington Management Company LLP	$757.7	$395.0	52.1%	$362.7	47.9%

† From "Asset Management and Financial Stability," Office of Financial Research, Department of the Treasury, 2013.
‡ Total AUM across all managers is given as $53 trillion.

Short-Term Reversal

Fama-MacBeth regressions – 100 largest equities:†



† From Collin-Dufresne and Daniel (2014)

13-F Data

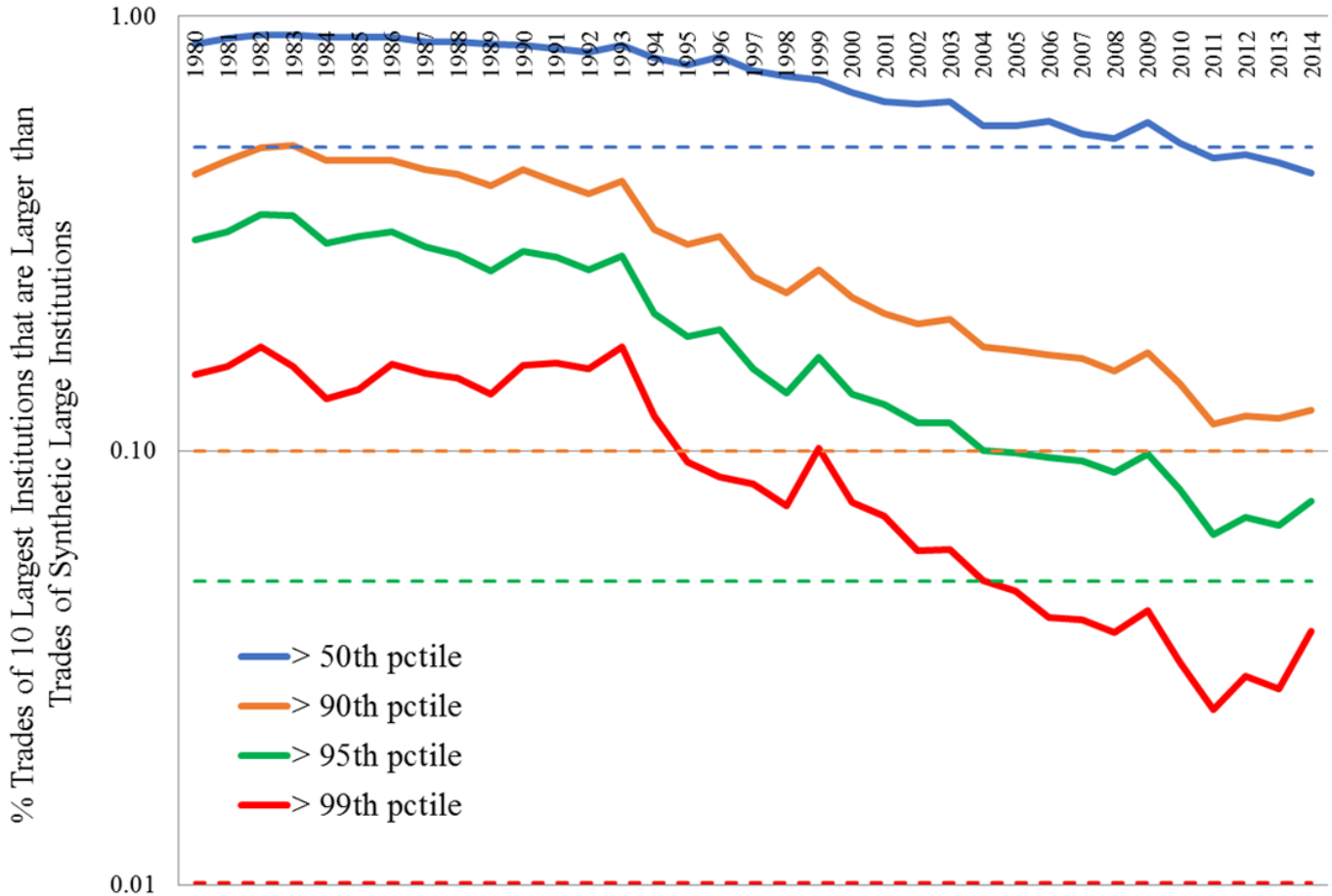
- This paper uses the quarterly 13F data from the SEC (via Thompson-Reuters), available from 1980 on.
- "All banks, bank holding companies, and broker/dealers that exercise discretion over $100 Million or more of Section 13(f) securities are required to file."
  - Section 13(f) securities are US exchange-traded stocks. closed-end funds, ETFs, options, etc.
- Report is "snapshot" of long holdings at end of each quarter.
  - reporting lag is (currently) 45 days.
- holdings are aggregated at the firm (not the fund) level.
  - That is, there is a single report for Barclays, for Blackrock, Fidelity, Vanguard, Goldman, etc.

Key Findings

- LAMs are “granular”
- Large Asset Managers push up the volatility of the individual equities they hold.
  - Address endogeneity using geographic preferences, LAM merger.
- When a LAM buys a stock, it starts to co-move more with the other stocks in the LAM’s portfolio, and the daily return autocorrelation of that stock increases.

Granularity

Figure 3: Evolution of Large Institutions' Relative Trade Size



Granularity

- LAMs have bigger trades than a "synthetic" collection of smaller AMs.
- Why?
  - Language in the paper suggests that this is because the fund managers are picking individual stocks or styles – they aren't diversified.
  - However, recall that 13F data is aggregated at the firm/fund-family level.
- Why do Fidelity, Vanguard and Barclays look less market-like than a set of small AMs?
  - Is it that bigger families have bigger funds? (*e.g.* the Fidelity Magellan fund)
  - Are the inflows more volatile for the LAM?
  - Is the increasing diversification a result of a broader move to index funds?

Volatility

How should we interpret the finding of higher volatility for LAM-held stocks?

> *...large asset managers have a positive causal impact on the volatility of the securities in which they invest. . . . This finding is not exclusively the desirable outcome of greater information production or faster price discovery. . . . the presence of large institutions correlates with lower price efficiency, as the stocks in which they trade have higher return autocorrelation. (p. 25)*

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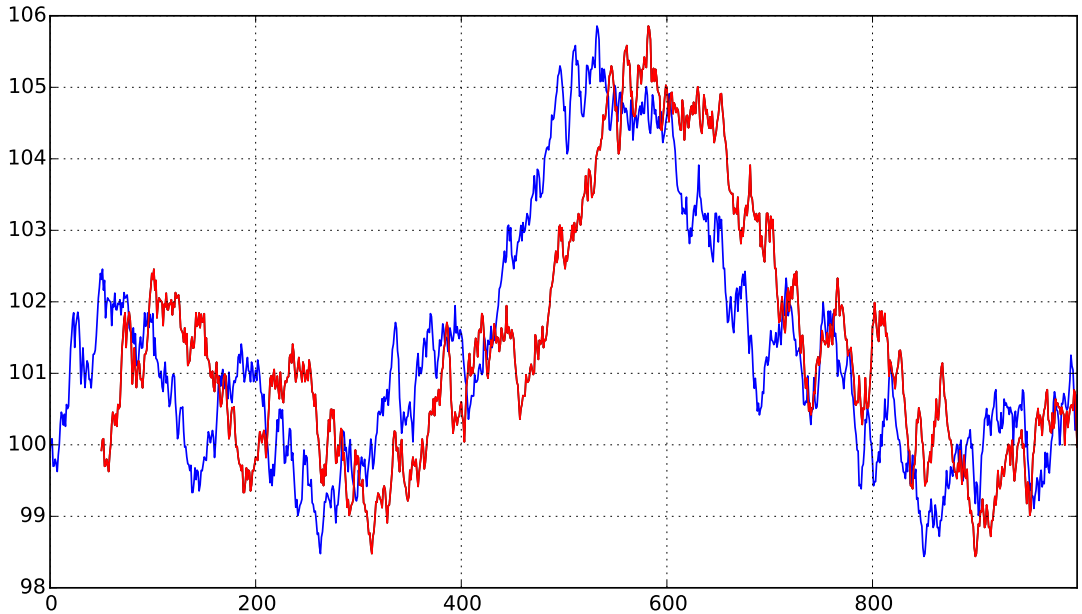
Volatility

- "greater information production or faster price discovery" doesn't change the return variance:



- Further, if information arrives in "chunks" it doesn't change the (unconditional) variance.

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Price Pressure and the Autocorrelation Function

- We can decompose price into an $I(1)$ "fundamental" and an $I(0)$ temporary component:

$$P_t = P_t^F + P_t^T$$

with corresponding returns:

$$\tilde{r}_t = \tilde{r}_t^F + \tilde{r}_t^T.$$

- Presumably, the actions of the LAM don't affect the fundamental value of the underlying firm.
- However, I think that the authors are arguing that the trading of the LAMs cause the prices to temporarily depart from fundamental value:
  - That is, they introduce a temporary component into the asset price.

Price Pressure and the Autocorrelation Function

$$\tilde{r}_t = \tilde{r}_t^F + \tilde{r}_t^T$$

- If risk-premia are constant, then the fundamental component ($\tilde{r}_t^F$) will be serially uncorrelated:

$$\rho_\tau^F = 0 \text{ for all } \tau \neq 0$$

- However, the temporary component will *necessarily* be negatively serially correlated:

$$2 \cdot \sum_{\tau=1}^{\infty} \rho_\tau^T = -1$$

Price Pressure and the Autocorrelation Function

- BFMS find that the daily (lag 1) autocorrelations of firms held by LAMs are *higher*.
- This is a little surprising given the finding that the variance is also higher.
  - It suggests that autocorrelations at other lags becoming more negative.
- What would be useful to see would be some estimates of how the holding of LAMs change the temporary component of returns.
  - Looking at autocorrelations is the right idea, but they need to examine more than the lag-1 autocorrelation.

The Autocorrelation Function

- Equivalently, currently the paper examines only changes in daily return volatility.
- Again, it would be more interesting to assess the overall effect on the temporary component of prices. They need to either:
  - Assess how the return volatility at different horizons changes with LAM ownership.
  - Assess how the autocorrelation structure changes with LAM ownership.
- My guess is that the authors will find that the change at longer horizons is small, but . . .

Why is this question important?

- One hypothesis that is consistent with the all of the evidence presented here is:
  - LAMs have better information than do smaller AMs.
  - Given their superior information, it is optimal for them to trade more. As a result:
    - they pay higher transaction costs.
    - their higher trading induces more short-term reversal
- The implications of this hypothesis would be that:
  - Daily return variance would increase; but weekly- and monthly-return variance increases would be much smaller.
  - Autocorrelations at lags between 2-10 trading days would become more negative; longer lag autocorrelations would be unaffected.
- Findings of longer-lived price impacts would be (potentially) consistent with LAMs being more systemically important.

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long-horizon variances and autocorrelation functions

- Define V^q as the variance of the q-day returns.
- Then (assuming return additivity – i.e., with log returns):

$$\begin{aligned} V^q &= cov(r_1 + r_2 + \cdots + r_q, r_1 + r_2 + \cdots + r_q) \\ &= q \cdot \sigma_r^2 + \sum_{\tau=-(q-1)}^{q-1} (q - |\tau|) \cdot cov(r_t, r_{t+\tau}) \end{aligned}$$

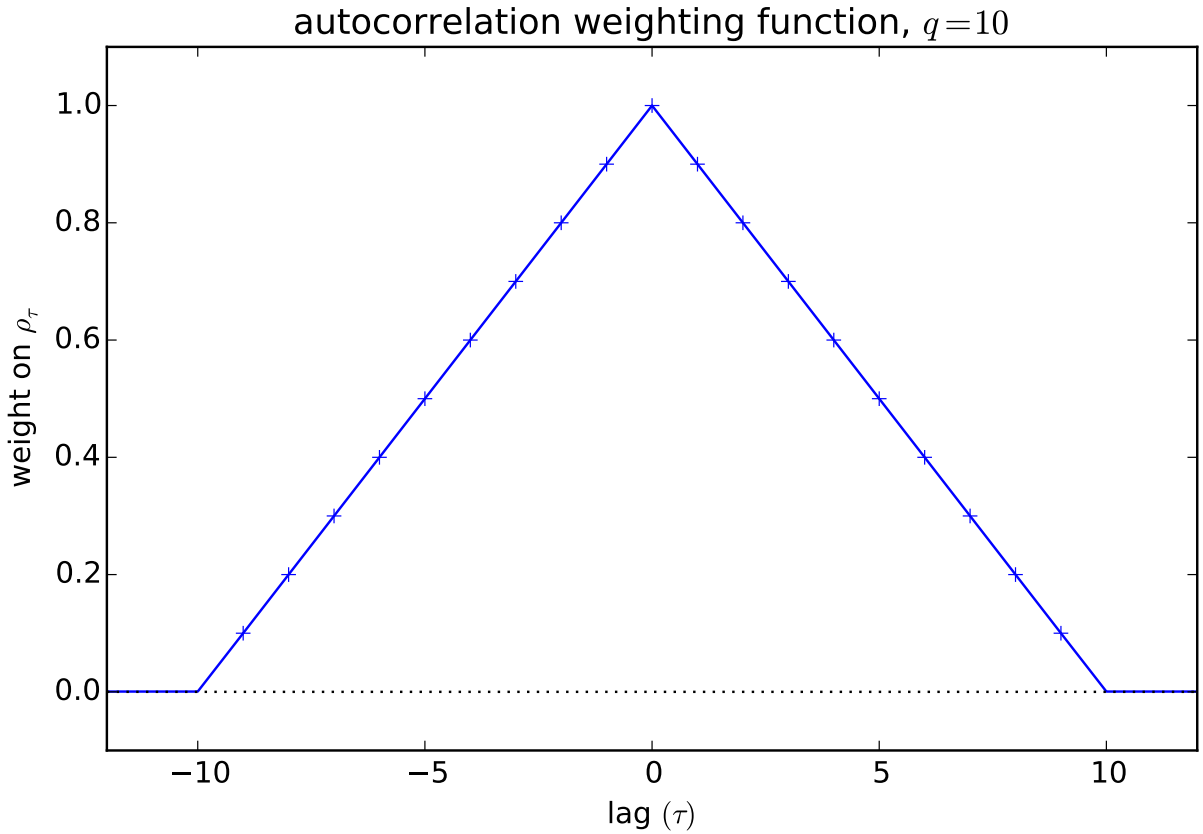
$$\frac{V^q}{q} = \sigma_r^2 \cdot \left[1 + 2 \sum_{\tau=1}^{q-1} \left(\frac{q - |\tau|}{q} \right) \rho_\tau \right]$$

or:

$$\frac{V^q}{q} = \sum_\tau w_\tau \cdot \rho_\tau,$$

long-horizon variances and autocorrelation functions

where the weighting function takes a “tent” shape:



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Fama, Eugene F., and James MacBeth, 1973, Risk, return and equilibrium: Empirical tests, *Journal of Political Economy* 81, 607–636.