

Discussion of:
Competition and Momentum Profits

by:

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Momentum

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- ▶ Momentum is present across numerous asset classes and geographical regions
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- ▶ Avg. momentum return is high but variable; there are “crash” periods.
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 - Cooper, Gutierrez, and Hameed (2004), Stivers and Sun (2010) and Barroso and Santa-Clara (2015),
 - Daniel and Moskowitz (2016)
- ▶ Momentum seems to work a bit better for certain kinds of stocks:
 - Low analyst following
 - ▶ Hong, Lim, and Stein (2000)
 - Volatile stocks
 - ▶ Jiang, Lee, and Zhang (2005), , Zhang (2006).
 - Growth stocks (as opposed to value)
 - ▶ Daniel and Titman (1999)

Competition

- ▶ Hoberg, Kumar, and Prabhala (2016), develop a multivariate style based spatial-distance based measure of mutual fund competition.
 - Here they apply a univariate (momentum only) version of this measure.
- ▶ They find that the momentum effect is present only among firms held by low-competition funds.
- ▶ The interpretation is based on limits-to-arbitrage:
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- ▶ The interpretation is based on limits-to-arbitrage:
 - momentum effect are only arbitrated away for stocks held by high-competition funds.
- ▶ really interesting result:
 - It is really strong
 - Holder characteristics matter, rather than firm characteristics
 - ▶ Endogeneity issue: why did the funds choose to hold these stocks?

Key Result

Table 6A: α for past-winners (5) and losers (1); H, M and L Competition

Panel A: MOM12

Quintile	CAPM				FF3				FF5			
	Low	Med	High	Low-High	Low	Med	High	Low-High	Low	Med	High	Low-High
1	-0.943 (-4.073)	-0.450 (-2.160)	-0.080 (-0.377)	-0.863 (-3.157)	-0.820 (-3.604)	-0.480 (-2.267)	-0.376 (-1.971)	-0.444 (-1.926)	-0.334 (-1.489)	-0.127 (-0.595)	-0.227 (-1.144)	-0.106 (-0.450)
5	0.487 (1.935)	0.336 (2.230)	0.123 (0.956)	0.365 (1.290)	0.827 (3.920)	0.401 (2.637)	0.025 (0.204)	0.802 (3.703)	1.036 (4.723)	0.297 (1.876)	-0.251 (-2.079)	1.287 (5.997)
5-1	1.430 (4.008)	0.786 (2.527)	0.202 (0.733)	1.228 (4.040)	1.648 (4.667)	0.881 (2.795)	0.401 (1.465)	1.246 (4.070)	1.370 (3.745)	0.424 (1.320)	-0.024 (-0.085)	1.393 (4.375)

- ▶ For Low-competition stocks, 5-1 diff. is $\sim 1.5\%$ /month ($t \sim 4$)
 - For High-comp. stocks, 5-1 diff. $\sim 0.2\%$ /month; $t \sim 1$.

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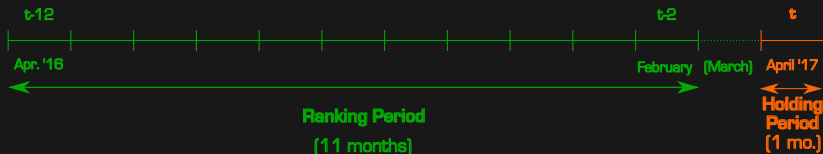
- ▶ For Low-competition stocks, 5-1 diff. is $\sim 1.5\%/month$ ($t \sim 4$)
 - For High-comp. stocks, 5-1 diff. $\sim 0.2\%/month$; $t \sim 1$.
- ▶ However, there is strong winner-loser asymmetry:
 - After **FF3** adjustment, strong performance differential among losers:
 - ▶ $t_{L-H}^{Q5} = 1.290$; $t_{L-H}^{Q1} = -3.157$
 - After **FF5** adjustment, strong performance differential among winners
 - ▶ $t_{L-H}^{Q5} = 5.997$; $t_{L-H}^{Q1} = -0.450$
 - Suggests Low- and High-comp funds firms are different:
 - ▶ RMW or CMA loading differentials

Competition

- ▶ From these results, it is clear that high- and low-competition firms are not identical.
- ▶ It is probably worth thinking about what the competition measure is capturing.

Competition

Measuring momentum



- ▶ Baseline (12,2) momentum measure $r_{i,t}^m \equiv r(t-12, t-2)$
- ▶ Holding period is 1 month.
 - Zero-investment (WML_t) portfolio goes long “Winner” (5) quintile, shorts “Loser” (1) quintile.
 - Portfolios are value-weighted, and rebalanced monthly.
- ▶ z-scored stock-momentum measure z^s for stock i :

$$z_{i,t}^s = \frac{r_{i,t}^m - \overline{r_t^m}}{\sigma_t^m}$$

Competition

Measuring competition

- ▶ Fund-level momentum measure z^f for fund k :
 - weighted average of the stock-level momentum measure:

$$z_{k,t}^f = \sum_{i=1}^n w_{i,t}^k \cdot z_{i,t}^s$$

where $w_{i,t}^k$ is fund k 's weight on stock i at time t .

- Note that, if the weight vector w_t^k were constant over time, $z_{k,t}^f$ would just be the (scaled) fund return.
- ▶ Competition (C_k) for fund k is number of funds that are “close” in terms of fund-level momentum:

$$\sum_{l \neq k} \mathbb{1}(|z_{k,t}^f - z_{l,t}^f| < d^*)$$

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- ▶ *What would we expect the distribution of C_k to look like?*

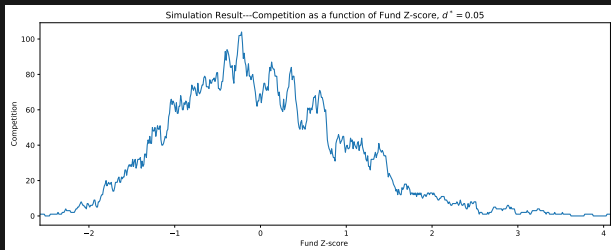
Competition

Competition simulation

- ▶ If we suppose that fund returns are drawn from a lognormal distribution, we can simulate the distribution of C_k .
 - The distribution of fund momentum Z-scores looks like this:



- ▶ And the distribution of the competition measure, as a function of the fund's momentum, looks like this:



- ▶ Not surprisingly, this looks a lot like a (noisy) lognormal distribution.
- ▶ This result suggests that the lowest “competition” funds should be those with the most extreme returns.

Competition

What is “Competition” capturing?

- ▶ It is possible that the low competition funds are those that bought the most volatile stocks.
 - We know that the momentum effect is stronger among more volatile stocks.
 - ▶ Jiang, Lee, and Zhang (2005), Zhang (2006).
- ▶ However, it is also possible that there is something about the trading behavior of extreme-winner or loser-funds that reinforces the momentum behavior among the stocks they hold.
- ▶ It would be worthwhile to try to tease out.
 - The objective is to figure out whether **exogenous** shocks to the level of competition among funds holding a given stocks affect that stock’s momentum.
 - ▶ Right now, it looks like C_k is like still capturing other firm-specific determinants of momentum strength.

Other Questions:

- ▶ This is a cross-sectional measure, does it work in the time-series as well?
- ▶

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