Re-Evaluation of the Low-Risk Anomaly via Matching

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May 16, 2014

Low-Risk Anomaly

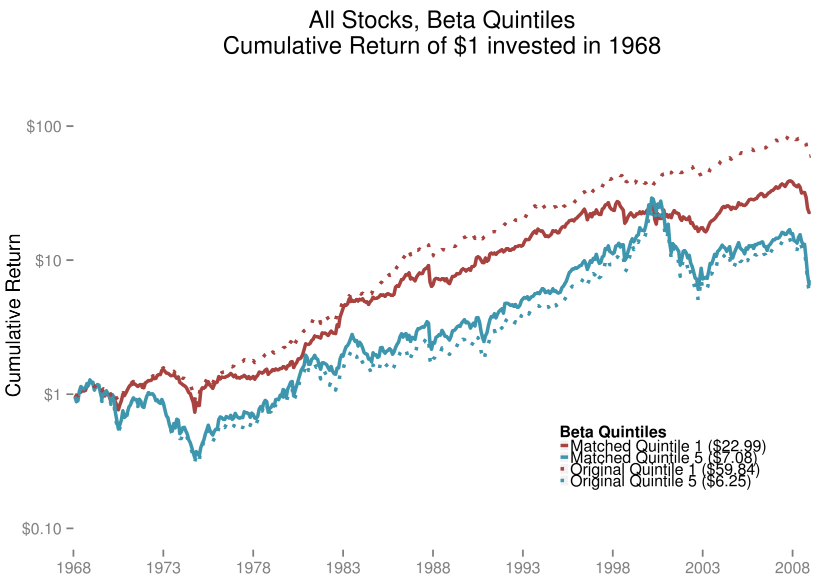
- Death of CAPM and beta?
- Limits to arbitrage vs. behavioral bias.
- Low beta portfolios (10.5% p.a.) outperform high beta portfolios (4.6% p.a.).

Matching

- Improve balance bewteen treatment and control groups.
- Match observations based on covariates.
- Coarsened Exact Matching (CEM package).

Re-Evaluate Low-Risk Anomaly via Matching

- Use monthly stock-level CRSP data (1968 - 2008).
- Match stocks in the highest and the lowest beta (volatility) quintile portfolios with CEM on
  - Industry
  - Company size
  - Trading volume
- Improve the balance by 10%.


All Stocks, Beta Quintiles
Cumulative Return of $1 invested in 1968
Cumulative Return
$100
$10
$1
$0.10
1968
1973
1978
1983
1988
1993
1998
2003
2008
Beta Quintiles
Matched Quintile 1 ($22.99)
Matched Quintile 5 ($7.08)
Original Quintile 1 ($59.84)
Original Quintile 5 ($6.25)

Conclusions

- Part of the low beta anomaly observed is due to imbalance between high and low beta quintile portfolios.
- Low-risk anomaly still exists but has a more muted effect (in % p.a.)
- High beta quintile portfolio outperformed low beta quintile portfolio cumulatively from Oct. '99 through June '00.

	Original	Matched
Lowest Beta Quintile	10.5	7.9
Highest Beta Quintile	4.6	4.9

Thank You!

Paper link: http://ssrn.com/abstract=2354965

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