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Liquidity risk adjusted portfolio performance evaluation – methods and application to Liquid Alternative Mutual Funds

Abstract

US liquid alternative mutual funds (LAMFs) are the public-market challenge to the privately-offered hedge funds. I study the liquidity, performance, and portfolio efficiency of these alternative investments. Using a data set of 208 LAMFs and 542 hedge funds that have 12-year performance records, and deploying a new equilibrium model that I developed for use specifically with LAMFs and hedge funds, I show that only 7% of the LAMFs have positive and statistically significant Alpha, versus 32% for the hedge funds, while 33% of the LAMFs have negative Alpha, versus only 7% for the hedge funds.

Using new techniques to gauge the liquidity risk of the funds, including my own liquidity risk factor and liquidity-risk-adjusted performance ratio (LRAPR), I find that hedge funds bear more liquidity risk than LAMFs, with the LRAPR coming in 33% lower than the Sharpe ratio for a subset of liquidity-risky hedge funds, versus 24% lower for the subset of LAMFs. Using my liquidity risk factor, I find that about 50% of the funds in a sub-set of high-return hedge funds load positively on the liquidity risk factor, which for liquidity risk results in over a 40% reduction in fund Alpha for these funds.

I developed a new globally-diversified, long-only benchmark to replace the US large-cap benchmark normally used as the proxy for the Markowitz market portfolio of all risky assets. Using this benchmark, I find that hedge funds are more efficient in diversifying the investor's pre-existing portfolio when added as a 20% portion of the overall diversified portfolio. Further, I show that a random selection of hedge funds reliably improves the overall portfolio Sharpe ratio, while random selection of LAMFs improves the portfolio Sharpe ratio only about 60% of the time.

I also develop a new methodology to measure the performance persistence of individual funds. I find that funds with high levels of performance persistence are better portfolio diversifiers than funds that are strong performers on other bases, such as Alpha, return, or Sharpe ratio.

In a break with standard practice, my analysis extends to the level of the individual fund; I name the funds that have performed better. Finally, in the last chapter, I apply the methods and techniques to Polish mutual funds. I find that liquidity risk is not a major exposure in Polish mutual funds, but neither is it a source of return. In fact, Alpha is essentially nonexistent in Polish mutual funds, including in Polish equity and alternative category mutual funds.

