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The Limits to Arbitrage and the Low-Volatility Anomaly

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Contrary to fundamental expectations, researchers have found that a strategy of buying prior low-volatility stocks and selling prior high-volatility risk stocks has historically generated substantial abnormal returns in the U.S. and international markets. Low-volatility effects are therefore increasingly being used by portfolio managers in portfolio construction in an attempt to extract excess returns.

These results are particularly intriguing because, according to theory, higher expected risk is compensated with higher expected return, not the other way around.

We show that over a long study period (1963–2010), the existence and trading efficacy of the well-known low-volatility stock anomaly are more limited than widely believed. Our results indicate that excess returns associated with zero-cost low-risk portfolios (low minus high risk) reverses rather quickly, thereby requiring traders to rebalance frequently in any attempt to successfully extract profits.

Furthermore, we find that the anomalous returns within value-weighted portfolios are largely eliminated when omitting low-priced (less than $5) stocks, and are not at all present within equal-weighted portfolios. Additionally, any excess returns associated with the value-weighted low-volatility effect are meaningfully hampered by high transaction costs beyond those directly associated with frequent rebalancing.

Altogether, our evidence suggests that the attempt to extract alpha associated with zero-cost low volatility is substantially reduced by market frictions such as high transaction costs.

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