
PRACTITIONER'S DIGEST

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DOES TRADING BY ETF AND MUTUAL FUND INVESTORS HURT PERFORMANCE? EVIDENCE FROM TIME- AND DOLLAR-WEIGHTED RETURNS

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Ananth Madhavan and Aleksander Sobczyk

This paper contributes to the growing literature on the divergence between the return the average fund investor experiences and reported buy-and-hold returns. This is a topic of considerable importance to investment advisors, plan sponsors, and policy makers seeking to encourage investors to save more for retirement. Our sample constitutes all US-domiciled open-end mutual funds (active and index) and exchange-traded funds (ETFs), and covers 6,766 fixed income and equity funds with assets in excess of \$13 trillion. We demonstrate directly that return chasing behavior-based on the time-series sensitivity of flows to past returns-explains the cross-sectional pattern of return gaps across funds. Indeed, we find empirically that ETFs where flows are positively correlated to past returns (return chasing) exhibit a greater return gap between what the average investor experiences and what is reported. We show that liquidity- and flow-related characteristics explain the cross-sectional variation in return gaps for funds. Smaller and more narrowly focused funds have the most negative gaps.

Some commentators have noted that the ability to trade ETFs intraday can lead to high turnover and sub-par performance for investors. We find little empirical support for this notion. The return gaps across ETFs are small on average, -0.93% for equity funds and -0.52% for fixed income funds. This finding is very relevant for administrators of defined contribution plans who must decide what funds are offered to participants, and who are often reluctant to offer ETFs despite their low cost. The results also indicate several areas where public policy makers or advisors can meaningfully enhance investor education. For example, advisors may want to complement standard buy-and-hold returns with flow-weighted returns, as part of their ongoing investor education efforts. Our evidence on the cross-section of return gaps suggests that educational efforts be focused on the trading of narrower, more niche products.

HOW TO BEAT THE MACHINES BEFORE THEY BEAT YOU**PAGE 21***Vineer Bhansali*

The use of “big” data, algorithms and machine learning is disrupting investment management. By carefully selecting domains where data is sparse and there is possibility of regime changes, a human investor can not only survive, but thrive in a world of investment machines. When data is sparse, Bayesian methods allow probability theory to be used as logic rather than an exercise in statistics and thus enable forward looking investors to anticipate and position for these regime shifts. By focusing on strategy instead of tactics, investing in volatile markets, and by joining forces with machines, human investors can excel in the investment world that will be increasingly dominated by algorithms and machine learning.

**EMBEDDED BETAS AND BETTER BETS: FACTOR INVESTING
IN EMERGING MARKET BONDS****PAGE 27***Johnny Kang, Kevin So and Thomas Tziortziotis*

Our paper documents novel empirical insights driving the pricing of sovereign external emerging market bonds (EMB) using a factor pricing framework. While similar to traditional fixed-income instruments driven primarily by interest rate and credit risk factors, the unique dynamics of emerging markets suggest that additional factors may be necessary to understand this asset class. We therefore use the EMB universe as an empirical setting to explore the ability of macro factors to explain the time series of returns and the power of style factors in forecasting the cross-section of returns.

We begin by highlighting the historical returns of the value-weighted EMB portfolio and showing that its impressive performance can be explained by its embedded betas to a diversified set of macro factors (rates, credit, currency, and equity). Not only does the benchmark portfolio have significant exposure to all four factors, but the relative risk contribution from each factor also appears to be well balanced over the full sample period. Repeating the same analysis on a rolling basis reveals that these risk contributions are not static, but in fact vary significantly over time.

Next we construct value and momentum style factors that help explain the cross-section of country expected returns. Our value measure, which we call default-adjusted spread, identifies issuers trading cheap or rich relative to expected sovereign default risk. Our momentum measure uses a cross-asset insight from currency markets to identify financial conditions that may hinder an issuer's ability to pay. We find that these two style factors are highly complementary, given the value factor's risk-seeking profile and the momentum factor's defensive nature. Based on this result, we introduce a risk-on versus risk-off framework to characterize the correlation structure spanning our macro and style factors. Finally, we incorporate our factor insights into a long-only optimized portfolio with practical investment constraints. Our results show that this multi-factor portfolio outperforms the value-weighted benchmark by 60 basis points per annum net of estimated transaction costs.

**RETURN PREDICTABILITY AND MARKET-TIMING:
A ONE-MONTH MODEL****PAGE 47***Blair Hull, Xiao Qiao and Petra Bakosova*

Our paper addresses an important question in portfolio management: tactical asset allocation. Asset allocation is a central theme in investment management, and a deeper understanding of when and how much to increase or decrease stock market exposure is important for many asset managers. We investigate tactical asset allocation through the lens of return predictability. In doing so, we provide a bridge between a large body of academic work and the investment management industry by demonstrating the real-world implications of predictability research.

In the academic literature, there has been lots of work on econometric models of return predictability, with emphasis on statistical results. Less work has focused on the portfolio management implications of predictability. In practice, the investment management aspect of return predictability may be more interesting than econometric analyses. We connect academic research and practice through the following research question: Can we form a viable trading strategy based on statistical models of stock return predictability?

We find that the answer is yes. Our paper illustrates how to construct such a trading strategy. Using weighted least squares (WLS) with stepwise variable selection, we combine 15 variables to forecast the one-month ahead market excess returns. We then propose a one-month market-timing strategy based on our statistical model. From 2003 to 2017, our strategy earned 16.6% annual returns with a 0.92 Sharpe ratio and a maximum drawdown of 20%. For the same period, the S&P 500 had 10% annual returns with a Sharpe ratio of 0.46 and a maximum drawdown of 55%. We also consider combining our one-month strategy with Hull and Qiao's (2017) six-month market-timing strategy. The combined strategy had 15% annual return, Sharpe ratios of 1.12, and a maximum drawdown of 14%. We are the first to investigate the economic implications of stock market predictability at the one-month horizon, and we illustrate the practical benefits of model combination through combining two market-timing models.

BILL GROSS' ALPHA: THE KING VERSUS THE ORACLE**PAGE 65***Aaron Brown and Richard Dewey*

The main practical application of this paper is advancing understanding of how to evaluate portfolio managers, and specifically how the concept of "alpha" differs in fixed income versus equities. The paper also explores market efficiency and sources of excess returns in fixed income investing. Finally, the paper takes a deep dive decomposing the returns of "Bond King" Bill Gross' PIMCO Total Return fund, and compares his career to that of the "Oracle of Omaha" Warren Buffett. In addition to some historical interest, this opens a window on how "superstar" investors achieve their exceptional track records.