

# PRACTITIONER'S DIGEST

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# **EFFICIENT MARKETS IN CRISIS**

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#### Meir Statman

Discussions about market efficiency are confusing because market efficiency lacks a common definition. The most recent confusing discussion centers on the claim that a belief that markets are efficient is at the root of the 2008–2009 crisis. I aim to replace confusion with order by distinguishing among definitions of efficient markets and distinguishing efficient markets from free markets.

*Rational markets* are markets where securities' prices always equal their intrinsic values. *Informationally efficient markets* are markets where *changes* in securities' prices are always equal to *changes* in their intrinsic values. *Random-walk markets* are markets where past securities' returns contain no information about future securities' returns other than the parameters of their distributions (e.g. mean and variance). *Unbeatable markets* are markets where investors are unable to generate consistent positive alphas from securities, once costs are accounted for. *Free markets* are markets where, in their extreme form, government imposes no restrictions on the economic actions of individuals or organization. In their moderate form they are markets where government places few such restrictions.

I argue that a belief that markets are efficient cannot be at the root of the 2008–2009 crisis, but a belief that free markets are always superior to regulated market does bear some responsibility for the crisis.

# PREDICTING FINANCIAL DISTRESS AND THE PERFORMANCE OF DISTRESSED STOCKS

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### John Y. Campbell, Jens Hilscher and Jan Szilagyi

We consider the measurement and pricing of distress risk. We present a model of corporate failure in which we use accounting and market-based measures to forecast future financial distress. Our best model makes more accurate predictions than leading alternative measures of corporate bankruptcy and failure.

We use our measure of financial distress to examine the performance of distressed stocks from 1981 to 2008. We find that distressed stocks are risky: They have highly variable returns and high market betas and they tend to underperform safe stocks by more at times of high market volatility and risk aversion. However, investors in distressed stocks have not been rewarded for bearing these risks. Instead, distressed stocks have had very low returns, both relative to the market and after adjusting for their high risk.

The underperformance of distressed stocks is present in all size and value quintiles. It is lower for stocks with low analyst coverage and institutional holdings, which suggests that information or arbitragerelated frictions may be partly responsible for the underperformance of distressed stocks.

# MULTIPLE TIME SCALE ATTRIBUTION FOR COMMODITY TRADING ADVISOR (CTA) FUNDS

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Brian T. Hayes

We describe a technique for decomposing CTA returns into directional (beta) contributions and market timing alpha across multiple time scales; the remaining average fund return is called residual alpha. Given the directional nature of CTA strategies, market timing is an important component of their returns. Market timing factors in the same asset are positively correlated, particularly at adjacent frequencies (e.g., monthly and quarterly), but not redundant. Thus, a CTA with multiple models may exhibit market timing skill at several time scales. CTA indexes also display market timing alpha at multiple frequencies. Our attribution analysis can suggest areas where further due diligence is warranted. In principle, it can be extended to other strategies; however, security selection ability and illiquid assets—both generally irrelevant for CTAs—can produce spurious market timing results.

Coefficients on the market timing factors provide information about the markets and time scales where the fund has exhibited market timing ability. Investors can check whether significant timing factors are in accordance with the fund's stated investment horizon and asset allocation. Consistently significant market timing alpha at a specific time scale or market could also be evidence of a proprietary modeling advantage by the fund. Most CTA funds have relatively small contributions from beta factors. While a fund with substantial returns from a persistent net long or short exposure over its history could simply have been "lucky", the fund may instead have long time-scale models whose market timing ability is indistinguishable from beta over the fund's (limited) track record.

Residual alpha—generally negative for CTAs—can provide information about a fund's trading efficiency; it may also signal that the fund uses non-core CTA strategies. Since funds operate at different risk levels, scaling residual alpha by market timing alpha plus beta contribution allows investors to compare funds; for CTA indexes, this ratio is around -0.4 to -0.5. Funds with a positive or less negative ratio may possess superior execution technology or algorithms. Alternatively, these funds may engage in relative value trades or single-stock equities, or have larger allocations to emerging markets

or less-liquid commodities than their peers; such returns could appear as residual alpha. Positive residual alpha may also be due to market timing ability at a higher frequency than available return data. If a fund's (scaled) residual alpha grows more negative relative to its own history, this may indicate that fund asset levels are too large for current market conditions.

## **ROBUST PORTFOLIO REBALANCING WITH TRANSACTION COST PENALTY—AN EMPIRICAL ANALYSIS**

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Vitaly Serbin, Milan Borkovec and Michael Chigirinskiy

Using a standard portfolio optimizer "out-of-the box" can often yield unintuitive results and lead to poor out-of-sample performance. It is well-known that one of the main reasons for this is the imprecision with which the input variables to the problem are typically estimated.

The paper compares two popular techniques used by practitioners to address uncertainty in expected return estimates: robust optimization and the inclusion of transaction costs into the portfolio asset allocation problem. We show that both methods yield superior out-of-sample portfolios.

Our analysis focuses on the return maximization problem with constraints on total risk or tracking error. We demonstrate that the effects of incorporating a transaction cost penalty into the optimization problem are similar to those of modeling uncertainty in expected returns; however the effects do not overlap completely. We draw some insights into the observed interplay between modeling transaction costs and modeling return uncertainty and offer suggestions regarding the joint use of these techniques.