

Regimes of Index Out-Performance: A Markov Switching Model of Index Dispersion

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Abstract

This paper investigates the case of time-variability in the performance of the cointegration-based index tracking, which is shown to produce consistent excess return during some time periods. The only information used to construct the trading strategy is the history of stock prices, and the cause of the index out-performance should be linked to their time-variability characteristics. We define a new measure of prices' cohesion within the market index called 'index dispersion'. The relationship between index dispersion and fund out-performance is found to depend on stock market regimes. A Markov switching model estimated for this relationship indicates the presence of two regimes having very different characteristics. The first regime, associated with more volatile market conditions and prevailing during the last few years, is responsible for the entire excess return generated from index tracking. In this regime, an increase in dispersion is followed by a relative gain from index tracking. The second regime, less volatile but with no significant out-performance of the index tracking strategy, is prevailing at the beginning of the data sample, and indeed during most of the 1990's. In this regime, it is a decrease in dispersion which is followed by a relative gain from index tracking. We relate these observations to the long-run equilibrium relationships identified by cointegration and show that the tracking portfolio disregards temporary deviations of stock prices from the equilibrium levels which occur in regime two, and tracks the index very accurately. However, when disequilibria in stock prices are no longer temporary, but instead represent transitions towards new equilibrium prices, the cointegration-based tracking portfolio generates consistent excess returns, and this is what is happening in regime one.