

The Generalized Treynor Ratio [★]

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Abstract. This paper extends the Treynor performance ratio for a single index to the case of multiple indexes. The new measure, called the Generalized Treynor Ratio, preserves the same key geometric and analytical properties of the original Treynor Ratio. The Generalized Treynor Ratio is defined as the abnormal return of a portfolio per unit of premium-weighted average systematic risk, normalized by the premium-weighted average systematic risk of the benchmark. Numerical simulations reveal that the portfolio rankings produced with this measure are more precise and more stable than the ones provided by Jensen's alpha and the Information Ratio.

1. Introduction

The Capital Asset Pricing Model developed by Treynor (1961), Sharpe (1964) and Lintner (1965) has provided the framework for a number of performance measures for managed portfolios, five of which have been broadly adopted in the financial literature. The Sharpe (1966) Ratio and the Treynor and Black (1973) 'Appraisal Ratio'¹ are derived from the Capital Market Line, with the level of risk being measured by the standard deviation of portfolio returns. Jensen's (1968) alpha, defined as the portfolio's excess return over the required average return, the Treynor (1966) ratio, defined as the alpha divided by the portfolio beta, and the Information Ratio, defined as the alpha divided by the standard deviation of the portfolio residual returns, are directly linked to the beta through the Security Market Line.

Beyond these five measures, the supply of new and widely accepted quantitative measures for the performance assessment of single index models has been scarce. Fama (1972) proposes a decomposition of performance between timing and selection abilities, while Treynor and Mazuy (1966) and Henriksson and Merton (1981) design performance measures aimed at measuring market timing abilities.

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¹ We refer to the original performance measure developed by Treynor and Black (1973) and not to the one frequently quoted in the literature, defined later as the Information Ratio.