EVALUATION OF LINEAR ASSET PRICING MODELS BY IMPLIED PORTFOLIO PERFORMANCE

ABSTRACT

To evaluate linear asset pricing models we develop a measure previously considered by Kandel and Stambaugh (1995). The "KS-ratio" criterion rates a model's usefulness based on the mean portfolio return, for any given variance choice, obtained by a mean-variance decision maker using the model for optimal portfolio decisions. It is shown to be equivalent to a maximum cross-sectional GLS R-square criterion and a criterion measuring the minimal standardized distance of the factor portfolio variance to the asset frontier for given mean. The KS-ratio together with the HJ-distance and several ad hoc evaluation criteria are applied to nine prominent asset pricing models. We find that it is necessary to correct for the number of factors and that this correction makes a substantial difference for model rankings. While rankings on the ad hoc criteria are variable, rankings based on the KS-ratio and HJ-distance are quite consistent. After correction for the number of factors, both a theoretical productivity-based model and the Chen-Roll-Ross model beat the Fama-French three-factor model.