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Modeling and Forecasting (Un)Reliable Realized Covariances for More Reliable Financial Decisions

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Abstract

We propose a new framework for modeling and forecasting common financial risks based on (un)reliable realized covariance measures constructed from high-frequency intraday data. Our new approach explicitly incorporates the effect of measurement errors and time-varying attenuation biases into the covariance forecasts, by allowing the ex-ante predictions to respond more (less) aggressively to changes in the ex-post realized covariance measures when they are more (less) reliable. Applying the new procedures in the construction of minimum variance and minimum tracking error portfolios results in reduced turnover and statistically superior positions compared to existing procedures. Translating these statistical improvements into economic gains, we find that under empirically realistic assumptions a risk-averse investor would be willing to pay up to 170 basis points per year to shift to using the new class of forecasting models.

Keywords: Common risks; realized covariances; forecasting; asset allocation; portfolio construction.
JEL: C32, C58, G11, G32

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