

Predictability in Equity Markets:
Estimation and Inference

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Abstract

Predictive Regressions in Predictive Systems

This paper analyses predictive regressions in a predictive system framework, where the predictor is an imperfect proxy for the expected returns. I show that when there are differences between the dynamic structure of the expected return and the predictor, the predictive regression uses predictive information inefficiently. The effect is especially strong if the predictors and the expected return are highly, but not equally, persistent. As a solution, I propose a persistence adjustment for the predictive regression. The resulting estimator is a two-stage method, where the expected return and predictor processes are modelled separately, allowing for each to have distinct dynamic properties. Simulations, as well as empirical results, show that the method leads to both better in-sample fit and real-time forecasting performance. The empirical results highlight that the proposed method is especially useful in the case of multiple predictors.

Keywords: Persistence adjustment; Predictive system; Return predictability

JEL classification: C22, G1

Testing Return Predictability with the Dividend-Growth Equation: An Anatomy of the Dog

The dividend-growth based test of return predictability, proposed by Cochrane [2008, Review of Financial Studies 21, 1533-1575], is similar to a likelihood-based test of the standard return-predictability model, treating the autoregressive parameter of the dividend-price ratio as known. In comparison to standard OLS-based inference, both tests achieve power gains from a strong use of the exact value postulated for the autoregressive parameter. When compared to the likelihood-based test, there are no power advantages for the dividend-growth based test. In common implementations, with the autoregressive parameter set equal to the corresponding OLS estimate, Cochrane's test also suffers from severe size distortions.

Keywords: Predictive regressions; Present-value relationship; Stock-return predictability

JEL classification: C22, G1

Vanishing Predictability and Non-stationary Regressors

This paper provides an explanation for why predictive regressions may have lost power in recent samples. In a noisy predictor framework, where expected returns are stationary and a non-stationary component masks the information in the regressor, I show that the predictive power of the regression vanishes as the sample size increases. To address vanishing predictability, I propose an estimation method, subsample fixed effects. It involves estimating the predictive relationship locally in subsamples and then pooling the estimates via a fixed effects estimator. Empirically, important predictors of the stock returns exhibit vanishing predictability but applying subsample fixed effects indicates that the underlying predictive relationship between these predictors and returns remains significant.

Keywords: Non-stationary regressor; Return predictability; Subsample fixed effects

JEL classification: C22, C58, G17

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