

INTERVAL ESTIMATION FOR SEMIPARAMETRIC PREDICTIVE REGRESSION

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Abstract

Predictive regression is an important research topic in financial econometrics. Various estimation methods have been proposed for it, but they suffer from complicated asymptotic limits which depend on whether or not the predicting variable is stationary. This makes inference for the predictability difficult. In this paper we employ a non-linear projection to deal with endogeneity of the state variable which results in a new semiparametric predictive regression model for describing the relationship between the state variables and the asset return. We propose a weighted profile estimation equation method to estimate the parameters and an empirical likelihood ratio test to examine the predictability of state variables. We establish the asymptotic normality of the proposed estimator and show the Wilks theorem holds for the test statistic regardless of predicting variables being stationary or not. This provides a unifying method for constructing confidence regions of the coefficients of state variables. Simulations demonstrate favorable finite sample performance of the proposed method over some existing holds for the test statistic regardless of predicting variables being stationary or not. This provides a unifying method for constructing confidence regions of the coefficients of state variables. Simulations demonstrate favorable finite sample performance of the proposed method over some existing approaches. Real examples illustrate the value of our methodology.