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# Testing for Parameter Instability in Predictive Regression Models\*

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## Abstract

We consider tests for structural change, based on the  $SupF$  and Cramer-von-Mises type statistics of Andrews (1993) and Nyblom (1989), respectively, in the slope and/or intercept parameters of a predictive regression model where the predictors display strong persistence. The  $SupF$  type tests are motivated by alternatives where the parameters display a small number of breaks at deterministic points in the sample, while the Cramer-von-Mises alternative is one where the coefficients are random and slowly evolve through time. In order to allow for an unknown degree of persistence in the predictors, and for both conditional and unconditional heteroskedasticity in the data, we implement the tests using a fixed regressor wild bootstrap procedure. The asymptotic validity of the bootstrap tests is established by showing that the asymptotic distributions of the bootstrap parameter constancy statistics, conditional on the data, coincide with those of the asymptotic null distributions of the corresponding statistics computed on the original data, conditional on the predictors. Monte Carlo simulations suggest that the bootstrap parameter stability tests work well in finite samples, with the tests based on the Cramer-von-Mises type principle seemingly the most useful in practice. An empirical application to U.S. stock returns data demonstrates the practical usefulness of these methods.

**Keywords:** Predictive regression; persistence; parameter stability tests; fixed regressor wild bootstrap; conditional distribution.

**JEL Classification:** C12, C32, C58.

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