

Testing for Time Stochastic Dominance

Kyungho Lee*, Oliver Linton[†] and Yoon-Jae Whang[‡]

July 15, 2020

Abstract

This paper proposes nonparametric tests for time stochastic dominance. Time stochastic dominance is a concept that enables us to rank different prospects over time based on present value criteria for general utility and discount function classes. For example, it can be useful in evaluating impacts of policies in a dynamic context or comparing different portfolios based on the present values of the cash flows over time. We consider a Kolmogorov-Smirnov type test statistic and investigate its asymptotic properties. We suggest bootstrap procedures to obtain critical values and prove its asymptotic validity. We investigate the finite sample performance of the tests using Monte-Carlo simulation experiments. We apply proposed tests to evaluate the impact of liquidity constraints on dynamic household consumption in the U.S. using Panel Study of Income Dynamics (PSID) data.

Keywords: Time Stochastic Dominance, Test Consistency, Bootstrap, Dynamic Policy Evaluation

* (kh.lee@snu.ac.kr) Graduate Student, Department of Economics, Seoul National University. Kyungho Lee acknowledges funding from the BK21Plus Program of the Ministry of Education and National Research Foundation of Korea (NRF-21B20130000013)

[†]Professor, Department of Economics, University of Cambridge

[‡]Professor, Department of Economics, Seoul National University