Estimation of Unknown Heteroscedasticity

Hiroaki Chigira*
Tsunemasa Shiba†

In this paper, we deal with estimation of possibly heteroscedastic scedastic functions in regression framework. Although our eventual interest may be in estimation of regression coefficients, we shall first focus on the estimation of scedastic functions. What distinguishes our framework from others, is that we do not assume any parametric scedastic model at all. The key in our approach is White's (1980) HCE that consistently estimates the variance of estimated regression coefficients. We extract information pertaining to scedastic functions from White's HCE, hence our scedastic function estimators are consistent under the same set of regularity conditions that makes HCE consistent. We present Monte Carlo results that show our method works reasonably well under various different conditions.

* JSPS Research Fellow, Hitotsubashi University.
† Graduate School of Economics, Hitotsubashi University.