# Generalized Empirical Likelihood Specification Test Robust to Local Misspecification*

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**Abstract**

It is well known that many of the standard specification tests may not be robust when the alternative is misspecified. This paper analyzes a robust specification test in Generalized Empirical Likelihood (GEL) estimators in weakly dependent time series setting. GEL estimators are first order equivalent to generalized method of moment (GMM) estimators and have better finite sample properties. We show the usual score test has a noncentral chi-square distribution asymptotically under the local misspecification in the GEL framework. Thus, it spuriously reject the null hypothesis too frequently. We propose a robust score specification test which has a central chi-square distribution asymptotically under the local misspecification, and therefore, it has asymptotically correct size.

**JEL code:** C12; C52
**Key words:** Generalized empirical likelihood; Local misspecification; Robust specification test.

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