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## **Unit Root Model Selection**

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Abstract: Some limit properties for information based model selection criteria are given in the context of unit root evaluation and various assumptions about initial conditions. Allowing for a nonparametric short memory component, standard information criteria are shown to be weakly consistent for a unit root provided the penalty coefficient  $C_n \rightarrow \infty$  and  $C_n/n \rightarrow 0$  as  $n \rightarrow \infty$ . Strong consistency holds when  $C_n/(\log \log n)^3 \rightarrow \infty$  under conventional assumptions on initial conditions and under a slightly stronger condition when initial conditions are infinitely distant in the unit root model. The limit distribution of the AIC criterion is obtained.

Key words: AIC, consistency, model selection, nonparametric, unit root

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