

White, Halbert**Estimation, inference, and specification analysis.** (English) [Zbl 0860.62100](#)*Econometric Society Monographs*. 22. Cambridge: Cambridge Univ. Press. x, 380 p. (1994).

Author's summary: This book examines the consequences of misspecifications in econometrics for the interpretation and properties of likelihood-based methods of statistical estimation and inference. The author first explores the underlying motivation for maximum-likelihood estimation, treats the interpretation of the maximum-likelihood estimator (MLE) for misspecified probability models and gives the conditions under which parameters of interest can be consistently estimated despite misspecification. He then investigates the limiting distribution of the MLE under misspecification, the conditions under which MLE efficiency is not affected despite misspecification and the consequences of misspecification for hypothesis testing and estimating the asymptotic covariance matrix of the parameters. The analysis concludes with an examination of methods by which misspecification problems can be empirically investigated and offers a variety of appropriate tests.

Although the theory presented in the book is motivated by econometric problems, its applicability is by no means restricted to economics. Subject to defined limitations, the theory applies to any scientific context in which statistical analysis is conducted using approximate models.

Reviewer: [J.Lillestøl \(Bergen\)](#)**MSC:**[62P20](#) Applications of statistics to economics[62-02](#) Research exposition (monographs, survey articles) pertaining to statistics[62F03](#) Parametric hypothesis testing[62F10](#) Point estimation

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Keywords:[misspecifications](#); [likelihood-based methods](#); [maximum-likelihood estimation](#); [limiting distribution](#); [efficiency](#); [hypothesis testing](#); [asymptotic covariance matrix](#); [approximate models](#)