

Search > Results for SIMEX estimatio... > SIMEX estimation for single-index model with covariate measurement error

Find it

Full text at publisher

Full Text Links



Export

Add To Marked List

< 1 of 1 >

SIMEX estimation for single-index model with covariate measurement errorBy: Yang, YP (Yang, Yiping) ^[1]; Tong, TJ (Tong, Tiejun) ^[2]; Li, GR (Li, Gaorong) ^[3][View Web of Science ResearcherID and ORCID](#) (provided by Clarivate)

ASTA-ADVANCES IN STATISTICAL ANALYSIS

Volume: 103 Issue: 1 Page: 137-161

DOI: 10.1007/s10182-018-0327-6

Published: MAR 2019

Indexed: 2019-03-22

Document Type: Article

Abstract

In this paper, we consider the single-index measurement error model with mismeasured covariates in the nonparametric part. To solve the problem, we develop a simulation-extrapolation (SIMEX) algorithm based on the local linear smoother and the estimating equation. For the proposed SIMEX estimation, it is not needed to assume the distribution of the unobserved covariate. We transform the boundary of a unit ball in R_p to the interior of a unit ball in R_{p-1} by using the constraint $=1$. The proposed SIMEX estimator of the index parameter is shown to be asymptotically normal under some regularity conditions. We also derive the asymptotic bias and variance of the estimator of the unknown link function. Finally, the performance of the proposed method is examined by simulation studies and is illustrated by a real data example.

Keywords

Author Keywords: [Single-index model](#); [Measurement error](#); [Local linear smoother](#); [SIMEX](#); [Estimating equation](#)

Keywords Plus: [NONPARAMETRIC REGRESSION](#); [EMPIRICAL LIKELIHOOD](#)

Author Information

Corresponding Address: Li, Gaorong (corresponding author)

▼ Beijing Univ Technol, Beijing Inst Sci & Engn Comp, Beijing 100124, Peoples R China

Addresses:

▼ ¹ Chongqing Technol & Business Univ, Coll Math & Stat, Chongqing 400067, Peoples R China

▼ ² Hong Kong Baptist Univ, Dept Math, Kowloon Tong, Hong Kong, Peoples R China

▼ ³ Beijing Univ Technol, Beijing Inst Sci & Engn Comp, Beijing 100124, Peoples R China

E-mail Addresses: ligaorong@bjut.edu.cn

Categories/Classification

Research Areas: Mathematics

Funding

Citation Network

In Web of Science Core Collection

37

Citations

Highly Cited Paper

Create citation alert

38 Times Cited in All 32

Databases

Cited References

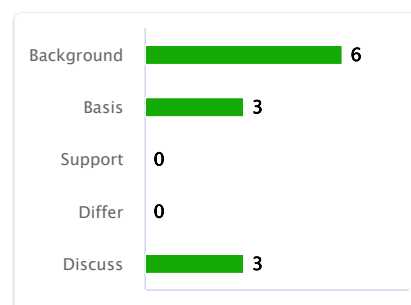
Times Cited in All

[View Related Records](#)

Databases

[+ See more times cited](#)Citing items by classification New

Breakdown of how this article has been mentioned, based on available citation context data and snippets from 9 citing item(s).



You may also like...

Bertrand, A; Van Keilegom, I; Legrand, C;
[Flexible parametric approach to classical measurement error variance estimation without auxiliary data](#)
 BIOMETRICS

Carroll, RJ;
[Surprising effects of measurement error on an aggregate data estimator](#)
 BIOMETRIKA

Kulich, M; Lin, DY;
[Additive hazards regression with covariate measurement error](#)