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# Least absolute value regression: recent contributions

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## Abstract

This article provides a review of research involving least absolute value (LAV) regression. The review is concentrated primarily on research published since the survey article by Dielman (Dielman, T. E. (1984). Least absolute value estimation in regression models: An annotated bibliography. Communications in Statistics – Theory and Methods, 4, 513–541.) and includes articles on LAV estimation as applied to linear and non-linear regression models and in systems of equations. Some topics included are computation of LAV estimates, properties of LAV estimators and inferences in LAV regression. In addition, recent work in some areas related to LAV regression will be discussed.

Keywords:

Linear regression models | Nonlinear regression models | Systems of equations | L 1-norm regression | Mini-mum absolute deviation regression | Least absolute deviation regression | Minimum sum of absolute errors regression

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The Asymptotic Normality of Two-Stage Least Absolute Deviations Estimators
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Estimating Systematic Risk with Daily Security Returns: A Note on the Relative Efficiency of Selected Estimators

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Tests of Linear Hypotheses and Lav Estimation: A Monte Carlo Comparison

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Corrections to a comparison of forecasts from least absolute value and least squares regression

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A comparison of forecasts from least absolute value and least squares regression

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On $L\sb 1$-norm estimators in nonlinear regression and in nonlinear error-in-variables models

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Studies in the history of probability and statistics XL Boscovich, Simpson and a 1760 manuscript note on fitting a linear relation

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On Least Absolute Error Estimation of Linear Regression Models With Dependent Stable Residuals

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Algorithm AS 132: Least Absolute Value Estimates for a Simple Linear Regression Problem

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An Efficient Algorithm for the MSAE and the MMAE Regression Problems

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On the rates of convergence of “minimum $l_1$-norm” estimates in a partly linear model

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On computation of regression quantiles: Making the Laplacian Tortoise faster

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Galton, Edgeworth, Frisch, and prospects for quantile regression in econometrics

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$L_1$ solution of overdetermined systems of linear equations

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Perturbation analysis for the minimum sum of absolute errors regression

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An introduction to based statistical data analysis

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A comparison of some robust, adaptive, and partially adaptive estimators of regression models

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Coefficients of determination for least absolute deviation analysis

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On Boscovich's Estimator

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Stability of L1-norm regression under additional observations

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On the asymptotic distributional risk properties of pre-test and shrinkage
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Nonparametric estimates of the nuisance parameter in the lad tests
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Algorithm 478: Solution of an Overdetermined System of Equations in the l1 Norm [F4]
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The place of the in robust estimation
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Some limit theory for $L\sb 1$-estimators in autoregressive models under general conditions
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On a necessary condition for the consistency of the $l_1$estimates in linear regression models
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A bootstrap approach to hypothesis testing in least absolute value regression
Source: Computational Statistics & Data Analysis
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Source: Journal of Statistical Computation and Simulation
On the estimation of the variance of the median used in $L_1$linear inference procedures

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Strong consistency of the LAD (L/sub 1/) estimator of parameters of stationary autoregressive processes with zero mean

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Algorithm AS 74: L1-norm Fit of a Straight Line

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The Minimum Sum of Absolute Errors Regression

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A NOTE ON LEAST ABSOLUTE DEVIATION ESTIMATION OF A THRESHOLD MODEL

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Bootstrapping in least absolute value regression: an application to hypothesis testing

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$L\sb 1$-tests in linear models: tests with maximum relative power

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On convergence of LAD estimates in autoregression with infinite variance

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Instability of least squares, least absolute deviation and least median of squares linear regression, with a comment by Stephen Portnoy and Ivan Mizera and a rejoinder by the author

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A p-subset property of L1 and regression quantile estimates

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A revised simplex algorithm for the absolute deviation curve fitting problem

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Characterization of the LAD (L/sub 1/) AR parameter estimator when applied to stationary ARMA, MA, and higher order AR processes

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Unbiased $L_1$and $L_\infty$estimation

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Scale economies in manufacturing: Problems of robust estimation

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