

# Contents

- 1. Univariate Nonlinear Regression** **1**
  1. Introduction, 1
  2. Taylor's Theorem and Matters of Notation, 8
  3. Statistical Properties of Least Squares Estimators, 16
  4. Methods of Computing Least Squares Estimates, 26
  5. Hypothesis Testing, 47
  6. Confidence Intervals, 104
  7. Appendix: Distributions, 121
  
- 2. Univariate Nonlinear Regression: Special Situations** **123**
  1. Heteroscedastic Errors, 124
  2. Serially Correlated Errors, 127
  3. Testing a Nonlinear Specification, 139
  4. Measures of Nonlinearity, 146
  
- 3. A Unified Asymptotic Theory of Nonlinear Models with Regression Structure** **148**
  1. Introduction, 149
  2. The Data Generating Model and Limits of Cesaro Sums, 153
  3. Least Mean Distance Estimators, 174
  4. Method of Moments Estimators, 197
  5. Tests of Hypotheses, 217
  6. Alternative Representation of a Hypothesis, 240

7. Constrained Estimation, 242	
8. Independently and Identically Distributed Regressors, 247	
<b>4. Univariate Nonlinear Regression: Asymptotic Theory</b>	<b>253</b>
1. Introduction, 253	
2. Regularity Conditions, 255	
3. Characterizations of Least Squares Estimators and Test Statistics, 259	
<b>5. Multivariate Nonlinear Regression</b>	<b>267</b>
1. Introduction, 267	
2. Least Squares Estimators and Matters of Notation, 290	
3. Hypothesis Testing, 320	
4. Confidence Intervals, 355	
5. Maximum Likelihood Estimation, 355	
6. Asymptotic Theory, 379	
7. An Illustration of the Bias in Inference Caused by Misspecification, 397	
<b>6. Nonlinear Simultaneous Equations Models</b>	<b>405</b>
1. Introduction, 406	
2. Three Stage Least Squares, 426	
3. The Dynamic Case: Generalized Method of Moments, 442	
4. Hypothesis Testing, 452	
5. Maximum Likelihood Estimation, 465	
<b>7. A Unified Asymptotic Theory for Dynamic Nonlinear Models</b>	<b>487</b>
1. Introduction, 488	
2. A Uniform Strong Law and a Central Limit Theorem for Dependent, Nonstationary Random Variables, 493	
3. Data Generating Process, 541	
4. Least Mean Distance Estimators, 544	
5. Method of Moments Estimators, 566	
6. Hypothesis Testing, 584	
<b>References</b>	<b>595</b>
<b>Author Index</b>	<b>601</b>
<b>Subject Index</b>	<b>603</b>