An Introduction to Econometric Theory

James Davidson
University of Exeter
UK

WILEY
Contents

List of Figures  ix
Preface  xi
About the Companion Website  xv

Part I  Fitting  1

1  Elementary Data Analysis  3
1.1 Variables and Observations  3
1.2 Summary Statistics  4
1.3 Correlation  6
1.4 Regression  10
1.5 Computing the Regression Line  12
1.6 Multiple Regression  16
1.7 Exercises  18

2  Matrix Representation  21
2.1 Systems of Equations  21
2.2 Matrix Algebra Basics  23
2.3 Rules of Matrix Algebra  26
2.4 Partitioned Matrices  27
2.5 Exercises  28

3  Solving the Matrix Equation  31
3.1 Matrix Inversion  31
3.2 Determinant and Adjoint  34
3.3 Transposes and Products  37
3.4 Cramer’s Rule  38
3.5 Partitioning and Inversion  39
3.6 A Note on Computation  41
3.7 Exercises  43

4  The Least Squares Solution  47
4.1 Linear Dependence and Rank  47
4.2 The General Linear Regression  50
14.5 Properties of ML Estimators 214
14.6 Likelihood Inference 216
14.7 Exercises 218

Part V Appendices 221

A The Binomial Coefficients 223
B The Exponential Function 225
C Essential Calculus 227
D The Generalized Inverse 229

Recommended Reading 233
Index 235