Subject index

Symbols

`&` (and operator) 65, 167
`|` (or operator) 65, 167

A

`ac` command 155
added-variable plot 119–121
additive seasonal 174
adjusted R-squared . . . . . *see* $\overline{R}^2$
ado-file 289, 307
`adopath` command 307
`adotype` command 289
`adoupdate` command 3
Akaike information criterion (AIC) . . 79, 87
analysis of covariance 168–174
analysis of variance . . . . . *see* ANOVA
analytical weight 148
ANOVA
  F statistic 77
  one-way 162
  table 77
`append` command 56, 63
AR(1) process 155
ARCH . . . . *see* autoregressive conditional heteroskedasticity
`areg` command 222
ASCII files 277–286
`assert` command 64–67, 281
attenuation 217, 260, 263, 264
audit trail 63
`autocode()` function 24
autocorrelation . . . *see* serial correlation
autoregressive conditional heteroskedasticity 144
auxiliary regression 145, 156
average marginal effects 251
`avplot` command 119–121

B

`_b[]` vector 82
balanced panel . . . *see* unbalanced panel
bandpass filter 178
bandwidth 199
Bartlett kernel 140
Baxter–King filter 178
Bayesian information criterion (BIC) 79, 87
benchmarking 175
between estimator 226–227
binary variable . . . *see* indicator variable
binomial logit 253–254
binomial probit 251–253
  with selection 272
`biprobit` command 272
bivariate probit model 271–275
`bking` command 178
`blogit` command 253
`bom()` function 32
`bomd()` function 32
Boolean condition 14, 32
Boolean variable . . . . . *see* indicator variable
Box–Pierce Q test 156
`bprobit` command 253
brackets 24
Breusch–Godfrey test 156
Breusch–Pagan test
  for heteroskedasticity 145
  for random effects 229
  for seemingly unrelated regression 238

built-in commands 301
business-daily data 44
`by` prefix 15–17, 43
byable 30, 310
`byte` data type 83

C

C statistic 201
calendar variable 304
canonical correlations 208
cardinal measurements 161
casewise deletion 25, 83
censoring 262–266
centered indicators 164, 225
Chow predictive test 184
Chow test 183
`cloglog` command 250
cluster estimator of the VCE . . . 138–139
`cnsreg` command 96–97
Cobb–Douglas production function . . 80
Cochrane–Orcutt estimator 159
`codebook` command 281
codebooks 281
`coldiag2` command 86
`collapse` command 36, 46–48
collinearity 84
  diagnostics 86
comma-delimited files 279
command syntax 39–41
competing models . . . . . *see* nonnested hypotheses
`compress` command 287
`cond()` function 22
condition number 86
consistency 74
`constraint` command 96–97, 238
contemporaneous correlation 236
continuity . . . . *see* piecewise continuous functions
`corr()` function 32
`correlate` command 25, 304
`corrgram` command 155
`count()` function 31
Cox–Pesaran–Deaton test 101
cross-sectional data 43–44
csv files 279
`cut()` function 91

D

`D.` 45
data dictionary 283
data mining 122
data validation 63
date formats 44
`date()` function 28, 49
Davidson–MacKinnon *J* test 100
`.dct` file 285
`decode` command 27
delimiters 278
demand system 241
`describe` command 301
`destring` command 26
detrending 177
`dfbeta` command 130
DFBETA statistic 130–132
DFITS statistic 128–130
`dhms()` function 31
difference operator . . . . . *see* `D.`
difference-in-Sargan statistic 201
differentiability 181
do-file 62–63, 289
Do-file Editor 2
`adoedit` command 290
`dofm()` function 175
`dofq()` function 175
double-log model 80
DPD . . . . . *see* dyamic panel-data models
`dprobit` command 251
`drop` command 20
dummy variable . . *see* indicator variable
`duplicates` command 58
Durbin's *h* test 157
Durbin–Watson test 156
Durbin–Wu–Hausman tests for endogeneity 211–214
dynamic panel-data models . . . 232–236

E

`e(b)` matrix 82, 84
`e(sample)` saved result 305

`e(sample)` vector 83
`e(V)` matrix 82
e-class 82–84, 301–307
efficiency 74
`egen` command 25, 30–33, 313
`egenmore` package 31, 53
eigenvalue 86
`elap()` function 32
`elap2()` function 32
elasticity 80, 107–111
embedded spaces 279
`encode` command 26–27
endogeneity 132, 185
`eom()` function 32
`eomd()` function 32
`epsfloat()` function 30
equality of variances . . . . . *see* `robvar`
`ereturn list` command . . 82, 301–307
errors-in-variables 217–218
`estadd` command 89
`estat bgodfrey` command 156–158
`estat durbinalt` command 157
`estat dwstat` command 157
`estat hettest` command 145–147
`estat ic` command 79
`estat imtest` command 146
`estat ovtest` command 122–124, 307
`estat summarize` command 83–84
`estat vce` command 84
`estat vif` command 85
`estimates` command . . 87–89, 212, 230, 307
estimation commands 301
`estout` command 88–90
`ewma()` function 32
exact identification 191
extended macro functions 293–294

F

`F` 45
feasible efficient two-step generalized method of moments 196
feasible generalized least squares . . 142–143, 147–149, 151–154, 238
FEGMM . . . . . *see* feasible efficient two-step generalized methods of moments
FGLS . . . . . *see* feasible generalized least squares
`filter()` function 32, 178
financial ratios 149
`findfile` command 289, 301
first-order Markov process . . . *see* AR(1) process
fixed effect 220
fixed format 278–286
`foreach` command . . 2, 37–38, 295–299
forecast confidence interval . . . . . *see* standard error of prediction
`forvalues` command 2, 37–38, 175, 295–299
fractional dates 31
free format 278–280
full column rank 75
functional form misspecification 122

G

gaps in time series 44, 50
GARCH . . *see* generalized autoregressive conditional heteroskedasticity
general-to-specific approach 121
generalized autoregressive conditional heteroskedasticity 144
generalized least-squares estimator 142, 237
with random effects 228
generalized linear regression model 134
generalized method of moments . . . 194–214
`generate` command 10
`global` command 293
`glogit` command 253
`gmean()` function 32
GMM . . . . . *see* generalized method of moments
Goldfeld–Quandt test for heteroskedasticity 146
goodness of fit 77, 256

`gprobit` command 253
`graph matrix` command 117
graphics 23, 48
grid search 159
`group()` function 29
grouped data 152–154
grouped logit 253–254
groupwise heteroskedasticity . . 149–152, 173
`gsort` command 10–11, 127

H

HAC standard errors . . . . . *see* heteroskedasticity and autocorrelation consistent
Hansen J statistic 198
hat matrix 126
`hausman` command 212, 230
Hausman test 212
  for random effects 230
Heckit model 266, 268
`heckman` command 268–271
Heckman two-step model . . . . . *see* Heckman model
`heckprob` command 273–275
heteroskedasticity and autocorrelation consistent 140
heteroskedasticity in grouped data 152–154
Hildreth–Lu estimator 159
`hmean()` function 32
`hmm()` function 32
`hmmss()` function 32
`hms()` function 31
Hodrick–Prescott filter 178
homogeneous relationship 81
homoskedasticity 124
`hprescott` command 178
HTML 89

I

I(1) process . . . *see* nonstationary series
identification problem 186
`if` qualifier 11–17
implied decimal 286
IMR . . . . . *see* inverse Mills ratio
`in` qualifier 11–17
incidental truncation 266–271
independently distributed disturbances 154
indicator variables 13–15, 161–184
`infile` command . . 21–22, 62, 278–280, 285
`infix` command 283
influential data 126
`inlist()` function 29
`inrange()` function 29
`insheet` command 21–22, 280–281
instrument redundancy 208
instrumental-variables estimator . . . 188
`int()` function 29
integer division 29
integer variables 26
interaction effects 167
interaction terms 125–126
intraday values 31
inverse Mills ratio 260
`invttail()` function 105
`iqr()` function 31
`ivendog` command 212
`ivreg` command 189–190
`ivreg2` command 141, 194–214
`ivreset` command 123

J

`joinby` command 58
joint test 98

K

`keep` command 20
kernel estimator 199
knot points 181
Kronecker product 228, 237
`kurt()` function 31

L

`L.` 45
`label` command 17–19
lag operator . . . . . *see* `L.`

Lagrange multiplier test 157
for groupwise heteroskedasticity 222
latent variable 132, 248–250
LaTeX output 89
lead operator . . . . . *see* `F.`
least-squares dummy variable model 221
left-censoring . . . . . *see* censoring
leverage 126
likelihood function 306
likelihood-ratio test 256
Likert scale 161
limited dependent variables . . . 247–275
`lincom` command 94–96, 255
linear combination of coefficients 96
linear filter . . *see* `filter()` function, 53
linear probability model 248
linear restrictions 96
linear splines 181
Ljung–Box Q test 156
`local` command 36, 290–294
`logistic` command 253
`logit` command 250
log-linear model 80
long-format data 55–58
long model 116
longitudinal data . . . . . *see* panel data
loop constructs 295–299
LSDV . . . . . *see* least-squares dummy variable model
`lvr2plot` command 126

M

`ma()` function 32
Macintosh spreadsheet dates 281
macro 36, 290–294
`macro` command 2
macro evaluation 291
macro list functions 294
`mad()` function 31
`makematrix` command 91
many-to-many merge 58
`margeff` command 251, 254
marginal effects 107–111
`marksample` command 309
`mat2txt` command 301
Mata 299, 313–319
`mata mosave` command 317
`mata:` command 315
match-merge 57
`matrix accum` command 300
`matrix colnames` command 307
`matrix colnames` commands 301
matrix language 299–301
`matrix list` command 84, 300
`matrix rownames` command . . 301, 307
`matrix` statement 300
`max()` function 31
`maxbyte()` function 29
`maxdouble()` function 30
`maxfloat()` function 30
maximization likelihood optimization 256
maximum-likelihood random-effects estimator 229
`maxint()` function 29
`maxlong()` function 29
`mdev()` function 31
`mdy()` function 28, 49
`mean` command 162–163
`mean()` function 31
measurement error 132, 216–218
`median()` function 31
`merge` command 57–58, 63
`_merge` variable 57
`mfx` command . . . 107–111, 251–252, 254
`min()` function 31
missing values 14
`mkmat` command 300
`mkspline` command 181
`mod()` function 29
`mode()` function 31
moment conditions 195
`month()` function 175
moving autocorrelations 54
moving-window correlation 54
moving-window regressions 242–245
moving-window statistics 53
multiplicative seasonal 174

mutually exclusive and exhaustive . . 163
`mvcorr` command 54
`mvdecode` command 25
`mvencode` command 25
`mvsumm` command 53–54

N

`nbreg` command 247
nested loop 297
NetCourse 289, 313
`newey`command 140–141
Newey–West estimates 199
Newey–West estimator 139–141
`nlcom` command 99–100, 255
`nnest` command 101
nonnested hypothesis 100
nonstationary series 155
not seasonally adjusted 174
`notes` command 19–20
NSA . . . . . *see* not seasonally adjusted
null model 78, 306
numeric variables 26–27

O

ODBC . . . . . *see* Open Data Base Connectivity
`odbc` 287
odds ratio 253
`ologit` command 257
omitted-variables bias 216
one-to-many merge 57
one-to-one merge 58
one-way random effects 227–230
one-way ANOVA 162
Open Data Base Connectivity 287
`oprobit` command 257
options 309
order condition 191
ordered logit 256
ordered measurements 161
ordered probit 256
ordinal measurements 161
ordinal variables 256
orthogonality conditions 195
outer join 58
outlier 126
`outshseet` 21
`outtable` command 91
`outtable` command 301
overfitting 121
`overid` command 191
overidentification 191
overlapping subsamples 53

P

`pac` command 156
Pagan–Hall test for heteroskedasticity 205
pairwise correlation matrix 91
panel data 46
panel variable 304
partial R^2 test 207
partial autocorrelation function 156
partial observability 272
partial R-squared 85
partial regression 130
`pc()` function 31
`pctile()` function 31
per capita regressions 149
perfect prediction 256
Phillips curve 199
piecewise continuous functions 181
piecewise functions 180
piecewise linear . . . . . *see* piecewise continuous functions
plugin 289
`poisson` command 247
pooled cross-section time series . . 45–46
pooled data 56
pooled ordinary least squares 219
portfolio shares 241
`prais` command 159–160
Prais–Winsten estimator 159
`predict` command . . 102–107, 175, 251
predicted values 102–107
`preserve` command 48
`probit` command 250
`program` command 308
proportionality . . . . . *see* homogeneous relationship

proxy variable 216
pseudo R^2 256
`psmatch2` command 313
publication-quality output 90
p-value 77
`pwcorr` 25

Q

Q test 156
qualitative factors 161
`quarter()` function 175
quasidemeaning transformation 228
quasidifferencing 159

R

R^2 78
$\overline{R}^2$ 78–79
`rall()` function 32
random effect 220
rank condition 191
`rank()` function 31
`rany()` function 32
r-class 301–307
`rcount()` function 32
`real()` function 26
`recode` command 23, 298
`recode()` function 23
`record()` function 32, 53
record value to date . . . . . *see* `record()` function
regime dummies 183
regressand 71
regressors 71
`rename` command 21, 56, 61
`renpfix` command 21
`renvars` command 21, 61
`replace` command 10
RESET 122–124
`reshape` command 56, 58–62
residuals 102–107
`return` command 308
`return list` command 301–307
return values 39–41
Review window 2
right censoring . . . . . *see* censoring
`rndint()` function 32
robust estimator of the VCE . . . 136–138
`robust` option 136
`robvar` command 150–151
`rolling` prefix 244–245
`rollreg` command 242
root MSE 73
`rowmax()` function 31
`rowmean()` function 31
`rowmin()` function 31
`rowmiss()` function 31
`rownonmiss()` function 31
`rowsd()` function 31
`rowtotal()` function 31
rowwise functions 30, 32
`rvfplot` command 124
`rvpplot` command 124

S

`S.` 45
SA . . . . . *see* seasonally adjusted
SAAR . . . . *see* seasonally adjusted at an annual rate
sandwich estimator . . . . . *see* robust standard errors
Sargan test 191
`save` command 21
`scalar` command 294–295
scalars 294–295
scale heteroskedasticity 144
Schwarz information criterion . . . . . *see* Bayesian information criterion (BIC)
`sd()` function 31
`sdtest` command 150
`_se[]` vector 82
seasonal adjustment 174–178
seasonal difference operator . . . . . *see* `S.`
seasonal dummies 175
seasonally adjusted 174
  at an annual rate 174
seemingly unrelated regression 220, 236–242
selection model 266–271
`semean()` function 32

semielasticity 80, 107–111, 169
serial correlation 154–160
Shea partial-R^2 test 208
short model 116
`skew()` function 31
`sort` command 9–11
sort order 303
space delimited files 278
specification analysis 71
specification error 115–132
specification search 122
spells 51
spline functions 181
spreadsheet data 281
SQL databases 287
SSC archive 3
`ssc` command 3, 30
`st_addvar()` function 316
`st_data()` function 315
`st_store()` function 316
`st_view()` function 315
standard error
    of forecast 107
    of prediction 105
    of regression . . . . . *see* root MSE
standardized values . . . . . *see* `std()`
stars, for significance 87
Stat/Transfer 25, 286
Statalist 289
statistical discrimination 171
statistical independence 167
`statsby` command 242
`statsmat` command 90, 301
`std()` function 31
storage optimization 287
`string()` function 27
string variables 26–27
structural breakpoints 179
structural breaks 184
structural change 183–184
structural stability 179
stub 60
studentized residual 128
`sum()` function 30
`summarize` command 303–304
SUR . . . . . *see* seemingly unrelated regression
`sureg` command 238
survivorship bias 47
`syntax` command 308

T

tab-delimited files 279–281
`tabout` command 91
`tabstat` command 90, 301
`tabulate` command 26–27, 163
tabulating results 87
temporary variable 309
tempvar 309
`test` command 94–99, 255
test of overidentifying restrictions . . 191
`testnl` command 99–100, 255
`testparm` command 94
text editors 278
text files 277–286
`texteditors` command 278
time arithmetic 31
time-series calendar 44
time-series data 44
time-series operators 2, 45, 310
`tin()` function 44
`tobit` command 263
tobit model 263
`todate` 28
`tostring` command 27
`total()` function 31
trend 177
truncation 259–262
`tsfill` command 47, 50
`tsline` command 243
`tsmktim` command 50, 318
`tsset` command 27, 32, 44, 47, 304
`tssmooth ma` command 53
`tssmooth shwinters` command . . . 178
`tsspell` command 50–52
`ttest` command 304
two-limit tobit . . . . . *see* tobit model
two-stage least squares (2SLS) . . 188–189
two-way fixed effects 224–226

U
unbalanced panel 46, 50
underfitting 121
underidentified 191
unit root test 155
`update query` 3
`use` command 7–8

V
`var()` function 32
variance decomposition matrix 86
variance inflation factor 85
varlist 20
`version` command 308
VIF . . . . . *see* variance inflation factor
volatility clustering 144

W
Wald test 92
weak instruments 191, 211
weighted least squares 148
weighting matrix 195
`which` command 289
`while` command 295
white noise 156
White standard errors . . . . . *see* robust standard errors
White's test for heteroskedasticity . . 146
`whitetst` command 145–147
wide-format data 55, 238
wildcards 31
Windmeijer correction for dynamic panel-data models 234
`witch` command 289
within estimator 221
`wntestq` command 156–158
word processors 278

X
`xi` command 163
`xpose` command 62
`xt` commands 49
`xtabond` command 234
`xtabond2` command 234, 313
`xtdes` command 50–52
`xthtaylor` command 232
`xtivreg` command 232
`xtreg, be` command 226
`xtreg, fe` command 222–224
`xtreg, re` command 229
`xtscd` command 222
`xttest3` command 222

Z
zero-conditional mean 72, 185