

Index

- Abadir, K. M. 140 n.
accelerator mechanisms 21
accounting identities 23, 74–5
ADF (Augmented Dickey-Fuller) test 200–1, 203
adjustment costs 5, 22, 42
 dynamics of models 46–8
 LQ optimisation models involving 38, 89
adjustment mechanisms 21
Adolfson, M. 29 n.
aggregation 22, 42
AIC (Akaike Information Criterion) 85, 108, 163, 198, 204, 218, 219, 221, 268, 269, 270, 271, 272, 273
Akerlof, G. 100
Akusuwan, M. 291
alternative modelling approaches 4–6, 24–31, 98–103, 221–3
Anderson, D. R. 163
Anderson, R. G. 290
Ando, A. 13
anti-inflationary policy 192
appreciation 75, 235, 247–8
 large initial 245
 persistent 245
 sterling 188–9
approximations 17, 131, 161
 log-linear 45, 81
arbitrage conditions 6, 23, 28, 67, 71–4, 97, 233
ARMA (autoregressive moving average) 48, 204 n., 218
 benchmark 219, 221
 univariate 219
 unrestricted 219
 see also VARMA
Asian crisis (1997) 291, 296
asset-income ratios 23, 28
asset markets 233
asset revaluation term 75 n.
assets:
 financial 74, 76, 77, 80
 return on 72, 78
 see also foreign assets
Astley, M. 18, 54
asymptotic distributions 123, 138 n., 209
Australia 13, 290
autoregressive models 83
 see also ARMA; BVAR; GVAR; VAR; VARMA; VARX
Bakhshi, H. 100 n.
Banerjee, A. 105 n.
Bank of Canada 29 n., 291
Bank of England 14, 15 n., 89 n., 274
 ‘Competition and Credit Control’ publication 192
 inflation and output growth forecasts 263 n.
 Inflation Report 274–5
 inflation targets 8, 10, 98
 operational independence 181 n.
 remit of 100 n.
bankruptcies 303, 304
Barassi, M. R. 266
Barrell, R. 15 n.
Barro, R. J. 69, 93 n., 233
base rate 89, 102, 227
 changing 95, 96, 99
 derivation of 92–4
 reaction function 94–7
baskets of goods/commodities 71, 72
Bayesian techniques/method 23, 29, 30, 109, 155, 156, 292
 DSGE models 18
 predictive density 157
 see also BMA; BVAR; SBC
behavioural relationships 4, 5, 15
 identification of 3
 underlying 53
benchmark models 218–21, 266, 268, 270, 271, 272, 285, 286
 over-identified 273
Berkowitz, J. 272 n.

- Bernanke, B. S. 18, 52, 53, 91 n., 92 n., 233 n., 261
- Bernard, A.B. 211
- Binder, M. 20 n., 42, 45, 47, 69
- Bjørnstad, J. F. 156 n., 162
- Blake, A. P. 263 n.
- Blanchard, O. J. 4, 18, 19, 50–1, 54, 55
- Blinder, A. S. 52, 53, 92 n.
- Blundell, R. 46
- BMA (Bayesian Model Averaging) 158–9, 160, 161, 162, 266, 268
- BN (Beveridge-Nelson) decomposition 248, 249, 257–8
relationship of GRW and 250–2
- Bodkin, R. G. 14 n.
- bonds 74, 290
foreign 76, 77
- bootstrapping exercises/procedure 140, 141, 166, 167, 208, 302
non-parametric technique 269
predictive density 156
- Box-Jenkins methodology 218
- Brand, C. 290
- Branson, W. H. 76
- Brayton, F. 13, 14 n., 16
- Breedon, F. J. 211
- Breeson, G. 46
- Britton, E. 263 n.
- Brunner, A. D. 52
- Bruno, M. 72 n.
- bubble effects 20
- budget constraints 14
- Buiter, W. 78 n.
- Bullard, J. 54
- Burnham, K. P. 163
- Buseti, F. 177 n.
- business cycles
effect of shocks to financial markets on 62
highly synchronised 259
monetary factors influencing 22
see also RBC
- BVAR (Bayesian autoregressive) models 4, 18
- calibration exercises 22
- Callaghan government (UK) 181, 193
- Calvo, G. 23
- Campbell, J. Y. 211
- Canada 290, 297
- Canova, F. 249 n.
- capital:
assumed to depreciate 42
marginal product of 70
real rate of return on 73
- capital markets:
less well-developed 294 n.
regions without 296
- capital stock 68, 69, 100
foreign 70
- cash portfolios 193
- Cayen, J.-P. 29 n.
- central banks 25, 29 n.
independent 100, 181
information available to 94
- Champernowne, D. G. 3, 105 n.
- Chatfield, C. 153 n.
- Chaudhuri, K. 72 n.
- Cheung, Y. W. 205
- China 15, 293, 294 n., 296
- chi-squared statistics 232
- Choleski decomposition 17, 49, 110, 114, 115, 134, 142, 167, 231
- Christiano, L. J. 5 n., 20 n., 22, 23, 29, 30 n., 42, 51, 52, 53, 54
- circulation of money 207
- Clarida, R. 18, 22, 23, 54
- Clarke, P. 249 n.
- Clemen, R. T. 159, 160
- Clements, M. P. 160 n., 266
- closed economy 42, 64, 293
- Cobb-Douglas production function 20, 43
aggregate constant returns to scale 42
- Cochrane, J. H. 261
- coefficient matrices 118
contemporaneous 107
error correction 137
loading 84, 197
- coefficients 92, 200, 236
adjustment 35, 55, 118
autocorrelation 17
cointegrating 137
correlation 256, 258, 259
dynamic 35
error-correction 84, 129, 137, 197, 212
loading 227
long-run 85, 97, 115, 137, 266, 268
reduced-form 88, 111, 120
restricted 115, 118
short-run 84, 97, 264, 266
unit, normalising 49
unknown 117
zero and unity 46
see also structural coefficients; trend coefficients
- Cogley, J. 211
- Cogley, T. 22, 263 n.

- cointegrating VAR models 6, 24, 40, 117–35, 207, 226, 253, 266
analysis of 10, 36, 83
augmented 7
estimation of 62, 208, 254
four-variable 298
identifying long-run relationships
embedded within 37
region-specific 294
relative simplicity of 8
six-variable 290
trend/cycle decomposition in 248–5
see also structural cointegrating VAR
- cointegration 3, 64, 200
cross-country/inter-country surveys 65
multivariate models without 252
surveys of literature on 105 n.
- cointegration analysis 129–35, 223
investigating PPP using 210
- cointegration tests 7, 24, 198, 198, 205, 233 n., 266
- commodity prices 51, 52, 53
- COMPACT (simultaneous equation model) 291, 292 n.
- competitive equilibrium outcome 43
- computer programs 10–11
- conceptual models 29
- conditional models 58, 59
- confidence error bands 233
- consumption 42, 75
- contemporaneous relations 48–51
- contemporaneous values 51
- Cooley, T. F. 20 n., 22, 49
- Corbett, A. 29 n.
- core models 305
monthly version 297–303
- core variables unit 25, 60, 135
unit root properties of 200–4
- correlation 248
- correlation matrix 124
- correlations 113
chance, with omitted variables 109
contemporaneous 166–7
non-zero 134
observed, estimated reduced form errors 141
see also serial correlation
- cost functions 28
- co-trending 7, 24, 120, 121, 211
- counter-factuals 139, 225
- covariance matrices 48, 88, 113, 116
asymptotic 157
non-singular 63
positive 137, 164, 165
- covariance restrictions 19 n., 54
exactly identifying 18
theory-based 18
- covariances:
contemporaneous 139
cross-country 64
error-correction 261 n.
significant changes in structure 236
stationary processes 16
- Cowles Commission 3, 4, 13, 49, 51, 110
- CPI (Consumer Price Index) 274, 290
- credit cards 77, 303, 304
- credit risk modelling 292–7
- critical values 123, 140, 141, 205, 208, 266, 273 n.
asymptotic 138 n., 199 n.
bootstrapped 209
- Crowder, W. J. 6, 54, 290, 298
- currency:
foreign 71, 75, 171
reference 293
- Cussola, N. 290
- Daniel, B. C. 72 n.
- Darby, M. R. 210, 291
- David-Fletcher-Powell algorithm 208 n.
- Davidson, J. E. H. 106
- Dawid, A. P. 146, 269
- debt burden 303
- decision-making 38, 51, 56, 145, 154
financial 303
fine distinctions of timing in 54
important influence on 9
institutional detail 87
intertemporal nature 38
investigator's understanding of context 49
opportunities for modelling 61
rigidities arising in 25
short-run 82
- decision problems 20, 146, 147, 153
demand for complete specification of 269 n.
- decision rules 98, 227
optimal 20
private agents 89
- decision-theoretic approach 269
- Dees, S. 62, 292, 293, 293–4, 299
- deflationary measures 192
- DeJong, D. 18, 28
- Del Negro, M. 23, 28

- demand:
 asset 76, 77, 78, 79, 80
 excess 39
 export 81, 290
 import 81, 290
 labour 46
 news likely to impact on 56
 reserves 53
see also money demand
- density function 157, 158, 161, 162, 168
- depreciation 42, 81, 82 n., 171, 181, 187, 188–9, 247
 moderate 188
 sequence of periods of appreciation followed by 245
- deterministic trends 120, 147, 148, 151, 197
 coefficients on 138 n., 211, 250
 linear 117, 119, 121, 135
 restriction 138
- de-trending 30
 explicit multivariate approach to 256
- devaluation 187
 deflationary measures to support 192
- DGP (data generating process) 157, 159, 163
- Dickey, D. A. 106, 122, 200
- Diebold, F. X. 159, 270, 272, 303
- difference-stationarity 40, 84, 101, 147
- dimensionality 18
- discount factor 43, 47
- discount rate 98, 171
- disequilibria 39, 83, 306
 credit market 305
 economically meaningful but unobservable 40 n.
 inflation 82
 interest rates 82, 97
 response to deviations from 199
 stochastic 130
 variables not affected by 56–7
- distribution functions 150
 predictive 278
see also probability distribution function
- disturbances 23, 28, 35, 84, 197, 265
 Gaussian 122
 money market 53
 reduced-form 57, 58, 81, 82, 101, 114, 226
 structural 50, 58, 82, 226
 technological 68
see also long-run disturbances
- Doan, T. 4, 18
- Dornbush, R. 245
- Draper, D. 153 n., 158, 160, 163 n.
- Dryhmes, P. 37
- DSGE (Dynamic Stochastic General Equilibrium) models 5, 7 n., 19–23, 27–31, 35 n.
 Bayesian techniques in 18
 dynamics of 41–6
 fully articulated, restrictions might be motivated by 89
 recent versions 38
see also New Keynesian DSGE models
- Durlauf, S. N. 211
- dynamic adjustments 14
- dynamic multipliers 110, 111
- economic fluctuations 21–2
- Ehrmann, M. 303
- Eichenbaum, M. 22, 30 n., 42, 51, 52, 53, 54, 242, 245
- eigenvalues 124, 125, 132, 253
 trace and maximum 122–3, 138 n., 140, 198, 204–5
- EMU (Economic and Monetary Union) 291
- endogenous variables 34 n., 57, 83, 109, 111, 117, 135, 203, 219, 227, 236, 236, 246, 300
 cointegrating 107
 distinction between exogenous and 4, 49, 56, 169
 effects on 114
 estimates of impulse response functions of 231
 future values of 65, 110
 instantaneous interactions between 107
 interactions between exogenous and 139
 lagged changes in 84
 measured effect of typical shock on 115
 number and list to be included 108
 permanent/transitory decomposition of 249
see also VARX models
- Engle, R. 3, 14, 118 n.
- equal weights 268, 269, 270
- equations 218
 determinantal 46, 107
 error-correction 212, 223, 266
 estimated error correction 266
 foreign interest rate 239–41
 foreign output 236–9
 log-linear 23, 78
 non-linear 44

- oil price 232, 268
 regional 64
 structural 58, 59, 97, 99, 102, 227, 229
see also Euler equations; SEMs
- equilibria 14, 20
 deviations from 35, 39–40, 118
 long-run 233
 monetary 242
 slow speed of convergence towards 233
 stock-flow 67, 80
- equilibrium relationships 76, 79
 long-run 81
- ergodicity 28, 70, 73, 76
- ERM (Exchange Rate Mechanism) 181, 188–9, 274
 sterling's membership of 193
- error-correction specifications/models 212–18
 conditional 264
 reduced-form vector 226
 serially uncorrelated 265
- error-correction terms 25, 84, 92
 absence of 59
 lagged 57
see also VECM
- errors 35, 71
 country-specific 63
 expectation 73
 forecast 155, 164, 168
 long-run 40, 46
 non-normal 199, 232, 266
 normally distributed 212
 orthogonalized 114
 reduced-form 88, 114, 115, 141, 265
 serially uncorrelated 107
 simulated 166–8
see also forecast error variance; structural errors
- ESRC (Economic and Social and Research Council) Macroeconomic Modelling Bureau 14 n.
- estimation 17, 29, 37, 41, 62, 63, 83
 biases in 56
 conditional 136, 168–9
 full information 4
 impulse response functions 231–48
 long-run 209–12
 long-run cointegrating vectors subject to identifying restrictions 124–7
 loss of efficiency in 56, 83
 probability forecasts 10
 reduced form system 59
- results and in-sample diagnostics 265–6
 stages of 198–200
 unrestricted 118
see also maximum likelihood estimation
- Euler equations 27, 73 n.
 stochastic 47
- euro area/eurozone 62, 212, 291, 293, 297
 modelling issues that arise from creation of 294
 shock effects 292, 295
 trend output 298
- European Community 34
- Evans, C. 51, 52, 53, 54
- Evans, C. L. 242, 245, 251 n.
- Evans, G. 248 n.
- event probability forecasts 280–5, 294
- exchange rates 187–9
 determined 64
 effective 71
 expectations 73, 75
 relating prices and output to 65
 unanticipated movements 99
 unexpected changes 90, 228
see also appreciation; depreciation; nominal exchange rate; real exchange rate
- exogenous variables 62, 109, 117, 135, 137, 138
 change in 15, 84
 common global 64
 deterministic and stationary 132 n.
 distinction between endogenous and 4, 49, 56, 169
 dynamic processes driving 139
 effect of a shock to 116
 foreign 293, 294
 influence of processes driving 139
 interactions between endogenous and 139
 number and list to be included 108
 restrictions on the processes generating 139
 shock effect measured to 110
 system long-run effects of 107
 unanticipated movements in 58
see also weakly exogenous variables
- expectations 39, 60, 75
a priori 205
 conditional 113, 230
 forward-looking 30
see also rational expectations
- expectations formation 14, 28, 92
- explanatory power 212, 218

- exports 79, 80
demand for 290
expenditures on 75
- Fabiani, S. 68
Fair, R. C. 13, 146
false alarm rate 271 n.
Favero, C. 23
Fed (US Federal Reserve Board) 4, 52, 54, 189–92
actions in federal funds market 53
evolution and development of macroeconomic modelling 14 n.
first and second generation models developed 13
feedback rule 93
Feldstein, M. 100 n.
Fernandez, C. 161
financial distress 305–6
financial markets 91 n.
globalisation of 62
very detailed knowledge of 54
financial sector 89
FIP (Fisher Inflation/Interest Parity) 65, 71, 73, 77, 102, 172, 211, 212, 242, 290, 291, 292
convergence to 233, 236
long-run 223
no economic rationale for including time trends in 207
firms 23
decision problems 20, 147
intertemporal optimisation problems 20
monopolistically competitive 22
optimising decisions 5
profit-maximising 14
first-order conditions 47, 93, 126
Euler 27
log-linearised 45
non-linear 44
fiscal policy 45
Fisher, P. G. 15 n., 211
forcing variables:
long-run 57, 61, 83, 130 n., 204
unobserved 112
forecast error variance 219
decomposition 115, 133, 134
forecast-inflation targeting 95, 98–9
forecast uncertainties 10, 109, 145, 149, 152, 153–61, 162, 163, 266–9
underestimated 169
forecasts 9, 29, 83, 84
conditional 94, 112
consistent with target 94–5
disaggregated 25
error variance of 114
global 15
multi-step 65
particularly useful method for presenting 10
potential ability of model 218
VARs primarily used for 4
world economy variables 63
see also probability forecasts
foreign assets 74, 77
demand for 76, 78, 79, 80
nominal interest rate paid on 73
reevaluation of 75
foreign exchange markets 263 n.
foreign interest rates 8, 83, 189–93
effects of shock on 239–41
measured 259
positive differential of domestic over 245, 247
unanticipated movements in 99
unchanged on impact 242
unexpected changes in 90, 228
foreign output 8, 65, 83, 102, 172, 173–8, 236–9
co-movement between transitory components of UK and 258
decline 234
impulse responses 231, 244
foreign variables 8, 56, 57
country-specific 63
region-specific 64
separate measures of 63
forward-looking behaviour 42
France 172, 290, 293
Froot, K. A. 210 n.
Fuller, W. A. 106, 122, 200
functional form 212, 266, 300
misspecification 199
fundamental representation 17
- Gali, J. 6, 18, 23, 42, 50–1, 54, 245 n.
GARCH error terms 177 n.
Garratt, A. 18, 54, 161, 177 n., 222, 264 n., 297
see also GRW
Gauss 10–11, 116, 112, 122, 233 n.
GDP (gross domestic product) 52, 68, 171, 172, 255
GDP deflator 52, 290
general equilibrium model 14, 20
explicit intertemporal 5

- Germany 293
falling equity markets 295
interest rates 172
monetary unification (1990) 192
real output fall 296
Gerrard, W. J. 129 n.
Gertler, M. 23, 52
Giannone, D. 30
Gilchrist, S. 52
GIRF (Generalised Impulse Response Function) 8, 26–7, 112–14, 115–16, 132, 133, 139, 226, 231, 236, 239, 246, 248, 261 n.
global linkages 15
Godfrey, L. G. 129 n.
Goffe, W. L. 141 n., 208 n.
Gonzalo, J. 54, 55, 140 n., 248 n.
Gordon, D. B. 53, 54, 89 n., 93 n.
government agencies 25
government expenditure 42, 43, 75
Granger, C. W. J. 3, 57, 105, 106, 136, 146, 159, 160, 248 n., 269 n., 271
Granger, G. 3, 14, 106, 118 n.
Granger-causality 57, 118, 136
Granger non-causality 84
Greece 290
Griliches, Z. 37
Grilli, V. 210
GRW (Garatt-Robertson-Wright)
decomposition 248, 249, 255, 257–8
computation of 252–4
relationship of BN and 250–2
Gunther, T. A. 270, 272
GVAR (global vector autoregressive) models 62–5, 289, 292, 293, 294, 296, 297, 307
dynamic properties of 295–7
extending and updating 293
- Hahn, J. 272 n.
Haldrup, N. 117 n., 203, 222
Hall, P. 167
Hall, S. 303
Hamilton, J. D. 17 n., 105 n., 204 n.
Hansen, G. D. 22
Hansen, L. P. 17 n., 47
Harding, D. 275
Harris, I. R. 156
Harvey, A. C. 249 n.
Harvey, D. I. 159
HBS (Harrod-Balassa-Samuelson) effect 71, 72
Heath Administration (UK) 181
Hecq, A. 248 n.
Hendry, D. F. 160 n., 266
- Hercowitz, Z. 22
heterogeneity 5
information 22
heteroskedasticity 71, 129, 199, 212, 266, 300
HICP (Harmonised Index of Consumer Prices), *see* CPI
hit rate 271 n., 273
HMT (HM Treasury) 4, 14, 15 n.
Hodrick, R. J., *see* HP filter
Hoeting, J. A. 158, 161
Hong Kong 290
households 23
consumption expenditure 304
decision problems 20, 147
intertemporal optimisation problems 20
optimising decisions/behaviour 5, 22
utility-maximising 14, 43
see also representative household
HP (Hodrick-Prescott) filter 30, 101, 249, 257, 258, 259, 261
Huizinga, J. 210
Hurn, A. S. 140 n.
hypothesis testing 85
hysteresis effects 69 n.
- identification 4, 14, 19, 27, 100
a priori 133
based on information flows 53
classical problem 109–10
contemporaneous relationships 87
explicit 28
implicit assumption 115
recursive approach 55, 115
short-run dynamics 48–51, 59
structural parameters, resolution of 110
identifying restrictions 18, 41, 54, 59, 87, 110, 113
estimation of long-run cointegrating vectors subject to estimation of 124–7
exact 118, 229
robust short-run 115
see also over-identifying restrictions
IMF (International Monetary Fund):
loan negotiations with 193
MULTIMOD multi-regional model 15
Special Drawing Right 172
imports 79, 80
expenditures on 75
impulse response analysis 110–16, 139, 294
cointegrating VARs 132–5
empirically coherent solution to 26
monthly model 300–3
surge of interest in the use of 297

- impulse response functions:
 empirical distribution of 141–3
 estimates of 231–48
 orthogonalised 134
see also GIRF; persistence profiles
- impulse responses 16, 19, 25, 48, 87, 200, 225–61
 long-run 18, 38
 matching 30 n.
 orthogonalised 17, 18, 49, 114–16
- Inada conditions 69
- income:
 future, expected 76
 nominal 76
 private sector disposable 75
 real money balances relative to 193–5
- incomes policy 181
- India 290
- industrial action 177 n.
- inference 63, 136, 139
- inflation 3, 65, 90, 235
 cointegrating relationship between interest rates and 212
 cost of deviations of 96
 describing welfare in terms of 22–3
 disequilibria between interest rates and 82
 disequilibrium effects of money markets on 292 n.
 effects of oil prices on 183
 expected 22, 72, 77
 falling 240
 high and low 182, 187, 193, 194
 interest rate shock on 240–1
 limited degree of positive co-movement between output and 256
 link between wage setting, minimum wages and 290
 long-run relationship between nominal interest rates and 102
 measuring 172
 non-zero 100
 price 178, 181
 probability forecasts of 263 n., 274–85
 rising 189
 short-term trade-off between output growth and reduction in 93
 UK and world 183
 wage 181
- inflation targets 92, 94–7, 98–103, 181, 281–2
 Bank of England 8, 10, 98
 set explicitly 274
- information disparities 71
- information flows 54
 exact timing of 227
 identification based on 53
 transitory impediments to 101
- information imperfections 245
- innovations:
 correlation between permanent and transitory 248
 monetary policy 53
 orthogonalised 17
 policy 8
 price-setting 50
 random 208
 short-term interest rates 91 n.
 structural 50, 94, 99, 226
 technological 211
- instrument rules 94, 99
- intercepts 108, 116, 210
 restricted 121, 137, 138
 unrestricted 121–2, 124, 138, 204
- interest groups 25
- interest rate changes:
 foreign, unexpected 90
 institutional and political costs of 93
- interest rates:
 assumption that UK rate has contemporaneous impact on 229
 cointegrating relationship between inflation and 212
 disequilibria between inflation and 82
 effects of shock to 26–7
 intertemporal links between prices, asset returns and 67
 long-term 53
 market, monetary authorities try to influence 89
 negative effect on real money balances 211
 oil price shock impact on 236
 orthogonalised functions 26
 setting 53
 short-term 91 n., 294
 unexpected increase in 242
 unit shift in 26
 volatility of 177
see also base rate; foreign interest rates; nominal interest rates; real interest rates
- international trade 60
- intertemporal optimisation 28, 67
 attempt to integrate 38
 dynamic decisions 3
 explicit problem involving adjustment costs 46
- stochastic techniques 20
 supplementing 'intrinsic dynamics' generated by 42
- interval forecasts 146, 147, 154, 156
- inventory models 47
- 'invertible' processes 17
- investment 42, 46, 75
- Iranian Revolution (1979) 183
- Iraq 187
- Ireland, P. 29
- IRP (Interest Rate Parity) 73, 74, 77, 207, 210, 222, 292
 convergence to 233, 236
- IS (investment-savings) curve 22, 42, 50
- Italy 293
- Jacobs, J. P. A. M. 291, 292
- Jaeger, A. 249 n.
- Janssen, N. 193
- Japan 290, 293, 293
 falling equity markets 295
 interest rates 172
 output 296
- Jeon, Y. 160
- Johansen, S. 3, 36–7, 72 n., 83, 85, 105, 106, 122, 124, 125, 127, 136, 137 n., 204–5, 233 n., 266
- Jorgensen, D. 37
- Juselius, K. 72 n., 83, 233 n.
- Kaminsky, G. 210
- Kapetanios, G. 29
- Kasa, K. 22
- Keating, J. W. 54
- Keynesian models 21, 50
see also New Keynesian DSGE models
- Kilian, L. 204
- Kim, K. 5 n., 7 n., 20 n., 22, 42, 46
- Kim, S. 53
- King, M. 98, 100
- King, R. G. 6, 22
- Klein, L. R. 13, 15, 307
- Kolmogorov-Smirnov statistic 273
- Koop, G. 26, 112, 229
- Kuipers score 269, 270, 271, 272, 273
- Kullback-Leibler information-theory 157
- Kuwait 187
- Kydland, F. 5, 22
- labour 42, 68
 steady-state inputs 44
- labour market 60
 changes in 69
 models of 25
- La Cour, L. 211–12
- lag orders 108, 137, 198
 determining 109
- lag polynomials 148
- Lagrange multipliers 125
- Lagrangian function 44, 125
- Lai, K. S. 205
- large-scale models 4, 20–1
 relatively poor forecasting performance of 14
 scepticism concerning the use of 3
 VAR models as benchmarks for evaluation of 18
- Lastrapes, W. D. 54
- Latin America 293, 295, 296
- 'Lawson boom' 177
- LBS (London Business School) 13, 15 n.
- learning 42
 incomplete 73 n.
- least squares 4
see also OLS
- Lee, K. C. 116, 177 n., 211 n., 233 n., 298, 303, 304, 305
- Leeper, E. M. 53, 54, 89 n.
- LeRoy, S. 49
- Levtchenkova, S. 19 n.
- Levy, M. S. 157
- likelihood 8, 146, 208 n.
 predictive 156, 162
- Lin, J. L. 57, 136
- liquidity 78
 price of 89 n.
- liquidity effects 292 n.
 sizeable 243
 strong 236
- liquidity trap 100
- Litterman, R. 4, 18, 22
- log-likelihood 125, 128
 maximised 108
- log-likelihood ratio statistics 123, 128, 140, 141, 208, 299
- Long, J. B. 5
- long-run disturbances 82, 83, 102
 reduced-form 57, 58, 101, 226
 structural 226 n.
- long-run modelling approach 6–9
- long-run multiplier matrix 135, 136
- long-run relationships 5, 6, 23, 30, 233, 266, 290
 deviations from 26
 economic theory of 67–85
 empirical validation of 28
 ensured existence of 107
 equilibrium 39

- optimisation 5, 44, 208 n.
 quadratic 47
see also intertemporal optimisation
- optimisation problems 92–3, 99
- orthogonalisation 17
 apparent atheoretic content of 49
- output 4, 42, 90
 aggregate 68
 contemporaneous 50, 51, 52
 describing welfare in terms of 22–3
 desired 100, 101
 determination of 68–70, 101
 effects of shock to 26
 exchange rates and 65
 expected real interest rate and 22
 falls in 232, 233, 239
 inflation and 22, 256
 news likely to impact on 56
 nominal 78
 pairwise approach to testing for 121
 possible disequilibrium effects of money markets on 292 n.
 potential 39, 100, 101, 102
see also foreign output
- output gap 100, 101, 207, 211, 222, 233, 236, 242, 292
 measures of 298
- output growth:
 bivariate VAR model of 19
 fixed target level for 96
 probability forecasts of 263 n., 274–85
 short-term trade-off between inflation reduction and 93
- over-identifying restrictions 41, 106, 110, 124, 125, 141, 208, 299
 asymptotic critical values of 199 n.
 long-run 138
 testing the validity of 127–9, 140
 tests of 199
 theory-based 207
 validity of 268
- overshooting model 245
- Oxley, L. 105 n.
- Pagan, A. R. 5 n., 7 n., 17, 20 n., 22, 42, 46, 55, 243 n., 275
- Palm, F. C. 248 n.
- parametric approach 167
- Pareto optimal outcomes 21
- permanent-transitory decomposition 298
- Perng, S. K. 157
- Perrier, P. 29 n.
- Perron, P. 72 n.
see also Phillips-Perron test
- Persian Gulf War (1990) 187
- persistence profiles 27, 116, 135, 200, 232, 233, 242, 245
 empirical distribution of 141–3
 main attraction of 134
 scaled 134
- Pesaran, B. 10, 127, 233 n.
- Pesaran, M. H. 10, 15, 16 n., 20 n., 25, 26, 27, 29, 35 n., 37, 41, 42, 45, 47, 48 n., 55, 59, 63 n., 69, 70, 83, 84 n., 85, 89, 105, 107, 109, 112, 116, 118, 121, 122, 123, 124, 126 n., 127, 128, 129, 134, 135, 137 n., 138 n., 146, 158, 161, 177 n., 199, 203 n., 205 n., 211 n., 225 n., 230, 232, 233 n., 292, 297, 298, 299
see also PSW; PT statistic
- Pettenuzzo, D. 158, 203 n.
- Phillips, P. C. B. 3, 37, 105, 124, 200
- Phillips curve 22, 42, 50
 backward-and forward-looking effects in 23
- Phillips-Perron test 200–1, 222
- Plosser, C. I. 3, 5, 21, 68, 106
- point forecasts 146, 147, 148, 154, 155, 178, 275–8, 296
 pooled 159–61
- policy analysis 15, 109
- policy evaluation 14
- policy rule 42
- Portfolio Balance Approach 76
- positive definite matrices 84, 165, 265
- Poulizac, D. 263 n.
- power utility function 20
- PPP (Purchasing Power Parity) 71, 72, 74, 79, 81, 172, 203, 242, 290
 absence of trend in 207
 deviations from 233
 investigating, using cointegration analysis 210
 restored 236
 small deviation from 292
- prediction density 157
- predictions 158 n.
 long-run 84, 197
 tested 42
 uncertainties on 156
- preferences:
 monetary authorities 93, 94, 97, 99
 well-behaved 73 n.
- prequential approach 146
- Prescott, E. C. 5, 22
see also HP filter
- pre-test bias 108

- price indices 72
 producer 172
see also CPI; RPI
- price rigidities 22, 68
- price-setting 50
 arbitrary nominal rigidities in 21, 23
- prices 65, 67
 asset 294 n.
 commodity 51, 52, 53
 common currency 71
 determination of 203
 foreign 8, 178–87, 203
 producer 171
 relative 72, 80, 235
 reset periodically and with fixed probability 23
 retail 171
 shadow 45
 upward pressure on 181
see also oil prices
- pricing behaviour 22
- priors 18
 non-informative 155, 156, 157
 vague 197
- private sector behaviour 101
- probability density function 157, 158
- probability distribution function 116, 162
 non-degenerate 69
 predictive 165, 166
 time-invariant 70
- probability distributions 20
 prior 109
 steady-state 69
- probability forecasts 2–3, 8, 145–69, 200, 219, 263–88
 interpretation of 10, 178
 measuring financial distress 303–6
 usefulness of 10
- production constraint 43
- production technology 68–70
- productivity differentials 70
- productivity:
 relatively rapid growth 71
 worldwide slowdown in 72 n.
- profit maximisation 70
- Proietti, T. 248 n.
- PSW (Pesaran-Schuermann-Weiner) 62, 64, 172 n., 293, 294, 295, 296
- PT (Pesaran-Timmermann) statistic 269, 271, 272, 273
- quadratic equations 46
- quadratic trends 120
- Quah, D. 4, 18, 19, 54, 55
- random variables 116
 independently and identically distributed 147
 probability distribution function of 116
 time-invariant 69
- random walks 105, 264, 268, 271
 martingale property shared by 250
 with drift 43, 232
- rational expectations 35 n.
 advent of 14
 explicit reliance on 42
 identification of 3 n.
 log-linear system of 20
 multivariate linear 45
 restrictions implied by 38
see also REH
- RBC (Real Business Cycle) 5, 18, 21, 28
 short-run restrictions involved in 38
- reaction functions 93, 94–7
- Reagan administration (US) 192
- real equity price index 293
- real exchange rate 72, 81, 293
 evidence of a unit root in 210
 stationarity of 79
- real factors 5
- real interest rates 73
 average 103 n.
 expected, relating output to 22
 long-run level 102
- real money balances 290, 293
 elasticity of 211
 oil price shock affects 236
 relative to income 193–5
 strong negative effect of interest rates on 241
- real rates of return 73
 annual 211
 expected 72, 77
 steady-state distribution 70
- recession 3, 264, 305
 avoiding 8, 275
 growth prospects and 282–5
 probability of 306
- recursive structure 38, 48, 49
 block 51, 53, 59, 60, 61
 imposing 49, 51
- regional interdependencies 292–7
- regressions 48, 109, 138, 156, 211
 error-correcting 57, 199
 finite-order 131 n.
 linear 157

- regressions (*cont.*)
 spurious 3, 105, 106
see also OLS
- regularity conditions 46, 157
 mild 69
- REH (Rational Expectations Hypothesis) 73 n.
- Reichlin, L. 248 n., 251 n.
- rejection level 209
- representative agent paradigm 20
- representative household 42
 forces outside the control of 43
 Social Planner maximises utility 43
- reserves 51–2, 53
- residuals 141, 167
 estimated 208
 non-normality in 205, 208
 reduced-form 229
 serially uncorrelated 232
 transformed 168
- restrictions 49, 55, 88, 89
a priori 82, 110, 114, 227
 co-trending 120, 121
 economic importance of 109
 evidence to support validity of 209
 exactly identifying 208
 exclusion 51
 imposed through tentative theory 49–50
 ‘incredible’ 3
 just-identifying 141
 long-run 6, 138, 255, 259
 normalisation 110
 rank 118
 short-run 38, 59, 87, 227
 system dynamics 46
 theory-based 298
see also covariance restrictions; identifying restrictions; over-identifying restrictions
- returns to scale 68
- Ribba, A. 298
- ‘rice puzzle’ 245
- Ríos-Rull, J. 22
- risk-averse agents 72, 73
- risk premia 72, 73
 deterministic component of 210
 secondary effects of shock on 245
- Robertson, D., *see* GRW
- Robertson, J. C. 243 n.
- Rogoff, K. 71 n., 93 n., 210 n., 233 n.
- Rosenblatt, M. 272
- Rotemberg, J. 52
- Roubini, N. 53
- Rovelli, R. 23
- RPI (Retail Price Index) 172, 181, 274, 276 n.
- Sachs, J. 72 n.
- Sala-i-Martin, X. 69, 233
- Sampson, M. 22
- Sargan, J. D. 106
- Sargent, T. J. 17 n., 47, 266 n.
- satellite models 25, 59–62, 289, 303–5
- Saudi Arabia 187
- SBC (Schwarz Bayesian Criterion) 85, 108, 163, 198, 204, 218, 219, 221, 268, 269, 270
- Schorfheide, M. 23, 28
- Schuermann, T. 15, 16 n., 292, 297
see also PSW
- Schumacher, C. 298
- Schwarz, G. *see* SBC
- SDR (IMF Special Drawing Right) 172
- sectoral models 59–62
- selection matrix 253
- Selgin, G. 54
- SEMs (simultaneous equation models):
 emerging consensus between 292
 forward-looking models of form associated with 35 n.
 large-scale 13–16, 20, 24–31, 291
 structural 230
- sensitivity analysis 109
- sequential conditioning decomposition 168
- sequential procedures 108
- serial correlation 218
 chi-squared statistics for 232
 residual 129, 199, 212, 266
 residual 300
- shadow prices 45
- Shin, Y. 26, 27, 29, 37, 41, 59, 83, 84 n., 85, 89, 105, 107, 109, 112, 116 n., 118, 122, 123, 124, 126 n., 127, 128, 129, 134, 135, 137 n., 138 n., 199, 205 n., 230, 232, 233 n.
- shock effects 26, 114, 183, 232–48, 295
 contemporaneous, restrictions on 18
 decomposition of 298
 dynamic 33
 financial markets on business cycles 62
 foreign 292
 identification of 89
 measured 33, 110–11
 permanent 4, 8
 persistent 35
 system-wide 27, 134
 temporary 4, 133

- shock responses 21
 accumulated 15
 dynamic 8, 16
 impulse 225, 226, 227, 229
 long-run 54
 short-run 8
- shocks 17, 28, 112, 139
 adjustments to 233
 contractionary 301
 demand/supply 4, 19, 26, 50, 54–5, 89, 257, 298
 dynamic impact of 225
 economically meaningful 10, 33, 36, 61, 298
 estimated 48
 euro area economies and impact on UK 62
 exogenous 34, 45
 future 149
 generated in stochastic simulation 166
 identification of 54, 89
 non-zero contemporaneous dependence of 64
 observed correlation of 141
 orthogonalised 49, 54
 output 51, 236–9
 predicted 113
 productivity 5, 50, 51, 72
 real 21, 72
 reduced-form 25, 115, 226, 227
 restrictions on 4, 19
 stationary 19
 system-wide 116, 134
 technology 20, 89
 tracking 29
 white-noise 19
see also monetary policy shocks; oil price shocks; structural shocks
- short-run dynamics 21, 25, 28, 33, 37, 84, 212
 captured more accurately 204
 identification based on tentative theory on contemporaneous relations 48–51
 imposing structure on 38
 impulse responses based on 30 n.
 restrictions on 3, 38, 110
 unconstrained 219
- short-run economic theory 87–103
- short-run relationships 39
- short-run response matrices 135
- signal extraction and learning 22
- Sims, C. 3, 4, 8, 14, 15, 16, 17, 18, 37, 38, 40, 48, 49, 52, 55, 91 n., 110, 114, 226
- simulated annealing routine 141 n., 208 n.
- simulation 209
 stochastic 156, 162, 164–6, 269
- Skouris, S. 269 n.
- Smets, F. 5 n., 20 n., 23, 303
- Smith, J. 160 n.
- Smith, L. V. 62, 292, 293–4, 299
- Smith, R. J. 29, 41, 59, 84 n., 85, 105, 107, 118, 122, 123, 135, 137 n., 138 n., 199, 205 n.
- Smith, R. P. 14 n., 20 n., 25, 42 n., 62, 225 n., 230 n., 292
- Smith, V. 62, 225 n., 292
- Social Planner 43–4
- Solow model framework 69 n., 101
- solvency:
 institutional 67
 key conditions 6
 long-run 23, 75–81
- South East Asia 293, 295, 296
- Special Issue of the Journal of Economic Surveys* 105 n.
- speculative behaviour 245
- speculative effects 73
- stability condition/assumption 107, 110
- Stadler, G. W. 22
- stagflation 14
- standard deviation 112, 177, 239
- standard errors 232, 233, 242
 asymptotic 210
- state of emergency 177 n.
- stationarity 17
- stationary processes 73, 76, 80
 normalised 70
- statistical significance 17, 57, 109, 212
- steady-state properties:
 clearly defined 42
 non-linear equations illustrate 44
- steady-state relationships 81
 long-run, derivation of 67
- steady-state solution 24
- steady-state values 46, 68
 non-stochastic 44, 45
- sterling 187, 188–9
- sticky price models 38
- stochastic process 29
 break point 158 n.
- stochastic simulations 156, 162, 164–6
- Stock, J. H. 248 n., 251 n.
- stock-flow:
 constraints 27–8
 equilibria 67, 80
 identities 23
 relationships 74–5

- stock market crash (1987) 192, 212
 Strachan, R. W. 292
 Strongin, S. 53
 structural coefficients 36, 231
 contemporaneous 34, 88, 227
 exact identification of 37, 88
 identification of 111, 113
 unknown 34
 structural cointegrating VAR approach 5, 7,
 13, 16 n., 23–31, 33
 investigating 297
 recent applications of 289–92
 structural errors 54, 58, 59, 133, 135
 a priori restrictions on covariance matrix
 of 18
 indeterminacy confined to
 contemporaneous interaction of 114
 long-run 26
 orthogonal 113
 shock to 110, 111, 112, 113, 133,
 231
 structural shocks 35, 41, 226
 composite shock generated by 95
 contemporaneous dependence between
 58
 covariance assumed to be diagonal 19
 economically meaningful 36, 39
 effects of 99, 115
 identification of 37–9, 50, 89
 independent of each other 48
 long-run 23
 orthogonalised 18–19, 55
 permanent 55
 serially uncorrelated 88, 227
 timing of reactions of various variables to
 25
 transitory 55
 unpredictable 96
 structural VAR approach 4, 18, 18–19, 25–7,
 38, 48, 54, 115
 see also structural cointegrating VAR
 structural VARX model 106, 107, 107–9, 115
 long-run 105
 Summers, L. 100
 supply:
 excess 39
 labour 68, 69
 reserves 53
 shocks effect on output 54–5
 Svensson, L. E. O. 92 n., 93 n., 94, 95, 96 n.,
 100
 Sweden 6 n., 28 n., 292
 target rules 94, 99
 tariff barriers 71
 tastes 20, 28
 shocks to 225
 tatonnement process 39
 taxation 69
 Tay, A. S. 270, 272
 Taylor, J. B. 103 n.
 Taylor, L. W. 129 n.
 Taylor, M. P. 210
 Taylor, R. 177 n.
 technological change 28
 technological progress:
 characterising 38
 economy determined by level in rest of
 world 70
 endogenous 5, 22
 foreign 70
 labour augmenting 44, 68
 simple model of 101
 steady-state growth path of variables
 driven by 44
 underlying common measure of 102
 technology:
 constraints 14
 exogenous shock to 45
 government expenditure expressed
 relative to 43
 payments technology 193
 production 68–70
 shocks to 225
 tentative economic theory 38, 53, 54–5, 87,
 89, 115
 contemporaneous relations 48–51
 term premium:
 determined by unanticipated factors
 89–90
 expected, time-varying 92
 predictable component of 91
 terms of trade 188
 test statistics 140–1
 Thai economy 291
 Thatcher administration (UK) 188
 time endowment 42
 time series 3, 24, 166, 193
 containing unit roots 105, 106
 limited data available 268
 univariate models 221
 Timmermann, A. 158, 203 n.
 see also PT statistic
 Tinbergen, J. 13
 Tinsley, P. 13
 TOTEM model 29 n.
 trade balance relationship 81

- Trade Unions 181
 transactions costs 73
 rigidities that arise from 26
 transparency 146
 transport costs 71
 transversality conditions 20
 Treasury Bills 54, 171
 trend coefficients 7, 85, 108, 147
 restricted 120, 136, 204, 207, 250
 trend/cycle properties 225–61
 trend-stationary models 147, 149–51
 Treutler, B. J. 292, 297
 trivariate models 210
 Turkey 290
 Turner, D. 15 n.
 UIP (Uncovered Interest Parity) 71, 73, 210,
 211, 245
 uncertainties 8
 bond and foreign exchange 73
 money and goods market 72
 see also forecast uncertainties
 unconditional probability 178
 unemployment 4, 54
 bivariate VAR model of 19
 cyclical fluctuations 68
 determined solely by productivity shocks
 50
 equilibrium 69
 fall in 177
 long-run equilibrium 68
 unique stable solution 46
 unit roots 3, 5, 46, 64, 68, 69, 70, 107, 123,
 248
 probability forecasts 149, 151
 properties of core variables 200–4
 tests for 106, 122, 177 n.
 time series containing 105, 106
 VARs with 116
 United Kingdom 293, 295
 impulse response and trend/cycle
 properties 225–61
 long-run structural model 197–223
 macroeconomy 171–95
 possible effects of joining Euro area 292
 probability event forecasting 263–88
 probability forecasting and measuring
 financial distress 303–6
 real output fall 296
 United Nations Project Link 15, 307
 United States 212, 293, 297, 298
 budget deficit 189
 falling equity markets 295

- interest rates 172
 real output fall 296
 see also Fed
 univariate approaches 261
 univariate models 43, 147–53, 252
 benchmark, comparing core model with
 218–21
 unrestricted VAR models 4, 7, 16–18, 19, 24,
 25–7, 40, 84, 118, 197, 198
 log-linear 23
 small 264
 Urbain, J. 248 n.
 utility functions:
 underlying 28
 weight given to leisure in 43
 utility-maximising 14, 43–4

- Van Dijk, H. K. 292
 VAR (vector autoregressive) models 35, 40,
 48, 50, 52 n., 55, 115, 268
 augmented 107–16
 bivariate 4, 19, 54, 55 n., 210
 computation of probability forecasts based
 on 164–6
 considerable interest in the use of 3
 finite order 17
 global 16 n., 293
 innovations in different variables in 114
 large dimensional 65
 models with weakly exogenous variables
 57–9
 number of parameters estimated in 61
 restricted 5, 25
 stationary 116
 trend coefficients in 7, 85
 underlying 85, 172, 204, 236, 253
 see also cointegrating VAR; structural VAR;
 unrestricted VAR
 variables:
 cointegrated 116, 211
 contemporaneously determined 90, 92
 country-specific 64
 decision 47
 dependent 212
 deterministic 107, 108
 difference-stationary 40, 84
 discounted future 20
 expectational 92
 explanatory 60
 foreign 293, 294
 global 64
 instrumental 4
 long-run responses to shocks 54

Index

- variables: (*cont.*)
 motivation for long-run relationships
 between 75
 non-stationarity in 3
 not affected by disequilibria 56–7
 predetermined 109, 110
 quadratic trends in level of 118
 sectoral 60
 short-run evolution of 199
 stationary 35, 115, 118
 target 93, 94, 95, 98, 99, 101
 unit root 3
 see also core variables; endogenous
 variables; exogenous variables; forcing
 variables; foreign variables; observed
 variables
variance-covariance matrices 17, 58
 estimated 49
 positive definite 35, 107, 227
 reduced form errors with 36
VARMA (vector autoregressive moving
 average) models:
 estimation of 17
 finite order process 17
 infinite order 131
VARX (vector autoregressive exogenous)
 models 20, 31, 42, 113
 cointegrating 6, 63
 DSGE model fits readily into 46
 large dimensioned 208
 log-linear 5, 6
 reduced form 109–10
 unrestricted 6
 see also structural VARX model
VAT (value-added tax) 181
VECM (vector error-correcting model) 30,
 34–5, 40, 106, 117, 120, 121, 197,
 209–21, 249, 293
 adjustment costs models frequently
 represented by 48
 augmented autoregressive 105
 conditional 128–9, 138
 core 248
 estimated 41, 49, 122, 128–9, 138,
 141
 extended 135
 full-system 138
 individual country (or region)
 models 63
 multivariate 259
 reduced form 49, 92
 structural 55, 88, 89, 137, 138, 226
 triangular 37
 underlying 254
Vietnam War 189
volatility 159, 177, 181, 187, 188,
 245 n., 303
wage rigidities 22
 nominal 68
 real 68
wage setting 290
 arbitrary nominal rigidities in 21
wages:
 minimum 290
 zero increases 181
Wallis, K. F. 14 n., 15 n., 160 n., 263 n., 275
Wallis, K. W. 291, 292
Walrasian general equilibrium model 14, 21
Watson, M. 18
Watson, M. W. 105 n., 248 n., 249 n., 251 n.
weakly exogenous variables 25, 34 n., 63,
 64, 106, 169, 227
 oil price 204
 VAR models with 57–9
Weiner, S. M. 15, 16 n., 292, 297
 see also PSW
Weiss, L. 22
welfare 101
 describing in terms of inflation and
 output 22–3
 reducing 21
West, K. D. 46–7
Western Europe 293
Whitley, J. D. 15 n., 25
Wickens, M. R. 20 n., 36 n., 298
Wilson Administration (UK) 181, 192
'Winter of Discontent' (UK 1978/79) 181
Wohar, M. E. 290
Wold-causal ordering 38
Wold decomposition theorem 16, 17 n.
Woodford, M. 52, 100 n., 101
Worthington, P. L. 273 n.
Wouters, R. 5 n., 20 n., 23
Wren-Lewis, S. 15 n.
Wright, S., *see* GRW

Yom Kippur War (1973) 183
Yule, G. U. 3, 105

Zaffaroni, P. 161
Zha, T. 52
Zimbabwe 290