Index

Adenot, C. 156–7
AMM of Banco de Portugal see Portuguese model
Ando, A. 210, 216
Annual Macroeconometric Model see AMM
Area-Wide Model see AWM
Austria 90
Austrian model 260
1991 to 1997 pronounced decline in household savings ratio 263
Cobb–Douglas production function 260–61, 264
competitiveness, ratio of Austrian exports to competitors’ prices 265
demand components 262–3
deviation of unemployment rate from NAWRU 264, 275
direct tax rates, Maastricht public debt criterion of 264
ECM and 262
Engle–Granger two-step procedure 260
exchange rate shock 266, 272–3
fiscal policy shock 266, 269–70
foreign demand shock 41, 266, 270–72
foreign trade block 265–6
government sector 264–5
Harrod-neutral manner and 261
impact of consumption deflator on prices 38
impact of monetary policy shock on real GDP 37
international spillovers 266, 268
Keynesian short-run and neoclassical long-run analysis 260
monetary policy shock 267–9
monetary sector 265
National Accounts data, nominal wage rate and 263
NAWRU, unemployment rate from the exogenous 269
oil price shock 266, 273–5
output in after exchange rate shock 42
Phillips curve 264, 269
price equations 263–4
private consumption is function both of disposable income and wealth 262
production function and factor demand 260–62
real wages very flexible 262
simulation exercises for ECB, OECD or IMF 259
simulations limited to five years 267
special role of oil prices 265–6
substitution effect in income channel 269
unemployment rate in EUROSTAT definition 264–5
uses of 259
versatility of 275
WGEM, monetary policy transmission exercise 266–7
Austrian Quarterly Model (AQM) see Austrian model
AWM (Area-Wide Model) 50
14–25 estimated behavioural equations 4
Cobb–Douglas production function 51–2
components of aggregate demand 53
employment growth depends on real wages and output growth 53
exchange rate shock 59, 62, 64
exports and imports comprise intra and extra area flows 53
fiscal policy and government sector 55
fiscal policy shock 59, 60
five key features 51–2
forecasting and policy analysis 50
foreign demand shock 59, 61
impacts of monetary policy shock larger than euro-area 37
inflationary pressures asymmetric 54
initial impacts of fiscal policy shock 40
monetary and financial sector 56
monetary policy shock 56, 58–9
nearly linear but fully linear version been developed 51
oil price shock 63, 64
prices and costs 53–5
private consumption, function both of disposable income and wealth 53
production function and factor demand 52–3
productivity gap 54
real government consumption exogenous in level terms 55
responses to key simulations 56, 57
role of capital 10
small initial effects of foreign demand shock 42
standard dynamic ECM equation for new M3 aggregate 56
structural macroeconomic models for euro area 51, 64
trade 55
unemployment, deviation from its structural level (NAIRU) 54
use gross trade (including intra euro-area flows) 31
wages modelled on Phillips curve 54

Baghli, M. 155, 157
Banco de España see Spanish model
Bank of Finland’s BOF5 model see Finnish model
Bank of Finland’s EDGE model see EDGE model
Bank for International Settlements (BIS) 121
Bank of Italy’s quarterly model (BIQM) see Italian model
Baude, J. 156, 161
Belgian model 101–3
adjustment on expenditure side 16–17

CES production function 103–4
Cobb–Douglas production function, supply side of the model and 104
consumption deflator 106
desired level and 104
corresponding details for endogenous variables 108–9
deflators affected by changes in foreign prices 111
disposable labour income short-run impact 20
EMU and EUROMON 90
ESCB’s sensitivity exercises and 103
estimation period from 1980s 5
foreign trade 107–8
foreign trade based on imperfect substitution approach 107
forward-looking elements in labour markets 13
full model-consistent expectations 102
government intervenes in wage-bargaining process 105
government wages and pensions indexed on ‘health’ CPI 107
growth rate of economy, growth rate of labour in efficiency unit 108
households 103–4
human wealth expected future labour incomes and 104
only increased gradually 111
variable 19
Keynesian effects in short run 101
labour productivity, affected by rate of technical progress 105
law of July (1996) 105–6
long-run income effects not present 19
monetary and financial sector 108
monetary policy shock, impact on real GDP 37
monopolistically, competitive suppliers produce private value added 104, 117
oil, tobacco and alcohol excluded from CPI 106
overlapping-generations model 103
polynomial adjustment costs (PAC) 102, 108
prices 106
Ricardian equivalence 103
‘right to manage’ framework for private sector wages 26
risk analysis accompanying BMPE 103
simulation 1: rise in short-term interest rate for two years 109–11
simulation 2: fiscal policy shock 111–13
simulation 3: foreign demand shock 113–14
simulation 4: exchange rate shock 114–15
simulation 5: oil price shock 116–17
steady state 108–9
supply side 104–5
transfers to households adjusted to achieve fiscal target 17
transition from ESA-79 to ESA-95 103
treats expectations explicitly in estimating dynamic equations and 101
unrestricted polynomials 102
value added disaggregated into market sector and semi-public sector 8
VAR-based expectations simulations, shock and 102
wages 105–6
Belgium 90, 121
Berben, R.P. 38, 46
Blanchard approach, definition 68–9
BMPE 5, 103, 137, 191–2
BOF4, Bank’s Economics Department for forecasting and policy analysis 292
BOF5, model development, Economics Department and Research Department 293
BOFMINI 292–3
Boletín Económico 137
Brayton, F. 102, 210
Broad Macroeconomic Projection Exercise see BMPE
Brunner, K. 173
Bundesbank model 6, 106, 119–20
adjustment on expenditure side 16–17
backward-looking expectations 125
calibrated models 124
Cobb–Douglas production function 121–2
competitors’ price deflator, weighted average of trading partners’ domestic prices 126
D-Mark in Eastern Germany in (1990) 119
dynamic adjustment process 121, 125
ESA-95 121
exchange rate shock 132–4
export price index of OPEC countries represented by oil price 125
fiscal policy shock 129–31
foreign demand shock 131–2
foreign trade block 125–6
general characteristics 121–2
German model G-7 countries trading with Germany 120
government sector 124
M3 role in determination of long-run price level 16
monetary policy shock 126–9
monetary sector 124–5
oil price shock 134–5
output and prices 46
P-Star approach 123–4, 134, 136
policy rule, strong smoothing component 124
prices and costs 123
private consumption affected by real net financial wealth of households 123
production costs defined as weighted average of labour and import costs 123
production function and factor demand 122
role of capital 10
simulation results from WGEM monetary policy transmission exercise 126–9
started as Keynesian system 119
TROLL Windows version used 122
Two-step ECM used 122, 124
used for policy analysis and forecasting since (1970) 119, 136
Bundesbank’s BbkM see Bundesbank model
calibration 4–5, 45, 48
Deutsche Bundesbank 124
EDGE model 66–7, 77
Greek model 178
Portuguese model 278, 290
Canada 121
capital, role directly through capital stock or indirectly through cost of capital or real interest rate 10
capital variable, user cost designed to reflect long-term borrowing costs 36
cash flow/income channel, financial position of households and firms 36, 46
Central Bank and Financial Services Authority of Ireland (CBFSAI) see Irish model
CES production function 8, 45, 90–91, 103–4, 193, 246
Cobb–Douglas production function 45 supply side of the model and 8, 45, see also individual models computable general equilibrium models 1, 77, 99 constant elasticity of substitution see CES consumer price index see CPI consumer spending, determines of 17 cost-of-capital channel 34–5, 46 costs and prices, treatment of process and deflators 27–9
treatment of wages 24–7
counterfactual analysis, economic developments compared with alternatives 6 CPI 106–7, 179, 296–7
De Nederlandsche Bank (DNB) 90
developed MORKMON (1980s) 244
De Nederlandsche Bank’s EUROMON 3 Demertzis, Maria 89–90
Denmark 90
description overview of behavioural equations in the models, aggregate demand and employment 17
costs and prices 24–6
trade and balance of payments 29, 31
treatment of consumption 17–19
treatment of employment 22–4
treatment of export volumes 30–31
treatment of import volumes 32–3
treatment of investment 20–22
treatment of prices and deflators 27–9 ‘Details of the design of harmonised simulation experiments’ 129
Dieppe, A. 50–51
disaggregation, facilitate models for detailed projections for public finances 16
disaggregation of investment, varies across models 20, 22
disaggregation of wages, same lines as disaggregation in employment 24
DNB’s Quarterly Bulletin 89, 245 Dutch model,
CES production function 8, 246 consumers increase expenditure when government budget balance improves 20 private sector wages, ‘right to manage’ framework 26 real expenditure target 16 role of capital 10 tax rates and expenditures used as instrument variables 17 value added disaggregated into market sector 8

EARP, department of the CBFSI 191, 207
ECB 1
(19 March 2002) 129
(2001) 156
AWM 3
Bank of Greece and AWM and MCM models 176–7 forecasts in are complex exercises 50
France 159
Germany 122, 124
Ireland 193–4, 196–8
Index

Luxembourg 228
MCM 81
monetary transmission mechanism
coordinated by 162
policy analysis performed with
Spain 139
structural econometric models of 45
trade consistency and 126

ECM,
Austria 262
AWM 52–4, 56, 64
France 159
Germany 122, 124
Greece 176–7, 179
Ireland 193–4, 196–8
Luxembourg 288
MCM 81
Portugal 281
Spain 139
Econometric Forecasting Unit,
econometric modelling at Bank of
Greece (1975) 172, 176
econometric model of the bank of
Greece see Greek model
econometric models of the euro-area
Central Banks 1–2
ANNEX: details of design of
harmonized simulated
experiments 34, 47–8
simulation properties of Eurosysten
models
conventional channels of
monetary transmission in ESCB
models 34–5
monetary policy shock (GDP
response) 36–7
structures and main features of
determination of short-term
interest rates 11, 13
government sector and fiscal
policy rules 16
monetary aggregates and interest
rates in model 12–13, 16
supply side of 45
Economic Analysis Research and
Publications department of Bank
of Ireland see EARP
economic shocks 1
Economie et Prévision (1998) 155
EDGE: Bank of Finland’s
macroeconomic model of euro
area see EDGE
EDGE model 3, 66–7, 70, 306–7
1% appreciation of euro 75–6
1% increase in nominal interest 70–71
adjusts quickly to different
temporary shocks 76
built as cashless economy 69
calibration 4, 48, 66–7, 77
Cobb–Douglas production function
68
components of aggregate demand
68–9
effect of foreign demand shock 42
effects of different expectations
among different agents 68
exchange rate shock 75–6
exogenous birth rate determines
population growth 68
financial wealth calculated by
present value method 68
fiscal ‘closure rule’ 69
fiscal policy and the government
sector 69
fiscal policy reaction function and 16
fiscal policy shock 72–3
floating fully forward-looking
exchange rate 70
foreign demand shock 73–5
foreign trade equations, simple log-
linear formulation 69, 77
forward-looking 38, 49, 66–7, 69
GDP response to foreign demand
shock 41
impact of monetary policy shock
larger than euro-area countries 37
initial effect of fiscal policy shock
crowded out by year 4 40
Keynesian features 76
labour supply, NAIRU and
population exogenous in 69
monetary and financial sectors
69–70
monetary policy shock 70–72
New Keynesian approach in short-
run but neoclassical in long-run
66
no direct measure of oil prices 70
open economy, dynamic general equilibrium model 77
‘overlapping contracts’ for wages 26
prices and costs 69
private consumption crowded out by public 73
production function and factor demands 68
sudden fall in output increases unemployment rate 72
summary of the simulation results 76–7
Taylor rule 69–70, 77
temporary 1% increase in world demand 73–5
temporary increase of 1% of real GDP in government consumption 72–3
trade 69
TROLL simulation software environment in 66
use gross trade (including intra euro-area flows) 31
used in policy analysis but can be applied to forecasting 67
employment, determination of 22–4
EMU 79, 89, 298, 303, 306
countries linked together with a ‘trade block’ 79, 88, 125
endogenous bond price determination 36
error correction mechanism see ECM
ESA-79 5, 103, 155, 191, 228
ESA-95 121, 137, 155, 210, 228, 279
ESCB 34–5, 79, 87
Austrian forecasts 259–60, 275
Belgium 103
forecasting exercise 174
Greece 175–6
Ireland 191–2
Luxembourg block and (MCM) 228
estimated models, closely fit the data of the economy 5
Estrada, A. 137, 230
EU countries 121, 125
euro area, advantages of modelling as single economy 3
euro area Dynamic General Equilibrium see EDGE
euro area models, price level increases over first five years of foreign demand shock 42
euro area national central banks (Eurosysten) 1
euro price of oil, exchange rate channel and 34–5
euro-area countries, small open economies, foreign variables play a role 10
euro-area equilibrium price level see P-Star
EUROMON 89
aggregate supply given by CES production function 90–91
consumption deflator is main variable 91
developed (1990s) 89
equilibrium unemployment captured by NAWRU 90–91
exchange rate channel 92
exports and imports, affected by cyclical conditions 91
future of 98–9
income taxes, social security premiums modelled separately 92
income/cash flow channel 92
initial impact of fiscal policy shock 40
moderate effects of monetary policy shock for euro-area 38
moving in direction of dynamic general equilibrium model 99
ordinary least squares 90
private sector wages ‘right to manage’ framework 26
role of capital 10
simulation 1: two-year 100 basis points increase in short-term interest rate 93–4
simulation 2: five-year increase in real government consumption by 1% of initial GDP 92, 95
simulation 3: five-year 1% increase in non-euro world demand 92, 96
simulation 4: five-year 1% appreciation of the euro in comparison with all other currencies 93, 97
simulation 5: permanent 10% increase in oil prices 93, 98–9
small effect of 1% increase in non-euro area world demand 96, 97
smaller effects of foreign demand shock 42
Taylor rule used for endogenizing short-term interest rates 91
TROLL, used to simulate model 90
two-year 100 basis point increase in short-term interest rates 92–4
used for forecasting, in conducting policy and scenario analyses 89
wealth channel 92
world model 94
EUROMON and the Netherlands, endogenous asset prices 36
European Central Bank see ECB
European System of Accounts (1995) data definitions 5
European System of Central Banks see ESCB
Eurosystem models 1
exchange rate shock (GDP response) 41, 43
exchange rate shock (response of consumption deflator) 43
fiscal policy shock (GDP response) 39
fiscal policy shock (response of consumption deflator) 40
foreign demand shock (GDP response) 41
foreign demand shock (response of consumption deflator) 41–2
monetary policy shock (response of consumption deflator) 38
multi-country model (MCM) 3
no single modelling philosophy in 2
oil price shock (GDP response) 42, 44
oil price shock (response of consumption deflator) 42, 44
span full range of possibilities 45
Eurosystem Staff macroeconomic Projection Exercises, described by ECB (2001) 5
Eurosystem’s multi-country model see MCM
exchange rate channel 34–5, 46
exchange rate shock 34, 47, 204, 205
euro strengthening for five years against third currencies 41
expectations 10, 45–6
Belgian model 102
EDGE 66–7, 294
EUROMON 93
Finnish model 292, 294
inflation 54, 152
Italian model 210
Netherlands’ model 248
role in French model 157
workers’ inflationary in Spain 152
exports, long-run determinates, world demand and competitiveness 31
Fagan, G. 3, 50, 80, 229
Fair, Ray C. 91
Fazio, A 210
Financial Services Authority of Ireland 6
Finland 90, 306
Finnish and EDGE models, forward-looking elements in labour market 13
Finnish model, appreciation of the exchange rate 303–4
assumes consumers myopic or liquidity-constrained 20
behaviour of firms based on profit maximization 296
BOF model coded in LBS(CEF) software 293
BOF4 , financial markets deregulated in mid-1980s 297
CES production function 8
components of aggregate demand 295
CPI modelled to include housing cost term 296–7
crowding-out effects, return to baseline by years 3 and 5 39, 49
effect of oil price shock 42, 44
endogenous asset prices 36
Euler equations applied in estimations 292–4, 306
expectations, inflation 292, 294
fiscal policy and government sector 297
foreign demand shock 300, 302
GMM method 293
government expenditure shock 300, 301
HICP 297
impact of consumption deflator on prices 38
impact of monetary policy shock on real GDP 37
low substitutability between domestically produced and imported goods 297
model data based on quarterly National Accounts 293
monetary transmission simulation 298–300
oil price shock 304–6
PPP, domestic and foreign currency 294
prices and costs 296–7
private sector wages ‘right to manage’ framework 26
production function and factor demand 296
sensitivity analysis, risk analysis and 293
short run properties of model are Keynesian 294
Tobin’s q used in construction of new dwellings 295
trade 297
uncovered interest parity (UIP) 298
fiscal policy reaction function, target level and 16
fiscal policy shock 34, 47
five simulations, harmonized basis 34, 48
foreign demand shock 34, 47
foreign prices, import deflator or effective exchange rate 29
France 121, 160
disaggregated expenditure 16
EMU and EUROMON 90
impact of monetary policy shock on real GDP 37
long-run wealth effects not present in 36
nominal wages 106
produces mainly services but exports mainly goods 160
French model 161–2
‘add factors’ of the equations 157
Cobb–Douglas production function and 158
components of aggregate demand 158–9
cost-of-capital channel 164
ECM includes consumption deflator 159
effect of oil price shock 42, 44
exchange rate channel 164
exchange rate shock 167
expenditure disaggregated 16
export deflator is function of production price index and competitors’ price index 161
financial liberalization 159
fiscal policy and the government sector 160
fiscal policy shock 164–5
foreign demand shock 165–6
impact of monetary policy shock on real GDP 37
income channel includes portfolio reallocation by households and firms 36, 49
income/cash flow channel 164
international spillovers 157
long-run wealth effects not present in 19
MC2 170
model without money 161
monetary and financial sector 161
monetary policy shock 162–4
NAIRU, subject to a ‘term of trade effect’ in France 160
neo-Keynesian 155, 157
non-profit institutions serving households (NPISH) 158
oil price shock 167–9
poor goodness-of-fit detrimental to inflation projections 159
portfolio channel included in joint income/cash-flow channel 36
price and costs 159–60
production function and factor demands 158
role of expectations 157
substitutability 158
substitution effect in consumption channel 164
trade 160–61
trade-off, sound theoretical foundations and goodness-of-fit 156
uses 156–7
wages, Phillips curve and WS–PS model 159

G-7 countries, macroeconometric MCMs 121

Germany, adjustment via nominal government consumption 17
development of prices influenced by the price gap 29
EMU 90
impact on real GDP of monetary policy shock 37
no wealth channel 36
price effects of fiscal expansion moderate 40–41
role of M3 in long-run price level 16
separate monetary channel 36
goodness-of-fit 156, 169
Gordon, R. 54, 194

Greek model 176–7
aggregate demand 177
annual bank model 4–5
BMPE forecasting and 175
Cobb–Douglas technology 177–8
coefficients of equation calibrated 178
cointegration techniques and 176, 178
crowding out 39, 183
dynamic specification, dynamic homogeneity 189
effect of fiscal policy shock on GDP 39
effect of oil price shock 42, 44
ESA-95 176
ESA-95 and 176
ESCB forecasting exercise 174–5
exchange rate channel 181
exchange rate shock 184, 185
echange rate shock and falling output below baseline in year 5 41
fall in real GDP largest in 37
financial liberalization mid-1980s 173, 189
fiscal policy shock 183–4
foreign trade 179–80
‘high-powered money multiplier’ 173
historical overview 172–4
Hodrick–Prescott filter 177
impact of structural funds 6, 174
Keynesian tradition 172
long-run wealth effects not present 19
model respecification by forecasting section 173–4
modelling of consumption deflator and CPI 179
Monetary Policy Committee (MPC) 174–5, 189
monetary policy shock 180–82
NAWRU level 178–9
‘neoclassical synthesis and 173–4
no cash flow/income channel 36
no wealth channel 36
permanent foreign demand shock 184, 186–7
permanent oil price shock 187–8
portable TROLL system used in simulation exercises 176
prices and wages 178–9
standard ECM of real imports of goods and services 179
supply side of the model 178
TROLL software 176
two-step Granger–Engle procedure used in structural equations 176
uncovered interest parity (UIP) 181
use in ESCB broad macroeconomic projection exercises 175–6
use of in internal forecasting rounds 174–5
use in other activities of the bank 176
wages, dynamic specification and dynamic homogeneity 179
WGEM monetary policy transmission exercise 180
harmonized index of consumer prices  

see HICP  

Henry, J. 3, 50, 193  

HICP 55, 64, 83, 140, 219–20, 297  

historical counterfactual analysis 16  

historical euro-area aggregate data for  

AWM, specially constructed by  

ECB 5  

Hodrick–Prescott filter 52, 177  

HWWA index, foreign and commodity  

prices measured by 55  

IMF Article IV missions 6  

income/cash flow channel 34–5  

inflation targets 13  

investment,  

actual capital cost and adjustment  

costs 36  

determined by output and user cost  

of capital variable 22  

Irac, D. 155–7  

Irish model 191–2,  

14–25 estimated behavioural  

equations 4  

CES production function 19  

changes to foreign prices and 197,  

208  

close links with UK labour markets  

197  

Cobb–Douglas production function  

193–4  

components of aggregate demand  

195–6  

EARP 191  

ECB and data on world demand and  

competitors prices 198  

ECM 193–4, 196–8  

ESA-79 191  

ESCB and Irish input into BMPE  

191–2  

estimation period from (1980s) 5  

exchange rate shock and output  

falling below baseline in year 5  

41  

fiscal policy and government sector  

197–8  

a fiscal policy shock 201–2  

a foreign demand shock 201, 203–4  

foreign trade block equations for  

real imports and exports 198  

GDP response to foreign demand  

shock 41  

Harrod-neutral technical progress  

193  

impact of consumption deflator on  

prices 38  

impact of monetary policy shock on  

real GDP 37  

increased importance of property  

market mid-1990s 207  

international transfers exogenous  

variable in balance of payments  

198  

level of real output and equilibrium  

195, 208  

long-run income effects not present  

in 19  

monetary and financial sector 199  

a monetary policy shock 199–201  

NAIRU and 197  

‘neoclassical synthesis, personal  

consumption in Ireland and  

195, 208  

no cash flow/income channel 36  

oil price shock 204, 206–7  

Phillips curve 194  

presence of foreign-owned high-  

technology sector 199  

prices and costs 196–7  

production function and factor  

demands 193–5  

short-run relationships in CBFSAI  

208  

trade 198–9  

WGEM, monetary policy  

transmission exercise 199  

ISMA (2000) 156–7  

Italian model 217  

100 basis point shock to short-term  

interest rate sustained for two  

years 217–19  

additional equations for tourist  

expenditure 19  

adopted ESA-95 standard 210  

Cobb–Douglas production function  

211–12  

components of aggregate demand  

213–14  

detailed sectoral breakdown of  

prices 31
disaggregated expenditure 16
distinction between durable and non-durable consumer spending 17, 35
effect of oil price shock 42, 44
equipment investment 212, 213
expectations channel and portfolio channel 36
expectations formation mechanisms and policy rules 210
fiscal policy and government sector 214–15, 224
five-year 1% appreciation of euro exchange rate 220–21, 226
five-year increase by 1% in government consumption 219–20, 223
five-year increase by 1% of non-euro area imports 220, 225
five-year increase by 10% in oil prices 221, 227
impact of monetary policy shock on real GDP 37
introduction and history 210
Keynesian ideas in short-run 211
large with 886 equations, 96 estimated 4
monetary and financial sector 215–17, 223
MPS econometric model 216
multiple sectors 8
Phillips curve 210
determines the NAIRU in Italy 214
prices and costs 214
production function and factor demands 212–13
public sector borrowing requirements 215, 221
real exchange rate 10
Research Department of Bank of and BIQM 211
simulations use Speakeasy/Modeleasy + 211
substitutability 216
summary of single equation properties of 217, 218
Tobin’s q model used for housing investment 213
trade equations 215
Italy 90, 121

Jacquinot, P. 155–6
Japan 86, 90, 121

Lucas critique 102
Luxembourg, annual bank model 5
part of European Monetary Union 229
Luxembourg model 4, 228–9
behavioural equations specified as ECM 228
Cobb–Douglas production function 230
components of aggregate demand 231–2
effect of fiscal policy shock on GDP 39
Engle–Granger two-step procedure 228
ESA-79 228
ESA-95 228
Eviews used 228
exports of goods and services, function of level of real world demand 231
fiscal policy and the government sector 233
gross fixed capital formation determined by investment equation 231
impact of consumption deflator on prices 38
impact of monetary policy shock on real GDP 37
imports of goods and services depend on indicator of demand for real imports 232
low initial impacts from fiscal shock 40
monetary and financial sector 233–4
no cash flow/income channel 36
prices and costs 232–3
production function and factor demands 230–31
public consumption exogenous 231
simulation 1: monetary policy shock 234–6
simulation 2: fiscal policy shock 236–8
simulation 3: foreign demand shock 238–9
simulation 4: exchange rate shock 239–40, 241
simulation 5: oil price shock 240, 242–3
trade 233
trade within euro area so positive effects of foreign demand shock 42

McGuire, M. 191–2
macro-modellers, intertemporal government budget constraint in simulations 16, 48
macroeconometric model, key building block is explicit supply side 8
macroeconomic models 2, 13, 45
Madrid stock exchange index 141
Mascotte: Banque de France forecasting model see French model

Mauskopf, E. 210
MC2 155–6
MCM database, constructed by collection data from national central banks (NCBs) 5
MCM models, distinction between intra- and extra euro-area determinants 31
MCMs, 14–25 estimated behavioural equations 4
behavioural equations, estimated on basis of national historical data from 1980 81
check consistency in context of euro-area projections 6
classical structure in long run, short run Keynesian 80
Cobb–Douglas production function 80–81, 83
competitors’ prices computed as weighted average of partners’ export prices 84, 87
components of aggregate demand 82
‘cross-trade consistency’ 87
differences across country blocks 85
deviation of unemployment from NAIRU 83
distinction between intra- and extra

euro-area long-run determinates 31
each model estimated on own national database 80, 85
ECM and 81
employment growth depends on real wages and output growth 82
‘ex ante/ex post trade consistency’ 87–8
features of country blocks 80–81 fiscal accounts 83–4
HICP and 83
individual country blocks can be operated in isolated mode 6
initial impacts of fiscal shock 40
inventories, long run ratio between cumulated and GDP remains constant 82
largest with 700–1000 equations 4
linking of separate country models through foreign trade equations 85–6, 87
long-run capital–labour ratio is ‘pinned down’ 81
monetary and financial sector 84–5
NAIRU process of adjustments and 80–81
Phillips curve 81, 83, 85
prices and costs 82–3
private consumption, function both of disposable income and wealth 82
production function and factor demands 81–2
public consumption 82
role of capital 10
short-term interest rates exogenous and long rates weighted average 84–5
standard fiscal reaction function 83
static homogeneity on all price equations 82–3
trade accounts 84
trade (exports and imports) modelled in standard fashion 82
uses of 79

Meltzer, A.H. 173
MIT, University of Pennsylvania and Social Science Research Council see MPS
‘Modèle d’analyse et de prévision de la conjoncture trimestrielle’
(‘quarterly analysis and forecasting model’) 155
‘Modèle de la Banque de France’
(‘BdF model’) 155–6
modellers, common practices on monetary, fiscal policy and exchange rate 34
models,
appreciation of exchange rate, fall in output in all 41
around half of, forward-looking elements 9–11
basic details 3–4, 5
behavioural equations, shared characteristics 45
Cobb–Douglas or CES production function 45
consumer prices rise in all following oil price hike 42, 44
counterfactual analysis and 6 differ according to endogenous or exogenous long-run employment 24
estimation periods for behavioural relationships vary significantly 5 explicit fiscal closure rules and 16 first year of fiscal policy shock raises GDP 39
government sector and fiscal policy rules 14–15
monetary or fiscal rules within, use is optional 6
negative effect of GDP strongest in year 2 37
operated in different ways 6
treatment of expectations of variables 10
prices rise in first five years as output above baseline level 40
properties, five simulation exercises and 2
role for inflation or inflation expectations 27
some contain complex dynamic adjustment processes 2
some include terms to capture cyclical factors 20
some isolate energy trade or oil on import side 31
structures and main features of 7–8
treatment of monetary and fiscal sectors 16–17
used for three basic purposes 5
variety in size, largest 700–1000 equations 4
wealth changes in caused by changes in asset holdings and valuation effects 36
models for euro-area countries, explicit monetary policy rules 13, 16
Modigliani, F. 210, 216, 263
monetary and financial sector 297–8
Monetary Policy Committee of the Bank of Greece 173
monetary policy shock 34, 47, 49 negative impact on real GDP strongest in year 2 37
results based on common simulation experiment 36
money base targets 13
‘Monnaie–Crédit–Change’ (MC2), finalized in mid-1980s 155
Morgan, J. 50
Muellbauer, J. 263
multiplier-acceleration properties 164
Muth, J.F. 263
NAIRU 10
exogenous in AWM 51, 54
Finland 69
France 160
Ireland 197
Italy 214
MCM 80–81, 83
Portugal 278–9, 281, 290
Spain 138, 140
NAWRU 10, 90–91, 178–9, 264, 269, 275
‘neoclassical synthesis, models and 2, 121, 229
Netherlands 37, 90, 106, 121
Netherlands’ model, CES production technology 246
degree of detail of its monetary submodel 245
economy and main risks that surround it 245, 252
expectations are backward-looking
future of 252
government revenues from natural
gas 252
Keynesian in short run 246
private consumption depends on real
disposable income 246
short-term forecasting 244
simulation 1: two year basis points
increase in short-term interest
rate 248, 254
simulation 2: five-year increase in
real government consumption
by 1% of initial GDP 248, 255
simulation 3: five-year 1% increase in
non-euro area world demand
248, 256
simulation 4: five-year 1% increase in
euro vis-à-vis all other
 currencies 248, 257
simulation 5: permanent 10%
increase in oil prices 248, 258
split in social security transfers 247
use of 244–5
wage rate depends on consumer and
producer prices 247
New Keynesian approach 66, 90
non-accelerating inflation rate of
unemployment see NAIRU
non-accelerating wage rate of
unemployment see NAWRU
OECD countries 121, 125
OECD’s ‘Monthly Statistics of Foreign
Trade’ 125
Oesterreichische Nationalbank, ESCB
and 259, 275
oil price shock 34, 47
OPEC countries 121, 125–6
OPTIM model 157
P-Star, derived from European money
demand 36, 123–4, 136
Phillips curve,
Austria 264, 269
AWM 54
France 159
Ireland 194
Italy 210, 214
Luxembourg 233
MCM 81, 83, 85
Plihon, D. 155
policy analysis, performed through
shock simulations 50
policy rules,
AWM model and 51
rarely used in preparing forecasts 13, 45
polynomial adjustment costs (PAC),
imports and exports 102, 108
Portuguese model 278–80
annual bank model 5
Cobb–Douglas production function
278–81, 290
competitiveness
loss of, consequence of increase in
domestic unit labour costs 290
loss of, reduction of exports,
GDP, investment and imports
287
components of aggregate demand
280–81
crowding out effects on private
expenditure 286, 291
debt redemption correction for
disposable income 36
disaggregated expenditure 16
distinction between durable and
non-durable spending 17
dynamic equation for investment,
two error correction terms 279
dynamic specifications calibrated to
improve forecasting 278, 290
effect of oil price shock 42, 44
employment and NAIRU 278–9,
281, 290
ESA-95 279
Eurosystem projection exercise 282
exchange rate and interest rate parity
condition 283, 290
exchange rate shock 287–8
fiscal policy and government sector
281–2
fiscal policy shock 284–6
foreign demand shock 286–7
GDP response to foreign demand
shock 41
gross fixed capital formation
(GFCF) 280
impact of monetary policy shock on real GDP 37
imports of goods and services 281
interest rate parity shock 283
long-run wealth effects not present in 19
monetary and financial sector 282–3
monetary policy shock 283–4
net private external transfers, emigrants’ remittances 282
no wealth channel 36
oil price shock 289–90
output in after exchange rate shock 41
PPP considered in ECM of exports and import prices equations 281
prices and costs 281
private consumption 280
public consumption 280
short-term Keynesian properties of AMM model 284
simulations, biannual Eurosystem projection exercise 278
small-scale quarterly inflation-forecasting model 4, 277, 290
studies of Banco de Portugal on impact of cyclical fluctuations 282, 290
substitution effect, sales in domestic and external markets 286
total exports 280
trade 282
uncovered interest parity (UIP) 283
value added disaggregated into market sector 8
Portuguese statistical office (Instituto Nacional de Estatística), new series of national accounts 279
PPP 281, 294
prices, impact of foreign demand shock 41
purchasing power parity see PPP
Quarterly Bulletin 89
rational expectations literature 102
rational/model-consistent expectations paradigm, expectations formation mechanism 67
rise in foreign demand, impact in first year is GDP rise in all models 41
Ryan, M. 191–2
Sédillot, F. 156–7
sensitivity analysis 103, 293
short-run dynamics of prices, role of cyclical indicators and 29
simulations, backward-looking mode 109, 117
EUROMON’s system properties analysed by conducting five 92–3
five conducted on harmonized basis 34, 48
model-consistent expectations 102
relevant factors 48
requests from central bank and 6
Siviero, S. 212–13
Spain 6, 90
Spanish model 4, 137–8
appreciation of the euro exchange rate 150–52
balance of payments includes net compensation of employees from rest of world 143
behaviour of households 141–2
BMPE and 137
Cobb–Douglas production function, constant returns to scale 138–9
competitiveness, difference between import prices and private sector value-added deflator 142
components of import deflator 140, 154
cost-push shock due to oil price increase 152
demand side 140–41
ECB and 137
ECM and 139
endogenous asset prices 36
ESA-95 137
estimation period from 1980s 5
extra-euro area demand shock 149–50
fiscal policy shock 147–8
government sector 143–4
household income affected by increase in net interest payments 146, 154
impact of monetary policy shock on real GDP 37
increase in the oil price 152–3
increase in prices worsens competitiveness 147
inventory investment 142
medium-term simulation properties 144
monetary policy shock 144–7
potential private employment defined and NAIRU 140
potential total factor productivity (TFP) 140
private sector wages ‘right to manage’ framework 26
public value-added deflator, public wages and public investment deflator 143
role of real exchange rate 10
supply side endogenously determines a NAIRU 138
trade block 142–3
value added disaggregated into market sector 8
spillovers, between euro-area countries 36, 49, 126
international 96, 162, 266, 288
structural vector autoregressions 1
substitution effect in consumption channel 34–5
in all models and can affect short and long-run consumption 35, 46, 49
Sweden 90
Switzerland 86
Taylor rules 13, 16, 69–70, 77, 91
TCE, macroeconomic projection exercises of ECB and ESCB 79, 87
theoretically based models 45
time-series models 1
total factor productivity (TFP) 10, 52, 140
trade, treatment of export and import volumes 29–33
‘trade consistency exercise’ see TCE
treatment of prices and deflators 27–9
TROLL software 66, 90, 122, 191
UIP 181, 283, 293
Uncovered interest parity see UIP
unemployment, reduction in stimulates private consumption 94
role in determination of wages 27
United Kingdom 90, 121
United States 67, 86, 90, 121, 143, 152
van Els, P.A., CES 90
EUROMON 89
Luxembourg model 229
Netherlands 244
shocks 266
simulation 36
transmission of monetary policy 34, 162
WGEM 6
VAR evidence, results more mixed 46
Villetelle, J.-P. 155, 159
wage equation, provided by (short-run) Phillips curve 26
Wage-setting, price-setting model see WS–PS
wealth, changes in caused by changes in asset holdings and valuation effects 46
wealth channel 34–5
WGEM 6, 79, 126–9, 180, 199, 266–7
Willman, A. 137, 230, 292–3
Working Group on Econometric Modelling see WGEM
WS–PS 159