Development Policy and Analysis Division
Department of Economic and Social Affairs

Global Policy Model

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GLOBAL POLICY MODEL

VERSION 3.0

APPENDICES A - F

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Appendix A Notation and measurement conventions

Domestic income and expenditure

Variables measured in real terms are denoted by an upper-case symbol followed by a 2 or 3 character country or bloc code or **W** for the world total:

e.g. **V_JA** Japan's GDP

VW = sum(V_?) world GDP where ? denotes each bloc

GDP is measured at base-year dollar prices divided by a different base-year purchasing power parity adjustment **pp0** for each bloc. Real incomes and expenditures in each bloc are measured by dividing current dollar values by the domestic expenditure deflator for the bloc to convert the figures to base-year values and further dividing by the base-year purchasing power adjustment to make them more comparable across blocs.

It follows that current dollar values, denoted with a leading underscore, are equal to real values multiplied by the dollar price of domestic expenditure **ph** for each bloc:

e.g. **_Y_EU = ph_EU * Y_EU** income of Europe in current dollars

International trade and other external transactions

International transactions denoted by a **$** suffix are measured in terms of world purchasing power. The deflator used is the deflator for world expenditure aggregated over all blocs in purchasing power parity terms. The value of this deflator is set to 1 in the base year (2005) to facilitate comparison of **$** variables with current price series.

e.g. **X$_CN = _X_CN/phw** China's exports (international value)

The real exchange rate **rx** for each bloc is defined as the ratio betwen the local price deflator **ph** and the world price deflator **phw**. Thus international values may be converted to domestic purchasing power by dividing by the real exchange rate:

e.g. **rx_CN = ph_CN/phw** China's real exchange rate

X_CN = X$_CN/rx_CN China's exports (domestic value)

The latter figure **X_CN** represents the buying power of China's exports in terms of goods and services within China. This is considerably larger than the buying power of the same exports in terms of globally-consumed goods and services **X$_CN** which, taking an average for the world as a whole, are more expensive than in China.

Conversely the income of each bloc, normally measured in domestic purchasing power, is converted to world purchasing power by multiplying by the real exchange rate.

e.g. **Y_IN** India's income (domestic purchasing power)

Y$_IN = Y_IN * rx_IN India's income (world purchasing power)

The definitions above imply that the weighted average real exchange rate for the world as a whole is a constant (equal to the base-year value of the world expenditure deflator before the latter is set to 1). Thus with **n** blocs there are only **n-1** degrees of freedom for real exchange rates just as there are only **n-1** degrees of freedom for nominal exchange rates.

The 'volume' of exports and imports measured at base-year prices and market exchange rates is denoted by suffix 0:

e.g. **XE0_WA** West Asia's energy exports at base-year international prices.

The contribution of West Asia's energy exports to West Asia's GDP measured in constant ppp units is given by

XE0_WA/pp0_WA

where **pp0_WA** is the base-year purchasing-power adjustment for West Asia.

World exports are equal to world imports in value and volume terms for each commodity group and for goods and services as a whole:

e.g.
```
XW$ = MW$ = sum(X$_?) = sum(M$_?)
XW0 = MW0 = sum(X0_?) = sum(M0_?)
XAW$ = MAW$ = sum(XA$_?) = sum(MA$_?)
etc.
```

Similar identities hold for other components of balance of payments current and capital accounts and for cross-border holdings of assets and liabilities when the latter are valued in terms of the same global purchasing-power standard. But when international transactions and assets are valued in terms of their purchasing power within each country or country group, it is no longer true that totals balance out.

e.g. **CAW = sum(CA$_?/rx_?)** where **CA** represents the current account surplus (+) or deficit (-), is not equal to zero, although the same total valued in world purchasing power **CAW$ = sum(CA$_?)** is equal to zero for the world as a whole.

One implication is that when excess savings are transferred from one bloc to another, the value of the savings in terms of purchasing power in each bloc is not the same. Thus if savings are transferred from a low-income bloc where goods and services are cheap to a high-income bloc where goods and services are more expensive, the volume of expenditure foregone in the low-income bloc is greater than the volume of additional expenditure in the high-income bloc. Evidently the reverse is the case when savings are transferred from high-income to low-income blocs.

Prices and rates

Prices, rates of inflation, interest rates and exchange rates are denoted with lower-case symbols:

e.g. **pvi_EU** Europe's average local currency cost inflation rate (% p.a.)

is_EU Europe's average local ccy. short-term interest rate (% p.a.)

irsw world average 'real' short-term interest rate (% p.a.)

Values for each bloc are weighted averages of values for countries in the bloc.[1]

[1] Expenditure weights are used to average domestic price inflation and nominal interest rates across countries within each bloc. GDP weights are used to average cost inflation. Implicitly, bloc-level real interest rates are expenditure-weighted averages of rates in each country.

Assets and liabilities

Assets and liabilities at end year are converted from current dollars to real values by dividing by the period expenditure deflator (the same deflator that is used for income and expenditure in the period). The real value of assets and liabilities may rise or fall from year to year on account of changes in their price or nominal value in the currency in which they are quoted or denominated, as well as changes in the dollar exchange rate for that currency and changes in the purchasing power of the dollar as measured by the domestic or world expenditure deflator.

Holding gains measured in real terms are denoted with the prefix **H** and cash flows (net acquisition or sale) of assets are denoted with the prefix **I**. For example

AGF_US	US government investment in banks
HAGF_US	Holding gains or losses on US government investment in banks
IAGF_US	Net cash proceeds of US government transactions in bank liabilities

The relationship between stocks and flows may be written as

```
AGF_US = AGF_US(-1) + HAGF_US + IAGF_US
```

The valuation of assets and liabilities brought forward from the previous year is represented by a variable whose name begins with **rp**.

e.g.	**LG_IN**	India government debt at end-year
	rpfa_IN	valuation for prior-year assets
	LG_IN(-1)*rpfa_IN	value of debt brought forward
	ILG_IN	proceeds of debt issues less redemptions

End-year debt is equal to debt brought forward plus issues less redemptions:[2]

```
LG_IN = LG_IN(-1)*rpfa_IN + ILG_IN
```

External assets and liabilities are treated in a similar fashion using variable names suffixed with **$** to indicate an international value:

e.g.	**R$_JA**	Japan's exchange reserves at end year
	rpr$_JA	valuation ratio for exchange reserves brought forward
	IR$_JA	net purchases less sales of exchange reserves

Actual and simulated values

Historical series (extended to include current-year estimates) are designated by the variable name and bloc code with no additional suffix. Baseline series projected into the future by the model have suffix **_0**. Series simulated in alternative scenarios have the relevant scenario suffix, e.g. **_1** or **_3a**.

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[2] Holding gains or losses may occur on purchases and sales in the current year. Therefore the interpration of **rpfa** given here is not strictly precise. A more accurate definition would be that **(rpfa-1)** represents the ratio of holding gains and losses on current-year transactions and prior-year assets to the real value of prior-year assets at the end of the preceding year. In general the valuation **rp** is defined such that holding gains or losses **H = (rp-1)*A(-1)** where **A** represents the end-year value of an asset.

Residuals and instruments

Values of behavioural variables simulated by the model may be influenced by residual terms or 'instruments' that modify the typical pattern of behaviour. In GPM simulations instruments are specified as bloc-specific intercept shifts in behavioural equations, denoted by the variable name and bloc code with suffix **_ins**. Values of **_ins** series may be defined exogenously or set by policy rules that depending on the rule may also create series suffixed with **_tar** (target values) or **_sav** (saved values of instruments).

Example: primary energy production in Europe (million tons of oil equivalent)

ED_EU	historical values and current year estimates
ED_EU_0	values in the baseline projection
ED_EU_1	values in scenario 1
ED_EU_ins	instrument (may take different values in each scenario)

Appendix B Real values, volumes and price deflators

Series	*Description*	*Source or formula*
1. Expenditure and expenditure deflators		
APT	GDP in current dollars	`databank`
APT1	GDP at current purchasing power parity	`databank`
AXD	domestic expenditure in current dollars	`databank`
AXD0	domestic expenditure at Y2005 prices	`databank`
PXA	index of world prices for primary commodities	`databank`
PXE	index of world price of oil	`databank`
Model variables - bloc level		
pp0	base-year purchasing power parity adjustment	`APT(base)/APT1(base)`
H	domestic expenditure, Y2005 purchasing power	`AXD0/pp0`
ph	domestic expenditure deflator	`AXD/H = AXD.pp0/AXD0`
_H	domestic expenditure in current dollars	`H.ph`
Model variables - global		
HW	world expenditure, Y2005 purchasing power	`sum(H)`
pp0w	base-year PPP adjustment	`sum(AXD(base))/sum(H(base))`
phw	world expenditure deflator	`sum(AXD)/(pp0w.sum(H))`
paw	world price of primary commodities, Y2005 world value	`PXA/phw`
pew	world price of oil, Y2005 world value	`PXE/phw`
2. Real exchange rate, current account, national income and GDP		
APT0	GDP at Y2005 prices	`databank`
AXX	exports in current dollars	`databank`
AXX0	exports at Y2005 prices	`databank`
AXM	imports in current dollars	`databank`
AXM0	imports at Y2005 prices	`databank`
BCA	current account in dollars	`databank`
Model variables - bloc level		
rx	real exchange rate	`ph/phw`
CA$	current account, Y2005 world value	`BCA/phw`
_CA	current account in current dollars	`CA$.phw`
TB$	trade balance, Y2005 world value	`(AXX-AXM)/phw`
TB0	net exports at Y2005 prices	`TB0 = AXX0-AXM0`
BIT$	balance on income and transfers, Y2005 world value	`CA$ - TB$`
Y	national income, Y2005 purchasing power	`(AXD+BCA)/ph`
V	GDP volume, Y2005 purchasing parity	`APT0/pp0`
VV	expenditure on GDP	`H + TB$/rx`
tt	terms of trade effect (ratio of GDP value to volume)	`(H + TB$/rx)/V`

Bloc level theorems		

T1 Income, domestic expenditure and the current a/c		`H = C + IP + IV + G`
		`Y = H + CA$/rx`
		`= H + TB$/rx + BIT$/rx`

T2 GDP, expenditure and net export volume		`V = H + TB0/pp0` `VV = H + TB$/rx`
T3 Income, GDP and the terms of trade		`Y = V.tt + BIT$/rx`
Theorem - world level		
T4 Weighted average real exchange rate		`sum(H.rx)/sum(H) = pp0w`

Proof	`H.rx = H.ph/phw`
	`= AXD.pp0w.sum(H)/sum(AXD)`
	`sum(H.rx) = pp0w.sum(H)`
		`definition of rx`
		`defns of ph and phw`
		`sum over blocs`

3. Inflation and nominal exchange rate appreciation		
APT3	GDP in domestic currency units	`(databank - internal)`
AXD3	domestic expenditure in domestic currency units	`(databank - internal)`
PPT	cost of constant dollar GDP in domestic currency units	`APT3/APT0`
PXD	price of constant dollar domestic expenditure in domestic currency units	`AXD3/AXD0`
RXN	exchange rate - dollars per domestic currency unit	`APT/APT3 = AXD/AXD3`
Model variables - bloc level		
pvi	domestic cost inflation (% p.a.)	`100(PPT/PPT(-1) - 1)`
pi	domestic price inflation (% p.a.)	`100(PXD/PXD(-1) - 1)`
rxna	nominal exchange rate appreciation (% p.a.)	`100(RXN/RXN(-1) - 1)`
Bloc level theorems		
T5 Price inflation, cost inflation and the terms of trade		`(1+pi/100) = (1+pvi/100)` `.tt(-1)/tt`

Proof	`PXD/PPT = (AXD/APT).(APT0/AXD0)`
	`= ph.V /(AXD+AXX-AXM)`
	`= V/(H + TB$/rx) = 1/tt`
		`defns of PPT, PXD and RXN`
		`defns of ph,V and APT`
		`defns of H, rx and tt`

T6 Nominal exchange rate appreciation		`(1+rxna/100) = (ph/ph(-1)` `/(1+pi/100)`
Proof	`RXN.PXD = AXD/AXD0` `= ph/pp0`	`defns of RXN, PXD` `definition of ph`
Theorem - world level		
T7 Movement of global dollar prices relative to US prices and real exchange rate movements		`phw = phw(-1)*(1+pi_us/100)` `.rx_us(-1)/rx_us`

Appendix C Variables and identities

Note: variables with no suffix represent domestic purchasing power values, variables suffixed with **$** are measured in terms of world purchasing power, and variables suffixed with **0** denote volumes or quantities measured at base-year prices and exchange rates. Variables suffixed with **w** represent world indexes or totals.[3]

Model variables

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
AGF	Bank deposits and capital held by government at end year	$m	AGF = NGI + max(NGF,0)
AX$	External assets at end year	$m	AX$ = R$ + AXO$
AXO$	Other external assets at end year (adjusted)	$m	AXO$ = AXOU$.AXOW$ / AXOUW$
AXOU$	Other external assets at end year (unadjusted)	$m	AXOU$ = NXI$ + max(NXFU$,0)
BA$	Net exports of primary commodities	$m	BA$ = XA$ - MA$
BA0	Net exports of primary commodities at base-year prices (adjusted)	$m	BA0 = XA0 - MA0
BAU0	Net exports of primary commodities at base-year prices (unadjusted)	$m	behavioural [structural policy]
BE$	Net exports of fuels	$m	BE$ = XE$- ME$
BE0	Net exports of fuels at base-year prices	$m	BE0 = XE0 - ME0
BIT$	Net income and transfers from abroad	$m	BIT$ = XIT$ - MIT$
BITU$	Net income and transfers from abroad (unadjusted)	$m	behavioural [structural policy]
BM$	Net exports of manufactures	$m	BM$ = XM$ - MM$
BM0	Net exports of manufactures at base-year prices	$m	BM0 = XM0 - MM0
BS$	Net exports of services (adjusted)	$m	BS$ = XS$ - MS$
BS0	Net exports of services at base-year prices	$m	BS0 = XS0 - MS0
BSU$	Net exports of services (unadjusted)	$m	behavioural [structural policy]
C	Consumers expenditure	$m	C = YP - SP
CA$	Current account balance of payments	$m	CA$ = TB$ + BIT$
DNN	Natural increase in population	millions	exogenous
DP	Bank deposits at end-year	$m	DP = NFI + max(NFF,0)
EB	Energy balance	mtoe	EB = EX - EM
ED	Energy demand	mtoe	behavioural [structural policy]
EDW	World energy demand	mtoe	EDW = sum(ED)
EM	Primary energy imports	mtoe	behavioural [trade policy]

[3] Most variables are also available in current US dollars (variable name prefixed by **_**).

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
EP	Primary energy production	mtoe	behavioural [structural policy]
EPW	World energy production	mtoe	EPW = sum(EP)
EX	Primary energy exports	mtoe	EX = EP + EM - ED
G	Government expenditure	$m	behavioural [fiscal policy]
H	Domestic expenditure	$m	H = C + IP + IV + G
HAGF	Holding gain or loss on government investment in banks	$m	HAGF = R(-1).rpr$/rx + (LN(-1)+ LGF(-1)-DP(-1)).rpfa - AGF(-1)- lnbail.LN(-1).wln.rpfa
HAXO	Holding gain on other external assets	$m	HAXO = AXO$/rx - AXO$(-1)/rx(-1) - IAXO$/rx
HDP	Holding gain or loss on other sectors' investment and deposits with banks	$m	HDP = DP - DP(-1) - IDP
HKP	Holding gain or loss on capital stock at end year	$m	HKP = KP - KP(-1) - IP - IV
HLGO	Holding gain or loss on other government debt	$m	HLGO = LGO - LGO(-1) - ILGO
HLN	Holding gain or loss on bank lending	$m	HLN = LN - LN(-1) - ILN
HLX	Holding gain or loss on external liabilities	$m	HLX = LX$/rx - LX$(-1)/rx(-1) - ILX$/rx
HWP	Holding gain or loss on private wealth	$m	HWP = HKP + HDP - HLN + HLGO + HAXO - HLX
IAG	Government asset transactions	$m	IAG = IAGF + IAGO
IAGF	Government injections to banks	$m	IAGF = AGF - AGF(-1) - HAGF
IAGO	Other government asset transactions	$m	behavioural [financial policy]
IAXO$	Other external capital outflow	$m	IAXO$ = ILX$ - IR$ + CA$
IDP	Acquisition of bank deposits	$m	IDP = IR$/rx - IN + ILGF - IAGF
ILG	Net issues of government debt	$m	ILG = IAG – NLG
ILGF	Acquisition of government debt by banks	$m	ILGF = ILG – ILGO
ILGO	Non-bank acquisition of government debt	$m	ILGO = LGO - LGO(-1).rpfa
ILN	Net borrowing from banks	$m	ILN = LN - LN(-1).rpfa.(1-wln)
ILX$	Other external borrowing	$m	ILX$ = LX$ - LX$(-1).rplx$
im	Bond rate	% p.a.	behavioural [confidence]
IP	Private investment	$m	behavioural [confidence]
IR$	Net acquisition of exchange reserves	$m	IR$ = R$ - R$(-1).rpr$
irm	Real bond rate	% p.a.	irm= 100((1+im/100)/(1+pi/100)-1)
irs	Short term interest rate	% p.a.	irs= 100((1+is/100)/(1+pi/100)-1)
is	Short-term interest rate	% p.a.	behavioural [monetary policy]
IV	Change in inventories	$m	behavioural [confidence]
KI	Produced capital stock at end year	$m	KI = KI(-1) - KID + IP + IV
KID	Capital consumption	$m	rdp KI(-1)
KP	Value of capital at end year	$m	KP = pkp.KI
LG	Government debt at end year	$m	LG = AGF – NGF
LGF	Government debt held by banks at end year	$m	LGF = LG - LGO
LGO	Non-bank holdings of government	$m	behavioural [monetary policy]

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
	debt at end year		
LN	Bank loans outstanding at end year	$m	`LN = DP - NFF`
lnbail	Government bail-out losses as proportion of abnormal loan write-offs by banks	ratio	`constant [assumption]`
lpa	Domestic impact of world price of primary commodities	log	`lpa = 0.3log(paw/rx) + 0.7lpa(-1)`
lped	Demand impact of world price of oil	log	`lped = 0.3 log(pew/(rx(pewmax-pew))) + 0.7 lped(-1)`
lpep	Production impact of world price of oil	log	`lpep = 0.15 log(pew/(rx(pewmax-pew))) + 0.85 lped(-1)`
LX$	External liabilities at end year	$m	`LX$ = AXOU$ - NXFU$`
M$	Imports of goods and services	$m	`M$ = MA$ + ME$ + MM$ + MS$`
M0	Import of goods and services at base-year prices	$m	`M0 = MA0 + ME0 + MM0 + MS0`
MA$	Imports of primary commodities	$m	`behavioural [price behaviour]`
MA0	Imports of primary commodities at base-year prices (adjusted)	$m	`MA0 = MAU0.XAW0/MAUW0`
MAU0	Imports of primary commodities at base-year prices (unadjusted)	$m	`MAU0 = XA0 - BAU0`
ME$	Imports of energy products	$m	`behavioural [price behaviour]`
ME0	Imports of energy products at base-year	$m	`behavioural [product mix]`
mh	Import content of domestic expenditure	ratio	`mh = M0/(pp0.H + vx.X0)`
MIT$	Income paid abroad	$m	`MIT$ = XITU$ - BITU$`
MM$	Imports of manufactures	$m	`behavioural [trade policy]`
MM0	Imports of manufactures at base-year prices (adjusted)	$m	`MM0 = MMU0.XMW0/MMUW0`
MMU0	Imports of manufactures at base-year prices (unadjusted)	$m	`behavioural [price behaviour]`
MS$	Imports of services	$m	`behavioural [trade policy]`
MS0	Imports of services at base-year prices (adjusted)	$m	`MS0 = MSU0.XSW0/MSUW0`
MSU0	Imports of services at base-year prices (unadjusted)	$m	`behavioural [price behaviour]`
N	Total population	millions	`N = N(-1) + DNN + NIM`
NCP	Child population	millions	`exogenous`
NE	Employment (full-time equivalent)	millions	`behavioural [labour market]`
NFF	Bank deposits less loans at end year	$m	`NFF = R$/rx + LGF + - AGF`
NFI	Covered bank lending	$m	`behavioural [confidence]`
NGF	Government investment and deposits with banks less outstanding debt at end year	$m	`NGF = NLG + AGF(-1) + HAGF - IAGO - LG(-1).rpfa`
NGI	Covered government debt	$m	`behavioural [monetary policy]`

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
NIM	Net migration (adjusted)	millions	`NIM = NIMU + NIMUW*(NIMU - abs(NIMU))/(sum(abs(NIMU)) - NIMUW)`
NIMU	Net migration (unadjusted)	millions	`behavioural [labour market]`
NIT$	Net income and transfers (adjusted)	$m	`NIT$ = min(XIT$, MIT$)`
NITU$	Net income and transfers (unadjusted)	$m	`behavioural [external policy]`
NLG	Government net lending	$m	`NLG = YG - G`
NLP	Private net lending	$m	`NLP = SP - IP - IV`
NOP	Elderly population	millions	`exogenous`
NUR	Urban population	millions	`behavioural [trend]`
NWP	Working age population	millions	`NWP = N - NCP - NOP`
NX$	External position	$m	`NX$ = R$ + NXF$`
NXF$	External position at end year excluding exchange reserves (adjusted)	$m	`NXF$ = AXO$ - LX$`
NXFU$	External position at end year excluding exchange reserves (unadjusted)	$m	`NXFU$ = CA$ - IR$ + AXO$(-1) .rpaxou$ - LX$(-1).rplx$`
NXI$	Covered external position excluding exchange reserve transactions	$m	`behavioural [confidence]`
NXN$	Covered external position including exchange reserve transactions	$m	`NXN$ = min(R$ + AXO$, LX$)`
paw	World price of primary commodities	index	`behavioural [global markets]`
paw$	World dollar price of primary commodities	index	`paw$ = paw.phw`
pewmax	Oil price ceiling	index	`constant (assumed level at which demand and supply elasticities become infinite)`
pew	World price of oil	index	`market-clearing price (equalizes EDW and EPW)`
pew$	World dollar price of oil	index	`pew$ = pew.phw`
ph	Dollar price of domestic expenditure	ratio	`ph = rx.phw`
phd	Domestic price index	index	`phd = phd(-1)(1+pi/100)`
phw	World dollar price of expenditure	ratio	`phw = phw(-1).(1+pi_us/100). rx_us(-1)/rx_us`
pi	Domestic currency price inflation	% p.a.	`pi = 100((1+pvi/100).tt(-1)/tt-1)`
piw	World average domestic currency price inflation	% p.a.	`piw = sum(pi.H)/HW`
piw$	World dollar price inflation	% p.a.	`piw$ = 100 (phw/phw(-1) - 1)`
pkp	Price of capital (ratio of value of capital including land to produced capital stock)	deflator	`behavioural [confidence]`
pmm$	Price of imports of manufactures	deflator	`ppm$ = MM$ / MM0`
pmm0	Average supplier price for imports of manufactures	deflator	`ppm0 = sum(sxm*(XM$/XM0)*(XM0(-1)/XM$(-1))`
pp0	Base-year ppp adjustment	ratio	`constant`
pp0w	World base-year ppp adjustment	ratio	`constant`

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
pvd	Domestic cost index	index	`pvd = pvd(-1)(1+pvi/100)`
pvi	Domestic cost inflation	% p.a.	`behavioural [supply, incomes policy]`
pxm$	Price of exports of manufactures	index	`pxm$ = XM$ / XM0`
R$	Exchange reserves at end year	$m	`behavioural (monetary policy)`
rmlx$	Ratio of exchange reserves to imports and external liabilities	%	`rmlx$ = 100 R$/(M$ + LX$)`
rpax$	Valuation ratio for external assets brought forward	$m	`rpax$ = rpr$ * r$(-1) + rpaxo$ * axo$(-1))/(r$(-1)+ axo$(-1))`
rpaxo$	Valuation ratio for other external assets brought forward (adjusted)	$m	`(AXO$-IAXO$)/AXO$(-1)`
rpaxou$	Valuation ratio for other external assets brought forward (unadjusted)	$m	`behavioural [price movements]`
rpfa	Valuation ratio for domestic financial assets brought forward	ratio	`rpfa = 1/(1+spvi) [assumption]`
rpkp	Valuation ratio for capital stock brought forward	ratio	`rpkp = pkp/pkp(-1)`
rplgo	Valuation ratio for non-bank holdings of government debt brought forward	ratio	`rplgo = slgx.ph(-1)/ph + (1-slgx).rpfa`
rplx$	Valuation ratio for external liabilities brought forward	ratio	`behavioural [price movements]`
rpr$	Valuation ratio for exchange reserves brought forward	ratio	`behavioural [price movements]`
rrf	Bank reserves as percent of lending	%	`rrf = 100 LGF/LN`
rx	Real exchange rate (adjusted)	ratio	`rx = rxu pp0w.HW/sum(H.rxu)`
rxd	Nominal exchange rate	index	`rxd = rxd(-1)(1+rxna/100)`
rxna	Nominal exchange rate appreciation	% p.a.	`rxna = 100((ph/ph(-1)) /(1+pi/100)-1)`
rxu	Real exchange rate (unadjusted)	ratio	`behavioural [monetary policy, confidence]`
slgx	Proportion of government debt financed in foreign currency	ratio	`slgx = 1 - log(1+YR)/2 [assumption]`
SP	Private saving	$m	`behavioural [confidence]`
spvi	Inflation indicator	log	`spvi = log(-0.718 + 3.436(1+pvi/100) /(2+pvi/100))`
sxm	Market share of exports of manufactures in imports of each destination bloc (adjusted)	ratio	`sxm = sxmu / sum(sxmu)`
sxmm	Percent share of world exports of manufactures	%	`sxmm = 100 XM$ / MMW$`
sxmu	Market share of exports of manufactures in imports of each destination bloc (unadjusted)	ratio	`behavioural [trade policy]`
TB$	Trade balance	$m	`TB$ = X$ - M$`
TB0	Trade balance at base year prices	$m	`TB0 = X0 - M0`

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
tt	Terms of trade effect	ratio	`tt = (H+TB$/rx) /(H+TB0/pp0)`
ucx	Unit cost of exports	ratio	`ucx = 2 mh M$/M0 + (rx H + X$-M$)(1-2 mh)/(pp0 V)`
V0	GDP at base-year exchange rates	$m	`V0 = V.pp0`
V	GDP volume	$m	`V = H + TB0/pp0`
VN	GDP per capita	$	`VN = V / N`
VNE	GDP per employed person	$	`VNE = V / NE`
VT	Productive capacity	$m	`VT = 1.05 movav(V,6). (V/V(-6))^0.3`
VV	Domestic purchasing power of GDP	$m	`VV = H + TB$/rx`
VV$	External purchasing power of GDP	$m	`VV$ = H*rx + TB$`
vx	Import content of exports relative to import content of domestic expenditure	ratio	`vx = 2 + (X0-M0)/(pp0.V) [assumption]`
wln	Write-off rate for bank loans	% p.a.	`exogenous [confidence]`
WLNA	Lagged loan write-offs	$m	`WLNA = 0.8 LN(-1).wln.rpfa + 0.2 WLNA(-1)`
WP	Private wealth at end-year	ratio	`WP = KP + LGO-AGO + DP-LN + (AXO$-LX$)/rx`
X$	Exports of goods and services	$m	`X$ = XA$ + XE$ + XM$ + XS$`
X0	Exports of goods and services at base-year prices	$m	`X0 = XA0 + XE0 + XM0 + XS0`
XA$	Exports of primary commodities (adjusted)	$m	`XA$ = XAU$.MAW$/XAUW$`
XA0	Exports of primary commodities at base-year prices	$m	`behavioural [trade policy]`
XAU$	Exports of primary commodities (unadjusted)	$m	`behavioural [price behaviour]`
XE$	Exports of energy products	$m	`XE$ = XEU$.MEW$/XEUW$`
XE0	Exports of energy products at base-year prices (adjusted)	$m	`XE0 = XEU0.MEW0/XEUW0`
XEU$	Exports of energy products (unadjusted)	$m	`behavioural [price behaviour]`
XEU0	Exports of energy products at base-year prices (unadjusted)	$m	`behavioural [product mix]`
XIT$	Income and transfers from abroad (adjusted)	$m	`XIT$ = XITU$.MITW$/XITUW$`
XITU$	Income and transfers from abroad (unadjusted)	$m	`XITU$ = NITU$ + max(BITU$, 0)`
XM$	Exports of manufactures	$m	`XM$ = sum(sxm MM$)`
XM0	Exports of manufactures at base-year prices	$m	`behavioural [price behaviour]`
XS$	Exports of services (adjusted)	$m	`XS$ = XSU$.MSW$/XSUW$`
XS0	Exports of services at base-year prices	$m	`behavioural [price behaviour]`
XSU$	Exports of services (unadjusted)	$m	`XSU$ = BSU$ + MS$`

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
Y	National income (domestic purchasing power)	$m	`Y = H + CA$/rx`
Y$	National income (international purchasing power)	$m	`Y$ = Y / rx`
YG	Government net income	$m	`behavioural [fiscal policy]`
YN	Income per capita	$m	`YN = Y / N`
YP	Private disposable income	$m	`YP = Y - YG`
YR	Relative income per capita	$m	`YR = YN / YNW`

Additional variables for policy evaluation

Variables listed below are calculated after solution of the core model. In addition to these variables, many growth rates and ratios are computed for display in graphs. Growth rates have the prefix D before the variable name and ratios have the name of the denominator after the name of the numerator.

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
GY	Population-weighted Gini coefficient for distribution of income between blocs	index	`computed on blocs in ascending sequence by income per capita`
psbdyn	bloc performance measure for per capita income growth	index	`psbdyn = movav(10/(1+0.3 max(movav(DYN(-1), pslag)-DYN,0)), psmav)`
psbnar	bloc performance measure for activity rate	index	`psbnar = movav(10/(1+0.5 max( movav(nar(-1),pslag)-nar,0)), psmav)`
psbpi	bloc performance measure for inflation	index	`psbpi = movav(10/(1+0.1 max(pi-movav(pi(-1), pslag), 0)), psmav)`
psbrx	bloc performance measure for exchange rate stability	index	`psbrx = movav(10/(1+10*abs( log(rx) - movav(log(rx(-1)),pslag)), psmav)`
psbt	overall bloc performance measure	index	`psbt = 1/(sqrt(pbpi/psbpi`^{2} `+ pbdyn/psbdyn`^{2} `+ pbrx/psbrx`^{2} `+ pbnar/psbnar`^{2}`))`
pslag	bloc performance comparison basis (no of years)	years	`constant [assumption]`
psmav	smoothing (no of year)	years	`constant [assumption]`
pbdyn, pbnar, pbpi, pbrx	weights for overall bloc performance measure	fractions	`constant [assumption]`
psedw	global performance measure for energy use	index	`psedw = movav(10 /(1 + max(EDW - movav(EDW(-1),pslag),0)), psmav)`
psdxw	global performance measure for stability of export markets	index	`psdxw = movav(10/(1+100 abs( dlog(XW$)-movav(dlog(XW(-1), pslag)), psmav)`

Symbol	*Name*	*Units*	*Exogenous, behavioural or determined by identity*
pspaew	global performance measure for stability of commodity and oil prices	index	pspaew = movav(10/(1+abs(log(paw)-movav(log(paw(-1)), pslag)), psmav)
psynlw	global performance measure for catch-up of low income blocs	index	psynlw = movav(10*exp(10*(rylow/ movav(rylow(-1), pslag)-1))/ (1+exp(10*rylow/movav(rylow(-1), pslag)-1))), psmav)
pswt	overall global performance measure	index	pswt = 1/(sqrt(psed/psedw^2 + psdx/psdxw^2 + pspae/pspaew^2 + psynl/psynlw^2)
psed, psdx, pspae, psynl	weights for overall global performance measure	fractions	constant [assumption]
rylow	average income of bottom quartile as a fraction of global average income	ratio	rylow = sum(Q1,Y)NW/(sum(Q1,N)YW) where Q1 is the first quartile by population of between-bloc income distribution
TH_ED	Theil inequality coefficient for energy absorption	index	TH_ED = 100(1-exp(-sum(ED/EDW log(N/NW)))
TH_EP	Theil inequality coefficient for energy production	index	TH_EP = 100(1-exp(-sum(EP/EPW log(N/NW)))
TH_G	Theil inequality coefficient for government expenditure	index	TH_G = 100(1-exp(-sum(G/GW log(N/NW)))
TH_XM$	Theil inequality coefficient for exports of manufactures	index	TH_XM$ = 100(1-exp(-sum(XM$/XMW$ log(N/NW)))
TH_XS$	Theil inequality coefficient for exports of services	index	TH_XS$ = 100(1-exp(-sum(XS$/XSW$ log(N/NW)))
TH_Y	Theil inequality coefficient for income	index	TH_Y = 100(1-exp(-sum(Y/YW log(N/NW)))

Appendix D Behavioural equations

Notes:
(1) except where noted coefficients, intercepts and autocorrelations are estimated on data for 1980-2008
(2) graphs of actual and predicted values for 1978-2008: *predicted values are generated by dynamic simulation* using simulated results for lagged endogenous values and actual values for other variables. For the purposes of historical simulation values of constants and fixed effects are those estimated for 1980-2008.

SP Private savings d(SP/YP(-1))

	value	probability
unit root test	Fisher ADF 170.1	0.000

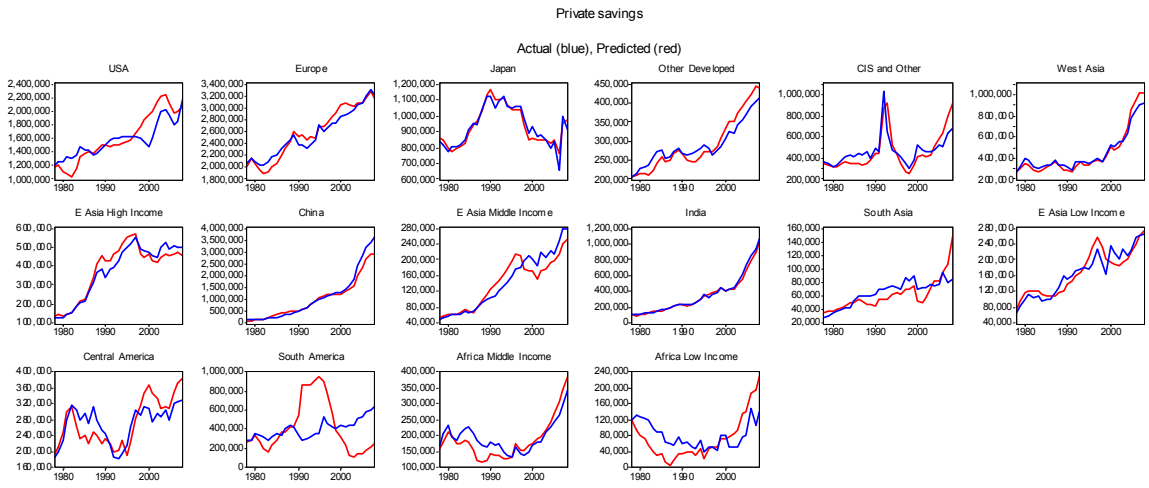
coefficients	coeff	t-stat	description
SP(-1)/YP(-2)	-0.200		error correction
d(YP)/YP(-1)	0.665	(17.2)	growth of private income
d(WP(-1))/WP(-2)	-0.008		wealth
spvi	0.066	(4.1)	inflation
irs(-1)/100	0.070		short-term interest rate

intercepts and ar(1) estimated on data for 1996-2008

statistics		value	t-stat		value	t-stat
	constant	0.025	(30.4)	residual ar(1)	0.066	(1.2)
	se	0.020				

fixed effects

CN	0.03212	JA	0.02740	EAM	0.02451	EAH	0.01648
EU	0.01421	WA	0.00516	CI	0.00262	OD	-0.00194
IN	-0.00422	AFM	-0.00441	AMM	-0.00888	EAL	-0.00949
US	-0.01148	ACX	-0.01298	SA	-0.03027	AFL	-0.03884

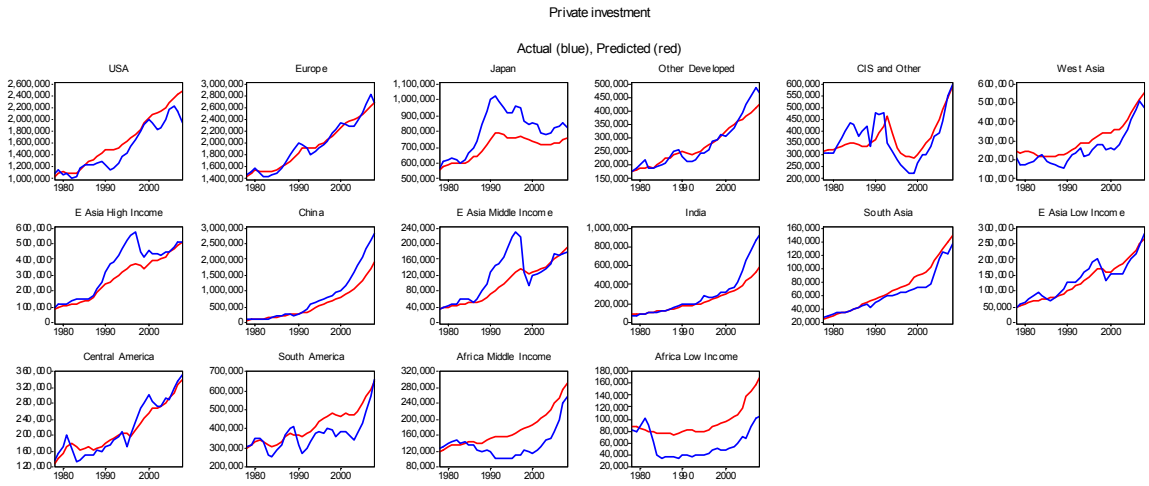


IP Private investment dlog(IP/V(-1)-0.05)

		value	probability
unit root test	Fisher ADF	193.9	0.000

coefficients		coeff	t-stat	description
	log(IP(-1)/V(-2)-0.05)	-0.057	(3.7)	error correction
	dlog(V)	0.500		GDP growth rate
	ILN(-1)/V(-1)	0.063	(1.5)	bank lending
	irm/100	-0.200		bond rate

statistics		value	t-stat		value	t-stat
	constant	-0.124	(4.0)	residual ar(1)	-0.057	(3.7)
	se	0.117				



IV Inventory changes d(IV/V(-1))

		value	probability
unit root test	Fisher ADF	145.9	0.000

coefficients

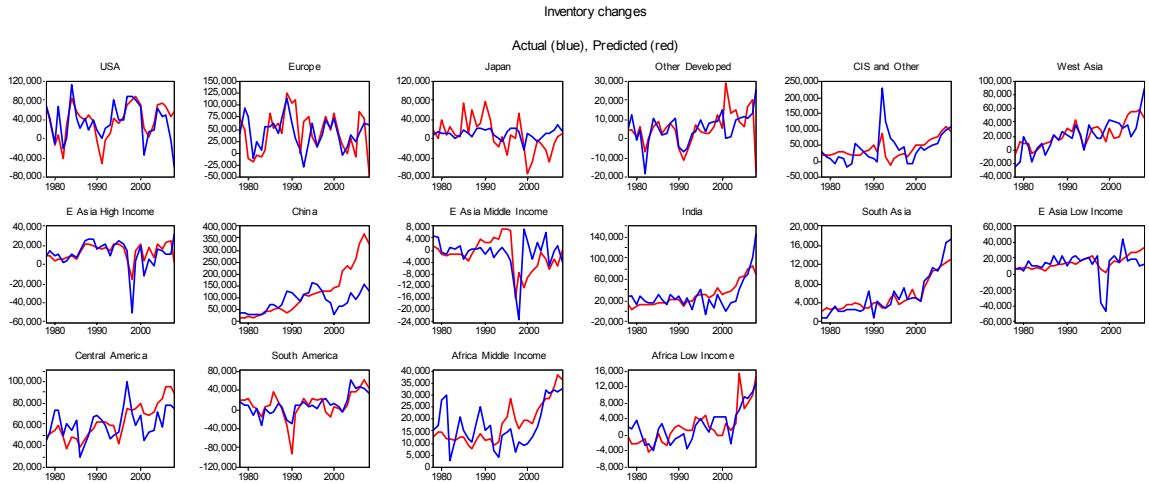
	coeff	t-stat	description
IV(-1)/V(-2)	-0.765	(11.4)	error correction
d(V)/V(-1)	0.178	(5.6)	GDP growth rate
ILN(-1)/V(-1)	0.050		bank lending
d(ILN/V(-1))	0.050		change in bank lending
irs/100	-0.013		short-term interest rate

intercepts and ar(1) estimated on data for 1996-2008

statistics		value	t-stat		value	t-stat
	constant	-0.001	(2.6)	residual ar(1)	0.219	(2.1)
	se	0.010				

fixed effects

ACX	0.02720	CI	0.00440	SA	0.00286	WA	0.00272
AFM	0.00190	IN	0.00164	JA	0.00094	AMM	0.00052
CN	-0.00312	EU	-0.00348	EAL	-0.00409	AFL	-0.00466
US	-0.00477	OD	-0.00486	EAH	-0.00528	EAM	-0.01191



NFI Covered bank lending dlog(1/(2.5/(NFI/Y(-1))-1))+4*WLNA/LN(-1)

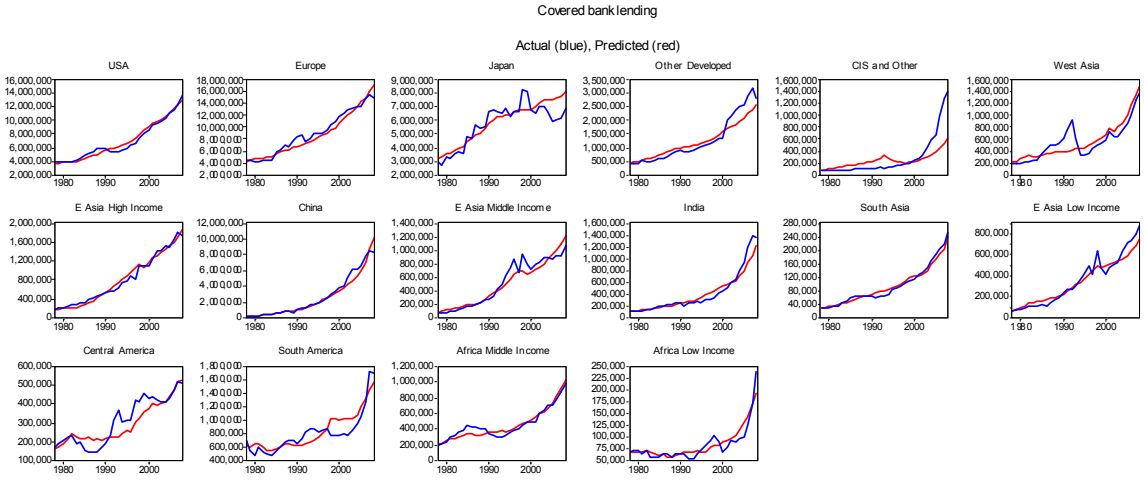
		value	probability
unit root test	Fisher ADF	279.3	0.000

coefficients	coeff	t-stat	description
log(1/(2.5/(NFI(-1)/Y(-2))-1))	-0.171	(3.4)	error correction
log(Y(-1))	0.096	(4.1)	national income
dlog(Y)	0.300		growth of national income
NFF/NFI(-1)	-0.012	(1.3)	liquidity
d(NFF)/NFI(-1)	0.034	(1.3)	increase in liquidity
d(LGF)/Y(-1)	1.371	(2.8)	government debt held by banks
(R$(-1)+NXI$(-1))/Y$(-1)	0.074	(2.9)	reserves & covered ext position

statistics	value	t-stat		value	t-stat
constant	-1.619	(4.3)	residual ar(1)	-0.171	(3.4)
se	0.166				

fixed effects

EAM	0.30599	JA	0.30539	OD	0.13854	CN	0.12419
AFM	0.05905	EAH	0.03401	EAL	0.02850	SA	-0.03562
WA	-0.05881	IN	-0.07257	US	-0.09666	AFL	-0.10679
AMM	-0.12579	EU	-0.13130	ACX	-0.13169	CI	-0.23644



pkp Real asset price dlog(pkp)

		value	probability
unit root test	Fisher ADF	195.6	0.000

coefficients

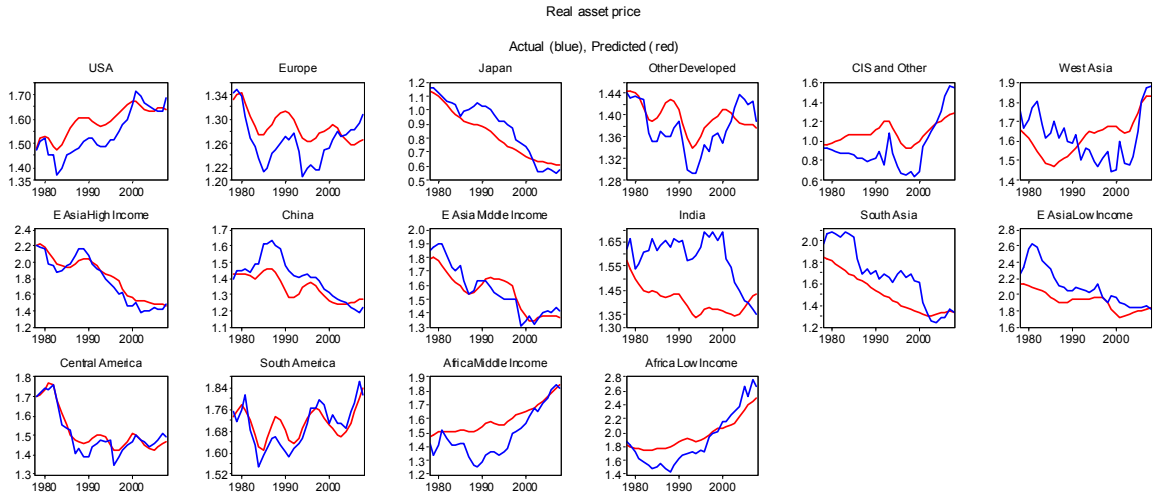
	coeff	t-stat	description
log(pkp(-1))	-0.029	(2.5)	error correction
dlog(pkp(-1))	0.292	(5.8)	momentum
log(V/VT)	0.500		capacity utilisation

statistics

	value	t-stat		value	t-stat
constant	0.021	(4.6)	residual ar(1)	-0.029	(2.5)
se	0.041				

fixed effects

AFL	0.01995	AFM	0.01122	AMM	0.01110	WA	0.00919
US	0.00918	EAL	0.00447	ACX	0.00278	OD	0.00174
EU	0.00159	CI	0.00137	EAM	-0.00634	IN	-0.00702
EAH	-0.00705	SA	-0.00807	CN	-0.01880	JA	-0.02530



YG Government income d(YG)/Y(-1)

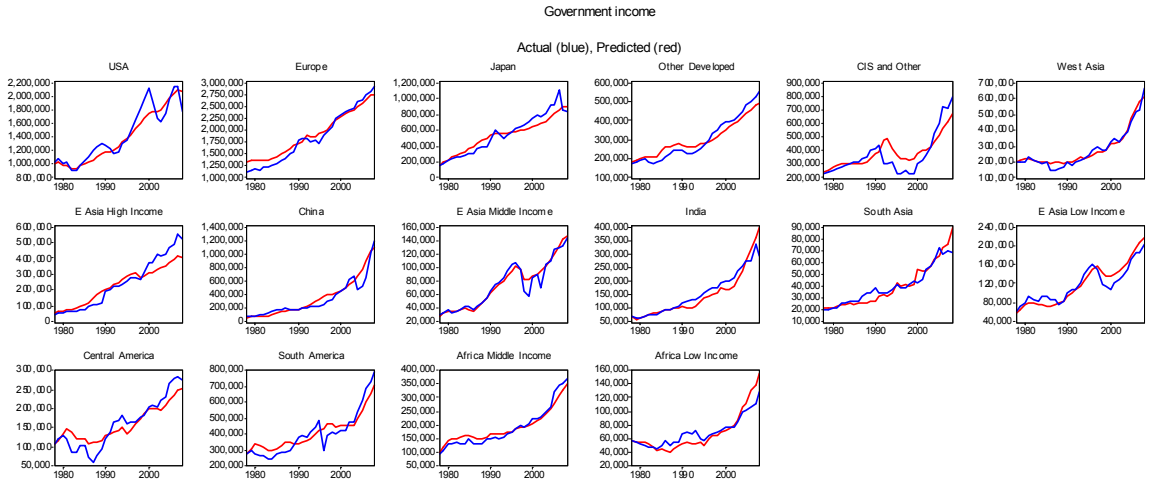
		value	probability
unit root test	Fisher ADF	258.8	0.000

coefficients	coeff	t-stat	description
YG(-1)/Y(-1)	-0.170	(4.1)	error correction
LG(-1)/Y(-1)	0.018	(3.3)	outstanding debt
d(Y)/Y(-1)	0.195	(8.3)	income growth
d(Y(-1))/Y(-1)	0.056	(3.4)	lagged income growth
irm(-1)*LG(-1)/(100*Y(-1))	-0.200		debt interest

statistics	value	t-stat		value	t-stat
constant	0.020	(3.0)	residual ar(1)	-0.170	(4.1)
se	0.015				

fixed effects

AFM	0.01230	CI	0.01133	OD	0.00901	AMM	0.00632
WA	0.00513	EU	0.00420	EAH	0.00392	EAM	-0.00033
JA	-0.00047	EAL	-0.00255	US	-0.00257	ACX	-0.00436
AFL	-0.00449	CN	-0.00570	IN	-0.01341	SA	-0.01832



G Government spending dlog(G)

		value	probability
unit root test	Fisher ADF	169.4	0.000

coefficients

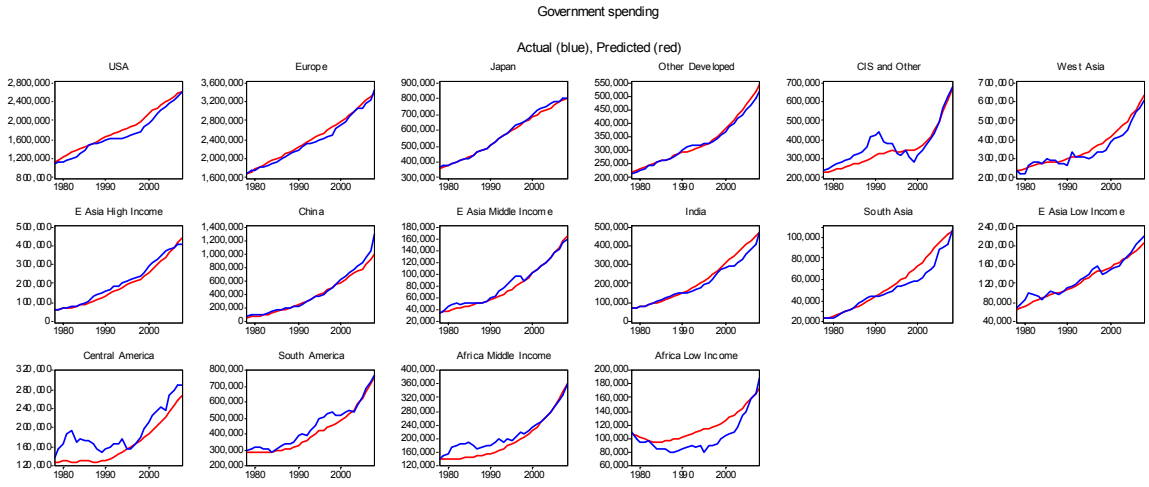
	coeff	t-stat	description
log(G(-1))	-0.030	(2.1)	error correction
dlog(YG)	0.064	(2.9)	increase in government income
YG(-1)/Y(-1)	0.342	(4.4)	government income
log(N(-1))	0.107	(3.1)	population
log(LG(-1)/Y(-1))	-0.032	(5.4)	outstanding debt
CA$(-1)/Y$(-1)	0.222	(2.6)	current account

statistics

	value	t-stat		value	t-stat
constant	-0.256	(2.0)	residual ar(1)	-0.030	(2.1)
se	0.042				

fixed effects

OD	0.15949	EAH	0.11908	JA	0.09231	EAM	0.08008
US	0.04917	ACX	0.03237	WA	0.00489	AFM	-0.00064
CI	-0.01386	AMM	-0.01807	EU	-0.02449	SA	-0.02917
EAL	-0.07881	AFL	-0.10113	IN	-0.10455	CN	-0.16669



NGI Covered debt dlog(NGI)

		value	probability
unit root test	Fisher ADF	234.6	0.000

coefficients

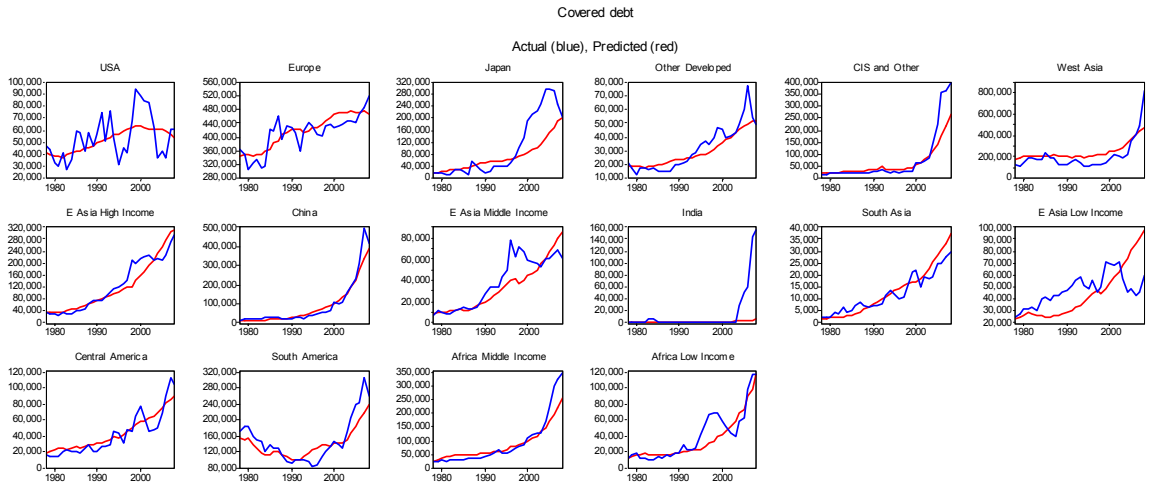
	coeff	t-stat	description
log(NGI(-1))	-0.124	(3.5)	error correction
log(R$(-1)/rx(-1))	0.100	(4.7)	exchange reserve
dlog(Y)	0.972	(3.2)	income growth

statistics

	value	t-stat		value	t-stat
constant	0.190	(1.0)	residual ar(1)	-0.124	(3.5)
se	0.406				

fixed effects

WA	0.13390	AFL	0.09813	AFM	0.08908	CI	0.08326
EAH	0.06504	EU	0.06287	AMM	0.05409	JA	0.04486
ACX	0.03881	EAL	0.01725	US	0.01021	OD	-0.01685
CN	-0.02514	EAM	-0.03517	SA	-0.23162	IN	-0.38873



IAGO Other govt asset transactions IAGO/Y(-1)

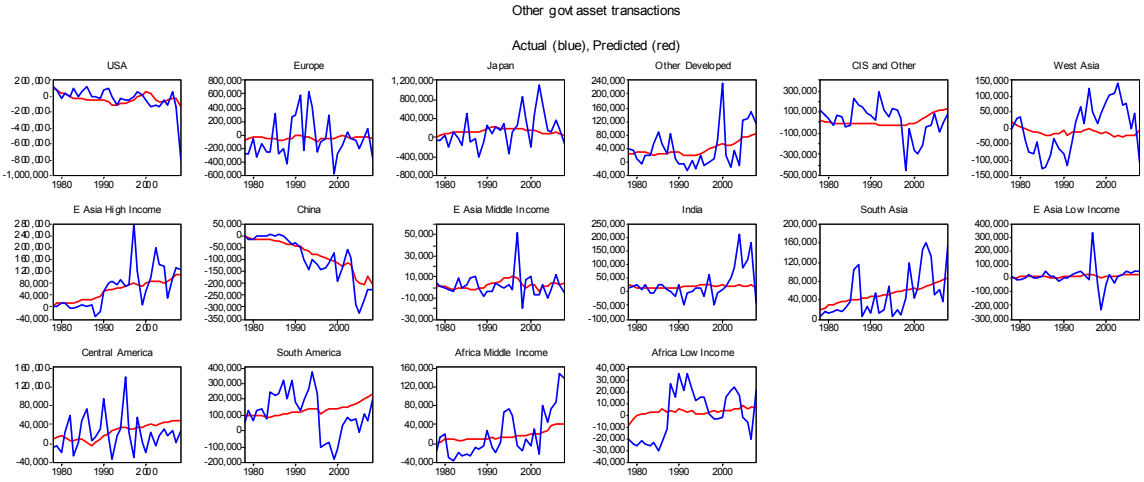
		value	probability
unit root test	Fisher ADF	136.8	0.000

coefficients		coeff	t-stat	description
	LG(-1)/Y(-1)	-0.044	(1.5)	outstanding debt
	NLG/Y(-1)	0.200		government balance

statistics		value	t-stat		value	t-stat
	constant	0.049	(3.3)	residual ar(1)	-0.044	(1.5)
	se	0.056				

fixed effects

SA	0.11104	AMM	0.03367	JA	0.03300	OD	0.01419
EAH	0.00649	IN	-0.00152	CI	-0.00160	AFM	-0.00227
EAL	-0.00459	AFL	-0.00602	ACX	-0.01015	EU	-0.02020
US	-0.02410	EAM	-0.02656	WA	-0.03086	CN	-0.07052



NE Employment dlog(1/((0.8-0.4)/(NE/(NWP(-1)+0.2*NOP(-1))-0.4)-1))

		value	probability
unit root test	Fisher ADF	100.5	0.000

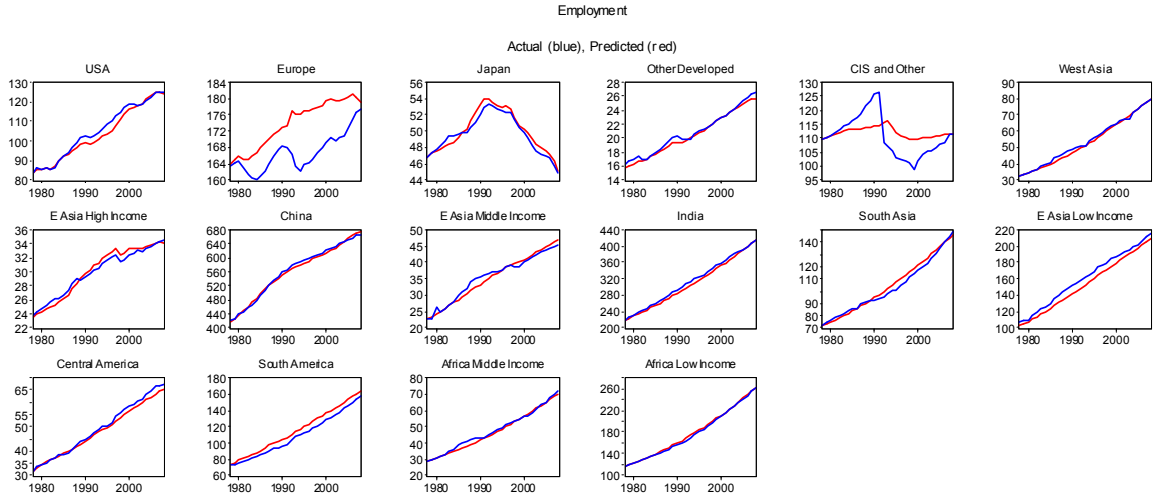
coefficients	coeff	t-stat	description
dlog(NUR(-1)/N(-1))	-0.635	(0.5)	urbanisation
YR(-1)*dlog(V)	0.552	(10.7)	GDP growth
YR(-1)*dlog(V(-1))	0.204	(5.2)	lagged GDP growth

intercepts and ar(1) estimated on data for 1996-2008

statistics		value	t-stat		value	t-stat
	constant	-0.033	(16.9)	residual ar(1)	0.031	(0.5)
	se	0.058				

fixed effects

AMM	0.05277	SA	0.04609	AFM	0.04575	AFL	0.03922
EAL	0.02855	ACX	0.02309	CI	0.01851	IN	0.01121
EU	0.00736	EAM	-0.00781	WA	-0.01982	OD	-0.02187
CN	-0.02341	JA	-0.05249	EAH	-0.06957	US	-0.07757



NIMU Net migration log((1 + NIMU/NE(-1))/(1 + NIM(-1)/NE(-2)))

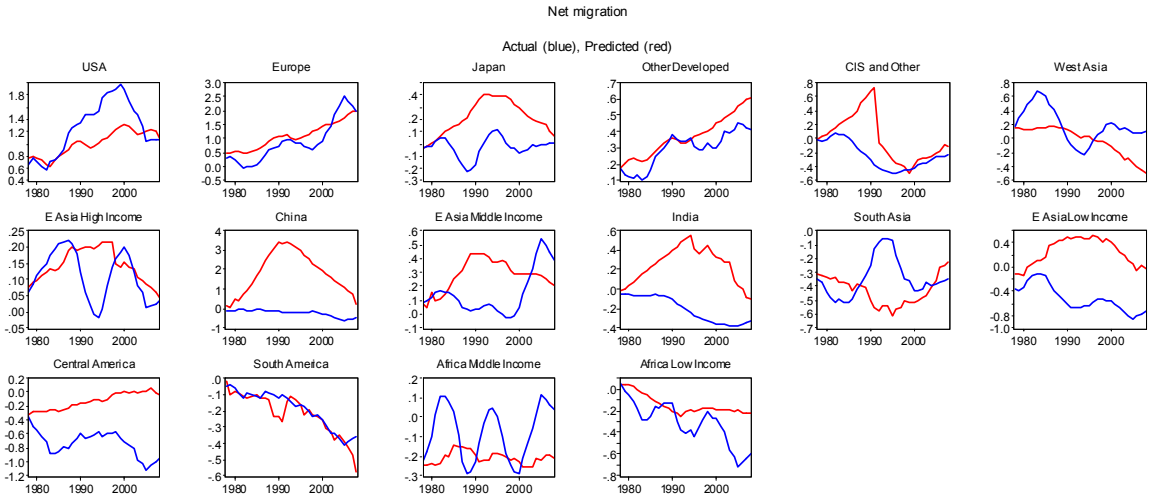
		value	probability
unit root test	Fisher ADF	183.5	0.000

coefficients	coeff	t-stat	description
dlog(NWP(-1))	0.020		working age population
dlog(NE)	0.040		employment growth

statistics	value	t-stat		value	t-stat
constant	-0.001	(25.3)	residual ar(1)	0.493	(8.3)
se	0.001				

fixed effects

JA	0.00116	EU	0.00114	CI	0.00090	OD	0.00047
US	0.00030	EAH	0.00017	CN	0.00008	ACX	-0.00008
EAM	-0.00026	IN	-0.00027	SA	-0.00036	EAL	-0.00037
AMM	-0.00052	AFM	-0.00053	AFL	-0.00065	WA	-0.00118



NUR Urban population dlog(1/(1/(NUR/N)-1))

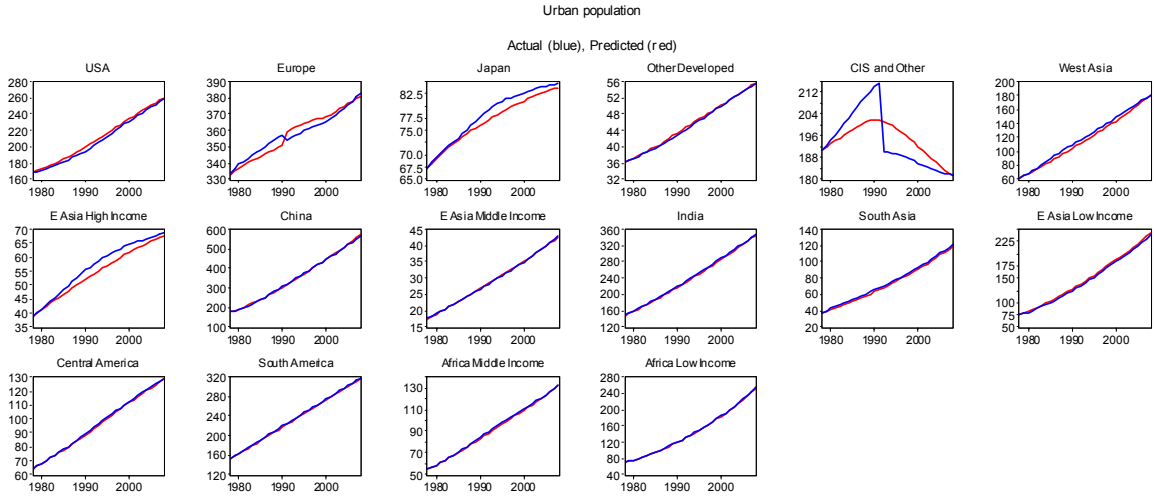
		value	probability
unit root test	Fisher ADF	190.0	0.000

coefficients		coeff	t-stat	description
	log(V(-1)/N(-1))	-0.000	(0.3)	GDP per capita

statistics		value	t-stat		value	t-stat
	constant	0.021	(2.6)	residual ar(1)	-0.000	(0.3)
	se	0.026				

fixed effects

CN	0.02192	EAL	0.01606	EAH	0.01312	AMM	0.01023
WA	0.00608	AFL	0.00286	EAM	0.00255	US	0.00064
SA	-0.00001	ACX	-0.00050	AFM	-0.00258	IN	-0.00689
OD	-0.00698	JA	-0.00786	EU	-0.01528	CI	-0.03335



LGO Non-bank holdings of govt debt dlog(1/(1/(LGO/LG)-1))

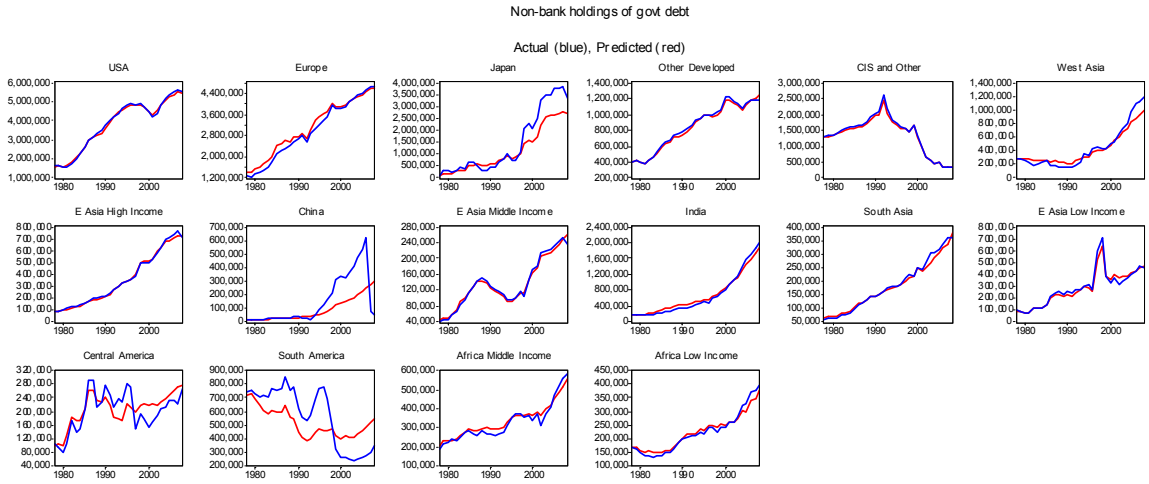
		value	probability
unit root test	Fisher ADF	206.3	0.000

coefficients	coeff	t-stat	description
log(1/(LG(-1)/LGO(-1)-1))	-0.099	(4.3)	error correction
dlog(DP(-1)/Y(-1))	0.060	(0.8)	non-bank liquidity

statistics		value	t-stat		value	t-stat
	constant	0.106	(4.1)	residual ar(1)	-0.099	(4.3)
	se	0.321				

fixed effects

EAM	0.14641	IN	0.12389	CI	0.11208	OD	0.07549
SA	0.06470	US	0.05248	AFL	0.03833	EAL	0.03376
AFM	0.01824	EAH	0.00897	ACX	-0.07091	EU	-0.07597
WA	-0.07855	JA	-0.12480	AMM	-0.15092	CN	-0.17319



is Short-term interest rate dlog(0.4+is/100)

		value	probability
unit root test	Fisher ADF	129.3	0.000

coefficients

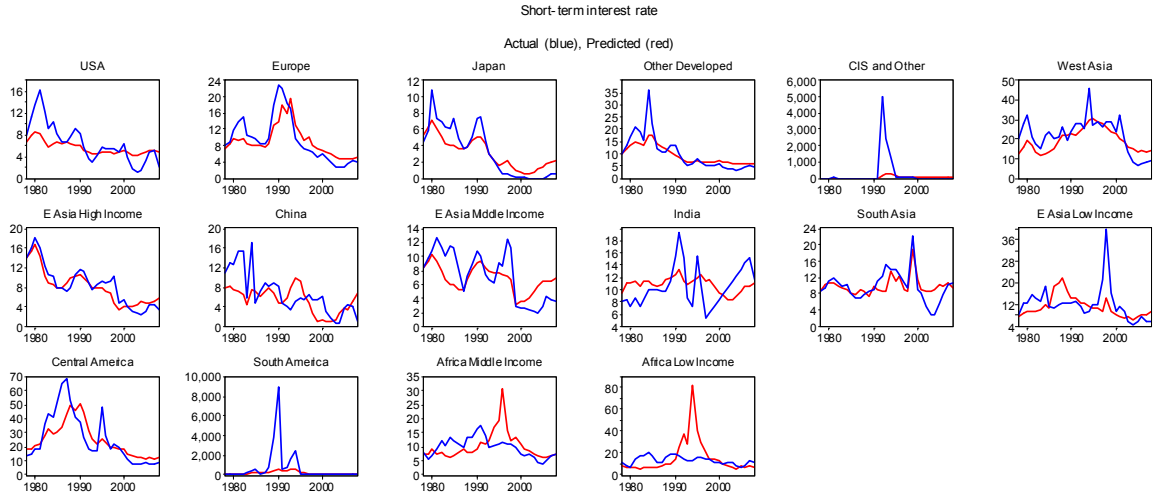
	coeff	t-stat	description
log(0.4+is(-1)/100)	-0.267	(4.3)	error correction
log(0.4+pi(-1)/100)	0.178	(3.4)	inflation
dlog(0.4+pi/100)	0.297	(5.4)	rate of change in inflation
log(V/VT)	0.439	(2.3)	capacity utilisation

intercepts and ar(1) estimated on data for 1996-2008

statistics		value	t-stat		value	t-stat
	constant	-0.065	(26.4)	residual ar(1)	0.038	(4.1)
	se	0.061				

fixed effects

AMM	0.03542	IN	0.02113	OD	0.01212	EU	0.00900
EAH	0.00838	WA	0.00638	US	0.00580	EAL	0.00343
JA	0.00275	EAM	0.00184	SA	-0.00019	ACX	-0.00037
AFL	-0.00627	CN	-0.01170	AFM	-0.01187	CI	-0.07585



im Bond rate log(0.4+im/100)

		value	probability
unit root test	Fisher ADF	50.3	0.021

coefficients

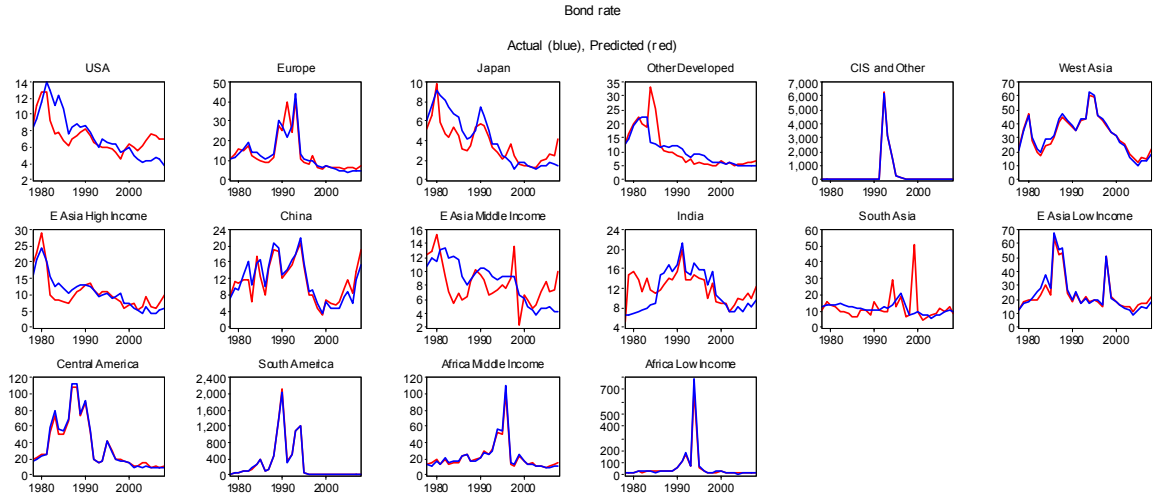
	coeff	t-stat	description
log(0.4+is(-1)/100)	0.055	(2.4)	short-term rate
dlog(0.4+is/100)	0.034	(2.1)	rate of change in short-term rate
log(0.4+pi(-1)/100)	0.930	(38.7)	inflation
dlog(0.4+pi/100)	0.939	(51.5)	rate of change in inflation

statistics

	value	t-stat		value	t-stat
constant	0.080	(6.5)	residual ar(1)	0.055	(2.4)
se	0.058				

fixed effects

CN	0.03266	CI	0.02432	EAL	0.02090	WA	0.01832
AFL	0.01606	EAH	0.01166	AFM	0.01084	ACX	0.00932
IN	0.00871	US	-0.00596	AMM	-0.00605	OD	-0.01108
EAM	-0.01625	EU	-0.01691	JA	-0.03213	SA	-0.06441



R$ Exchange reserves dlog(1/(1.5/(R$/(rx*Y(-1)))-1))

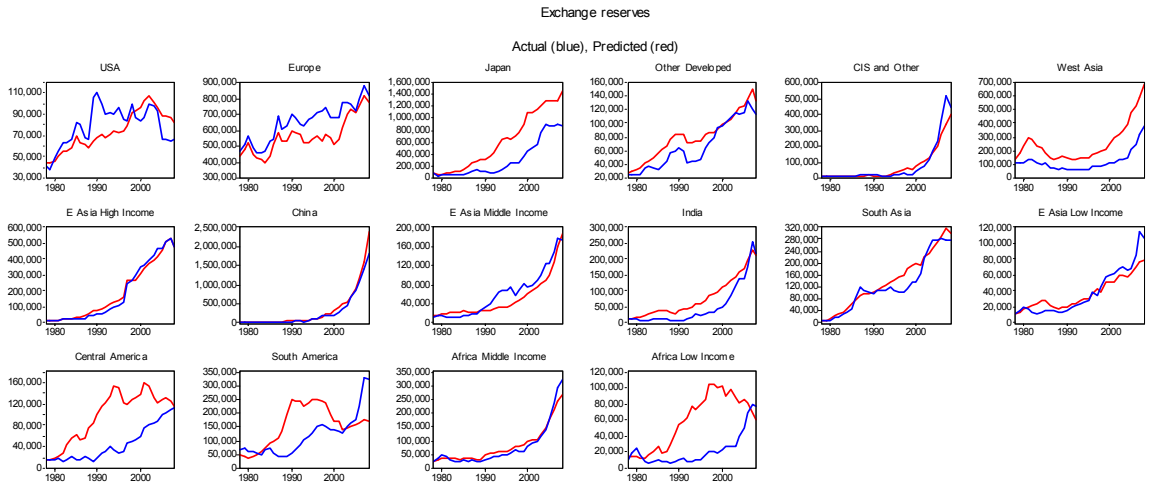
		value	probability
unit root test	Fisher ADF	226.3	0.000

coefficients	coeff	t-stat	description
log(rpr$)	0.647	(8.4)	valuation ratio
CA$/Y$(-1)	2.247	(4.6)	current account
CA$(-1)/Y$(-1)	-1.454	(3.2)	lagged c/a

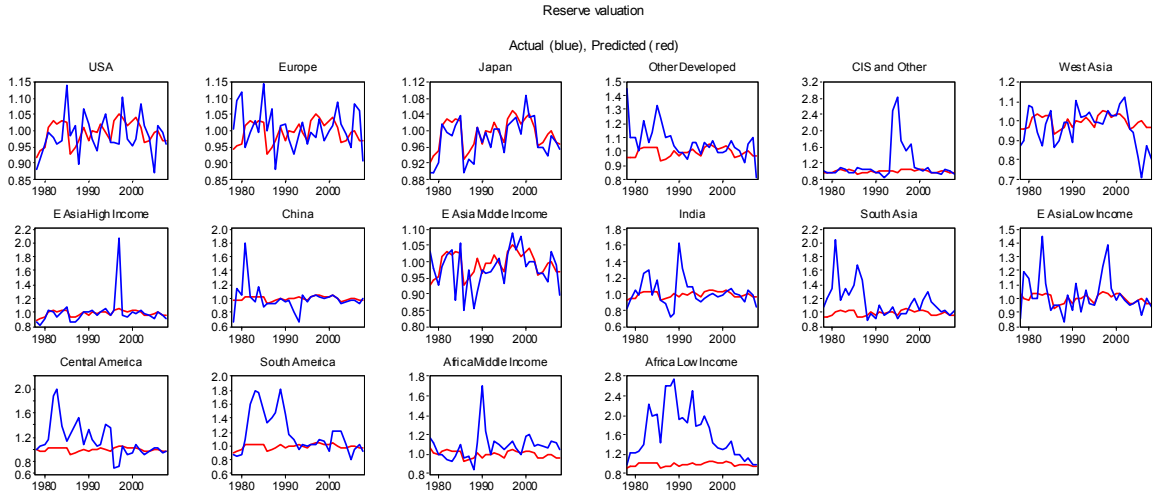
statistics		value	t-stat			value	t-stat
	constant	0.003	(0.3)	residual ar(1)		0.647	(8.4)
	se	0.193					

fixed effects

CN	0.12030	SA	0.08627	JA	0.06533	IN	0.05876
EAM	0.03674	US	0.01610	EAH	0.01269	EAL	0.00567
OD	-0.00436	AFM	-0.00949	CI	-0.01291	ACX	-0.01503
WA	-0.01654	EU	-0.02244	AMM	-0.08127	AFL	-0.23984



rpr$	Reserve valuation	log(rpr$)						
							value	probability
	unit root test					Fisher ADF	136.4	0.000
	coefficients					coeff	t-stat	description
					dlog(phw)	-0.725	(6.9)	global dollar inflation
	statistics		value	t-stat			value	t-stat
		constant	0.018	(1.5)		residual ar(1)	-0.725	(6.9)
		se	0.152					



NXI$ Covered external position dlog(1/(3.5/(NXI$/(rx*Y(-1)))-1))

	value	probability
unit root test	Fisher ADF	214.9	0.000

coefficients

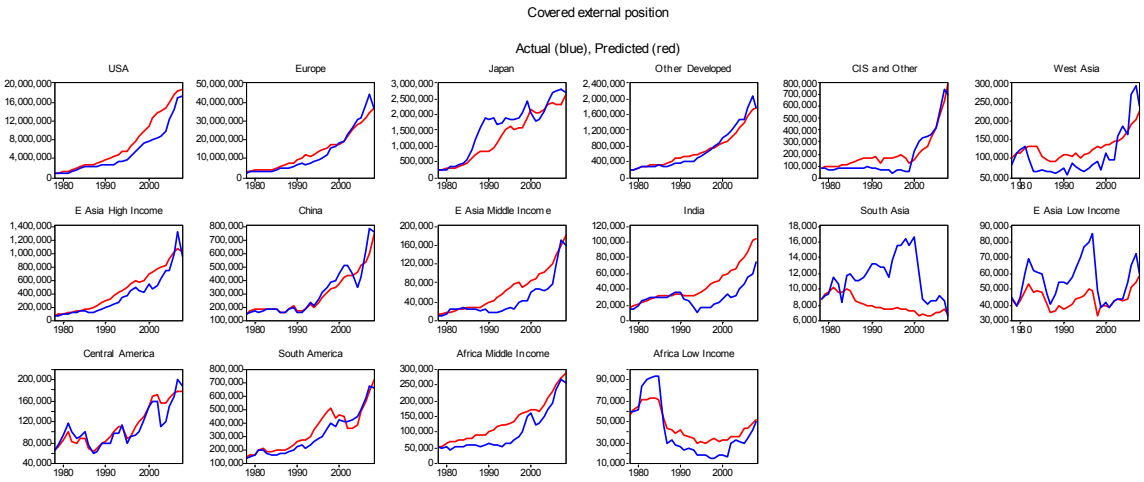
	coeff	t-stat	description
dlog(Y(-1))	-0.338	(0.8)	income growth
log(Y(-1))	-0.019	(0.5)	income level
dlog(R$(-1))	-0.006	(0.2)	increase in exchange reserves
dlog(1+YR(-1))	-0.602	(0.7)	relative income

statistics

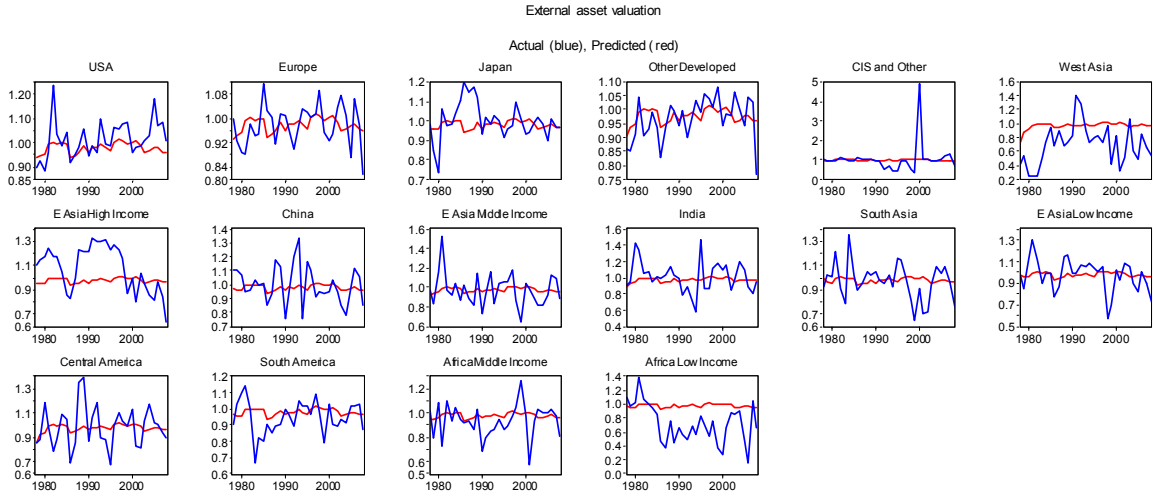
	value	t-stat		value	t-stat
constant	0.311	(0.5)	residual ar(1)	-0.338	(0.8)
se	0.170				

fixed effects

US	0.09475	EU	0.09467	JA	0.04407	CI	0.03761
OD	0.01788	EAH	0.01722	EAM	0.00343	IN	-0.00020
AMM	-0.00421	AFM	-0.00595	CN	-0.01195	WA	-0.03270
ACX	-0.03672	EAL	-0.06234	AFL	-0.06711	SA	-0.08844



rpaxou$	External asset valuation	log(0.5+rpaxou$)						
							value	probability
	unit root test					Fisher ADF	200.8	0.000
	coefficients					coeff	t-stat	description
					dlog(phw)	-0.308	(2.8)	world dollar inflation
	statistics		value	t-stat			value	t-stat
		constant	0.401	(53.5)		residual ar(1)	-0.308	(2.8)
		se	0.150					



rplx$ External liability valuation log(rplx$)

		value	probability
unit root test	Fisher ADF	186.3	0.000

coefficients		coeff	t-stat	description
	dlog(pkp)	0.288	(1.9)	domestic asset inflation
	dlog(phw)	-0.581	(4.7)	world dollar inflation

statistics		value	t-stat		value	t-stat
	constant	0.003	(0.3)	residual ar(1)	0.288	(1.9)
	se	0.118				

rxu Real exchange rate log(rxu/rx(-1))

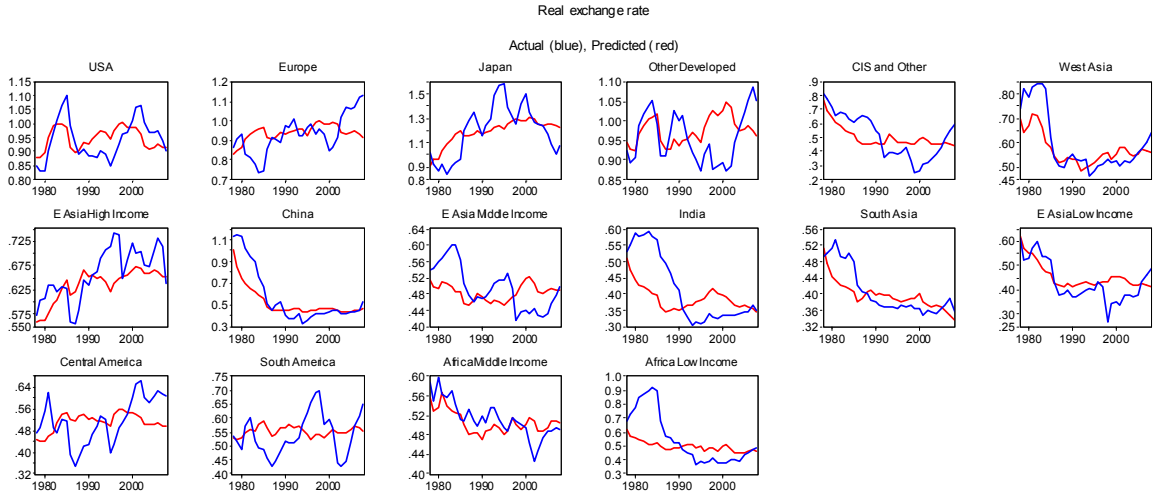
		value	probability
unit root test	Fisher ADF	174.0	0.000

coefficients	coeff	t-stat	description
log(rx(-1))	-0.564	(9.2)	error correction
CA$(-1)/(NXI$(-1)+M$(-1))	0.300		current account
NX$(-1)/(rx(-1)*Y(-1))	0.100		external position
d(spvi(-1))	0.066	(3.9)	inflation
dlog(PHW)	-0.477	(8.2)	global dollar inflation

statistics	value	t-stat		value	t-stat
constant	-0.287	(7.9)	residual ar(1)	-0.564	(9.2)
se	0.072				

fixed effects

JA	0.37866	OD	0.32816	US	0.28732	EU	0.26364
EAH	0.11054	AMM	0.00531	ACX	-0.01045	AFL	-0.07717
WA	-0.07853	EAM	-0.09343	AFM	-0.09660	EAL	-0.14477
CI	-0.15585	CN	-0.19426	IN	-0.23707	SA	-0.28550



pvi Cost inflation dlog(0.20+pvi/100)

		value	probability
unit root test	Fisher ADF	164.2	0.000

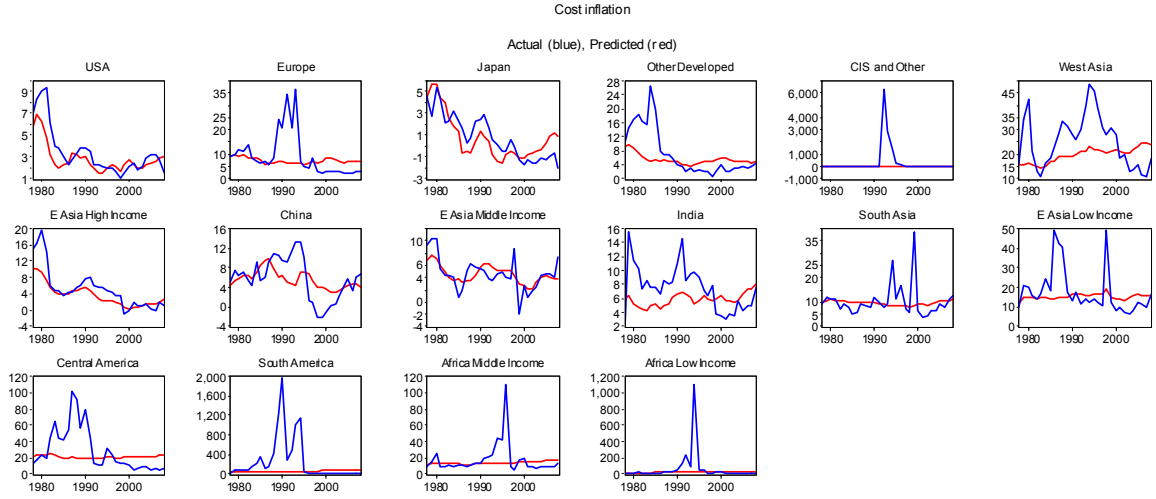
coefficients	coeff	t-stat	description
log(0.20+pvi(-1)/100)	-0.153	(3.1)	error correction
(1/(1.60-V/VT)+1/(1.60-V(-1)/VT(-1...	0.167	(2.8)	capacity utilisation
dlog(rx)	-0.196	(2.5)	real exchange rate
dlog(pew/rx)	0.050		world oil price

intercepts and ar(1) estimated on data for 1996-2008

statistics	value	t-stat		value	t-stat
constant	-0.761	(192.9)	residual ar(1)	0.045	(0.7)
se	0.198				

fixed effects

EAL	0.05600	WA	0.04923	SA	0.03113	EAM	0.00794
AFM	0.00696	OD	0.00363	EU	0.00107	AFL	0.00105
ACX	-0.00229	AMM	-0.00592	US	-0.00649	IN	-0.00958
EAH	-0.02704	JA	-0.03307	CN	-0.03471	CI	-0.03792



BITU$ Net income and transfers (BITU$-BIT$(-1))/Y$(-1)

	value	probability
unit root test	249.8	0.000

coefficients	coeff	t-stat	description
BIT$(-1)/Y$(-1)	-0.057	(1.5)	error correction
im_us*NX$(-1)/(100*Y$(-1))	-0.006	(0.2)	external position
d(NX$)/Y$(-1)	0.004	(0.8)	change in external position

statistics	value	t-stat		value	t-stat
constant	-0.001	(2.5)	residual ar(1)	-0.057	(1.5)
se	0.007				

fixed effects

JA	0.00248	SA	0.00171	IN	0.00114	EAH	0.00097
CN	0.00092	WA	0.00089	US	0.00085	EU	0.00056
ACX	-0.00002	AFM	-0.00014	AFL	-0.00103	OD	-0.00129
EAL	-0.00132	AMM	-0.00178	EAM	-0.00184	CI	-0.00209

NITU$ Covered income and transfers log((1+NITU$)/(1+NIT$(-1)))

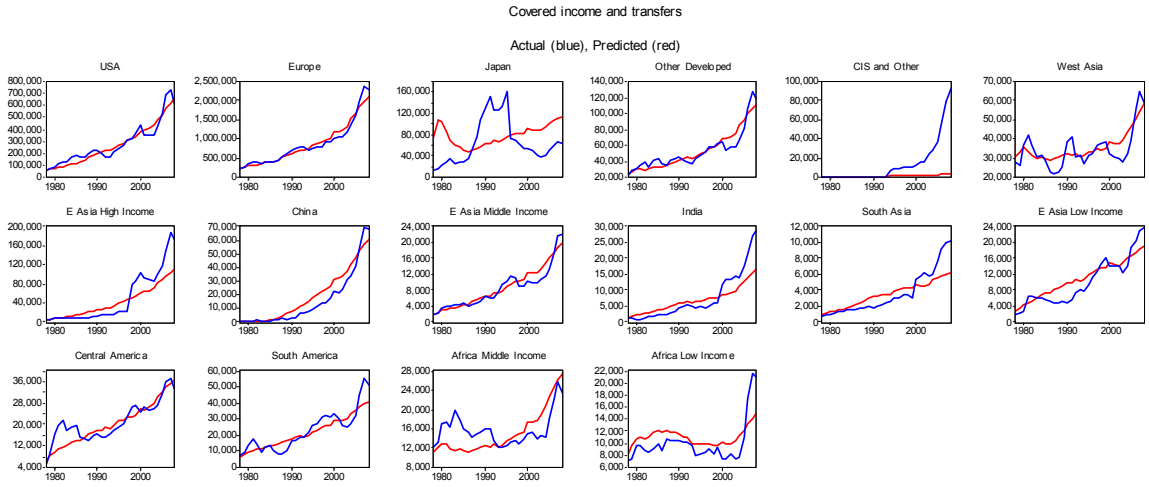
		value	probability
unit root test	Fisher ADF	212.1	0.000

coefficients		coeff	t-stat	description
	log(1+NIT$(-1))	-0.154	(4.8)	error correction
	log(NXN$(-1))	0.085	(2.7)	covered position
	dlog(XW$)	0.857	(3.5)	growth of world exports

statistics		value	t-stat		value	t-stat
	constant	0.476	(1.4)	residual ar(1)	-0.154	(4.8)
	se	0.428				

fixed effects

EU	0.25460	US	0.15630	WA	0.07649	EAH	0.07136
OD	0.04861	ACX	0.03310	CN	0.03261	JA	0.00177
AFL	-0.00533	EAL	-0.02026	AFM	-0.02935	AMM	-0.04011
EAM	-0.04037	IN	-0.04420	SA	-0.14261	CI	-0.35262



BAU0 Net exports of primary commodities at base-year prices (BAU0-BA0(-1))/V(-1)

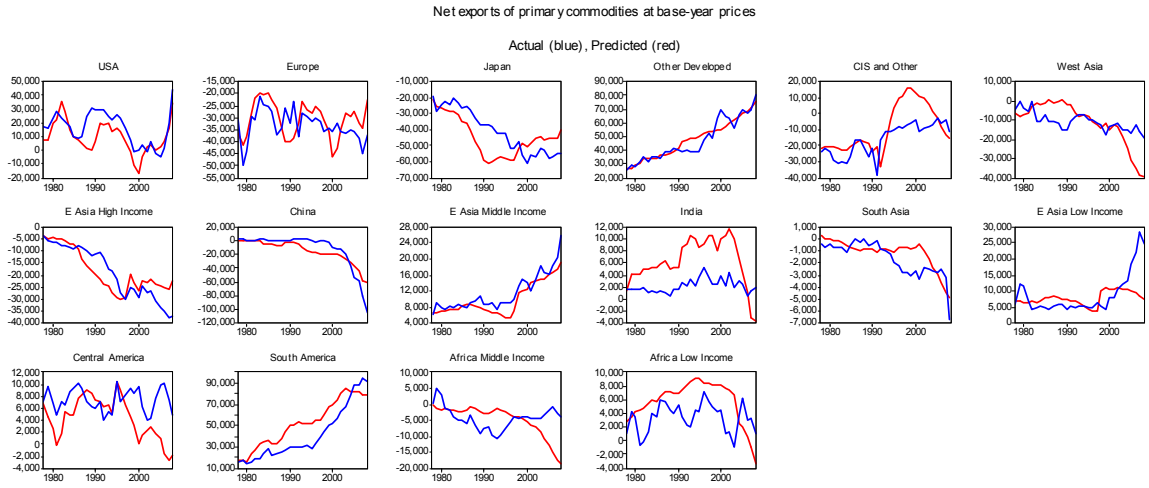
		value	probability
unit root test	Fisher ADF	281.0	0.000

coefficients		coeff	t-stat	description
	d(lpa(-1))	0.003	(1.3)	world prices
	d(V)/V(-1)	-0.050		GDP growth

statistics		value	t-stat		value	t-stat
	constant	0.002	(25.3)	residual ar(1)	0.003	(1.3)
	se	0.003				

fixed effects

CN	0.00202	EAM	0.00139	IN	0.00097	OD	0.00064
AMM	0.00033	EAL	0.00030	EAH	0.00020	SA	-0.00003
CI	-0.00009	US	-0.00052	AFL	-0.00065	ACX	-0.00075
EU	-0.00082	WA	-0.00089	AFM	-0.00094	JA	-0.00115

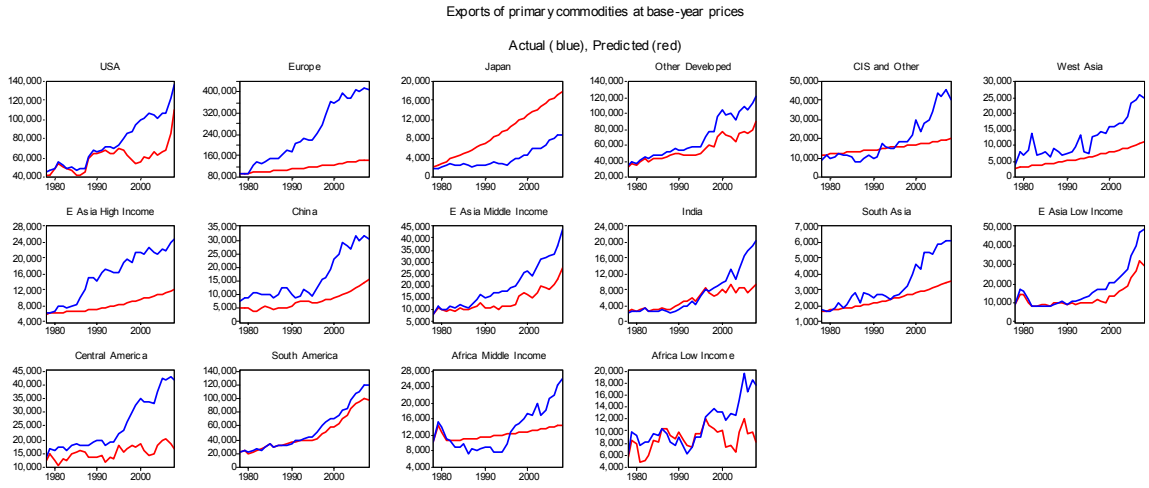


XA0 Exports of primary commodities at base-year prices d(XA0)/V(-1)

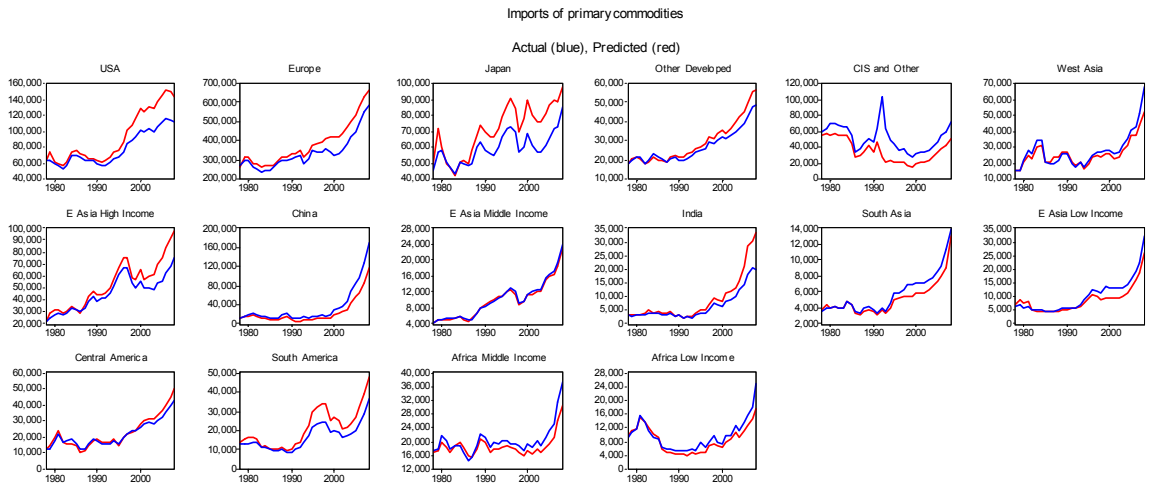
		value	probability
unit root test	Fisher ADF	281.8	0.000

coefficients		coeff	t-stat	description
	d(if(BAU0>0,BAU0,0))/V(-1)	0.860	(25.4)	net export surplus (if any)

statistics	value	t-stat		value	t-stat
constant	0.000	(4.2)	residual ar(1)	0.860	(25.4)
se	0.001				



MA$	Imports of primary commodities	dlog(MA$/MA0)					
						value	probability
	unit root test				Fisher ADF	228.1	0.000
	coefficients				coeff	t-stat	description
				dlog(paw)	0.833	(23.7)	world prices
				dlog(rx/pp0)	0.370	(9.6)	exchange rate
	statistics		value	t-stat		value	t-stat
		constant	-0.008	(2.6)	residual ar(1)	0.833	(23.7)
		se	0.078				

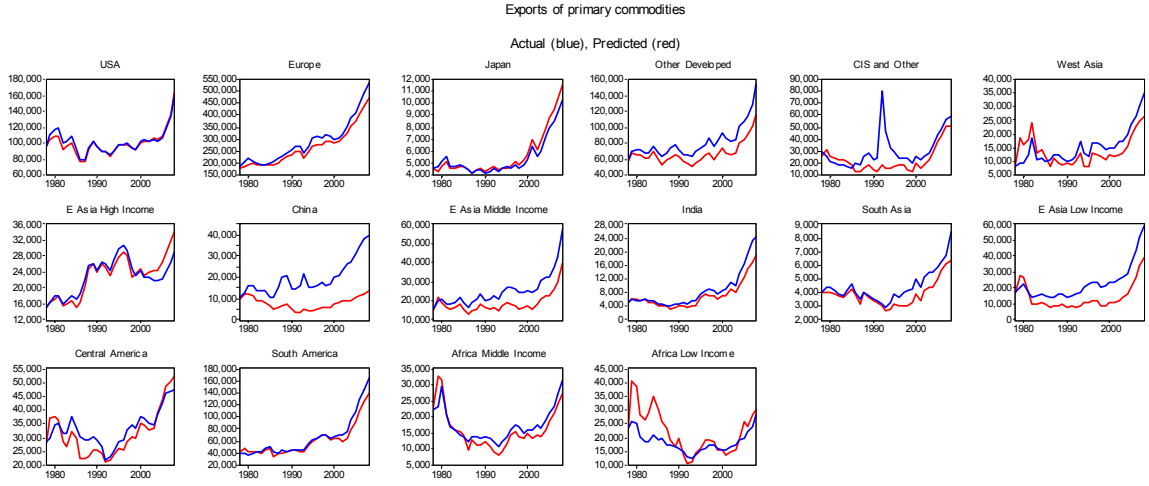


XAU$ Exports of primary commodities log(XAU$*XA0(-1)/(XA0*XA$(-1)))

	value	probability
unit root test	Fisher ADF	246.6	0.000

coefficients	coeff	t-stat	description
dlog(paw)	0.923	(37.3)	world prices
dlog(rx/pp0)	0.518	(13.0)	exchange rate

statistics	value	t-stat		value	t-stat
constant	-0.014	(5.9)	residual ar(1)	0.923	(37.3)
se	0.096				

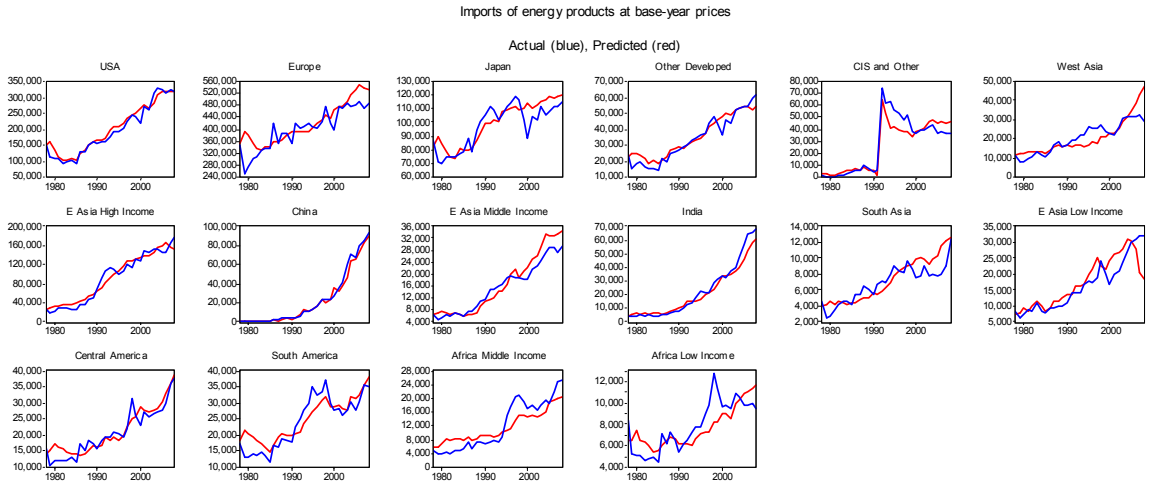


ME0 Imports of energy products at base-year prices dlog(ME0/EM)

unit root test					Fisher ADF		value 345.8	probability 0.000
coefficients					coeff	t-stat	description	
			log(ME0(-1)/EM(-1))		-0.222	(3.8)	error correction	
statistics			value	t-stat			value	t-stat
		constant	1.290	(3.9)	residual ar(1)		-0.222	(3.8)
		se	0.168					

fixed effects

ACX	0.06282	EAL	0.03588	OD	0.02757	SA	0.02537
US	0.02513	CN	0.01335	EAM	0.01014	EU	0.00519
AMM	0.00397	EAH	0.00124	IN	-0.00746	AFM	-0.02087
CI	-0.03053	AFL	-0.04106	WA	-0.04902	JA	-0.06170



XEU0 Exports of energy products at base-year prices log((1+XEU0)*(0.01+EX(-1))/((1+XE0(-1))*(0.01+EX)))

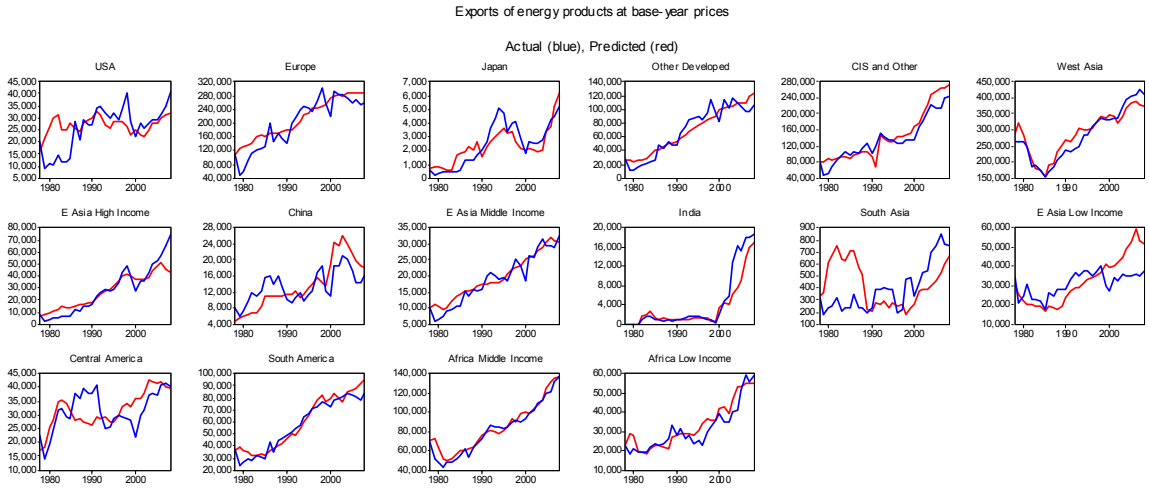
		value	probability
unit root test	Fisher ADF	361.5	0.000

coefficients		coeff	t-stat	description
	log((1+XE0(-1))/(0.01+EX(-1)))	-0.252	(4.1)	error correction

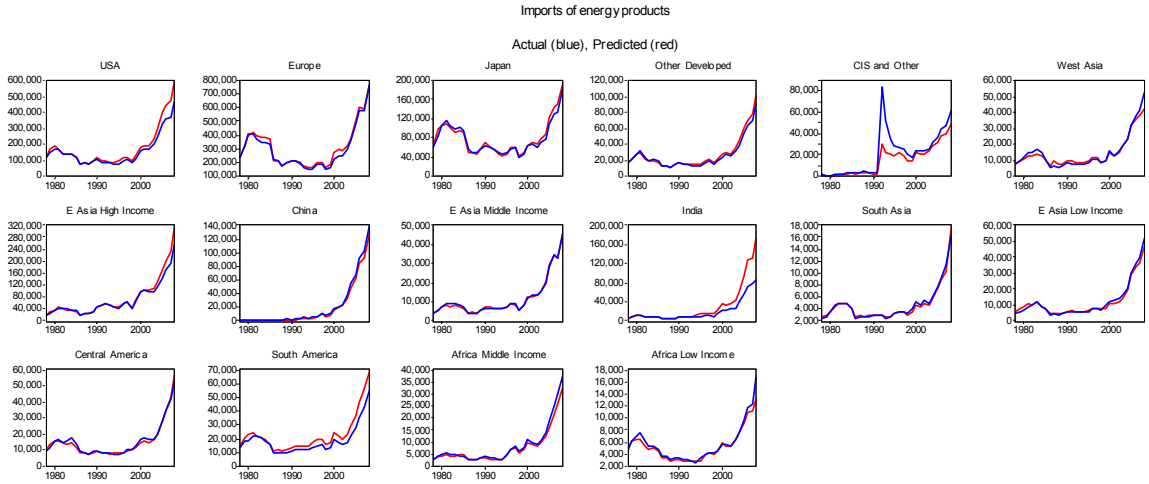
statistics		value	t-stat		value	t-stat
	constant	1.450	(4.1)	residual ar(1)	-0.252	(4.1)
	se	0.187				

fixed effects

EAH	0.07653	EU	0.05867	IN	0.05480	WA	0.03444
EAM	0.02390	CI	0.01993	JA	0.01558	AMM	-0.00200
AFM	-0.00445	ACX	-0.00612	AFL	-0.02492	SA	-0.03072
CN	-0.04796	OD	-0.05247	US	-0.05690	EAL	-0.05831



ME$	Imports of energy products	dlog(ME$/ME0)					
						value	probability
	unit root test				Fisher ADF	239.7	0.000
	coefficients				coeff	t-stat	description
				dlog(pew)	0.960	(66.3)	world prices
	statistics		value	t-stat		value	t-stat
		constant	-0.006	(1.3)	residual ar(1)	0.960	(66.3)
		se	0.079				

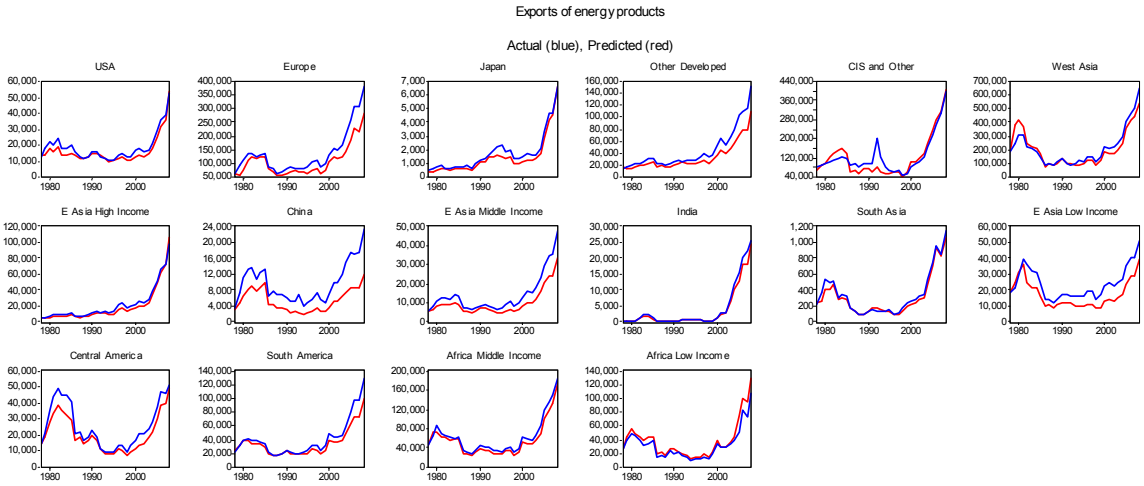


XEU$ Exports of energy products log(((0.01+XEU$)/(0.01+XE0))/((0.01+XE$(-1))/(0.01+XE0(-1))))

		value	probability
unit root test	Fisher ADF	265.0	0.000

coefficients		coeff	t-stat	description
	dlog(pew)	1.059	(32.7)	world prices

statistics		value	t-stat		value	t-stat
	constant	-0.016	(2.3)	residual ar(1)	1.059	(32.7)
	se	0.089				



MM$ Imports of manufactures dlog(MM$)

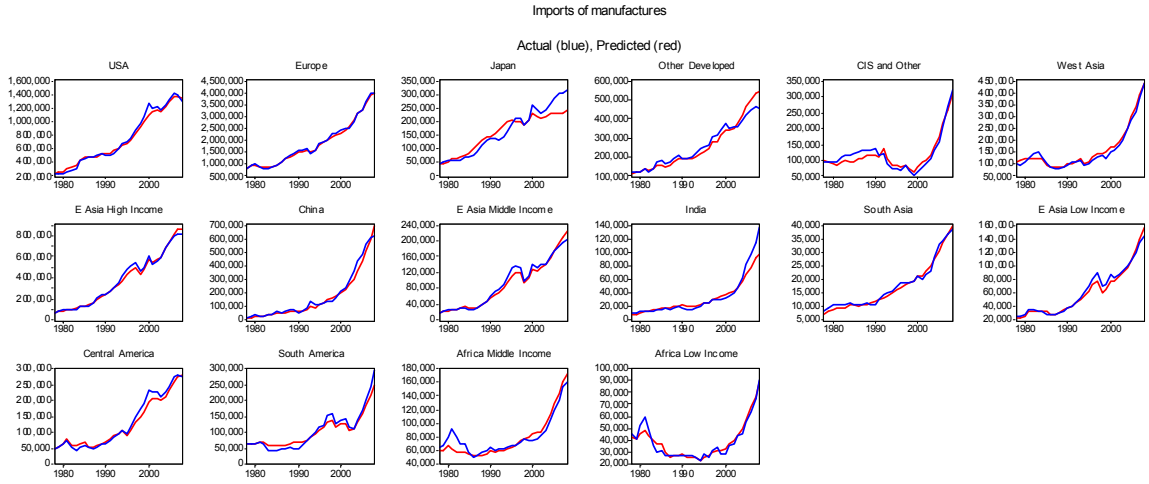
		value	probability
unit root test	Fisher ADF	178.6	0.000

coefficients	coeff	t-stat	description
log(MM$(-1))	-0.210	(3.3)	error correction
@trend()	0.004	(2.6)	trend
log(rx(-1)*(C(-1)+0.4*G(-1)+2*(IP(-1)+IV(-1)))+X$(-1)+2*XM$(-1))	0.183	(3.0)	demand
dlog(rx(-1)*(C(-1)+0.4*G(-1)+2*(IP(-1)+IV(-1)))+X$(-1)+2*XM$(-1))	1.000		growth of demand
dlog(rx)	-0.169	(4.5)	change in real exchange rate
log(pmm0(-1))	-0.083	(1.3)	supplier prices

statistics		value	t-stat		value	t-stat
	constant	-0.209	(0.9)	residual ar(1)	-0.210	(3.3)
	se	0.061				

fixed effects

EAH	0.11984	EU	0.10493	EAM	0.08925	OD	0.06871
WA	0.05851	ACX	0.03837	AFM	0.02728	EAL	0.01450
CI	0.00164	US	-0.00029	AFL	-0.00197	CN	-0.02053
AMM	-0.07062	SA	-0.08690	IN	-0.15811	JA	-0.18461



MMU0 Imports of manufactures at base-year prices log((MMU0*pmm0/MM$)/(MM0(-1)*pmm0(-1)/MM$(-1)))

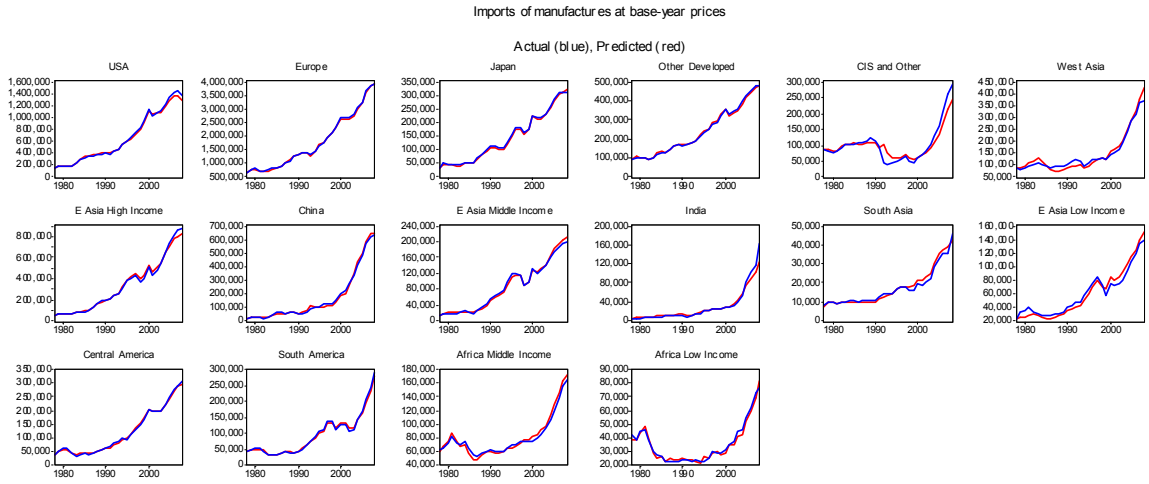
		value	probability
unit root test	Fisher ADF	263.2	0.000

coefficients	coeff	t-stat	description
log(MM0(-1)*pmm0(-1)/MM$(-1))	-0.160	(5.3)	error correction
dlog(pmm0)	0.105	(2.4)	supplier price change
dlog(rx)	-0.253	(10.4)	exchange rate appreciation

statistics		value	t-stat		value	t-stat
	constant	0.001	(1.2)	residual ar(1)	-0.160	(5.3)
	se	0.070				

fixed effects

SA	0.01348	AFM	0.01254	EAL	0.01127	EAM	0.00567
CN	0.00487	WA	0.00456	OD	0.00297	EU	0.00287
ACX	0.00285	AMM	-0.00161	EAH	-0.00365	JA	-0.00540
US	-0.00603	AFL	-0.00689	IN	-0.01362	CI	-0.02389



sxm Manufactured export market shares dlog(sxm)

	value	probability
unit root test	Fisher ADF	1125.5	0.000

coefficients	coeff	t-stat	description
log(sxm(-1))	-0.076	(4.4)	error correction
log(ucx$(-1))	-0.211	(6.5)	unit cost
dlog(ucx$(-1))	-0.035	(0.9)	increase in unit cost

statistics		value	t-stat			value	t-stat
	constant	-0.145	(3.9)	residual ar(1)		-0.076	(4.4)
	se	0.153					

fixed effects

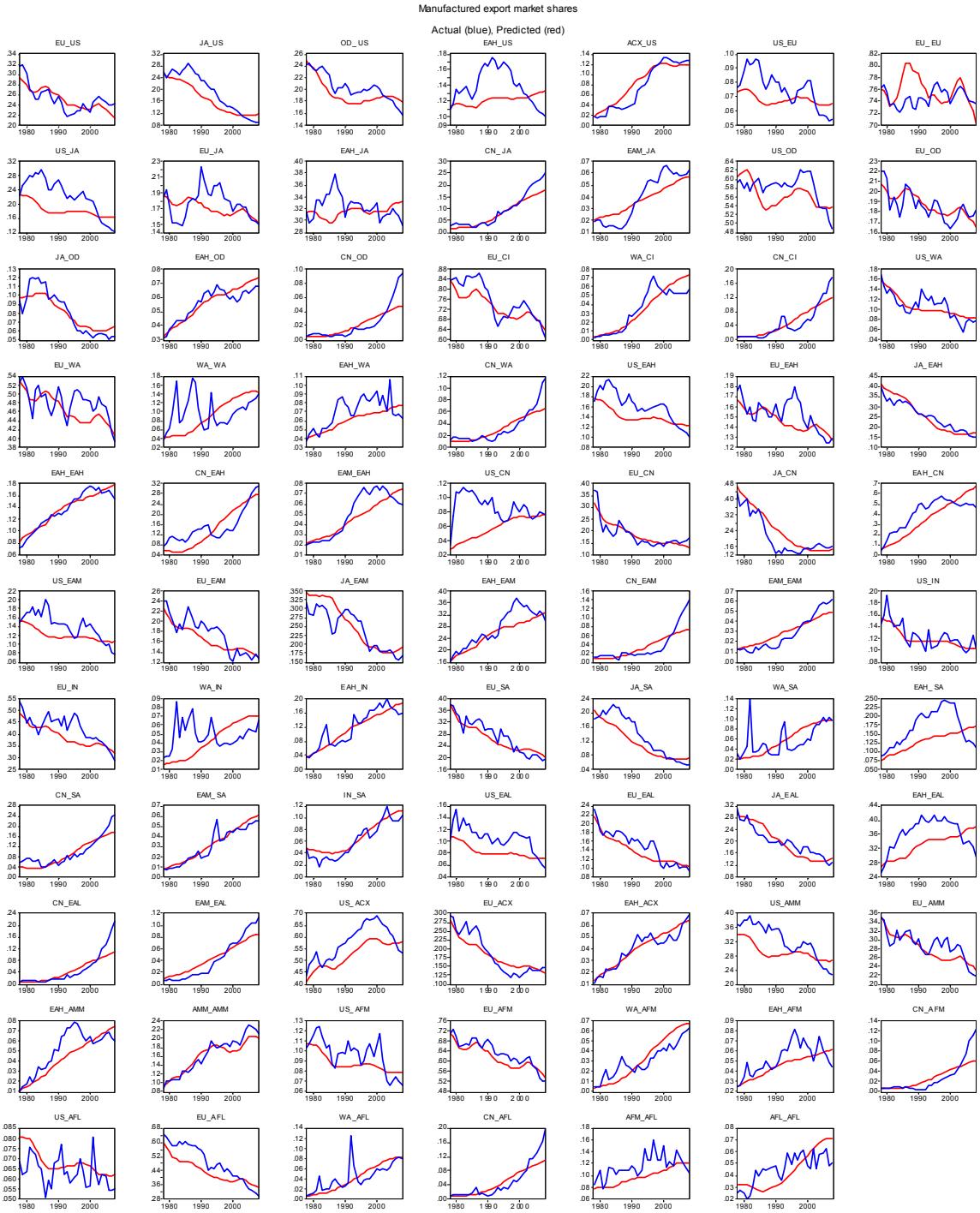
EAH_CN	0.14153	US_ACX	0.10682	EU_EU	0.10472	US_OD	0.09713
EU_CI	0.09549	EU_AFM	0.08197	EAH_EAL	0.08173	EAH_EAM	0.07254
CN_EAH	0.07223	EAH_JA	0.06903	EU_WA	0.06168	EU_AFL	0.04682
CN_JA	0.04489	US_AMM	0.04305	EU_IN	0.04261	EAH_IN	0.03941
CN_SA	0.03738	AMM_AM	0.03704	EAH_EAH	0.02746	EAH_SA	0.02488
JA_EAM	0.02379	EU_AMM	0.01849	CN_CI	0.01666	JA_EAH	0.01471
EU_US	0.01314	CN_AFL	0.01040	CN_EAL	0.01031	WA_WA	0.00725
OD_US	0.00618	EU_SA	0.00573	US_JA	0.00489	EAH_US	0.00017
JA_EAL	-0.00009	JA_CN	-0.00136	IN_SA	-0.00258	EU_OD	-0.00591
EAM_EAL	-0.01071	AFM_AFL	-0.01202	EU_JA	-0.01232	JA_US	-0.01280
US_EAH	-0.01550	ACX_US	-0.01594	WA_SA	-0.01941	CN_EAM	-0.02271
WA_AFL	-0.02334	EU_EAH	-0.02599	EU_EAM	-0.02668	EU_ACX	-0.02708
US_EAM	-0.02798	EAM_EAH	-0.02854	EU_CN	-0.02936	US_IN	-0.02952
EAH_AMM	-0.02961	WA_CI	-0.03020	CN_WA	-0.03548	EAH_WA	-0.03583
CN_AFM	-0.03629	WA_AFM	-0.03684	EAM_SA	-0.03712	EAH_OD	-0.03857
US_CN	-0.04068	EAH_ACX	-0.04396	AFL_AFL	-0.04458	WA_IN	-0.04473
EU_EAL	-0.04736	US_WA	-0.04736	US_AFM	-0.04948	EAM_JA	-0.05004
EAH_AFM	-0.05132	JA_SA	-0.05265	CN_OD	-0.05453	JA_OD	-0.05611
EAM_EAM	-0.05834	US_EAL	-0.05851	US_EU	-0.06316	US_AFL	-0.06755

Notes:

1) coefficients are estimated using a subset of bilateral market shares in order to eliminate the impact of large proportionate changes of very small shares. The subset is indicated by source_destination pairs for which fixed effects are listed. The selection criterion is that the base-year (2005) market share should have been 5% or more and the share should not have been less than 0.1% in any previous year.

2) Values of statistics and fixed effects shown above are those estimated for the full estimation period. For the purposes of scenario simulations intercepts are estimated for all bilateral market shares using the more recent data sample.

3) See graphs of actual and predicted values on the next page.


Manufactured export market shares
Actual (blue), Predicted (red)
EU_US
JA_US
OD_US
EAH_US
ACX_US
US_EU
EU_EU
US_JA
EU_JA
EAH_JA
CN_JA
EAM_JA
US_OD
EU_OD
JA_OD
EAH_OD
CN_OD
EU_CI
WA_CI
CN_CI
US_WA
EU_WA
WA_WA
EAH_WA
CN_WA
US_EAH
EU_EAH
JA_EAH
EAH_EAH
CN_EAH
EAM_EAH
US_CN
EU_CN
JA_CN
EAH_CN
US_EAM
EU_EAM
JA_EAM
EAH_EAM
CN_EAM
EAM_EAM
US_IN
EU_IN
WA_IN
EAH_IN
EU_SA
JA_SA
WA_SA
EAH_SA
CN_SA
EAM_SA
IN_SA
US_EAL
EU_EAL
JA_EAL
EAH_EAL
CN_EAL
EAM_EAL
US_ACX
EU_ACX
EAH_ACX
US_AMM
EU_AMM
EAH_AMM
AMM_AMM
US_AFM
EU_AFM
WA_AFM
EAH_AFM
CN_AFM
US_AFL
EU_AFL
WA_AFL
CN_AFL
AFM_AFL
AFL_AFL

XM0 Exports of manufactures at base-year prices dlog(XM0/XM$)

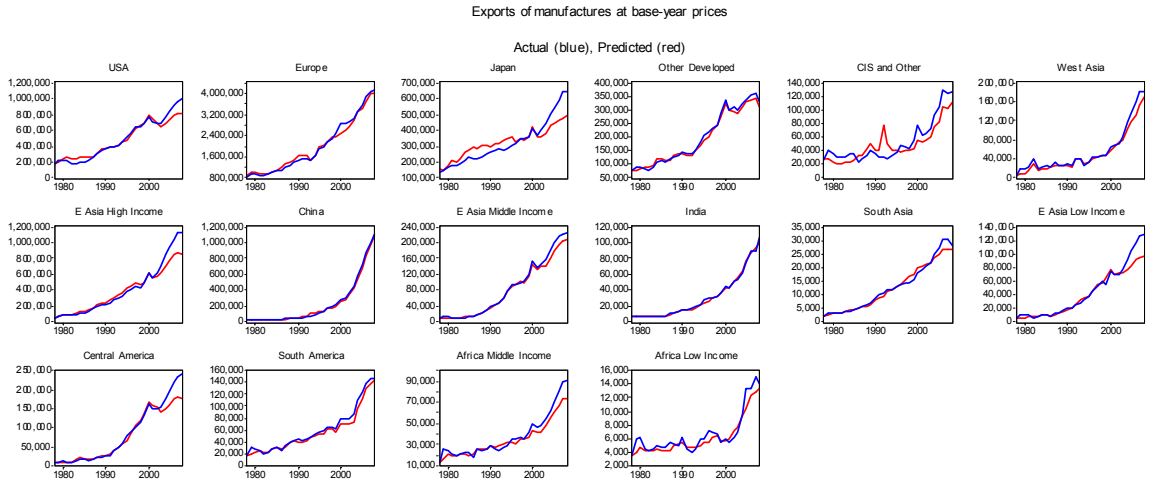
		value	probability
unit root test	Fisher ADF	237.1	0.000

coefficients	coeff	t-stat	description
log(XM0(-1)/XM$(-1))	-0.182	(2.4)	error correction
log(ucx$(-1))	-0.092	(2.1)	unit cost

statistics		value	t-stat		value	t-stat
	constant	-0.026	(1.9)	residual ar(1)	-0.182	(2.4)
	se	0.094				

fixed effects

IN	0.02760	CN	0.01566	OD	0.01453	EU	0.01192
AMM	0.00877	EAM	0.00831	SA	0.00819	US	0.00570
JA	-0.00078	AFM	-0.00285	EAH	-0.00677	WA	-0.00743
ACX	-0.01306	EAL	-0.01591	CI	-0.02650	AFL	-0.02738

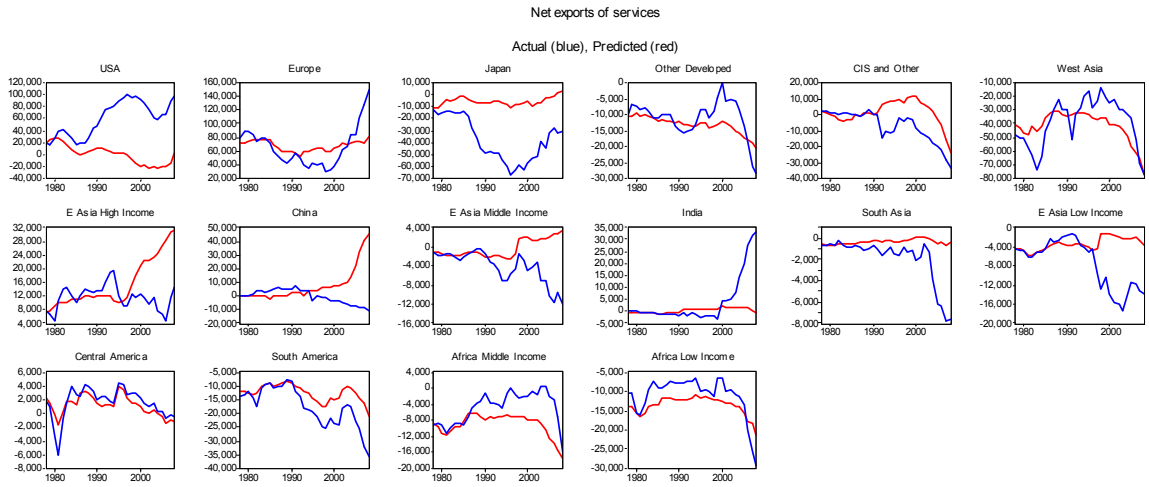


BSU$ Net exports of services (BSU$-BS$(-1))/V(-1)

		value	probability
unit root test	Fisher ADF	210.6	0.000

coefficients		coeff	t-stat	description
	dlog(rx)	-0.002	(1.4)	real exchange rate appreciation
	d(BA$)/V(-1)	0.047	(1.7)	increase in net exports of raw materials
	d(BE$)/V(-1)	-0.054	(3.3)	increase in net exports of energy
	d(BM$)/V(-1)	0.089	(6.1)	increase in net exports of manufactures

statistics	value	t-stat		value	t-stat
constant	-0.000	(0.3)	residual ar(1)	-0.002	(1.4)
se	0.003				

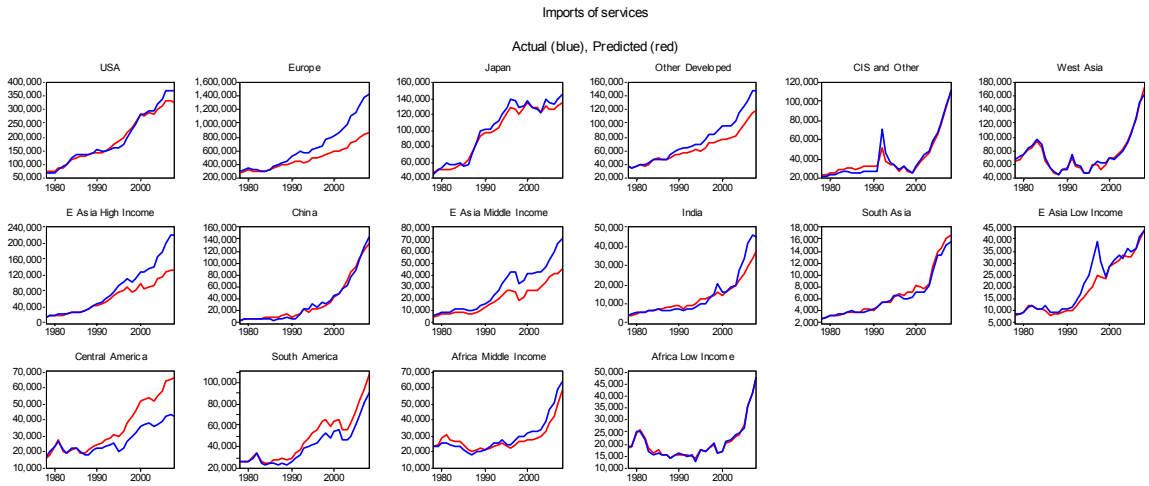


MS$ Imports of services d(MS$)/V(-1)

		value	probability
unit root test	Fisher ADF	189.8	0.000

coefficients	coeff	t-stat	description
d(if(BSU$>0,0,-BSU$))/V(-1)	0.683	(22.7)	net imports (if positive)
dlog(rx)	0.002	(2.0)	real exchange rate appreciation
d(MA$)/V(-1)	0.094	(1.7)	increase in imports of raw materials
d(XE$)/V(-1)	0.042	(3.3)	increase in exports of energy
d(MM$)/V(-1)	0.127	(13.3)	increase in imports of manufactures

statistics	value	t-stat		value	t-stat
constant	0.000	(5.0)	residual ar(1)	0.683	(22.7)
se	0.002				



MSU0 Imports of services at base-year prices log(MSU0*MS$(-1)/(MS$*MS0(-1)))

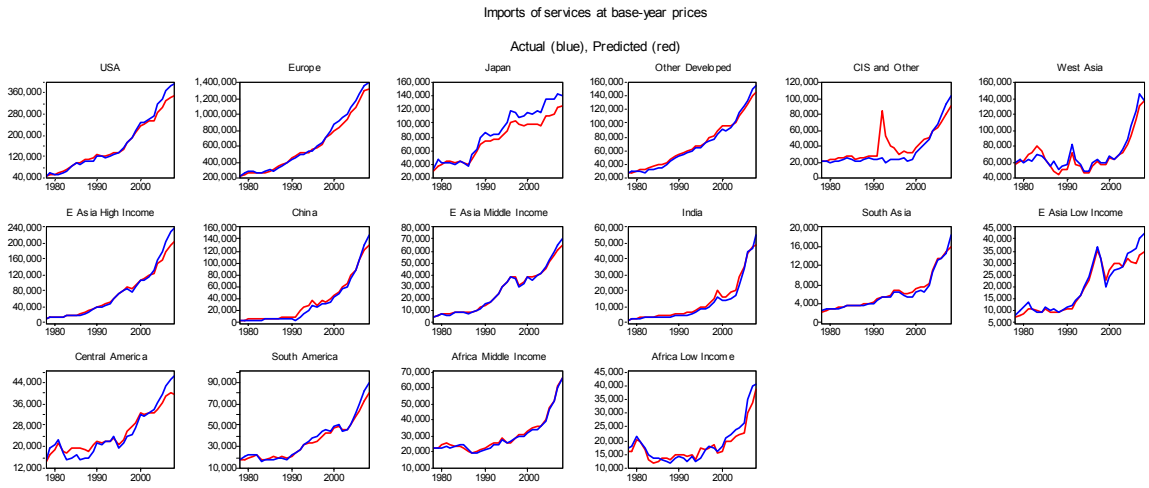
		value	probability
unit root test	Fisher ADF	245.1	0.000

coefficients		coeff	t-stat	description
	log(MS0(-1)/MS$(-1))	-0.033	(1.0)	error correction
	dlog(rx)	-0.382	(8.2)	exchange rate appreciation

statistics		value	t-stat		value	t-stat
	constant	-0.000	(0.1)	residual ar(1)	-0.033	(1.0)
	se	0.080				

fixed effects

IN	0.01236	AMM	0.00615	OD	0.00585	EU	0.00555
ACX	0.00420	EAH	0.00367	US	0.00365	AFM	0.00075
EAM	-0.00050	SA	-0.00058	JA	-0.00187	WA	-0.00475
CN	-0.00736	CI	-0.00827	EAL	-0.00879	AFL	-0.01007



XS0 Exports of services at base-year prices dlog(XS0/XS$)

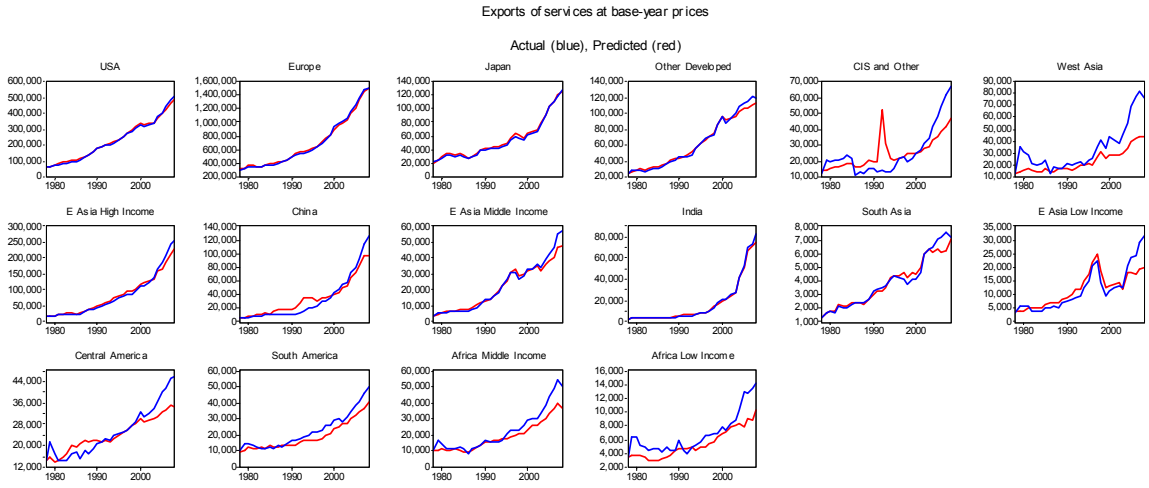
		value	probability
unit root test	Fisher ADF	247.2	0.000

coefficients		coeff	t-stat	description
	log(XS0(-1)/XS$(-1))	-0.028	(1.3)	error correction
	dlog(rx)	-0.564	(12.0)	exchange rate appreciation

statistics		value	t-stat		value	t-stat
	constant	-0.005	(1.0)	residual ar(1)	-0.028	(1.3)
	se	0.100				

fixed effects

JA	0.01656	EAH	0.01356	US	0.01346	EU	0.01272
ACX	0.00748	OD	0.00641	IN	0.00290	SA	0.00270
AMM	0.00054	EAM	-0.00311	AFM	-0.00441	CI	-0.00724
AFL	-0.00817	EAL	-0.01255	WA	-0.01996	CN	-0.02088



ED Primary energy demand dlog(ED/N)

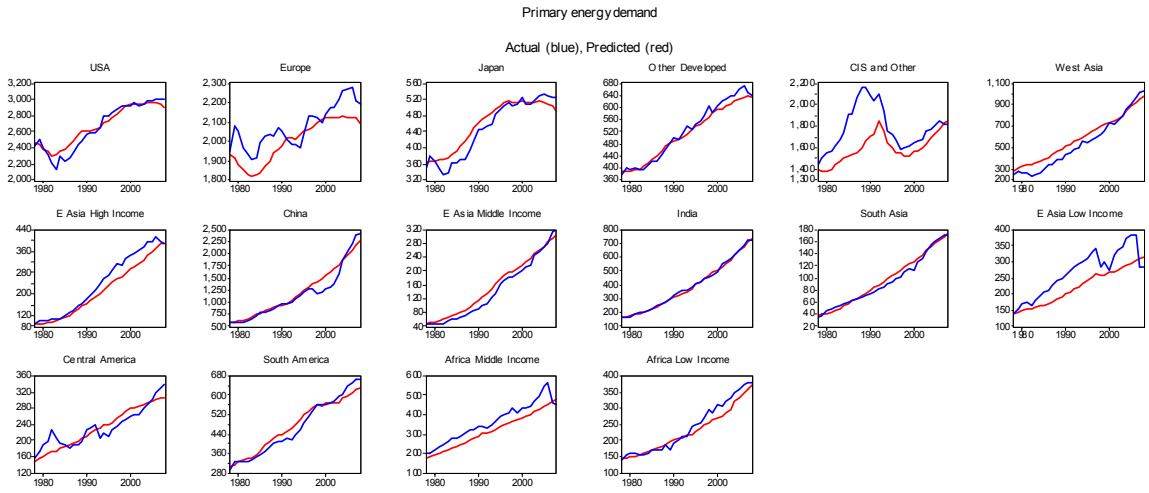
		value	probability
unit root test	Fisher ADF	244.4	0.000

coefficients		coeff	t-stat	description
	log(ED(-1)/N(-1))	-0.033	(4.2)	error correction
	dlog(V/N)	0.430	(7.3)	per capita GDP growth
	d(lped)	-0.038	(4.2)	change in world oil price
	dlog(tt)	0.102	(0.9)	terms of trade change
	dlog(X0)	0.057	(1.8)	export growth
	IV/V(-1)	-0.123	(0.8)	inventory change
	log(1+YR(-1))	0.092	(4.1)	per capita income

statistics		value	t-stat		value	t-stat
	constant	-0.047	(2.6)	residual ar(1)	-0.033	(4.2)
	se	0.042				

fixed effects

CI	0.04411	EAM	0.03853	WA	0.02822	CN	0.02793
AFM	0.02472	IN	0.01421	AFL	0.01132	SA	0.00846
EAL	0.00360	AMM	-0.00340	ACX	-0.00598	EAH	-0.01463
OD	-0.02358	EU	-0.04465	US	-0.05316	JA	-0.05568



EP Primary energy production dlog(EP)

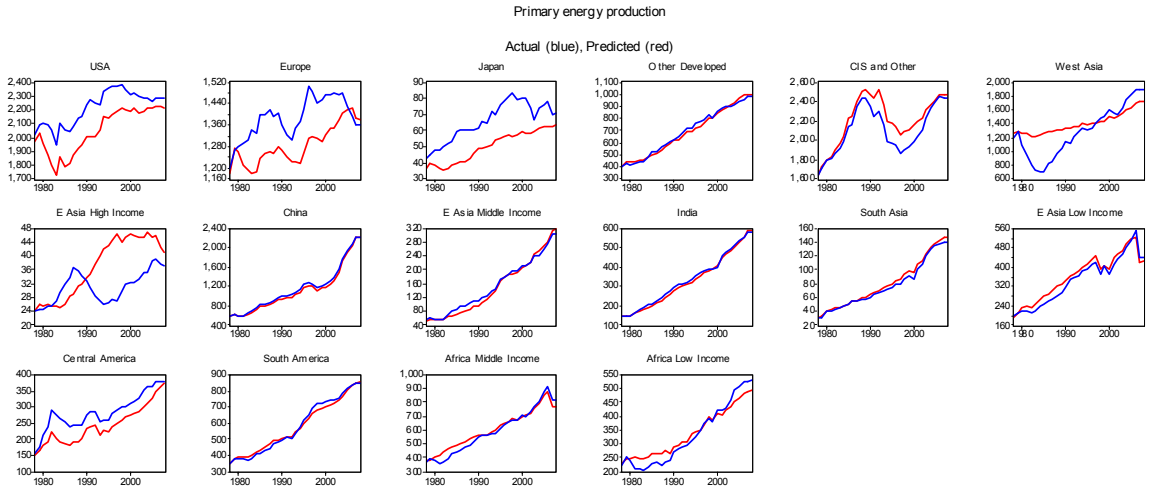
		value	probability
unit root test	Fisher ADF	221.7	0.000

coefficients		coeff	t-stat	description
	dlog(ED)*if(ED(-1)>EP(-1),1,ED(-1)...	1.001	(30.2)	domestic demand
	d(lpep)	0.016	(2.0)	change in world oil price

statistics		value	t-stat		value	t-stat
	constant	0.000	(0.1)	residual ar(1)	1.001	(30.2)
	se	0.035				

fixed effects

OD	0.01552	EAL	0.00776	AFM	0.00746	AMM	0.00738
CI	0.00597	ACX	0.00541	JA	0.00443	AFL	0.00172
EU	0.00048	SA	-0.00079	EAM	-0.00294	US	-0.00395
IN	-0.00406	CN	-0.00435	WA	-0.00784	EAH	-0.03220



EM Primary energy imports dlog(0.01+EM-if(ED>EP,ED-EP,0))

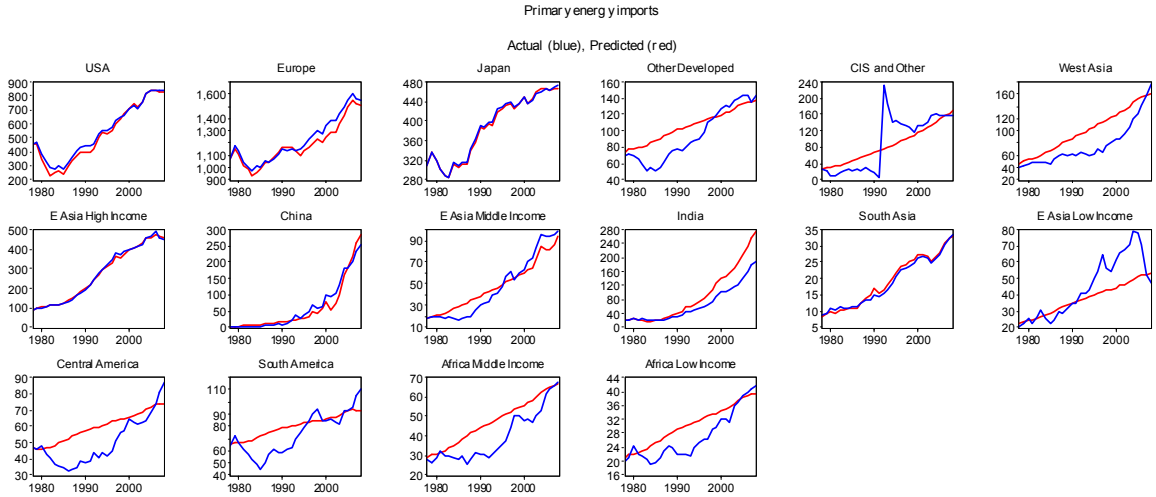
		value	probability
unit root test	Fisher ADF	229.0	0.000

coefficients	coeff	t-stat	description
log(0.01+EM(-1)-if(ED(-1)>EP(-1),E...	-0.027	(1.8)	error correction
dlog(EPW)	0.469	(1.3)	growth of world production

statistics	value	t-stat		value	t-stat
constant	0.137	(2.6)	residual ar(1)	-0.027	(1.8)
se	0.325				

fixed effects

IN	0.09739	CN	0.05524	EU	0.04529	CI	0.03207
WA	0.01711	EAH	0.01232	EAM	0.00416	OD	-0.00081
US	-0.00101	AFM	-0.01534	AMM	-0.01642	JA	-0.01954
ACX	-0.01963	EAL	-0.02094	AFL	-0.03398	SA	-0.13591



Appendix E Scenario rules

Introduction

Each GPM scenario is defined by a number of rules superimposed on the baseline projection. The rules may specify shocks representing, for example, shifts in confidence of consumers or investors, as well as policy changes in individual blocs or coordinated changes in groups of blocs.

A scenario is defined and calculated by an EViews program named **`solxx.prg`** where xx is the scenario identifier.[4] Scenario rules are defined by calls to GPM library routines: e.g.

```
call Target("G_EU","@pc(V_EU)","3.5",150,100)
```

This appendix explains the different types of rule available, the ways in which rules may be qualified and multiple instruments linked together, and methods for testing new rules and determining the effectiveness of instruments relative to targets. Practical examples of shocks and policy rules are provided in each section.

Types of rule

Exogenous adjustments to behavioural variables

The simplest modification to the baseline is to fix (exogenize) a behavioural variable or shock its predicted values.

Rule type	*Purpose*	*Arguments*
`Fix(%Var,"level",%Val)`	Impose values of a behavioural variable	**`%Var`** behavioural variable **`%Val`** value or list of values
`Fix(%Var,"growth",%Val)`	Impose the growth path of a behavioural variable	**`%Var`** behavioural variable **`%Val`** p.a. % growth rate or list of growth rates
`Fix(%Var, "exog", %Val)`	Impose values of an exogenous variable	**`%Var`** exogenous variable **`%Val`** value or list of values
`Shock(%Var,"add",%Val)`	Additive adjustment of predicted values of a behavioural variable	**`%Var`** behavioural variable **`%Val`** amount or amounts to be added to the predicted value of the variable
`Shock(%Var,"mult",%Val)`	Multiplicative adjustment of predicted values of a behavioural variable	**`%Var`** behavioural variable **`%Val`** ratio or list of ratios (0 leaves the predicted value unchanged)

Arguments

`%Var` is the name of a behavioural variable (with bloc suffix) enclosed in quotes.

[4] In EViews the scenario identifier or 'alias' is suffixed to the names of series storing results of the simulation. For example, Europe's trade balance in scenario 1 is named **`TB$_EU_1`**.

Example: **"G_EU"** government expenditure in Europe

%Val is a single value or list of values, also enclosed in quotes. If a list of values is provided, an asterisk may be inserted at any position in the list to indicate that remaining values are to be repeated up to the horizon (end of the simulation period).

Examples:		
	"3.5"	fixed value
	"3.5 4 5 5.5 5 4 3"	sequence of values
	"3.5 *4"	repeating value

Example rules

```
call Fix("G_EU", "level", "3000000 3200000 *3500000")
```

fixes government expenditure in Europe at $3 tr. in the first year, 3.2 tr. in the second year and 3.5 tr. thereafter.

```
call Fix("G_JA", "growth","3 *3.5 4 2.5 2")
```

fixes annual growth of government expenditure in Japan at 3% in the first year with a four-year cyclical pattern thereafter.

```
call Fix("wln_US", "exog", "0.05 0.10 0.07 0.03")
```

sets the assumed rate of loan write-offs in the US to 5% in the first year, 10% in year 2 and declining values thereafter.

```
call Shock("is_US", "add", "-1 0 1 *2)
```

reduces the predicted value of the US policy rate in the first year, leaves it unchanged in the second year, increases it by 1% in the third year and by 2% from year 4 onwards.

```
call Shock("IP_US", "mult", "-0.02 -0.01 0 *0.01)
```

reduces US fixed investment by 2% in the first year and 1% in the second year, leaves the predicted value unchanged in the third year and increases it by 1% from year 4 onwards.

Note that in the case of shocks, adjustments are applied to values predicted by the behavioural equation for the variable. Feedbacks such as multiplier effects may cause differences with respect to baseline values to be greater or less than those implied by the shock itself .

Endogenous adjustment of behavioural variables

Rules described in the table below override standard behaviour represented by equations in the baseline model. The rules adjust the value of a behavioural variable (the instrument) in order to modify the outcome for a target variable or expression (the object). The adjustment is made by setting values of an instrument variable that acts as an intercept shift in the behavioural equation.[5] In effect standard behaviour is overridden and the extent of the departure from standard behaviour is determined by the value of the instrument variable. If the instrument value is small the rule has implied only a minor departure from standard behaviour. If it is large, the rule has implied a major difference in behaviour.

[5] The instrumental variable is denoted by suffix **_ins** (e.g. **is_EAH_ins**). Historical values and baseline values of instrumental variables are zero.

If a rule implies large departures from standard behaviour or is not feasible within the terms of the model, the EViews solution may fail to converge or crash with a numerical error. Before setting up new rules it is advisable to consider carefully whether

- the chosen instrument will have sufficient influence on the object
- target values for the object make sense and are feasible.

A 'Target' rule requires the target-instrument association to be effective and will always fail if the association is not effective (see below for further discussion of this issue). A 'Try' rule does not require the target-instrument association to be effective but may still present difficulties if the implied modification to standard behaviour is too large.

Rule type	*Purpose*	*Arguments*
Try(%Var,%Obj, %Val,sens,pct)	Attempt to meet a target by adjusting an instrument (the attempt may not succeed). The instrument is adjusted in proportion to the difference between the target value and prior-year value of the object.	**%Var** behavioural variable that can be modified by policy **%Obj** target variable or expression **%Val** target value or list of values **sens** sensitivity of the target to a change in the instrument **pct** percentage movement towards the target
Target(%Var,%Obj, %Val,sens,pct)	Adjust an instrument to ensure that a target variable or expression meets a target. The target must be satisfied.[6]	

Arguments

%Var is the name of a behavioural variable, with bloc suffix, enclosed in quotes. Values of this variable are adjusted by changing the value of an instrument with the same name and suffix **_ins**.

%Obj is the name of a target variable or a target expression such as a growth rate or ratio. The expression may include EViews functions such as

@pc( )	percentage growth rate
d( )	difference (change from previous year)
log( )	logarithm
dlog( )	log difference
exp( )	exponential

Examples:	**@pc(V_AMM)**	growth of GDP in South America
	100*IP_US/V_US	US investment as % of GDP
	dlog(YN_CN)	log growth rate of income per capita in China

[6] If the target is not feasible, the EViews solution program will not converge or will crash with a numerical error as one or more variables go out of bounds.

%Val is a single value or list of values, also enclosed in quotes (same as in preceding section).

sens is a number giving the approximate sensitivity of the object variable or expression to a change in the **_ins** instrument variable that is used to perturb the value of the behavioural variable specified by **%Var**. If this argument is set to 0, the GPM program computes a shock simulation to estimate the value. See below for further discussion of how to set the value of this argument.

pct indicates how closely the object is required to approach the target value in each period, starting from its actual value in the prior period. If the value is set to **100** the object is required to reach the target value in each period. If the value were set to **0** the object would be frozen at its prior-year value. By setting an intermediate value, e.g. **30** or **50**, the object can converge progressively on the target value or trajectory.

Example rules

```
call Try("is_EU","pvi_EU","2",-0.3,20)
```

The rule specifies that Europe's policy rate will be adjusted with the intention of maintaining the underlying inflation rate at 2% p.a. It is assumed that a 1% increase in the policy rate will achieve a 0.3% reduction in the inflation rate. The adjustment attempts to bridge 20% of the gap between the inflation target and the actual rate of inflation in the previous year.

Note that if the estimated sensitivity is too low, adjustments of the policy rate will be too large and may cause the simulation to fail. Moreover if this rule were changed to a same-year target-instrument basis

```
call Target("is_EU","pvi_EU","2",-0.3,20)
```

the simulation would certainly fail as the EViews solution algorithm attempted to find a value of the policy rate that generated an inflation rate of exactly 2% p.a.

Same-year target-instrument rules are effective for variables that are strongly related provided the target trajectory is not too unrealistic given other assumptions of the scenario. For example, the following rule specifies that government net revenue (taxes less grants, subsidies and debt interest) will be adjusted to increase or reduce private disposable income, stimulating or retarding private spending as required to achieve the specified growth rates of GDP:

```
call Target("YG_CI","@pc(V_CI)","3.0 3.5 4.5 *5",0,100)
```

The rule says that government revenue in the CIS bloc will be adjusted to ensure GDP growth rising progressively from 3% in the first year to 5% from year 4 onwards. The zero sensitivity argument (second-last parameter) means that sensitivity of GDP growth to shocks to government revenue will be estimated by the GPM program.

Conditional regime-switching

Rules described in the table below introduce policy changes that are conditional on an objective function reaching a ceiling or floor. The rules adjust the value of a behavioural variable (the instrument) in order to modify the outcome for the target variable or expression (the object) if and only if the defined ceiling or floor is reached. The adjustment

is made in a similar manner to target-instrument adjustments by setting values of the instrumental variable included in the equation for the policy variable.[7]

If the regime switch implies very large departures from standard behaviour or is not feasible within the terms of the model, the EViews solution program may again fail to converge or crash with a numerical error.

A regime switch may be anticipated, resulting in a more progressive behavioural transition, by setting the **pct** parameter to a value between 0 and 100. The change in behaviour will commence when the objective moves a given percentage of the distance from its prior-year value to the target value or trajectory specified by the **%Val** argument in the rule definition.

The effect of a regime change may also be limited by setting a probability range restriction on adjustments to the policy variable (see below, "Qualifying the application of a rule").

Rule type	*Purpose*	*Arguments*
Ceiling(%Var,%Obj, %Val,sens,pct)	Adjust an instrument to ensure that a target variable or expression does not exceed an upper limit (ceiling). No adjustment is made if the predicted value is below the ceiling.	**%Var** behavioural variable that can be modified by policy **%Obj** target variable or expression **%Val** target value or list of values **sens** sensitivity of the target to a change in the instrument **pct** percentage movement towards the target
Floor(%Var,%Obj, %Val,sens,pct)	Adjust an instrument to ensure that a target variable or expression does not fall below a lower limit (floor). No adjustment is made if the predicted value is above the floor.	

Arguments

%Var is again the name of a behavioural variable, with bloc suffix, enclosed in quotes. Values of this variable are adjusted by changing the value of an instrument with the same name and suffix **_ins**.

%Obj is the name of a target variable or a target expression such as a growth rate or ratio. The expression may include EViews functions listed in the preceding section.

%Val is a single value or list of values, also enclosed in quotes (same as in preceding section).

sens is a number giving the approximate sensitivity of the object variable or expression to a change in the **_ins** instrument variable that is used to perturb the value of the behavioural variable specified by **%Var**.

pct determines the position of the ceiling or floor between the prior-year value of the object and the value given by the **%Val** argument. If **pct** is set to **50** the effective ceiling or floor will be half-way between the prior-year value of the object and the specified value. If

[7] The instrumental variable is again denoted by suffix **_ins**.

the object moves towards the ceiling or floor, the effective ceiling or floor will itself move progressively nearer to the value given by the **%Val** argument.

Example rules

```
call Ceiling("G_EAH","@pc(V_EAH)","5",150,50)
```

Government expenditure in the East Asia high income bloc is adjusted to restrict GDP growth to a ceiling of 5% p.a. with gradual enforcement starting from the initial position. The sensitivity of GDP growth to the government expenditure instrument is known to be approximately 150. The scenario can be computed more quickly because the GPM program does not have to perform a shock simulation to obtain the value.

```
call Floor("rx_EU","@pc(rx_EU)","0",0,100)
```

The real exchange rate for Europe may rise but will not be allowed to fall. Since the sensitivity of the outcome to the instrument is not know, the GPM program must perform a shock simulation to obtain the value.

Linking multiple instruments

It is often useful to link adjustments of behavioural variables together, whether within one bloc or across blocs. One example is the description of changes in confidence that may impact on several behavioural variables and are often synchronised more or less closely in different world regions.

Variables linked in a common group may be adjusted in the same direction or opposite direction to the variable to which they are linked and the strength of linkage may be weak or strong (if the value of **sens** is greater than 1 or less than -1 the linked variable may be adjusted more strongly than the variable to which it is linked).

Rule type	*Purpose*	*Arguments*
Link(%Var, %Ins, sens)	Adjust a behavioural variable in proportion to adjustments in a previously-defined variable	**%Var** behavioural variable which is to be linked **%Ins** behavioural variable specified in a prior scenario rule **sens** strength of the linkage (positive or negative ratio)

When comparing the size of adjustments, GPM library routines take account of the historical volatility of residuals in the relevant behavioural equation. Thus if the strength of linkage is 1 (or -1) the size of adjustments to the linked variable relative to those of the variable to which it is linked will be proportionate to the ratio of the historical volatility of residuals for each variable.

Example:
```
call Shock("ip_US", "mult", "-0.02 -0.02, -0.01")
call Link("sp_US","ip_US", -1)
call Link("ip_EU", "ip_US", 0.7)
```

A negative shock to investment in the US is mirrored by increased saving (reduced consumer spending) and by a similar loss of confidence in Europe.

Example:
```
call Ceiling("YG_JA","100*LG_JA/Y_JA","200",0,100)
call Link("G_JA","YG_JA",2)
```

Government revenue and expenditure in Japan are adjusted together to prevent the ratio of government to income exceeding 200%. The GPM program will perform a shock simulation to determine sensitivity of the objective to the linked instruments.

Qualifying the application of a rule

Rules applied in the manner described above are implemented by formula which may sometimes result in unrealistic instrument values and scenario outcomes. The GPM provides an option to constrain instrument adjustments within a range that appears plausible in relation to historical volatility of residuals for the given bloc and behavioural variable. The severity of the constraint is defined by specifying a probability level - for example, 95% or 99%. GPM library routines will then limit the size of variation of instruments to a corresponding multiple of the historical volatility of residuals.[8]

Rule type	*Purpose*	*Arguments*
Limit(pr, %Var)	Constrain the size of adjustments to one instrument	**pr** probability level (between 50 and 100)
Limit(pr, %Varlist)	Constrain the size of adjustments to a list of instruments	**%Var** behavioural variable already specified in a scenario rule
Limit(pr,"ALL")	Constrain the size of adjustments to all instruments defined so far	**%Varlist** list of behavioural variables already specified in scenario rules

When limits are imposed on instrument adjustments, the scenario is "safer" in the sense that departures from past behaviour are more limited and the EViews solution has a better chance of converging. On the other hand, the objectives specified for the scenario may not be fully achieved.

Testing new rules

Options when running a scenario program

The GPM program for defining and simulating a scenario has two options that will help the person specifying the scenario to test new rules.

Set **%shocks = "Yes"** and **%scenario = "No"** to request a shock simulation for each group of linked instruments specified for the scenario without the scenario itself being simulated. The results of each shock simulation (discussed below) will help you to determine whether the proposed rules are appropriate.

Set **%shocks = "No"** and **%scenario = "Yes"** to request calculation of a scenario using sensitivity values that you have specified for each rule. This is the fastest way to compute a scenario. The GPM program will still have to perform shock simulations to determine sensitivity for any rules for which you have left the sensitivity argument equal to 0.

[8] Assuming a normal distribution of deviations from the standard behavioural pattern.

Set **`%shocks = "Yes"`** and **`%scenario = "Yes"`** to request a shock simulation for each group of linked instruments as well as calculation of the scenario. The scenario calculation will still use sensitivity values that you have coded but you may want to check the results of shock simulations and consider whether to change any of the hard-coded sensitivity values.

Results of shock simulation

The GPM shock simulation imposes a 95% shock in year 1 on the main instrument and corresponding shocks on linked instruments and computes the impact on the object in years 1 to 3. The shock is superimposed on the baseline projection and instrument values for years 2 and 3 are set to 0.

Sensitivity is estimated by taking the ratio of the year 1 difference in the value of the object variable or expression to the size of the year 1 shock to the main instrument. The ratio may be positive or negative. If the ratio is very small, the object variable or expression is not sensitive to changes in the instrument and it may be difficult or impossible to use the instrument with the object as a target. It is also important to look at the impact of the shock in years 2 and 3. If this is much larger than the impact in year 1, adjustment of the instrument variable may be unstable as the fallout from the adjustment in each year causes overshooting in following years. As a rough guide, the year 2 impact should be less than twice the year 1 impact. If the year 2 impact is smaller or partially reverses the year 1 impact, the instrument can be used effectively.

Examples of shock simulation reports:

1) Revaluation by China - impact on the US real exchange rate

Impact of 95% shock to rxu_CN in 2011

	2011	2012	2014	2016
Shock	0.14043	0	0	0
Ex ante effect on rxu_CN	0.08084	0	0	0
rxu_CN				
values with shock	0.61241	0.54688	0.50760	0.49813
baseline	0.53615	0.52244	0.50563	0.49826
%	14.2238	4.67819	0.38854	-0.02639
elasticity	0.94341	0.31029	0.02577	-0.00175
rx_US				
values with shock	0.92378	0.94509	0.97746	1.00009
baseline	0.93706	0.95052	0.97916	1.00136
%	-1.41727	-0.57121	-0.17400	-0.12683
elasticity	-0.09400	-0.03789	-0.01154	-0.00841

2) Increase in Europe's policy rate - impact on the bond rate and inflation

Impact of 95% shock to is_EU in 2011

	2011	2012	2014	2016
Shock	0.02119	0	0	0
Ex ante effect on is_EU	0.90309	0	0	0
is_EU				
values with shock	3.07582	3.36775	4.00704	3.54223
baseline	2.17538	2.71378	3.66984	3.3712

% p.a.	0.90044	0.65397	0.33721	0.17103
elasticity	0.99706	0.72415	0.37339	0.18938
im_EU				
values with shock	3.74344	3.81789	4.61491	4.87521
baseline	3.71487	3.78666	4.61255	4.88437
% p.a.	0.02857	0.03123	0.00236	-0.00916
elasticity	0.03164	0.03459	0.00261	-0.01015
pi_EU				
values with shock	1.20383	1.02348	1.51709	1.64565
baseline	1.20622	1.03457	1.53666	1.666
% p.a.	-0.00239	-0.01108	-0.01957	-0.02035
elasticity	-0.00264	-0.01227	-0.02168	-0.02253

Appendix F Multiplier Tables

Introduction

These tables provide information about short and medium-term responses of key variables (outputs) to one-year shocks applied to different behavioural variables (inputs).

The impact on each output is measured with respect to the ex ante change of the shocked variable (input) in the first year[9]. When the input and output are both money stocks or flows the response is measured as a multiplier ($ million change in the output variable for a 1$ billion ex ante change in the input variable in the first year). In all other cases the response is tabulated as an elasticity (ratio of the percentage change in the output relative to the ex ante change in the input, also measured as a percentage). Depending on the variable, the percentage is measured as the proportionate change in the variable itself or per annum or relative to GDP or some other aggregate.

Multipliers and elasticities are shown for the bloc where the shock is applied (local impact), for the world as a whole (global impact) and for selected other blocs (spillovers).

The tables below document responses to shocks in the US, China, CIS, South America and Middle Income Africa. The GPM program **`solm.prg`** can be used to generate similar tables for other blocs. The GPM programs **`shock.prg`** and **`impact.prg`** may be used to check details of the calculations, generate shocks to other inputs and trace responses of other outputs not shown in these summary tables.

Methodological note

Responses shown in the tables represent average values of multipliers and elasticities for substantial upward shocks to the different input variables[10] calculated relative to first six years of the baseline projection. Given that the model is non-linear, values of multipliers and elasticities may change significantly if shocks are generated in a downward direction or if a different baseline is used. The dependence of results on the baseline is particularly significant for interest rates and inflation since the current GPM baseline starts with unusually low inflation rates and capacity utilisation. Interest rates in many blocs are near to levels at which the "liquidity trap" may become effective and capacity utilisation is low enough to make inflation relatively insensitive to changes in aggregate demand.

The responses are generated in a closed system (the global economy) through a variety of relationships, some of which are local to the economy in which the shock occurs (e.g. changes in incomes, government revenue and capacity utilisation) while others are external (e.g. growth of world income and export markets, changes in prices of oil and primary commodities). The main external feedbacks can be identified by examining world responses and spillovers in other blocs. Values of local multipliers could be significantly different if external variables were held constant.

---

[9] The ex ante change is the change that would have occurred if all other variables were held constant.

[10] Shocks are calibrated to match the 95% point of the historical distribution of equation residuals for the shocked variable.

Impact tables

Government expenditure on goods and services

Impact of shock to USA govt exp on goods & services in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in USA govt exp on goods & services					
local	GDP	1,598	1,467	1,672	1,893
	Consumption	391	290	576	816
	Investment	47	220	229	270
	govt net revenue	286	341	336	367
	government spending	1,032	1,022	990	949
	government debt	524	962	1,644	2,265
	current account	-280	-180	-212	-236
world	GDP	2,200	1,965	2,463	3,034
	Exports	1,018	324	551	654
Spillovers					
GDP	Total	602	498	791	1,141
of which	Europe	133	110	151	213
	Japan	31	35	39	57
	China	196	196	252	367
	Central America	30	28	37	50
	Africa Low Income	9	5	18	26
current account	Total	280	180	212	236
of which	Europe	12	56	59	70
	Japan	-15	12	12	17
	China	3	14	21	29
	Central America	10	8	8	9
	Africa Low Income	19	3	5	4
Per cent change in each variable per 1% of GDP increase in USA govt exp on goods & services					
local	real exchange rate (%)	-0.047	-0.123	-0.170	-0.215
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	0.644	0.824	0.873	0.953
	employment (%)	0.659	0.862	0.960	1.095
	cost inflation (% p.a.)	0.111	0.178	0.222	0.103
	price inflation (% p.a.)	0.216	0.085	0.229	0.102
	real asset prices (%)	0.419	0.765	1.021	0.668
	interest rates (% p.a.)	0.214	0.244	0.262	0.073
	real interest rates (% p.a.)	-0.000	0.157	0.030	-0.030
	real bond rates (% p.a.)	0.001	0.009	0.009	0.003
world	oil price (%)	3.614	0.480	0.980	0.927
	employment (%)	0.038	0.046	0.048	0.052
	dollar inflation (% p.a.)	0.261	0.159	0.257	0.119
	domestic inflation (% p.a.)	0.027	0.068	0.053	0.026
inflation spillover (% p.a.)					
	Europe	0.119	-0.054	0.027	0.014
	Japan	0.164	-0.094	0.027	0.016
	China	0.200	-0.060	0.052	0.019
	Central America	0.048	0.026	0.029	0.015
	Africa Low Income	-0.541	0.549	0.004	0.039

Impact of shock to China govt exp on goods & services in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in China govt exp on goods & services					
local	GDP	1,816	1,726	2,491	3,410
	consumption	481	-284	152	513
	investment	321	1,118	1,403	1,854
	govt net revenue	351	414	490	610
	government spending	1,027	1,067	1,168	1,271
	government debt	116	100	149	209
	current account	-202	-171	-188	-211
world	GDP	2,221	2,085	3,045	4,171
	exports	986	490	764	968
spillovers					
GDP	total	406	359	554	761
of which	USA	27	44	48	71
	Europe	119	106	143	193
	Japan	44	51	59	80
	Central America	7	8	11	15
	Africa Low Income	7	3	11	16
current account	total	202	171	188	211
of which	USA	-37	17	11	14
	Europe	23	58	63	73
	Japan	0	23	27	35
	Central America	2	2	2	2
	Africa Low Income	14	1	2	1
per cent change in each variable per 1% of GDP increase in China govt exp on goods & services					
local	real exchange rate (%)	0.101	-0.274	-0.414	-0.473
	nominal change in $ rate (% p.a.)	-0.073	-0.573	-0.357	-0.170
	activity rate (%)	0.077	0.107	0.141	0.184
	employment (%)	0.078	0.109	0.145	0.190
	cost inflation (% p.a.)	0.127	0.284	0.321	0.132
	price inflation (% p.a.)	0.149	0.212	0.329	0.139
	real asset prices (%)	0.437	0.758	0.976	0.600
	interest rates (% p.a.)	0.216	0.290	0.308	0.091
	real interest rates (% p.a.)	0.064	0.074	-0.019	-0.045
	real bond rates (% p.a.)	0.006	0.012	0.015	0.006
world	oil price (%)	1.823	0.126	0.370	0.356
	employment (%)	0.024	0.031	0.039	0.049
	dollar inflation (% p.a.)	-0.040	-0.055	-0.023	-0.024
	domestic inflation (% p.a.)	0.014	0.059	0.058	0.025
inflation spillover (% p.a.)					
	USA	0.062	-0.054	-0.001	-0.004
	Europe	0.053	-0.032	0.007	0.002
	Japan	0.084	-0.052	0.012	0.005
	Central America	0.008	0.002	0.001	-0.002
	Africa Low Income	-0.286	0.285	-0.002	0.005

Impact of shock to CIS and Other govt exp on goods & services in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in CIS and Other govt exp on goods & services					
local	GDP	1,331	1,008	1,217	1,315
	consumption	381	-35	279	453
	investment	46	206	211	235
	govt net revenue	277	281	310	335
	government spending	1,026	1,005	934	831
	government debt	775	1,249	2,034	2,564
	current account	-168	-124	-131	-131
world	GDP	1,798	1,286	1,647	1,871
	exports	577	118	247	252
spillovers					
GDP	total	466	279	430	556
of which	USA	23	23	35	53
	Europe	152	78	128	166
	Japan	23	18	22	29
	China	149	92	126	158
	Central America	6	5	7	10
	Africa Low Income	5	1	4	4
current account	total	168	124	131	131
of which	USA	-3	26	21	23
	Europe	72	66	66	66
	Japan	4	14	15	17
	China	15	14	17	20
	Central America	2	1	1	1
	Africa Low Income	6	-3	-1	-2
per cent change in each variable per 1% of GDP increase in CIS and Other govt exp on goods & services					
local	real exchange rate (%)	0.019	-0.164	-0.256	-0.309
	nominal change in $ rate (% p.a.)	-0.041	-0.376	-0.233	-0.079
	activity rate (%)	0.127	0.150	0.165	0.176
	employment (%)	0.129	0.154	0.172	0.184
	cost inflation (% p.a.)	0.090	0.216	0.233	0.061
	price inflation (% p.a.)	0.054	0.274	0.242	0.066
	real asset prices (%)	0.341	0.565	0.700	0.355
	interest rates (% p.a.)	0.160	0.249	0.235	0.028
	real interest rates (% p.a.)	0.096	-0.014	-0.007	-0.036
	real bond rates (% p.a.)	0.004	0.006	0.008	0.002
world	oil price (%)	0.196	-0.134	-0.076	-0.093
	employment (%)	0.007	0.007	0.007	0.007
	dollar inflation (% p.a.)	-0.014	-0.007	-0.003	-0.001
	domestic inflation (% p.a.)	0.008	0.016	0.014	0.004
inflation spillover (% p.a.)					
	USA	0.005	-0.011	-0.001	-0.001
	Europe	0.004	-0.006	0.001	0.000
	Japan	0.010	-0.012	-0.000	-0.001
	China	0.016	-0.010	0.001	-0.002
	Central America	-0.001	0.000	0.000	-0.000
	Africa Low Income	-0.033	0.054	0.005	0.001

Impact of shock to South America govt exp on goods & services in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in South America govt exp on goods & services					
local	GDP	1,541	1,440	1,730	1,981
	consumption	431	196	518	754
	investment	94	370	409	470
	govt net revenue	314	373	407	457
	government spending	1,023	1,029	1,019	987
	government debt	648	1,146	1,914	2,531
	current account	-174	-159	-167	-175
world	GDP	2,022	1,852	2,315	2,757
	exports	426	171	265	296
spillovers					
GDP	total	481	412	585	775
of which	USA	56	55	76	108
	Europe	111	89	129	173
	Japan	22	23	29	38
	China	140	127	162	213
	Central America	17	15	20	26
	Africa Low Income	6	4	7	8
current account	total	174	159	167	175
of which	USA	14	36	34	37
	Europe	51	66	68	73
	Japan	3	14	16	20
	China	13	16	20	24
	Central America	6	4	4	4
	Africa Low Income	6	-1	-0	-1
per cent change in each variable per 1% of GDP increase in South America govt exp on goods & services					
local	real exchange rate (%)	0.010	-0.150	-0.275	-0.359
	nominal change in $ rate (% p.a.)	-0.055	-0.376	-0.308	-0.148
	activity rate (%)	0.129	0.169	0.185	0.199
	employment (%)	0.131	0.173	0.193	0.208
	cost inflation (% p.a.)	0.111	0.276	0.322	0.131
	price inflation (% p.a.)	0.078	0.297	0.328	0.134
	real asset prices (%)	0.393	0.713	0.953	0.591
	interest rates (% p.a.)	0.206	0.340	0.351	0.098
	real interest rates (% p.a.)	0.114	0.035	0.011	-0.038
	real bond rates (% p.a.)	0.005	0.007	0.009	0.003
world	oil price (%)	0.245	-0.088	-0.060	-0.085
	employment (%)	0.010	0.013	0.013	0.014
	dollar inflation (% p.a.)	-0.002	-0.016	-0.005	-0.004
	domestic inflation (% p.a.)	0.014	0.028	0.027	0.012
inflation spillover (% p.a.)					
	USA	0.008	-0.010	0.001	-0.000
	Europe	0.006	-0.006	0.003	0.001
	Japan	0.013	-0.011	0.002	0.000
	China	0.022	-0.007	0.005	-0.001
	Central America	-0.000	0.002	0.002	0.000
	Africa Low Income	-0.040	0.057	0.002	0.003

Impact of shock to Africa Middle Income govt exp on goods & services in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in Africa Middle Income govt exp on goods & services					
local	GDP	1,369	1,253	1,469	1,632
	consumption	377	130	410	601
	investment	88	331	352	392
	govt net revenue	274	334	377	423
	government spending	1,020	1,011	983	934
	government debt	896	1,334	2,012	2,498
	current account	-187	-168	-172	-177
world	GDP	1,905	1,704	2,100	2,460
	exports	640	308	404	435
spillovers					
GDP	total	535	451	631	828
of which	USA	33	37	52	77
	Europe	162	125	174	226
	Japan	25	26	30	39
	China	152	138	172	225
	Central America	8	8	11	16
	Africa Low Income	7	4	7	8
current account	total	187	168	172	177
of which	USA	-3	25	23	26
	Europe	71	83	82	85
	Japan	3	15	17	20
	China	13	17	21	25
	Central America	3	2	2	2
	Africa Low Income	7	-1	-1	-1
per cent change in each variable per 1% of GDP increase in Africa Middle Income govt exp on goods & services					
local	real exchange rate (%)	0.013	-0.169	-0.314	-0.398
	nominal change in $ rate (% p.a.)	-0.084	-0.372	-0.302	-0.138
	activity rate (%)	0.062	0.083	0.095	0.107
	employment (%)	0.063	0.084	0.098	0.110
	cost inflation (% p.a.)	0.105	0.288	0.345	0.132
	price inflation (% p.a.)	0.111	0.309	0.351	0.140
	real asset prices (%)	0.352	0.639	0.858	0.525
	interest rates (% p.a.)	0.184	0.293	0.302	0.084
	real interest rates (% p.a.)	0.067	0.004	-0.024	-0.042
	real bond rates (% p.a.)	0.003	0.006	0.008	0.003
World	oil price (%)	0.123	-0.038	-0.024	-0.035
	employment (%)	0.003	0.003	0.004	0.004
	dollar inflation (% p.a.)	-0.010	-0.004	-0.001	-0.001
	domestic inflation (% p.a.)	0.008	0.013	0.014	0.007
inflation spillover (% p.a.)					
	USA	0.003	-0.005	-0.000	-0.000
	Europe	0.004	-0.003	0.002	0.001
	Japan	0.006	-0.006	0.001	-0.000
	China	0.010	-0.004	0.002	-0.001
	Central America	-0.000	0.000	0.000	0.000
	Africa Low Income	-0.020	0.027	0.000	0.001

Government revenue (net of grants, subsidies and interest)

Impact of shock to USA govt revenue (net of grants & subs) in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in USA govt revenue (net of grants & subs)					
Local	GDP	-344	-90	-155	-81
	consumption	-418	-247	-408	-410
	investment	-10	-41	-22	-17
	govt net revenue	939	790	511	330
	government spending	100	158	250	317
	government debt	-655	-1,120	-1,510	-1,453
	current account	78	9	35	21
World	GDP	-523	-142	-289	-229
	exports	-276	53	-97	-64
spillovers					
GDP	total	-178	-53	-134	-149
of which	Europe	-38	-11	-27	-28
	Japan	-10	-6	-8	-8
	China	-58	-24	-47	-47
	Central America	-10	-4	-8	-8
	Africa Low Income	-2	0	-2	-3
current account	total	-78	-9	-35	-21
of which	Europe	-6	-14	-10	-9
	Japan	2	-6	-3	-3
	China	-3	-4	-4	-4
	Central America	-3	-1	-2	-1
	Africa Low Income	-5	2	-1	0
per cent change in each variable per 1% of GDP increase in USA govt revenue (net of grants & subs)					
Local	real exchange rate (%)	0.010	0.026	0.030	0.032
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	-0.139	-0.091	-0.085	-0.055
	employment (%)	-0.143	-0.097	-0.096	-0.070
	cost inflation (% p.a.)	-0.025	-0.023	-0.019	0.007
	price inflation (% p.a.)	-0.052	0.015	-0.018	0.008
	real asset prices (%)	-0.091	-0.108	-0.098	0.000
	interest rates (% p.a.)	-0.048	-0.022	-0.020	0.019
	real interest rates (% p.a.)	0.004	-0.037	-0.002	0.011
	real bond rates (% p.a.)	-0.000	-0.002	-0.001	0.001
World	oil price (%)	-0.878	0.394	-0.118	-0.001
	employment (%)	-0.009	-0.006	-0.006	-0.004
	dollar inflation (% p.a.)	-0.062	-0.000	-0.025	0.008
	domestic inflation (% p.a.)	-0.007	-0.014	-0.007	0.001
inflation spillover (% p.a.)					
	Europe	-0.029	0.029	-0.002	0.001
	Japan	-0.041	0.045	-0.001	0.001
	China	-0.050	0.042	-0.004	0.003
	Central America	-0.012	-0.002	-0.005	0.000
	Africa Low Income	0.132	-0.209	-0.015	-0.007

Impact of shock to China govt revenue (net of grants & subs) in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in China govt revenue (net of grants & subs)					
local	GDP	-454	551	159	96
	consumption	-456	499	-131	-233
	investment	-81	-102	132	63
	govt net revenue	912	915	609	404
	government spending	61	127	200	264
	government debt	-29	41	10	5
	current account	60	-72	-7	4
world	GDP	-576	694	209	104
	exports	-287	438	13	-2
spillovers					
GDP	total	-122	143	50	8
of which	USA	-9	5	-1	0
	Europe	-34	40	6	3
	Japan	-14	13	1	-0
	Central America	-2	2	1	0
	Africa Low Income	-2	3	2	0
current account	total	-60	72	7	-4
of which	USA	10	-25	5	-0
	Europe	-7	-1	9	0
	Japan	-1	-4	3	-0
	Central America	-1	1	0	-0
	Africa Low Income	-4	7	-1	-0
per cent change in each variable per 1% of GDP increase in China govt revenue (net of grants & subs)					
local	real exchange rate (%)	-0.026	0.140	-0.057	-0.023
	nominal change in $ rate (% p.a.)	0.014	0.124	-0.055	-0.004
	activity rate (%)	-0.020	0.014	0.010	0.006
	employment (%)	-0.020	0.014	0.010	0.006
	cost inflation (% p.a.)	-0.032	-0.005	0.051	0.022
	price inflation (% p.a.)	-0.035	0.027	0.061	0.026
	real asset prices (%)	-0.112	0.022	0.116	0.076
	interest rates (% p.a.)	-0.054	0.038	0.048	0.019
	real interest rates (% p.a.)	-0.019	0.010	-0.012	-0.007
	real bond rates (% p.a.)	-0.002	0.000	0.002	0.001
world	oil price (%)	-0.517	0.938	-0.079	-0.011
	employment (%)	-0.006	0.005	0.003	0.001
	dollar inflation (% p.a.)	0.008	-0.005	-0.002	0.003
	domestic inflation (% p.a.)	-0.003	-0.009	0.007	0.005
inflation spillover (% p.a.)					
	USA	-0.018	0.049	0.003	0.001
	Europe	-0.015	0.038	0.003	0.001
	Japan	-0.024	0.060	0.005	0.001
	Central America	-0.003	0.003	-0.002	-0.000
	Africa Low Income	0.081	-0.232	-0.024	-0.002

Impact of shock to CIS and Other govt revenue (net of grants & subs) in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in CIS and Other govt revenue (net of grants & subs)					
local	GDP	-298	190	183	303
	consumption	-423	4	-239	-261
	investment	-10	-31	19	46
	govt net revenue	936	846	585	424
	government spending	77	209	409	544
	government debt	-728	-1,108	-1,353	-1,055
	current account	53	-19	-13	-24
world	GDP	-444	265	205	359
	exports	-181	153	27	49
spillovers					
GDP	total	-146	75	22	56
of which	USA	-7	1	-0	4
	Europe	-49	26	3	12
	Japan	-7	2	0	2
	China	-48	24	5	19
	Central America	-2	1	1	1
	Africa Low Income	-1	1	1	1
current account	total	-53	19	13	24
of which	USA	1	-8	1	3
	Europe	-24	4	5	11
	Japan	-1	-2	1	2
	China	-5	1	2	3
	Central America	-1	0	0	0
	Africa Low Income	-2	3	0	-0
per cent change in each variable per 1% of GDP increase in CIS and Other govt revenue (net of grants & subs)					
local	real exchange rate (%)	-0.005	0.057	0.005	-0.016
	nominal change in $ rate (% p.a.)	-0.000	0.091	-0.032	-0.063
	activity rate (%)	-0.029	0.005	0.019	0.035
	employment (%)	-0.029	0.005	0.020	0.036
	cost inflation (% p.a.)	-0.020	-0.019	0.037	0.061
	price inflation (% p.a.)	-0.002	-0.050	0.034	0.063
	real asset prices (%)	-0.078	-0.027	0.073	0.167
	interest rates (% p.a.)	-0.034	-0.007	0.043	0.073
	real interest rates (% p.a.)	-0.029	0.036	0.009	0.008
	real bond rates (% p.a.)	-0.001	-0.000	0.001	0.003
world	oil price (%)	-0.060	0.096	0.001	-0.005
	employment (%)	-0.002	0.000	0.001	0.001
	dollar inflation (% p.a.)	0.003	-0.002	-0.001	-0.001
	domestic inflation (% p.a.)	-0.002	-0.001	0.002	0.003
inflation spillover (% p.a.)					
	USA	-0.002	0.005	0.001	-0.000
	Europe	-0.001	0.003	0.001	0.000
	Japan	-0.003	0.006	0.001	0.000
	China	-0.005	0.008	0.002	0.001
	Central America	0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.010	-0.026	-0.005	0.000

Impact of shock to South America govt revenue (net of grants & subs) in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in South America govt revenue (net of grants & subs)					
local	GDP	-397	-62	-70	48
	consumption	-448	-173	-360	-369
	investment	-24	-77	-27	-2
	govt net revenue	918	789	528	363
	government spending	61	146	288	399
	government debt	-706	-1,139	-1,400	-1,170
	current account	57	14	14	0
world	GDP	-556	-90	-134	2
	exports	-154	27	-33	-10
spillovers					
GDP	total	-159	-28	-64	-46
of which	USA	-21	-7	-11	-10
	Europe	-36	-5	-15	-11
	Japan	-7	-3	-3	-3
	China	-47	-10	-19	-10
	Central America	-6	-1	-2	-2
	Africa Low Income	-2	0	-0	-0
current account	total	-57	-14	-14	-0
of which	USA	-5	-9	-3	-1
	Europe	-16	-10	-5	-1
	Japan	-1	-3	-2	-1
	China	-5	-3	-2	-1
	Central America	-2	-0	-0	0
	Africa Low Income	-2	1	0	0
per cent change in each variable per 1% of GDP increase in South America govt revenue (net of grants & subs)					
local	real exchange rate (%)	-0.003	0.053	0.046	0.041
	nominal change in $ rate (% p.a.)	0.007	0.101	0.014	-0.032
	activity rate (%)	-0.034	-0.020	-0.011	-0.001
	employment (%)	-0.034	-0.020	-0.012	-0.001
	cost inflation (% p.a.)	-0.028	-0.049	-0.014	0.034
	price inflation (% p.a.)	-0.012	-0.064	-0.015	0.033
	real asset prices (%)	-0.103	-0.110	-0.058	0.076
	interest rates (% p.a.)	-0.052	-0.047	-0.008	0.053
	real interest rates (% p.a.)	-0.035	0.015	0.006	0.017
	real bond rates (% p.a.)	-0.001	-0.001	-0.000	0.001
world	oil price (%)	-0.084	0.073	0.005	0.009
	employment (%)	-0.003	-0.001	-0.001	-0.000
	dollar inflation (% p.a.)	-0.000	0.004	-0.000	-0.001
	domestic inflation (% p.a.)	-0.003	-0.005	-0.001	0.003
inflation spillover (% p.a.)					
	USA	-0.003	0.005	-0.000	0.000
	Europe	-0.002	0.003	-0.000	0.000
	Japan	-0.004	0.006	0.000	0.000
	China	-0.007	0.006	0.000	0.001
	Central America	-0.000	-0.001	-0.000	0.000
	Africa Low Income	0.014	-0.026	-0.001	0.000

Impact of shock to Africa Middle Income govt revenue (net of grants & subs) in 2011

		2011	2012	2014	2016
$m change in each variable per $1b increase in Africa Middle Income govt revenue (net of grants & subs)					
local	GDP	-326	37	46	188
	consumption	-426	-99	-298	-304
	investment	-21	-57	1	32
	govt net revenue	934	811	551	392
	government spending	63	160	324	465
	government debt	-769	-1,136	-1,411	-1,125
	current account	61	1	4	-15
world	GDP	-501	46	14	199
	exports	-210	77	-13	36
spillovers					
GDP	total	-175	8	-32	12
of which	USA	-11	-3	-4	-1
	Europe	-54	4	-12	0
	Japan	-8	-1	-2	0
	China	-50	1	-9	7
	Central America	-2	-0	-0	0
	Africa Low Income	-2	1	0	0
current account	total	-61	-1	-4	15
of which	USA	1	-8	-0	1
	Europe	-24	-6	-2	6
	Japan	-1	-3	-1	1
	China	-5	-1	-0	1
	Central America	-1	0	0	0
	Africa Low Income	-2	2	0	0
per cent change in each variable per 1% of GDP increase in Africa Middle Income govt revenue (net of grants & subs)					
local	real exchange rate (%)	-0.003	0.059	0.033	0.020
	nominal change in $ rate (% p.a.)	0.015	0.085	-0.009	-0.052
	activity rate (%)	-0.015	-0.005	0.001	0.009
	employment (%)	-0.015	-0.005	0.001	0.009
	cost inflation (% p.a.)	-0.025	-0.042	0.008	0.056
	price inflation (% p.a.)	-0.020	-0.047	0.009	0.059
	real asset prices (%)	-0.085	-0.070	0.004	0.126
	interest rates (% p.a.)	-0.043	-0.025	0.015	0.063
	real interest rates (% p.a.)	-0.020	0.016	0.005	0.006
	real bond rates (% p.a.)	-0.001	-0.001	0.000	0.002
world	oil price (%)	-0.040	0.042	0.001	0.003
	employment (%)	-0.001	-0.000	0.000	0.000
	dollar inflation (% p.a.)	0.002	-0.001	-0.001	-0.001
	domestic inflation (% p.a.)	-0.002	-0.001	0.000	0.002
inflation spillover (% p.a.)					
	USA	-0.001	0.003	0.000	-0.000
	Europe	-0.001	0.002	-0.000	0.000
	Japan	-0.002	0.003	0.000	0.000
	China	-0.003	0.004	0.000	0.001
	Central America	-0.000	-0.000	-0.000	0.000
	Africa Low Income	0.006	-0.014	-0.001	0.000

Real exchange rate

Impact of shock to USA real exchange rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in USA real exchange rate					
local	GDP (%)	-0.061	-0.054	-0.049	-0.047
	consumption (% of GDP)	-0.011	-0.008	-0.015	-0.019
	investment (% of GDP)	-0.002	-0.008	-0.007	-0.007
	govt net revenue (% of GDP)	-0.009	-0.009	-0.005	-0.004
	government spending (% of GDP)	-0.001	-0.003	-0.005	-0.007
	government debt (% of GDP)	0.035	0.047	0.045	0.028
	current account (% of GDP)	-0.045	-0.026	-0.011	-0.005
	real exchange rate (%)	0.756	0.314	0.048	-0.004
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	-0.024	-0.032	-0.029	-0.029
	employment (%)	-0.025	-0.033	-0.033	-0.034
	cost inflation (% p.a.)	-0.041	-0.017	-0.002	0.004
	price inflation (% p.a.)	-0.061	-0.016	-0.000	0.006
	real asset prices (%)	-0.016	-0.029	-0.035	-0.017
	interest rates (% p.a.)	-0.024	-0.019	-0.010	0.002
	real interest rates (% p.a.)	0.037	-0.002	-0.009	-0.004
	real bond rates (% p.a.)	0.001	-0.000	-0.001	-0.000
world	GDP (%)	0.014	0.004	0.007	0.006
	exports (%)	-0.015	-0.016	0.004	0.006
	oil price (%)	-0.019	-0.055	-0.007	-0.010
	employment (%)	0.001	0.001	0.001	0.001
	dollar inflation (% p.a.)	-0.799	0.420	0.082	0.023
	domestic inflation (% p.a.)	-0.002	0.009	0.001	-0.001
GDP spillover (%)					
	Europe	0.021	0.012	0.018	0.019
	Japan	0.027	0.021	0.020	0.019
	China	0.048	0.021	0.026	0.022
	Central America	0.091	0.052	0.036	0.027
	Africa Low Income	0.025	0.007	-0.001	-0.002
current account spillover (% of GDP)					
	Europe	0.010	0.009	0.006	0.004
	Japan	0.015	0.010	0.004	0.003
	China	0.010	0.005	0.000	0.000
	Central America	0.031	0.013	-0.000	-0.004
	Africa Low Income	0.009	0.003	0.002	-0.000
inflation spillover (% p.a.)					
	Europe	0.008	0.009	0.001	-0.001
	Japan	0.007	0.008	0.000	-0.002
	China	0.007	0.019	0.000	-0.003
	Central America	0.021	0.021	0.004	-0.008
	Africa Low Income	0.025	0.015	-0.000	-0.006

Impact of shock to China real exchange rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in China real exchange rate					
local	GDP (%)	-0.112	-0.127	-0.153	-0.140
	consumption (% of GDP)	-0.043	0.029	-0.009	-0.024
	investment (% of GDP)	-0.020	-0.065	-0.092	-0.081
	govt net revenue (% of GDP)	-0.032	-0.028	-0.024	-0.020
	government spending (% of GDP)	-0.002	-0.017	-0.018	-0.016
	government debt (% of GDP)	0.157	-0.008	-0.011	-0.012
	current account (% of GDP)	-0.036	-0.018	-0.002	-0.000
	real exchange rate (%)	0.892	0.286	0.018	-0.008
	nominal change in $ rate (% p.a.)	0.934	-0.466	-0.047	-0.008
	activity rate (%)	-0.005	-0.009	-0.013	-0.013
	employment (%)	-0.005	-0.009	-0.013	-0.014
	cost inflation (% p.a.)	-0.059	-0.028	-0.019	-0.002
	price inflation (% p.a.)	-0.006	-0.090	-0.019	0.002
	real asset prices (%)	-0.028	-0.055	-0.087	-0.049
	interest rates (% p.a.)	-0.013	-0.043	-0.031	-0.003
	real interest rates (% p.a.)	-0.006	0.043	-0.012	-0.005
	real bond rates (% p.a.)	-0.000	-0.001	-0.002	-0.000
world	GDP (%)	-0.009	-0.012	-0.019	-0.020
	exports (%)	0.009	-0.007	-0.015	-0.014
	oil price (%)	0.045	-0.013	-0.002	-0.000
	employment (%)	-0.001	-0.001	-0.002	-0.002
	dollar inflation (% p.a.)	0.105	-0.056	-0.006	-0.001
	domestic inflation (% p.a.)	0.001	-0.006	-0.002	0.000
GDP spillover (%)					
	USA	0.006	0.007	0.006	0.006
	Europe	0.001	0.008	0.010	0.010
	Japan	0.021	0.013	0.006	0.005
	Central America	-0.000	0.008	0.009	0.009
	Africa Low Income	0.006	0.005	0.006	0.005
current account spillover (% of GDP)					
	USA	0.004	0.003	0.001	0.001
	Europe	0.003	0.004	0.002	0.002
	Japan	0.011	0.005	-0.001	-0.003
	Central America	0.004	0.003	0.002	0.001
	Africa Low Income	0.008	0.001	-0.000	0.000
inflation spillover (% p.a.)					
	USA	0.009	0.000	0.001	-0.000
	Europe	-0.000	0.006	0.002	0.001
	Japan	0.004	0.004	0.001	-0.001
	Central America	0.004	0.004	0.001	0.000
	Africa Low Income	-0.004	0.019	-0.003	-0.000

Impact of shock to CIS and Other real exchange rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in CIS and Other real exchange rate					
local	GDP (%)	-0.093	-0.051	-0.059	-0.055
	consumption (% of GDP)	-0.034	0.009	-0.018	-0.023
	investment (% of GDP)	-0.003	-0.013	-0.011	-0.010
	govt net revenue (% of GDP)	-0.026	-0.017	-0.010	-0.008
	government spending (% of GDP)	-0.002	-0.010	-0.016	-0.016
	government debt (% of GDP)	0.083	0.058	0.037	0.015
	current account (% of GDP)	-0.035	-0.021	-0.004	0.000
	real exchange rate (%)	0.962	0.339	0.036	-0.005
	nominal change in $ rate (% p.a.)	0.939	-0.411	-0.066	-0.018
	activity rate (%)	-0.009	-0.009	-0.010	-0.010
	employment (%)	-0.009	-0.010	-0.010	-0.010
	cost inflation (% p.a.)	-0.076	-0.029	-0.002	0.008
	price inflation (% p.a.)	-0.005	-0.087	-0.008	0.009
	real asset prices (%)	-0.025	-0.036	-0.042	-0.017
	interest rates (% p.a.)	-0.012	-0.035	-0.018	0.002
	real interest rates (% p.a.)	-0.006	0.044	-0.009	-0.007
	real bond rates (% p.a.)	-0.000	0.000	-0.001	-0.000
world	GDP (%)	-0.002	-0.001	-0.001	-0.001
	exports (%)	0.007	0.003	0.001	0.001
	oil price (%)	0.036	0.019	0.011	0.009
	employment (%)	-0.000	-0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.036	-0.019	-0.003	-0.001
	domestic inflation (% p.a.)	0.001	-0.002	-0.000	0.000
GDP spillover (%)					
	USA	0.001	0.001	0.001	0.001
	Europe	0.005	0.003	0.002	0.002
	Japan	0.001	0.002	0.002	0.002
	China	0.006	0.003	0.003	0.002
	Central America	-0.001	0.000	0.001	0.001
	Africa Low Income	0.002	0.001	0.002	0.003
current account spillover (% of GDP)					
	USA	0.000	0.000	0.000	0.000
	Europe	0.003	0.002	0.000	-0.000
	Japan	0.000	0.000	0.000	-0.000
	China	0.001	0.001	-0.000	-0.000
	Central America	0.001	0.000	0.000	0.000
	Africa Low Income	0.004	0.002	0.000	0.000
inflation spillover (% p.a.)					
	USA	0.004	-0.000	-0.000	-0.000
	Europe	0.001	0.002	0.000	-0.000
	Japan	0.002	0.001	0.000	-0.000
	China	0.001	0.003	0.000	-0.000
	Central America	0.002	0.001	-0.000	-0.000
	Africa Low Income	-0.004	0.005	0.000	-0.000

Impact of shock to South America real exchange rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in South America real exchange rate					
local	GDP (%)	-0.061	-0.058	-0.049	-0.046
	consumption (% of GDP)	-0.008	-0.007	-0.013	-0.017
	investment (% of GDP)	-0.004	-0.014	-0.012	-0.011
	govt net revenue (% of GDP)	-0.008	-0.010	-0.008	-0.007
	government spending (% of GDP)	-0.001	-0.002	-0.005	-0.007
	government debt (% of GDP)	0.043	0.040	0.034	0.019
	current account (% of GDP)	-0.026	-0.017	-0.008	-0.004
	real exchange rate (%)	0.939	0.381	0.052	-0.011
	nominal change in $ rate (% p.a.)	0.978	-0.425	-0.091	-0.028
	activity rate (%)	-0.005	-0.007	-0.006	-0.006
	employment (%)	-0.005	-0.007	-0.006	-0.006
	cost inflation (% p.a.)	-0.074	-0.030	-0.001	0.009
	price inflation (% p.a.)	-0.078	-0.037	-0.000	0.011
	real asset prices (%)	-0.016	-0.030	-0.035	-0.014
	interest rates (% p.a.)	-0.031	-0.030	-0.015	0.003
	real interest rates (% p.a.)	0.043	0.007	-0.013	-0.007
	real bond rates (% p.a.)	0.001	-0.000	-0.001	-0.000
world	GDP (%)	0.000	-0.001	-0.000	-0.000
	exports (%)	-0.002	-0.002	0.002	0.003
	oil price (%)	0.008	0.002	0.008	0.007
	employment (%)	-0.000	-0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.060	-0.032	-0.006	-0.002
	domestic inflation (% p.a.)	-0.002	-0.000	-0.000	0.000
GDP spillover (%)					
	USA	0.006	0.004	0.002	0.002
	Europe	0.001	0.002	0.003	0.003
	Japan	0.001	0.002	0.003	0.004
	China	0.006	0.003	0.005	0.004
	Central America	0.010	0.006	0.004	0.003
	Africa Low Income	0.004	0.002	0.001	0.002
current account spillover (% of GDP)					
	USA	0.003	0.002	0.000	0.000
	Europe	0.001	0.001	0.001	0.001
	Japan	0.001	0.001	0.001	0.001
	China	0.001	0.001	0.000	-0.000
	Central America	0.004	0.002	0.000	-0.000
	Africa Low Income	0.002	0.001	0.001	0.000
inflation spillover (% p.a.)					
	USA	0.006	0.000	-0.000	-0.001
	Europe	0.002	0.002	0.000	-0.000
	Japan	0.001	0.002	0.000	-0.000
	China	0.001	0.004	0.000	-0.000
	Central America	0.006	0.001	-0.000	-0.001
	Africa Low Income	0.005	0.002	0.000	-0.001

Impact of shock to Africa Middle Income real exchange rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in Africa Middle Income real exchange rate					
local	GDP (%)	-0.109	-0.080	-0.076	-0.066
	consumption (% of GDP)	-0.033	-0.003	-0.025	-0.028
	investment (% of GDP)	-0.007	-0.024	-0.019	-0.017
	govt net revenue (% of GDP)	-0.026	-0.022	-0.013	-0.010
	government spending (% of GDP)	-0.002	-0.007	-0.012	-0.012
	government debt (% of GDP)	0.064	0.034	0.014	0.003
	current account (% of GDP)	-0.048	-0.024	-0.003	0.001
	real exchange rate (%)	0.981	0.366	0.039	-0.011
	nominal change in $ rate (% p.a.)	0.936	-0.423	-0.071	-0.022
	activity rate (%)	-0.005	-0.006	-0.006	-0.006
	employment (%)	-0.005	-0.006	-0.006	-0.006
	cost inflation (% p.a.)	-0.093	-0.041	-0.006	0.012
	price inflation (% p.a.)	-0.046	-0.086	-0.011	0.014
	real asset prices (%)	-0.028	-0.047	-0.055	-0.021
	interest rates (% p.a.)	-0.025	-0.041	-0.022	0.004
	real interest rates (% p.a.)	0.017	0.033	-0.010	-0.008
	real bond rates (% p.a.)	0.000	0.001	-0.001	-0.000
world	GDP (%)	-0.001	-0.001	-0.001	-0.000
	exports (%)	0.006	0.001	0.000	0.000
	oil price (%)	0.020	0.004	0.005	0.004
	employment (%)	-0.000	-0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.019	-0.010	-0.002	-0.001
	domestic inflation (% p.a.)	-0.001	-0.001	-0.000	0.000
GDP spillover (%)					
	USA	0.001	0.001	0.001	0.000
	Europe	0.003	0.002	0.002	0.001
	Japan	0.001	0.001	0.001	0.001
	China	0.003	0.001	0.002	0.002
	Central America	-0.000	0.000	0.001	0.001
	Africa Low Income	0.002	0.002	0.003	0.002
current account spillover (% of GDP)					
	USA	0.001	0.000	0.000	0.000
	Europe	0.002	0.001	0.000	-0.000
	Japan	0.000	0.000	0.000	0.000
	China	0.001	0.000	-0.000	-0.000
	Central America	0.001	0.000	0.000	0.000
	Africa Low Income	0.002	0.001	0.000	0.000
inflation spillover (% p.a.)					
	USA	0.002	-0.000	-0.000	-0.000
	Europe	0.000	0.001	0.000	-0.000
	Japan	0.001	0.000	0.000	-0.000
	China	0.001	0.001	0.000	-0.000
	Central America	0.001	0.001	0.000	-0.000
	Africa Low Income	-0.002	0.005	0.001	-0.000

Cost inflation

Impact of shock to USA inflation in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in USA inflation					
local	GDP (%)	-0.031	-0.002	0.033	0.073
	consumption (% of GDP)	-0.053	-0.033	-0.017	0.007
	investment (% of GDP)	-0.001	-0.001	0.007	0.016
	govt net revenue (% of GDP)	-0.005	-0.006	-0.021	-0.040
	government spending (% of GDP)	-0.001	0.005	0.022	0.042
	government debt (% of GDP)	-0.621	-1.106	-1.729	-1.971
	current account (% of GDP)	0.007	-0.004	-0.006	-0.015
	real exchange rate (%)	0.001	0.063	0.068	0.106
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	-0.012	-0.006	0.015	0.035
	employment (%)	-0.013	-0.006	0.015	0.037
	cost inflation (% p.a.)	0.998	0.844	0.621	0.448
	price inflation (% p.a.)	1.000	0.847	0.621	0.447
	real asset prices (%)	-0.008	-0.008	0.011	0.043
	interest rates (% p.a.)	0.289	0.350	0.383	0.346
	real interest rates (% p.a.)	-0.691	-0.491	-0.238	-0.102
	real bond rates (% p.a.)	-0.020	-0.012	0.003	0.008
world	GDP (%)	-0.009	0.003	0.019	0.041
	exports (%)	-0.019	0.011	0.018	0.035
	oil price (%)	-0.090	0.044	0.032	0.058
	employment (%)	-0.001	-0.000	0.002	0.004
	dollar inflation (% p.a.)	0.991	0.773	0.599	0.423
	domestic inflation (% p.a.)	0.206	0.171	0.124	0.089
GDP spillover (%)					
	Europe	-0.005	0.002	0.013	0.028
	Japan	-0.005	-0.001	0.014	0.039
	China	-0.006	0.008	0.030	0.064
	Central America	-0.001	0.012	0.019	0.028
	Africa Low Income	-0.004	0.007	0.028	0.065
current account spillover (% of GDP)					
	Europe	0.001	0.001	0.001	0.001
	Japan	-0.002	-0.006	-0.004	0.002
	China	-0.001	-0.001	0.002	0.005
	Central America	0.001	0.005	0.003	0.001
	Africa Low Income	-0.005	0.004	-0.000	-0.003
inflation spillover (% p.a.)					
	Europe	-0.003	0.004	0.002	0.004
	Japan	-0.004	0.006	0.005	0.011
	China	-0.005	0.006	0.010	0.017
	Central America	-0.001	0.001	-0.001	-0.002
	Africa Low Income	0.013	-0.020	0.004	0.009

Impact of shock to China inflation in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in China inflation					
local	GDP (%)	0.001	0.035	0.066	0.085
	consumption (% of GDP)	-0.037	-0.020	-0.024	-0.022
	investment (% of GDP)	0.000	0.022	0.072	0.096
	govt net revenue (% of GDP)	0.000	0.006	0.015	0.017
	government spending (% of GDP)	0.000	0.000	-0.000	-0.001
	government debt (% of GDP)	0.000	0.002	0.004	0.005
	current account (% of GDP)	-0.002	-0.009	-0.010	-0.009
	real exchange rate (%)	0.000	0.044	-0.023	-0.036
	nominal change in $ rate (% p.a.)	-0.826	-0.674	-0.549	-0.381
	activity rate (%)	0.000	0.002	0.005	0.007
	employment (%)	0.000	0.002	0.005	0.007
	cost inflation (% p.a.)	1.000	0.869	0.628	0.428
	price inflation (% p.a.)	0.998	0.871	0.627	0.429
	real asset prices (%)	0.000	0.009	0.031	0.040
	interest rates (% p.a.)	0.280	0.347	0.376	0.325
	real interest rates (% p.a.)	-0.639	-0.464	-0.225	-0.096
	real bond rates (% p.a.)	-0.002	0.002	0.013	0.015
world	GDP (%)	0.001	0.008	0.015	0.021
	exports (%)	0.003	0.018	0.021	0.024
	oil price (%)	0.004	0.044	0.016	0.014
	employment (%)	0.000	0.001	0.002	0.002
	dollar inflation (% p.a.)	-0.000	0.004	-0.004	-0.002
	domestic inflation (% p.a.)	0.137	0.127	0.102	0.077
GDP spillover (%)					
	USA	0.000	0.001	0.002	0.003
	Europe	0.001	0.003	0.006	0.007
	Japan	0.002	0.007	0.010	0.012
	Central America	0.000	0.001	0.003	0.004
	Africa Low Income	0.000	0.002	0.004	0.005
current account spillover (% of GDP)					
	USA	0.000	-0.000	0.001	0.001
	Europe	0.000	0.001	0.003	0.003
	Japan	0.001	0.002	0.005	0.006
	Central America	0.000	0.001	0.001	0.001
	Africa Low Income	0.000	0.003	0.001	0.000
inflation spillover (% p.a.)					
	USA	0.000	0.002	-0.000	-0.000
	Europe	0.000	0.001	0.000	0.000
	Japan	0.000	0.002	0.001	0.001
	Central America	0.000	0.000	0.000	0.000
	Africa Low Income	-0.001	-0.006	0.001	0.000

Impact of shock to CIS and Other inflation in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in CIS and Other inflation					
local	GDP (%)	-0.020	-0.005	0.004	0.009
	consumption (% of GDP)	-0.034	-0.017	-0.016	-0.018
	investment (% of GDP)	-0.000	-0.001	0.002	0.004
	govt net revenue (% of GDP)	-0.004	-0.002	-0.001	-0.004
	government spending (% of GDP)	-0.000	0.003	0.010	0.019
	government debt (% of GDP)	-0.087	-0.154	-0.253	-0.293
	current account (% of GDP)	0.002	-0.002	-0.001	-0.001
	real exchange rate (%)	-0.000	0.040	-0.003	-0.008
	nominal change in $ rate (% p.a.)	-0.700	-0.526	-0.401	-0.272
	activity rate (%)	-0.002	-0.001	0.000	0.001
	employment (%)	-0.002	-0.001	0.000	0.001
	cost inflation (% p.a.)	0.998	0.825	0.552	0.344
	price inflation (% p.a.)	0.981	0.825	0.548	0.343
	real asset prices (%)	-0.005	-0.006	-0.001	0.008
	interest rates (% p.a.)	0.242	0.294	0.325	0.277
	real interest rates (% p.a.)	-0.545	-0.388	-0.182	-0.064
	real bond rates (% p.a.)	-0.018	-0.011	0.004	0.009
world	GDP (%)	-0.001	0.000	0.000	0.001
	exports (%)	-0.001	0.001	0.001	0.001
	oil price (%)	-0.002	0.006	0.001	0.001
	employment (%)	-0.000	-0.000	0.000	0.000
	dollar inflation (% p.a.)	0.000	0.001	-0.000	-0.000
	domestic inflation (% p.a.)	0.041	0.035	0.024	0.015
GDP spillover (%)					
	USA	-0.000	0.000	0.000	0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	0.000	0.000	0.000
	China	-0.001	0.001	0.000	0.000
	Central America	-0.000	-0.000	0.000	0.000
	Africa Low Income	-0.000	0.000	0.000	0.000
current account spillover (% of GDP)					
	USA	0.000	-0.000	0.000	0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	-0.000	0.000	0.000
	China	-0.000	0.000	0.000	0.000
	Central America	-0.000	0.000	0.000	0.000
	Africa Low Income	-0.000	0.000	0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	0.000	-0.000	-0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	0.000	0.000	0.000
	China	-0.000	0.000	0.000	0.000
	Central America	0.000	0.000	-0.000	-0.000
	Africa Low Income	0.000	-0.001	0.000	0.000

Impact of shock to South America inflation in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in South America inflation					
local	GDP (%)	-0.027	-0.005	0.012	0.025
	consumption (% of GDP)	-0.040	-0.020	-0.016	-0.015
	investment (% of GDP)	-0.001	-0.003	0.006	0.011
	govt net revenue (% of GDP)	-0.006	-0.003	-0.003	-0.007
	government spending (% of GDP)	-0.000	0.003	0.013	0.024
	government debt (% of GDP)	-0.204	-0.340	-0.474	-0.491
	current account (% of GDP)	0.003	-0.002	-0.003	-0.003
	real exchange rate (%)	-0.000	0.044	-0.002	-0.011
	nominal change in $ rate (% p.a.)	-0.754	-0.573	-0.454	-0.317
	activity rate (%)	-0.002	-0.001	0.001	0.002
	employment (%)	-0.002	-0.001	0.001	0.002
	cost inflation (% p.a.)	0.998	0.846	0.588	0.391
	price inflation (% p.a.)	0.994	0.845	0.588	0.391
	real asset prices (%)	-0.007	-0.008	0.003	0.018
	interest rates (% p.a.)	0.285	0.347	0.378	0.330
	real interest rates (% p.a.)	-0.605	-0.427	-0.197	-0.071
	real bond rates (% p.a.)	-0.016	-0.012	0.001	0.006
world	GDP (%)	-0.002	-0.000	0.001	0.002
	exports (%)	-0.002	0.001	0.001	0.002
	oil price (%)	-0.004	0.006	0.002	0.001
	employment (%)	-0.000	-0.000	0.000	0.000
	dollar inflation (% p.a.)	0.000	0.003	-0.001	-0.000
	domestic inflation (% p.a.)	0.059	0.050	0.035	0.023
GDP spillover (%)					
	USA	-0.000	0.000	0.000	0.000
	Europe	-0.000	0.000	0.000	0.001
	Japan	-0.000	0.000	0.000	0.001
	China	-0.001	0.001	0.001	0.001
	Central America	-0.001	0.001	0.001	0.001
	Africa Low Income	-0.000	0.000	0.000	0.000
current account spillover (% of GDP)					
	USA	-0.000	0.000	0.000	0.000
	Europe	-0.000	-0.000	0.000	0.000
	Japan	-0.000	-0.000	0.000	0.000
	China	-0.000	0.000	0.000	0.000
	Central America	-0.000	0.000	0.000	0.000
	Africa Low Income	-0.000	0.000	0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	0.001	-0.000	-0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	0.000	0.000	0.000
	China	-0.000	0.001	0.000	0.000
	Central America	0.000	0.000	0.000	0.000
	Africa Low Income	0.001	-0.001	0.000	0.000

Impact of shock to Africa Middle Income inflation in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in Africa Middle Income inflation					
local	GDP (%)	-0.013	-0.001	0.014	0.026
	consumption (% of GDP)	-0.027	-0.014	-0.009	-0.007
	investment (% of GDP)	-0.000	0.000	0.008	0.012
	govt net revenue (% of GDP)	-0.003	-0.000	0.002	0.001
	government spending (% of GDP)	-0.000	0.002	0.009	0.018
	government debt (% of GDP)	-0.113	-0.185	-0.261	-0.262
	current account (% of GDP)	0.001	-0.004	-0.004	-0.004
	real exchange rate (%)	-0.000	0.033	-0.005	-0.013
	nominal change in $ rate (% p.a.)	-0.563	-0.438	-0.338	-0.235
	activity rate (%)	-0.001	-0.000	0.001	0.002
	employment (%)	-0.001	-0.000	0.001	0.002
	cost inflation (% p.a.)	0.998	0.850	0.560	0.350
	price inflation (% p.a.)	0.974	0.845	0.555	0.349
	real asset prices (%)	-0.003	-0.003	0.005	0.016
	interest rates (% p.a.)	0.213	0.262	0.280	0.238
	real interest rates (% p.a.)	-0.465	-0.341	-0.171	-0.073
	real bond rates (% p.a.)	-0.022	-0.017	-0.002	0.004
world	GDP (%)	-0.000	0.000	0.001	0.001
	exports (%)	-0.000	0.001	0.001	0.001
	oil price (%)	-0.001	0.003	0.001	0.000
	employment (%)	-0.000	0.000	0.000	0.000
	dollar inflation (% p.a.)	0.000	0.001	-0.000	-0.000
	domestic inflation (% p.a.)	0.024	0.021	0.014	0.009
GDP spillover (%)					
	USA	-0.000	0.000	0.000	0.000
	Europe	-0.000	0.000	0.000	0.001
	Japan	-0.000	0.000	0.000	0.000
	China	-0.000	0.000	0.001	0.001
	Central America	-0.000	0.000	0.000	0.000
	Africa Low Income	-0.000	0.000	0.000	0.000
current account spillover (% of GDP)					
	USA	-0.000	-0.000	0.000	0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	-0.000	0.000	0.000
	China	-0.000	0.000	0.000	0.000
	Central America	-0.000	0.000	0.000	0.000
	Africa Low Income	-0.000	0.000	0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	0.000	-0.000	-0.000
	Europe	-0.000	0.000	0.000	0.000
	Japan	-0.000	0.000	0.000	0.000
	China	-0.000	0.000	0.000	0.000
	Central America	0.000	0.000	0.000	0.000
	Africa Low Income	0.000	-0.001	0.000	0.000

Policy rate

Impact of shock to USA short-term interest rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in USA short-term interest rate					
local	GDP (%)	-0.017	-0.102	-0.166	-0.188
	consumption (% of GDP)	-0.004	-0.080	-0.141	-0.161
	investment (% of GDP)	-0.001	-0.006	-0.023	-0.029
	govt net revenue (% of GDP)	-0.003	-0.024	-0.048	-0.047
	government spending (% of GDP)	-0.000	-0.003	-0.007	-0.012
	government debt (% of GDP)	0.003	0.025	0.101	0.167
	current account (% of GDP)	0.005	0.022	0.028	0.029
	real exchange rate (%)	0.001	0.005	0.017	0.026
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	-0.007	-0.043	-0.088	-0.103
	employment (%)	-0.007	-0.045	-0.093	-0.114
	cost inflation (% p.a.)	-0.001	-0.008	-0.023	-0.023
	price inflation (% p.a.)	-0.003	-0.013	-0.022	-0.023
	real asset prices (%)	-0.004	-0.031	-0.093	-0.110
	interest rates (% p.a.)	0.998	0.722	0.372	0.189
	real interest rates (% p.a.)	0.986	0.727	0.388	0.209
	real bond rates (% p.a.)	0.035	0.048	0.025	0.013
world	GDP (%)	-0.006	-0.030	-0.049	-0.057
	exports (%)	-0.012	-0.055	-0.052	-0.052
	oil price (%)	-0.041	-0.205	-0.117	-0.102
	employment (%)	-0.000	-0.003	-0.005	-0.006
	dollar inflation (% p.a.)	-0.003	-0.017	-0.027	-0.027
	domestic inflation (% p.a.)	-0.000	-0.002	-0.006	-0.006
GDP spillover (%)					
	Europe	-0.002	-0.010	-0.017	-0.022
	Japan	-0.002	-0.011	-0.018	-0.022
	China	-0.005	-0.023	-0.034	-0.040
	Central America	-0.005	-0.020	-0.033	-0.040
	Africa Low Income	-0.002	-0.007	-0.017	-0.026
current account spillover (% of GDP)					
	Europe	-0.001	-0.002	-0.007	-0.009
	Japan	-0.000	0.000	-0.006	-0.008
	China	-0.000	-0.001	-0.003	-0.004
	Central America	-0.001	-0.007	-0.009	-0.008
	Africa Low Income	-0.003	-0.014	-0.007	-0.005
inflation spillover (% p.a.)					
	Europe	-0.001	-0.006	-0.002	-0.003
	Japan	-0.002	-0.008	-0.003	-0.003
	China	-0.003	-0.011	-0.006	-0.005
	Central America	-0.001	-0.003	-0.005	-0.004
	Africa Low Income	0.006	0.023	-0.006	-0.005

Impact of shock to China short-term interest rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in China short-term interest rate					
local	GDP (%)	-0.020	-0.112	-0.189	-0.224
	consumption (% of GDP)	-0.005	-0.073	-0.097	-0.111
	investment (% of GDP)	-0.006	-0.034	-0.107	-0.132
	govt net revenue (% of GDP)	-0.004	-0.023	-0.042	-0.045
	government spending (% of GDP)	-0.000	-0.001	-0.001	-0.000
	government debt (% of GDP)	-0.001	-0.007	-0.012	-0.015
	current account (% of GDP)	0.003	0.014	0.020	0.018
	real exchange rate (%)	-0.001	-0.001	0.037	0.059
	nominal change in $ rate (% p.a.)	0.000	0.012	0.049	0.040
	activity rate (%)	-0.001	-0.006	-0.014	-0.020
	employment (%)	-0.001	-0.006	-0.014	-0.020
	cost inflation (% p.a.)	-0.001	-0.010	-0.033	-0.031
	price inflation (% p.a.)	-0.001	-0.010	-0.032	-0.032
	real asset prices (%)	-0.005	-0.032	-0.092	-0.106
	interest rates (% p.a.)	0.997	0.728	0.367	0.180
	real interest rates (% p.a.)	0.943	0.691	0.371	0.200
	real bond rates (% p.a.)	0.034	0.048	0.025	0.012
world	GDP (%)	-0.004	-0.021	-0.040	-0.052
	exports (%)	-0.008	-0.038	-0.048	-0.053
	oil price (%)	-0.024	-0.106	-0.061	-0.045
	employment (%)	-0.000	-0.002	-0.004	-0.005
	dollar inflation (% p.a.)	0.000	0.003	0.005	0.004
	domestic inflation (% p.a.)	-0.000	-0.001	-0.006	-0.006
GDP spillover (%)					
	USA	-0.000	-0.002	-0.004	-0.005
	Europe	-0.001	-0.006	-0.011	-0.014
	Japan	-0.002	-0.010	-0.018	-0.022
	Central America	-0.001	-0.003	-0.006	-0.008
	Africa Low Income	-0.001	-0.004	-0.009	-0.013
current account spillover (% of GDP)					
	USA	0.000	0.001	-0.001	-0.001
	Europe	-0.000	-0.002	-0.005	-0.006
	Japan	-0.000	-0.002	-0.008	-0.010
	Central America	-0.000	-0.001	-0.001	-0.001
	Africa Low Income	-0.002	-0.007	-0.003	-0.001
inflation spillover (% p.a.)					
	USA	-0.001	-0.003	0.000	0.001
	Europe	-0.001	-0.003	-0.001	-0.001
	Japan	-0.001	-0.004	-0.002	-0.001
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.004	0.013	-0.002	-0.001

Impact of shock to CIS and Other short-term interest rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in CIS and Other short-term interest rate					
local	GDP (%)	-0.011	-0.065	-0.102	-0.116
	consumption (% of GDP)	-0.003	-0.063	-0.102	-0.113
	investment (% of GDP)	-0.001	-0.005	-0.017	-0.022
	govt net revenue (% of GDP)	-0.002	-0.016	-0.031	-0.033
	government spending (% of GDP)	-0.000	-0.001	-0.002	-0.004
	government debt (% of GDP)	0.000	0.005	0.040	0.075
	current account (% of GDP)	0.003	0.012	0.016	0.016
	real exchange rate (%)	-0.000	0.002	0.021	0.036
	nominal change in $ rate (% p.a.)	-0.000	0.006	0.026	0.024
	activity rate (%)	-0.001	-0.007	-0.015	-0.019
	employment (%)	-0.001	-0.007	-0.015	-0.019
	cost inflation (% p.a.)	-0.001	-0.006	-0.022	-0.021
	price inflation (% p.a.)	0.000	-0.004	-0.023	-0.021
	real asset prices (%)	-0.003	-0.020	-0.056	-0.065
	interest rates (% p.a.)	0.999	0.726	0.378	0.187
	real interest rates (% p.a.)	0.895	0.642	0.356	0.191
	real bond rates (% p.a.)	0.031	0.044	0.023	0.011
world	GDP (%)	-0.001	-0.004	-0.007	-0.008
	exports (%)	-0.002	-0.006	-0.006	-0.006
	oil price (%)	-0.003	-0.009	0.002	0.006
	employment (%)	-0.000	-0.000	-0.001	-0.001
	dollar inflation (% p.a.)	0.000	0.001	0.001	0.000
	domestic inflation (% p.a.)	-0.000	-0.001	-0.001	-0.001
GDP spillover (%)					
	USA	-0.000	-0.000	-0.001	-0.001
	Europe	-0.001	-0.002	-0.003	-0.004
	Japan	-0.000	-0.001	-0.002	-0.002
	China	-0.001	-0.003	-0.004	-0.004
	Central America	-0.000	-0.001	-0.001	-0.001
	Africa Low Income	-0.000	-0.001	-0.001	-0.001
current account spillover (% of GDP)					
	USA	0.000	-0.000	-0.000	-0.001
	Europe	-0.000	-0.001	-0.002	-0.002
	Japan	-0.000	-0.000	-0.001	-0.001
	China	-0.000	-0.000	-0.001	-0.001
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	-0.000	-0.001	0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	-0.000	0.000	0.000
	Europe	-0.000	-0.000	-0.000	-0.000
	Japan	-0.000	-0.000	-0.000	-0.000
	China	-0.000	-0.001	-0.000	-0.000
	Central America	0.000	0.000	0.000	-0.000
	Africa Low Income	0.001	0.001	-0.000	-0.000

Impact of shock to South America short-term interest rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in South America short-term interest rate					
local	GDP (%)	-0.015	-0.082	-0.138	-0.158
	consumption (% of GDP)	-0.004	-0.068	-0.116	-0.132
	investment (% of GDP)	-0.002	-0.009	-0.032	-0.040
	govt net revenue (% of GDP)	-0.003	-0.020	-0.039	-0.041
	government spending (% of GDP)	-0.000	-0.001	-0.004	-0.007
	government debt (% of GDP)	0.001	0.013	0.051	0.082
	current account (% of GDP)	0.003	0.012	0.017	0.017
	real exchange rate (%)	-0.000	0.002	0.021	0.036
	nominal change in $ rate (% p.a.)	-0.000	0.007	0.031	0.029
	activity rate (%)	-0.001	-0.007	-0.016	-0.019
	employment (%)	-0.001	-0.008	-0.016	-0.019
	cost inflation (% p.a.)	-0.001	-0.008	-0.027	-0.027
	price inflation (% p.a.)	-0.000	-0.006	-0.028	-0.027
	real asset prices (%)	-0.004	-0.025	-0.075	-0.088
	interest rates (% p.a.)	0.998	0.733	0.372	0.183
	real interest rates (% p.a.)	0.891	0.653	0.357	0.193
	real bond rates (% p.a.)	0.030	0.042	0.022	0.011
world	GDP (%)	-0.001	-0.007	-0.011	-0.013
	exports (%)	-0.002	-0.007	-0.007	-0.007
	oil price (%)	-0.004	-0.013	0.001	0.005
	employment (%)	-0.000	-0.001	-0.001	-0.001
	dollar inflation (% p.a.)	-0.000	0.000	0.001	0.001
	domestic inflation (% p.a.)	-0.000	-0.001	-0.002	-0.002
GDP spillover (%)					
	USA	-0.000	-0.001	-0.002	-0.003
	Europe	-0.000	-0.002	-0.003	-0.004
	Japan	-0.000	-0.002	-0.003	-0.003
	China	-0.001	-0.004	-0.006	-0.006
	Central America	-0.001	-0.002	-0.004	-0.005
	Africa Low Income	-0.000	-0.001	-0.002	-0.003
current account spillover (% of GDP)					
	USA	-0.000	-0.000	-0.001	-0.001
	Europe	-0.000	-0.001	-0.002	-0.002
	Japan	-0.000	-0.000	-0.001	-0.002
	China	-0.000	-0.000	-0.001	-0.001
	Central America	-0.000	-0.001	-0.001	-0.001
	Africa Low Income	-0.000	-0.001	-0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	-0.000	0.000	-0.000
	Europe	-0.000	-0.000	-0.000	-0.000
	Japan	-0.000	-0.001	-0.000	-0.000
	China	-0.000	-0.001	-0.001	-0.000
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.001	0.001	-0.001	-0.001

Impact of shock to Africa Middle Income short-term interest rate in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% p.a. increase in Africa Middle Income short-term interest rate					
local	GDP (%)	-0.012	-0.066	-0.108	-0.122
	consumption (% of GDP)	-0.003	-0.062	-0.103	-0.114
	investment (% of GDP)	-0.002	-0.008	-0.027	-0.032
	govt net revenue (% of GDP)	-0.002	-0.017	-0.035	-0.037
	government spending (% of GDP)	-0.000	-0.001	-0.002	-0.003
	government debt (% of GDP)	-0.001	0.000	0.038	0.078
	current account (% of GDP)	0.003	0.013	0.018	0.018
	real exchange rate (%)	-0.000	0.002	0.023	0.039
	nominal change in $ rate (% p.a.)	0.000	0.008	0.028	0.026
	activity rate (%)	-0.001	-0.003	-0.007	-0.009
	employment (%)	-0.001	-0.003	-0.007	-0.009
	cost inflation (% p.a.)	-0.001	-0.007	-0.026	-0.026
	price inflation (% p.a.)	-0.000	-0.007	-0.027	-0.026
	real asset prices (%)	-0.003	-0.020	-0.060	-0.070
	interest rates (% p.a.)	0.998	0.731	0.370	0.183
	real interest rates (% p.a.)	0.871	0.618	0.332	0.180
	real bond rates (% p.a.)	0.032	0.046	0.025	0.013
world	GDP (%)	-0.000	-0.002	-0.004	-0.005
	exports (%)	-0.001	-0.004	-0.004	-0.004
	oil price (%)	-0.002	-0.006	-0.000	0.002
	employment (%)	-0.000	-0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.000	0.000	0.000	0.000
	domestic inflation (% p.a.)	-0.000	-0.001	-0.001	-0.001
GDP spillover (%)					
	USA	-0.000	-0.000	-0.001	-0.001
	Europe	-0.000	-0.001	-0.002	-0.002
	Japan	-0.000	-0.001	-0.001	-0.001
	China	-0.000	-0.002	-0.002	-0.003
	Central America	-0.000	-0.000	-0.001	-0.001
	Africa Low Income	-0.000	-0.001	-0.001	-0.001
current account spillover (% of GDP)					
	USA	0.000	-0.000	-0.000	-0.000
	Europe	-0.000	-0.001	-0.001	-0.001
	Japan	-0.000	-0.000	-0.001	-0.001
	China	-0.000	-0.000	-0.000	-0.000
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	-0.000	-0.001	-0.000	0.000
inflation spillover (% p.a.)					
	USA	-0.000	-0.000	0.000	0.000
	Europe	-0.000	-0.000	-0.000	-0.000
	Japan	-0.000	-0.000	-0.000	-0.000
	China	-0.000	-0.000	-0.000	-0.000
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.000	0.001	-0.000	-0.000

Energy use

Impact of shock to USA energy use in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in USA energy use					
local	GDP (%)	-0.057	-0.028	-0.066	-0.077
	consumption (% of GDP)	-0.053	-0.003	-0.042	-0.052
	investment (% of GDP)	-0.002	-0.007	-0.009	-0.011
	govt net revenue (% of GDP)	-0.037	-0.019	-0.016	-0.016
	government spending (% of GDP)	-0.004	-0.010	-0.015	-0.018
	government debt (% of GDP)	-0.012	0.002	0.009	0.012
	current account (% of GDP)	-0.115	-0.040	-0.024	-0.018
	real exchange rate (%)	0.009	-0.047	-0.036	-0.037
	nominal change in $ rate (% p.a.)	0.000	0.000	0.000	0.000
	activity rate (%)	-0.023	-0.023	-0.041	-0.049
	employment (%)	-0.024	-0.025	-0.044	-0.055
	cost inflation (% p.a.)	0.038	0.001	-0.007	-0.007
	price inflation (% p.a.)	0.177	-0.096	-0.004	-0.009
	real asset prices (%)	-0.015	-0.021	-0.038	-0.036
	interest rates (% p.a.)	0.047	-0.016	-0.007	-0.006
	real interest rates (% p.a.)	-0.127	0.080	-0.004	0.002
	real bond rates (% p.a.)	-0.004	0.001	-0.000	-0.000
world	GDP (%)	-0.003	0.000	0.004	0.008
	exports (%)	0.725	0.178	0.128	0.103
	oil price (%)	4.122	0.982	0.641	0.499
	employment (%)	-0.001	-0.000	-0.000	0.000
	dollar inflation (% p.a.)	0.167	-0.039	-0.008	-0.008
	domestic inflation (% p.a.)	0.017	0.039	0.005	0.007
GDP spillover (%)					
	Europe	0.008	0.016	-0.000	0.003
	Japan	-0.006	0.014	-0.017	-0.015
	China	0.051	0.083	0.034	0.034
	Central America	-0.034	-0.006	-0.014	-0.017
	Africa Low Income	0.050	-0.010	0.121	0.143
current account spillover (% of GDP)					
	Europe	-0.059	-0.011	0.002	0.004
	Japan	-0.121	-0.023	-0.009	-0.004
	China	-0.031	-0.009	0.001	0.001
	Central America	-0.007	-0.001	-0.002	-0.002
	Africa Low Income	0.253	0.048	0.010	-0.000
inflation spillover (% p.a.)					
	Europe	0.126	-0.061	0.003	-0.004
	Japan	0.166	-0.099	0.001	-0.006
	China	0.162	-0.072	0.010	-0.007
	Central America	0.040	0.006	-0.002	-0.002
	Africa Low Income	-0.621	0.536	-0.002	0.030

Impact of shock to China energy use in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in China energy use					
local	GDP (%)	-0.020	0.000	-0.018	-0.019
	consumption (% of GDP)	-0.016	0.020	-0.002	-0.006
	investment (% of GDP)	-0.004	-0.008	-0.012	-0.011
	govt net revenue (% of GDP)	-0.011	-0.004	-0.006	-0.005
	government spending (% of GDP)	-0.001	-0.002	-0.003	-0.003
	government debt (% of GDP)	-0.004	-0.001	-0.003	-0.004
	current account (% of GDP)	-0.019	-0.011	-0.007	-0.005
	real exchange rate (%)	0.001	-0.033	-0.027	-0.025
	nominal change in $ rate (% p.a.)	-0.001	-0.020	0.004	0.000
	activity rate (%)	-0.001	-0.001	-0.002	-0.002
	employment (%)	-0.001	-0.001	-0.002	-0.003
	cost inflation (% p.a.)	0.015	0.003	-0.001	-0.001
	price inflation (% p.a.)	0.055	-0.026	0.001	-0.001
	real asset prices (%)	-0.005	-0.004	-0.009	-0.007
	interest rates (% p.a.)	0.014	-0.003	-0.000	0.000
	real interest rates (% p.a.)	-0.038	0.022	-0.002	0.001
	real bond rates (% p.a.)	-0.000	-0.000	-0.000	-0.000
world	GDP (%)	-0.004	-0.002	-0.001	-0.000
	exports (%)	0.228	0.067	0.054	0.049
	oil price (%)	1.289	0.366	0.277	0.248
	employment (%)	-0.000	-0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.050	-0.012	-0.001	-0.001
	domestic inflation (% p.a.)	0.005	0.012	0.002	0.003
GDP spillover (%)					
	USA	-0.007	0.002	-0.007	-0.009
	Europe	0.002	0.005	-0.000	0.001
	Japan	-0.003	0.003	-0.007	-0.007
	Central America	-0.011	-0.003	-0.005	-0.006
	Africa Low Income	0.015	-0.002	0.040	0.050
current account spillover (% of GDP)					
	USA	-0.028	-0.007	-0.003	-0.002
	Europe	-0.019	-0.005	-0.001	0.000
	Japan	-0.039	-0.010	-0.006	-0.005
	Central America	-0.003	-0.001	-0.001	-0.000
	Africa Low Income	0.079	0.018	0.007	0.004
inflation spillover (% p.a.)					
	USA	0.052	-0.026	0.001	-0.001
	Europe	0.040	-0.017	0.002	-0.000
	Japan	0.052	-0.029	0.001	-0.001
	Central America	0.013	0.002	-0.000	-0.000
	Africa Low Income	-0.196	0.159	-0.002	0.009

Impact of shock to CIS and Other energy use in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in CIS and Other energy use					
local	GDP (%)	-0.002	0.001	0.008	0.011
	consumption (% of GDP)	0.002	-0.005	-0.001	-0.002
	investment (% of GDP)	-0.000	-0.000	0.001	0.002
	govt net revenue (% of GDP)	0.001	-0.002	-0.002	-0.001
	government spending (% of GDP)	0.000	0.000	-0.001	-0.002
	government debt (% of GDP)	-0.000	-0.000	0.002	0.000
	current account (% of GDP)	0.003	-0.005	-0.004	-0.002
	real exchange rate (%)	0.000	0.002	-0.005	-0.006
	nominal change in $ rate (% p.a.)	0.008	-0.018	-0.004	-0.003
	activity rate (%)	-0.000	0.000	0.001	0.001
	employment (%)	-0.000	0.000	0.001	0.001
	cost inflation (% p.a.)	0.001	-0.002	0.001	0.002
	price inflation (% p.a.)	-0.008	0.022	0.001	0.002
	real asset prices (%)	-0.000	-0.000	0.004	0.007
	interest rates (% p.a.)	-0.002	0.005	0.003	0.003
	real interest rates (% p.a.)	0.005	-0.014	0.002	0.001
	real bond rates (% p.a.)	0.000	-0.000	0.000	0.000
world	GDP (%)	-0.000	0.000	-0.000	-0.000
	exports (%)	0.011	-0.008	-0.010	-0.012
	oil price (%)	0.042	-0.068	-0.085	-0.093
	employment (%)	-0.000	0.000	0.000	-0.000
	dollar inflation (% p.a.)	0.002	-0.003	-0.001	-0.001
	domestic inflation (% p.a.)	0.000	0.000	-0.001	-0.001
GDP spillover (%)					
	USA	-0.000	0.000	0.000	0.001
	Europe	0.000	0.000	-0.000	-0.000
	Japan	0.000	0.000	-0.000	0.000
	China	0.001	0.000	-0.002	-0.003
	Central America	-0.001	-0.000	-0.001	-0.001
	Africa Low Income	0.000	-0.001	-0.002	-0.006
current account spillover (% of GDP)					
	USA	-0.001	0.002	0.002	0.002
	Europe	-0.001	0.001	0.001	0.001
	Japan	-0.001	0.002	0.002	0.002
	China	-0.000	0.001	0.001	0.000
	Central America	-0.001	-0.000	-0.000	-0.000
	Africa Low Income	0.003	-0.004	-0.004	-0.004
inflation spillover (% p.a.)					
	USA	0.002	-0.004	-0.001	-0.001
	Europe	0.001	-0.003	-0.001	-0.001
	Japan	0.002	-0.004	-0.001	-0.001
	China	0.002	-0.004	-0.001	-0.001
	Central America	0.001	-0.001	-0.001	-0.001
	Africa Low Income	-0.007	0.017	-0.000	-0.000

Impact of shock to South America energy use in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in South America energy use					
local	GDP (%)	0.000	0.001	0.003	0.005
	consumption (% of GDP)	0.000	0.000	0.001	0.001
	investment (% of GDP)	0.000	0.000	0.001	0.001
	govt net revenue (% of GDP)	-0.000	0.000	0.001	0.001
	government spending (% of GDP)	0.000	0.000	0.000	0.000
	government debt (% of GDP)	0.000	0.000	-0.000	-0.001
	current account (% of GDP)	-0.000	-0.000	0.001	0.001
	real exchange rate (%)	-0.000	-0.000	0.000	0.002
	nominal change in $ rate (% p.a.)	-0.000	-0.001	-0.000	0.000
	activity rate (%)	0.000	0.000	0.000	0.001
	employment (%)	0.000	0.000	0.000	0.001
	cost inflation (% p.a.)	-0.000	-0.000	0.000	0.000
	price inflation (% p.a.)	0.000	0.000	-0.000	0.000
	real asset prices (%)	0.000	0.000	0.002	0.003
	interest rates (% p.a.)	0.000	0.000	0.000	0.001
	real interest rates (% p.a.)	-0.000	-0.000	0.001	0.001
	real bond rates (% p.a.)	-0.000	0.000	0.000	0.000
world	GDP (%)	0.000	0.000	-0.000	-0.000
	exports (%)	0.000	-0.004	-0.006	-0.006
	oil price (%)	-0.008	-0.035	-0.042	-0.045
	employment (%)	0.000	0.000	0.000	-0.000
	dollar inflation (% p.a.)	-0.000	-0.001	-0.001	-0.000
	domestic inflation (% p.a.)	-0.000	-0.000	-0.000	-0.000
GDP spillover (%)					
	USA	0.000	0.000	0.000	0.001
	Europe	0.000	-0.000	-0.000	-0.000
	Japan	0.000	0.000	0.000	0.000
	China	-0.000	-0.000	-0.001	-0.001
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	-0.000	-0.000	-0.001	-0.003
current account spillover (% of GDP)					
	USA	0.000	0.001	0.001	0.001
	Europe	0.000	0.001	0.000	0.000
	Japan	0.000	0.001	0.001	0.001
	China	0.000	0.000	0.000	0.000
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	-0.000	-0.002	-0.002	-0.002
inflation spillover (% p.a.)					
	USA	-0.000	-0.001	-0.000	-0.000
	Europe	-0.000	-0.001	-0.000	-0.000
	Japan	-0.000	-0.001	-0.000	-0.000
	China	-0.000	-0.001	-0.001	-0.001
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.001	0.004	-0.000	-0.000

Impact of shock to Africa Middle Income energy use in 2011

		2011	2012	2014	2016
per cent change in each variable per 1% increase in Africa Middle Income energy use					
local	GDP (%)	-0.004	-0.002	0.003	0.005
	consumption (% of GDP)	0.001	-0.002	-0.000	0.000
	investment (% of GDP)	-0.000	-0.001	0.000	0.001
	govt net revenue (% of GDP)	0.001	-0.001	-0.000	0.000
	government spending (% of GDP)	0.000	0.000	-0.000	-0.000
	government debt (% of GDP)	0.000	-0.001	0.001	0.000
	current account (% of GDP)	0.002	-0.001	-0.001	0.000
	real exchange rate (%)	0.000	0.002	-0.001	-0.001
	nominal change in $ rate (% p.a.)	0.007	-0.007	-0.001	-0.001
	activity rate (%)	-0.000	-0.000	0.000	0.000
	employment (%)	-0.000	-0.000	0.000	0.000
	cost inflation (% p.a.)	0.001	-0.001	0.000	0.001
	price inflation (% p.a.)	-0.007	0.010	-0.000	0.001
	real asset prices (%)	-0.001	-0.001	0.001	0.003
	interest rates (% p.a.)	-0.002	0.002	0.001	0.002
	real interest rates (% p.a.)	0.004	-0.007	0.001	0.000
	real bond rates (% p.a.)	0.000	-0.000	0.000	0.000
world	GDP (%)	-0.000	0.000	-0.000	-0.000
	exports (%)	0.009	-0.002	-0.003	-0.003
	oil price (%)	0.045	-0.016	-0.023	-0.026
	employment (%)	-0.000	0.000	-0.000	-0.000
	dollar inflation (% p.a.)	0.002	-0.002	-0.000	-0.000
	domestic inflation (% p.a.)	0.000	0.000	-0.000	-0.000
GDP spillover (%)					
	USA	-0.000	0.000	-0.000	0.000
	Europe	0.000	0.000	-0.000	-0.000
	Japan	-0.000	0.000	-0.000	0.000
	China	0.001	0.001	-0.000	-0.001
	Central America	-0.001	-0.000	-0.000	-0.000
	Africa Low Income	0.000	-0.000	0.000	-0.001
current account spillover (% of GDP)					
	USA	-0.001	0.000	0.001	0.001
	Europe	-0.001	0.000	0.000	0.000
	Japan	-0.001	0.001	0.001	0.001
	China	-0.000	0.000	0.000	0.000
	Central America	-0.000	-0.000	-0.000	-0.000
	Africa Low Income	0.003	-0.001	-0.001	-0.001
inflation spillover (% p.a.)					
	USA	0.002	-0.002	-0.000	-0.000
	Europe	0.001	-0.002	-0.000	-0.000
	Japan	0.002	-0.002	-0.000	-0.000
	China	0.002	-0.002	-0.000	-0.000
	Central America	0.001	-0.000	-0.000	-0.000
	Africa Low Income	-0.007	0.010	-0.000	0.000