0.1 This file provides the equations defining the supply use - equilibrium for the domestic and imported products and at the agregate level.

0.2 It also derives the GDP according to various definitions.

0.3 Since each relation is written in value and in volume, the value equation defines the price.

0.4 Domestic and foreign equilibrium for commodities c (value & volume):

$$PQD_c\, QD_c = PMGRD_c\, MGRD_c + PCID_c\, CID_c + PCHD_c\, CHD_c + PGD_c\, GD_c + PID_c\, ID_c + PXD_c\, XD_c + PDSD_c\, DSD_c \tag{0.1}$$

$$QD_c = MGRD_c + CID_c + CHD_c + GD_c + ID_c + XD_c + DSD_c \tag{0.2}$$

$$PQM_c\, QM_c = PMGRM_c\, MGRM_c + PCIM_c\, CIM_c + PCHM_c\, CHM_c + PGM_c\, GM_c + PIM_c\, IM_c + PXM_c\, XM_c + PDSM_c\, DSM_c \tag{0.3}$$

$$QM_c = MGRM_c + CIM_c + CHM_c + GM_c + IM_c + XM_c + DSM_c \tag{0.4}$$

0.5 Domestic and imported intermediary raw material consumption c (value & volume):

$$PCID_c\, CID_c = \sum_s PCID_{c,s}\, CID_{c,s} \tag{0.5}$$

$$CID_c = \sum_s CID_{c,s} \tag{0.6}$$

$$PCIM_c\, CIM_c = \sum_s PCIM_{c,s}\, CIM_{c,s} \tag{0.7}$$

$$CIM_c = \sum_s CIM_{c,s} \tag{0.8}$$

0.6 Domestic and imported investment in commodity c (value & volume)

$$PID_c\ ID_c = \sum_s PID_{c,s}\ ID_{c,s} \tag{0.9}$$

$$ID_c = \sum_s ID_{c,s} \tag{0.10}$$

$$PIM_c\ IM_c = \sum_s PIM_{c,s}\ IM_{c,s} \tag{0.11}$$

$$IM_c = \sum_s IM_{c,s} \tag{0.12}$$

0.7 Aggregation of imports and domestic production for commodity c per use

0.8 For Q (production of commodities at market price); CI (intermediary consumption); I (private investiment); DS (change in inventories)

$$PQ_c\ Q_c = PQD_c\ QD_c + PQM_c\ QM_c \tag{0.13}$$

$$Q_c = QD_c + QM_c \tag{0.14}$$

$$PCI_c\ CI_c = PCID_c\ CID_c + PCIM_c\ CIM_c \tag{0.15}$$

$$CI_c = CID_c + CIM_c \tag{0.16}$$

$$PI_c\ I_c = PID_c\ ID_c + PIM_c\ IM_c \tag{0.17}$$

$$I_c = ID_c + IM_c \tag{0.18}$$

$$PDS_c\ DS_c = PDSD_c\ DSD_c + PDSM_c\ DSM_c \tag{0.19}$$

$$DS_c = DSD_c + DSM_c \tag{0.20}$$

0.9 Aggregation of imports and domestic production per use

$$PQD.QD = \sum_c PQD_c \, QD_c \tag{0.21}$$

$$QD = \sum_c QD_c \tag{0.22}$$

$$PQM.QM = \sum_c PQM_c \, QM_c \tag{0.23}$$

$$QM = \sum_c QM_c \tag{0.24}$$

0.10 Aggregation of imports and domestic margins per use

$$PMGRD.MGRD = \sum_c PMGRD_c \, MGRD_c \tag{0.25}$$

$$MGRD = \sum_c MGRD_c \tag{0.26}$$

$$PMGRM.MGRM = \sum_c PMGRM_c \, MGRM_c \tag{0.27}$$

$$MGRM = \sum_c MGRM_c \tag{0.28}$$

0.11 Aggregation of imports and domestic intermediate consumption per use

$$PCID.CID = \sum_c PCID_c \, CID_c \tag{0.29}$$

$$CID = \sum_c CID_c \tag{0.30}$$

$$PCIM.CIM = \sum_c PCIM_c \, CIM_c \tag{0.31}$$

$$CIM = \sum_c CIM_c \tag{0.32}$$

0.12 Aggregation of imports and domestic households consumption per use

$$PCHD.CHD = \sum_c PCHD_c \, CHD_c \tag{0.33}$$

$$CHD = \sum_c CHD_c \tag{0.34}$$

$$PCHM.CHM = \sum_c PCHM_c \, CHM_c \tag{0.35}$$

$$CHM = \sum_c CHM_c \tag{0.36}$$

0.13 Aggregation of imports and domestic government consumption per use

$$PGD.GD = \sum_c PGD_c \, GD_c \tag{0.37}$$

$$GD = \sum_c GD_c \tag{0.38}$$

$$PGM.GM = \sum_c PGM_c \, GM_c \tag{0.39}$$

$$GM = \sum_c GM_c \tag{0.40}$$

0.14 Aggregation of imports and domestic investment per use

$$PID.ID = \sum_c PID_c \, ID_c \tag{0.41}$$

$$ID = \sum_c ID_c \tag{0.42}$$

$$PIM.IM = \sum_c PIM_c \, IM_c \tag{0.43}$$

$$IM = \sum_c IM_c \tag{0.44}$$

0.15 Aggregation of imports and domestic exports per use

$$PXD.XD = \sum_c PXD_c \, XD_c \tag{0.45}$$

$$XD = \sum_c XD_c \tag{0.46}$$

$$PXM.XM = \sum_c PXM_c \, XM_c \tag{0.47}$$

$$XM = \sum_c XM_c \tag{0.48}$$

0.16 Aggregation of imports and domestic stock variation per use

$$PDSD.DSD = \sum_c PDSD_c \, DSD_c \tag{0.49}$$

$$DSD = \sum_c DSD_c \tag{0.50}$$

$$PDSM.DSM = \sum_c PDSM_c \, DSM_c \tag{0.51}$$

$$DSM = \sum_c DSM_c \tag{0.52}$$

0.17 Aggregation per use of total production (value & volume)

$$PQ.Q = PQD.QD + PQM.QM \tag{0.53}$$

$$Q = QD + QM \tag{0.54}$$

0.18 Aggregation per use of margins (value & volume)

$$PMGR.MGR = PMGRD.MGRD + PMGRM.MGRM \tag{0.55}$$

$$MGR = MGRD + MGRM \tag{0.56}$$

0.19 Aggregation per use of intermediate consumptions (value & volume)

$$PCI.CI = PCID.CID + PCIM.CIM \tag{0.57}$$

$$CI = CID + CIM \tag{0.58}$$

0.20 Aggregation per use of households consumption (value & volume)

$$PCH.CH = PCHD.CHD + PCHM.CHM \tag{0.59}$$

$$CH = CHD + CHM \tag{0.60}$$

0.21 Aggregation per use of government consumption (value & volume)

$$PG.G = PGD.GD + PGM.GM \tag{0.61}$$

$$G = GD + GM \tag{0.62}$$

0.22 Aggregation per use of investment (value & volume)

$$PI.I = PID.ID + PIM.IM \tag{0.63}$$

$$I = ID + IM \tag{0.64}$$

0.23 Aggregation per use of exports (value & volume)

$$PX.X = PXD.XD + PXM.XM \tag{0.65}$$

$$X = XD + XM \tag{0.66}$$

0.24 Aggregation of total stock variation (value & volume)

$$PDS.DS = PDSD.DSD + PDSM.DSM \tag{0.67}$$

$$DS = DSD + DSM \tag{0.68}$$

0.25 Margins paid to on domestic and imported commodity c (value & volume)

$$PMGPD_c \; MGPD_c = \sum_{cc} PMGPD_{cc,c} \; MGPD_{cc,c} \tag{0.69}$$

$$MGPD_c = \sum_{cc} MGPD_{cc,c} \tag{0.70}$$

$$PMGPM_c \; MGPM_c = \sum_{cc} PMGPM_{cc,c} \; MGPM_{cc,c} \tag{0.71}$$

$$MGPM_c = \sum_{cc} MGPM_{cc,c} \tag{0.72}$$

0.26 Domestic production of commodity c at basic price:

0.27 The price can not be defined as an index because it is already defined as a function of the production price in the price block.

$$YQ_c \; PYQ_c + NTAXPD_c^{VAL} + PMGPD_c \; MGPD_c = PQD_c \; QD_c \tag{0.73}$$

0.28 Same variable calculated from values & volumes. For verification.

$$PYQ_c^{bis}\, YQ_c + NTAXPD_c^{VAL} + PMGPD_c\, MGPD_c = PQD_c\, QD_c \quad (0.74)$$

$$YQ_c^{bis} + NTAXPD_c + MGPD_c = QD_c \quad (0.75)$$

0.29 Imported production of commodity c at basic price:

0.30 The price can not be defined as an index because it is already defined as a function of the production price in the price block.

$$M_c\, PM_c + NTAXPM_c^{VAL} + PMGPM_c\, MGPM_c = PQM_c\, QM_c \quad (0.76)$$

0.31 Same variable calculated from volumes. For verification.

$$PM_c^{bis}\, M_c + NTAXPM_c^{VAL} + PMGPM_c\, MGPM_c = PQM_c\, QM_c \quad (0.77)$$

$$M_c^{bis} + NTAXPM_c + MGPM_c = QM_c \quad (0.78)$$

0.32 Margins paid to commodity cc on commodity c (value & volume):

$$PMGP_{cc,c}\, MGP_{cc,c} = PMGPD_{cc,c}\, MGPD_{cc,c} + PMGPM_{cc,c}\, MGPM_{cc,c} \quad (0.79)$$

$$MGP_{cc,c} = MGPD_{cc,c} + MGPM_{cc,c} \quad (0.80)$$

0.33 Margins recieved by commodity cc (value & volume):

$$PMGR_{cc}\, MGR_{cc} = \sum_{c} PMGP_{cc,c}\, MGP_{cc,c} \tag{0.81}$$

$$MGR_{cc} = \sum_{c} MGP_{cc,c} \tag{0.82}$$

$$PMGR_{c}^{bis}\, MGR_{c}^{bis} = PMGRD_{c}\, MGRD_{c} + PMGRM_{c}\, MGRM_{c} \tag{0.83}$$

$$MGR_{c}^{bis} = MGRD_{c} + MGRM_{c} \tag{0.84}$$

0.34 Remark about margins:

0.35 The margins paid MGPD[cc, c] and MGPM[cc, c] are defined with behavor equations. They follow YQ[c] and M[c] (more or less proportionnally depending on the possibility of substitutions between margins). See producer block. The margins paid are then agregated to define the margins recieved MGR[cc]. The latter is then disagrated between the domestic and imported margins recieved (MGRD[c] and MGRM[c]). See producer block.

0.36 Aggregate margins paid on the domesticaly produced commodity (value & volume):

$$PMGPD.MGPD = \sum_{c} PMGPD_{c}\, MGPD_{c} \tag{0.85}$$

$$MGPD = \sum_{c} MGPD_{c} \tag{0.86}$$

0.37 Aggregate margins paid on the imported commodity (value & volume):

$$PMGPM.MGPM = \sum_c PMGPM_c \, MGPM_c \tag{0.87}$$

$$MGPM = \sum_c MGPM_c \tag{0.88}$$

0.38 Aggregate domestic production of commodity c at basic price:

$$PYQ.YQ = \sum_c PYQ_c \, YQ_c \tag{0.89}$$

$$YQ = \sum_c YQ_c \tag{0.90}$$

0.39 Aggregate imports of commodity c at basic price:

$$PM.M = \sum_c PM_c \, M_c \tag{0.91}$$

$$M = \sum_c M_c \tag{0.92}$$

0.40 Domestic and imported intermediary raw material consumption of sector s (value & volume):

$$PCID_s \, CID_s = \sum_c PCID_{c,s} \, CID_{c,s} \tag{0.93}$$

$$CID_s = \sum_c CID_{c,s} \tag{0.94}$$

$$PCIM_s \, CIM_s = \sum_c PCIM_{c,s} \, CIM_{c,s} \tag{0.95}$$

$$CIM_s = \sum_c CIM_{c,s} \tag{0.96}$$

0.41 Intermediary raw material consumption of sector s (value & volume):

$$PCI_s\ CI_s = PCID_s\ CID_s + PCIM_s\ CIM_s \tag{0.97}$$

$$CI_s = CID_s + CIM_s \tag{0.98}$$

0.42 Intermediary raw material from sector agregation (value & volume) :

$$PCI^{bis}.CI^{bis} = \sum_s PCI_s\ CI_s \tag{0.99}$$

$$CI^{bis} = \sum_s CI_s \tag{0.100}$$

0.43 Domestic and imported investment of sector s (value & volume):

$$PID_s\ ID_s = \sum_c PID_{c,s}\ ID_{c,s} \tag{0.101}$$

$$ID_s = \sum_c ID_{c,s} \tag{0.102}$$

$$PIM_s\ IM_s = \sum_c PIM_{c,s}\ IM_{c,s} \tag{0.103}$$

$$IM_s = \sum_c IM_{c,s} \tag{0.104}$$

0.44 Investment of sector s (value & volume):

$$PI_s\ I_s = PID_s\ ID_s + PIM_s\ IM_s \tag{0.105}$$

$$I_s = ID_s + IM_s \tag{0.106}$$

0.45 Investment from sector agregation (value & volume) (summed directly on the aggregate per product c). For verification:

$$PI^{bis}.I^{bis} = \sum_s PI_s \, I_s \tag{0.107}$$

$$I^{bis} = \sum_s I_s \tag{0.108}$$

0.46 Production of sector s (value & volume):

0.47 A mettre probablement en bis! Car defini dans producteur

Mettre VERIF sur le PRIX !!!!! PYbis[s]

$$Y_s = \sum_c Y_{c,s} \tag{0.109}$$

0.48 Aggregate production (value & volume):

$$PY.Y = \sum_s PY_s \, Y_s \tag{0.110}$$

$$Y = \sum_s Y_s \tag{0.111}$$

0.49 Value-added of sector s (value & volume):

0.50 It may not be possible to calculate the price of the value-added (VA) since the VA may be equal to zero at the sector level. For this reason, we define the VA in value (VA˙VAL). To avoid any bug, desactivate the equation of PVA[s]. Moreover there should be an equation for the VA even if it is equal to zero at the base year.

$$VA_s^{VAL} = PY_s\, Y_s - PCI_s\, CI_s \tag{0.112}$$

$$VA_s = Y_s - CI_s \tag{0.113}$$

0.51 Aggregate value-added (value & volume):

$$PVA.VA = \sum_s VA_s^{VAL} \tag{0.114}$$

$$VA = \sum_s VA_s \tag{0.115}$$

0.52 Aggregate bruto wages paid by sector s including employees (but not employers)' social contribution

$$PWAGES.WAGES = \sum_s PWAGES_s\, WAGES_s \tag{0.116}$$

$$WAGES = \sum_s WAGES_s \tag{0.117}$$

0.53 Gross operating surplus of sector s (value & volume)

0.54 Same remark than for VA

$$GOS_s^{VAL} = VA_s^{VAL} - PWAGES_s\ WAGES_s - PRSSC_s\ RSSC_s - NTAXI_s^{VAL} \tag{0.118}$$

$$GOS_s = VA_s - WAGES_s - RSSC_s - NTAXI_s \tag{0.119}$$

0.55 The exact definition of the GOS generally include tax on profit. For simplicity we exclude here by assuming that NTAXI[s] includes all net taxes on capital (i.e. tax on production and profits). This should be taken into account if one wants to use the GOS as a basis for the profit taxes.

$$PGOS.GOS = \sum_s GOS_s^{VAL} \tag{0.120}$$

$$GOS = \sum_s GOS_s \tag{0.121}$$

0.56 Same remark than for VA

$$NOS_s^{VAL} = GOS_s^{VAL} - PK_{s,t-1}\ \delta_s\ F_{K,s,t-1} \tag{0.122}$$

$$NOS_s = GOS_s - PK_{s,t_0-1}\ \delta_s\ F_{K,s,t-1} \tag{0.123}$$

$$PNOS.NOS = \sum_s NOS_s^{VAL} \tag{0.124}$$

$$NOS = \sum_s NOS_s \tag{0.125}$$

Agregated GDP (value & volume) calculated by using agregates

$$PGDP.GDP = PCH.CH + PG.G + PI.I + PX.X + PDS.DS - PM.M \tag{0.126}$$

$$GDP = CH + G + I + X + DS - M \tag{0.127}$$

$$\begin{aligned} PGDP_c\, GDP_c = {} & PCH_c\, CH_c + PG_c\, G_c + PI_c\, I_c \\ & + PX_c\, X_c + PDS_c\, DS_c - PM_c\, M_c \end{aligned} \tag{0.128}$$

$$GDP_c = CH_c + G_c + I_c + X_c + DS_c - M_c \tag{0.129}$$

Agregated GDP (value & volume) calculated from the GDP per using commodity

$$PGDP^{bis}.GDP^{bis} = \sum_c PGDP_c\, GDP_c \tag{0.130}$$

$$GDP^{bis} = \sum_c GDP_c \tag{0.131}$$

$$PGDP^{ter}.GDP^{ter} = PVA.VA + PNTAXP.NTAXP \tag{0.132}$$

$$GDP^{ter} = VA + NTAXP \tag{0.133}$$

$$\begin{aligned} PGDP4.GDP4 = {} & PGOS.GOS + PWAGES.WAGES + PRSSC.RSSC \\ & + NTAXI^{VAL} + PNTAXP.NTAXP \end{aligned} \tag{0.134}$$

$$GDP4 = GOS + WAGES + RSSC + NTAXI + NTAXP \tag{0.135}$$

0.57 This file provides the equations defining the producer behaviour.

0.58 Equation are behavioral. They are not used to calibration variable. They may be inverted to calibrate a parameter.

0.59 Margins paid to commodity m on the domestic commodity c

0.60 the growth in demand for margins follows the growth of aggregate demand for the commodity c and a substitution term

$$\Delta\left(\log MGPD_{m,c}\right) = \Delta\left(\log YQ_{c}\right) + \Delta\left(SUBST_{m,c}^{MGPD}\right) \tag{0.136}$$

$$SUBST_{m,c}^{n,MGPD} = \sum_{mm} -\sigma_{m,mm,c}^{MGPD}\ \varphi_{mm,c,t-1}^{MGPD}\ \Delta\left(\log PMGPD_{m,c} - \log PMGPD_{mm,c}\right) \tag{0.137}$$

$$\varphi_{m,c}^{MGPD} = PMGPD_{m,c}\ \frac{MGPD_{m,c}}{\left(\sum_{mm} PMGPD_{mm,c}\ MGPD_{mm,c}\right)} \tag{0.138}$$

0.61 Margins paid to commodity m on the imported commodity c

$$\Delta\left(\log MGPM_{m,c}\right) = \Delta\left(\log M_{c}\right) + \Delta\left(SUBST_{m,c}^{MGPM}\right) \tag{0.139}$$

$$SUBST_{m,c}^{n,MGPM} = \sum_{mm} -\sigma_{m,mm,c}^{MGPM}\ \varphi_{mm,c,t-1}^{MGPM}\ \Delta\left(\log PMGPM_{m,c} - \log PMGPM_{mm,c}\right) \tag{0.140}$$

$$\varphi_{m,c}^{MGPM} = PMGPM_{m,c}\ \frac{MGPM_{m,c}}{\left(\sum_{mm} PMGPM_{mm,c}\ MGPM_{mm,c}\right)} \tag{0.141}$$

0.62 Production of commodity c by sector s

0.63 We assume that each activity s may produce more than one commodity c. Therefore the production Y of commodity c by the activity s depends on the parameter PhiY which represents ¡U+00B2¿of aggregate production

$$Y_{c,s} = PhiY_{c,s}\, YQ_c \tag{0.142}$$

Demand for production factor f of sector s

$$\Delta\left(\log F^n_{f,s}\right) = \Delta\left(\log Y_s\right) - \Delta\left(\log PROG_{f,s}\right) + \Delta\left(SUBST^F_{f,s}\right) \tag{0.143}$$

$$\Delta\left(SUBST^{n,F}_{f,s}\right) = \sum_{ff} -ES_{f,ff,s}\,\varphi_{ff,s,t-1}\,\Delta\left(\log\frac{C_{f,s}}{PROG_{f,s}} - \log\frac{C_{ff,s}}{PROG_{ff,s}}\right) \tag{0.144}$$

$$\varphi_{f,s} = C_{f,s}\,\frac{F^n_{f,s}}{\left(\sum_{ff} C_{ff,s}\, F^n_{ff,s}\right)} \tag{0.145}$$

1 use list f !!!!!!@@@!!!

2 F[f] = sum(F[f, s] on s)

$$F_K = \sum_s F_{K,s} \tag{2.1}$$

$$F_L = \sum_s F_{L,s} \tag{2.2}$$

$$F_E = \sum_s F_{E,s} \tag{2.3}$$

$$F_{MAT} = \sum_{s} F_{MAT,s} \tag{2.4}$$

Investment in commodity c by sector s For a given sector, we assume that the investment structure is fixed over time. In other words, the investment good is a composite of several commodities in fixed proportion.

$$\Delta \left(\log I_{c,s} \right) = \Delta \left(\log IA_{s} \right) \tag{2.5}$$

Energy demand by type of energy in sector s

$$\Delta \left(\log CI_{ce,s} \right) = \Delta \left(\log F_{E,s} \right) + \Delta \left(SUBST^{CI}_{ce,s} \right) \tag{2.6}$$

$$\Delta \left(SUBST^{n,CI}_{ce,s} \right) = \sum_{cee} -\sigma^{NRJ}_{ce,cee,s} \; \varphi_{E,cee,s,t-1} \; \Delta \left(\log PCI_{ce,s} - \log PCI_{cee,s} \right) \tag{2.7}$$

$$\varphi_{E,ce,s} = PCI_{ce,s} \; \frac{CI_{ce,s}}{\left(\sum_{cee} PCI_{cee,s} \; CI_{cee,s} \right)} \tag{2.8}$$

Demand for material commodity cmo by sector s Intermediary consumption that are not transport or energy commodities Leontief hypothesis

$$\Delta \left(\log CI_{cmo,s} \right) = \Delta \left(\log F_{MAT,s} \right) \tag{2.9}$$

2.1 Demand for transport commodities by sector s

Leontief hypothesis

$$\Delta \left(\log TRSP_{s} \right) = \Delta \left(\log F_{MAT,s} \right) \tag{2.10}$$

Demand for transport commodity ct by sector s

$$\Delta \left(\log CI_{ct,s} \right) = \Delta \left(\log TRSP_{s} \right) + \Delta \left(SUBST^{CI}_{ct,s} \right) \tag{2.11}$$

$$\Delta \left(SUBST^{n,CI}_{ct,s} \right) = \sum_{ctt} -\sigma^{TRSP}_{ct,ctt,s} \; \varphi^{TRSP}_{ctt,s,t-1} \; \Delta \left(\log PCI_{ct,s} - \log PCI_{ctt,s} \right) \tag{2.12}$$

$$\varphi_{ct,s}^{TRSP} = PCI_{ct,s}\ \frac{CI_{ct,s}}{(\sum_{ctt} PCI_{ctt,s}\ CI_{ctt,s})} \tag{2.13}$$

Technical progress of the production factor f

$$PROG_{f,s} = PROG_{f,s,t-1}\ \left(1 + GR_{f,s}^{PROG}\right) \tag{2.14}$$

Endogenous energy efficiency

$$\begin{aligned} GR_{E,s}^{PROG} = GR_{E,s,t_0}^{PROG} + \rho^{PROG,E,PE}.\,(\log PE_s - \log P \\ > 0)\ \Delta\left(\log PE_s - \log P\right) \end{aligned} \tag{2.15}$$

Doute sur le specification ci-dessus qui reprend celle existante:

2.2 On a une variation qui affecte un niveau. L'effet doit ¡U+00EA¿tre faible.

Je serais tenter de mettre plutot (¡U+00E0¿ discuter!!!):

2.3 This file provides the equations defining the prices.

2.4 Domestic production price of commodity c:

$$PYQ_c\ YQ_c = \sum_s PY_s\ Y_{c,s} \tag{2.16}$$

2.5 Notional production price of sector s

$$PY_s^n = CU_s^n\ (1 + \mu_s) \tag{2.17}$$

Notional mark-up

$$\Delta\left(\log 1 + \mu_s^n\right) = \rho^{\mu,Y}.\Delta\left(\log CUR_s\right) \tag{2.18}$$

$$\Delta\left(\log 1 + \mu_s^{n2}\right) = \rho^{\mu,Y}.\left(\Delta\left(\log Y_s\right) - \Delta\left(\log Y_{s,t-1}\right)\right) \tag{2.19}$$

Production capacity

$$\begin{aligned} \Delta\left(\log YCAP_s\right) = \sum_f \varphi_{f,s,t-1}\ \Delta\left(\log F_{f,s}\ PROG_{f,s}\right) \\ + \alpha_s^{YCAP,Y}\ \left(\log Y_{s,t-1} - \log YCAP_{s,t-1}\ CUR_{s,t_0}\right) \end{aligned} \tag{2.20}$$

$$CUR_s = \frac{Y_s}{YCAP_s} \tag{2.21}$$

$$(1 + \mu_c) = PYQ_c \, \frac{YQ_c}{(\sum_s CU_s \, Y_{c,s})} \tag{2.22}$$

Notional unit cost of production in sector s To define the notional price, it is preferable to use the notional unit cost of production instead of the effective one. This lead to a more stable dynamic and gives a better representation of anticipation.

$$CU_s^n \, Y_s = \sum_f C_{f,s} \, F_{f,s}^n + NTAXI_s^{VAL} \tag{2.23}$$

Unit cost of production in sector s

$$CU_s \, Y_s = \sum_f C_{f,s} \, F_{f,s} + NTAXI_s^{VAL} \tag{2.24}$$

Labor cost in sector s

$$C_{L,s} = W_s \; (1 + RRSSC_s) \tag{2.25}$$

2.6 Capital cost in sector s

2.7 It is preferable to calculate the user cost of capital based on the price of capital rather than on the price of investment. Indeed the price of the average capital installed is lower than the one of investment because of inflation. Using the price of investment tend to over estimate the cost of capital because it assumes that the debt contracted to finance past investments is indexed on inflation which is not the case in reality.

$$C_{K,s} = PK_s \; (\delta_s + r_s) \tag{2.26}$$

2.8 Price of capital in sector s

2.9 The price of capital is calibrated by rewriting this equation in the long run. It is always smaller than 1 because it is calibrated as follows: PK[s] = PI[s]*(Rdep[s]+GR˙REAL)*(1+GR˙PRICES)/(Rdep[s]-1+(1+GR˙REAL)*(1+GR˙PRICES))

$$PK_s \; F_{K,s} = (1 - \delta_s) \; PK_{s,t-1} \; F_{K,s,t-1} + PI_s \; I_s \tag{2.27}$$

2.10 Energy costs in sector s

2.11 In first approximation the cost of energy correspond to the energy price. However if the producer is forward looking, she will integrate the anticipation of price increase in it definition of the user cost of energy. In this case the specification becomes ....

$$C_{E,s} = PE_s \tag{2.28}$$

2.12 Materal costs in sector s

$$C_{MAT,s} = PMAT_s \tag{2.29}$$

2.13 Agregate costs for capital, labor, energy and material

$$C_K \; F_K = \sum_s C_{K,s} \; F_{K,s} \tag{2.30}$$

$$C_L \; F_L = \sum_s C_{L,s} \; F_{L,s} \tag{2.31}$$

$$C_E\ F_E = \sum_s C_{E,s}\ F_{E,s} \tag{2.32}$$

$$C_{MAT}\ F_{MAT} = \sum_s C_{MAT,s}\ F_{MAT,s} \tag{2.33}$$

2.14 Volume and price of the bruto wages paid by sector s including employees (but not employers)' social contribution

2.15 To derive the volume, we assume that the price is the consumer price

$$WAGES_s\ PWAGES_s = W_s\ F_{L,s} \tag{2.34}$$

$$PWAGES_s = P \tag{2.35}$$

2.16 Price of commodity c

2.17 For CH (households'consumption); G (public spendings); X (exports)

$$PCH_c\ CH_c = PCHD_c\ CHD_c + PCHM_c\ CHM_c \tag{2.36}$$

$$PG_c\ G_c = PGD_c\ GD_c + PGM_c\ GM_c \tag{2.37}$$

$$PX_c\ X_c = PXD_c\ XD_c + PXM_c\ XM_c \tag{2.38}$$

2.18 Price of intermediary raw material consumption c of sector s

$$PCI_{c,s}\ CI_{c,s} = PCID_{c,s}\ CID_{c,s} + PCIM_{c,s}\ CIM_{c,s} \tag{2.39}$$

2.19 Material consumption price for sector s

$$PMAT_s \; F_{MAT,s} = \sum_{cm} PCI_{cm,s} \; CI_{cm,s} \tag{2.40}$$

2.20 Energy price for sector s

$$PE_s \; F_{E,s} = \sum_{ce} PCI_{ce,s} \; CI_{ce,s} \tag{2.41}$$

2.21 Average selling price for domestic commodity c (Value & volume)

YQS[c] is the volume of the production expressed at market price. It should not be seen as a composite of several "goods": production at base price, margins and taxes. Its does not increase when the volume of the margins and taxes increase. The price does instead. This is equivalent to assuming that YQS[c] is always proportionnal to and YQ[c] since the volume of margins and taxes depends on the latter. Writing it following the specification composite of several goods, YQS[c] = YQ[c] + MGPD[c] + NTAXPD[c], would lead to inacurate results since a decrease in the quantity of margins used per unit of production would not lead to a decrease of the selling price.

$$PYQS_c \, YQS_c = PYQ_c \, YQ_c + PMGPD_c \, MGPD_c + NTAXPD_c^{VAL} \tag{2.42}$$

$$\Delta \left(\log YQS_c \right) = \Delta \left(\log YQ_c \right) \tag{2.43}$$

2.22 Average selling price for imported commodity c

$$PMS_c \, MS_c = PM_c \, M_c + NTAXPM_c^{VAL} + PMGPM_c \, MGPM_c \tag{2.44}$$

$$\Delta \left(\log MS_c \right) = \Delta \left(\log M_c \right) \tag{2.45}$$

2.23 Price of the margins paid to commodity cc on the domestic commodity c

2.24 We assume that the margins paid on domestic and imported commodities can be produced by domestic and foreign (using the import share of the margin recieved). The price of the margins paid to commodity cc is assumed commun to all commodity c.

$$PMGPD_{cc,c}\, MGR_{cc} = PMGRD_{cc}\, MGRD_{cc} + PMGRM_{cc}\, MGRM_{cc} \quad (2.46)$$

2.25 Price of the margins paid to commodity cc on the imported commodity c

2.26 This price is the same as the one paid on domestic commodity because of the assumption given in the previous equation.

$$PMGPM_{cc,c} = PMGPD_{cc,c} \quad (2.47)$$

2.27 Price of domesticly produced margins recieved by commodity c

$$PMGRD_c = PYQS_c \quad (2.48)$$

2.28 Price of imported margins recieved by commodity c

$$PMGRM_c = PMS_c \quad (2.49)$$

2.29 Price of intermediary raw material consumption domestically produced c of sector s

$$PCID_{c,s} = PYQS_c \quad (2.50)$$

2.30 Price of the imported intermediary raw material consumption c of sector s

$$PCIM_{c,s} = PMS_c \tag{2.51}$$

2.31 Price of household consumption domestically produced c of sector s

$$PCHD_c = PYQS_c \tag{2.52}$$

2.32 Price of imported household consumption c of sector s

$$PCHM_c = PMS_c \tag{2.53}$$

2.33 Price of governmental consumption domestically produced c of sector s

$$PGD_c = PYQS_c \tag{2.54}$$

2.34 Price of imported governmental consumption c of sector s

$$PGM_c = PMS_c \tag{2.55}$$

2.35 Price of investment commodity domestically produced c of sector s

$$PID_{c,s} = PYQS_c \tag{2.56}$$

2.36 Price of imported investment commodity c of sector s

$$PIM_{c,s} = PMS_c \tag{2.57}$$

2.37 Price of exported commodity domestically produced c of sector s

$$PXD_c = PYQS_c \tag{2.58}$$

2.38 Price of re-exported commodity c of sector s

$$PXM_c = PMS_c \tag{2.59}$$

2.39 Price of stock variation commodity domestically produced c of sector s

$$PDSD_c = PYQS_c \tag{2.60}$$

2.40 Price of imported stock variation commodity of sector s

$$PDSM_c = PMS_c \tag{2.61}$$

Price of imported commodity c

$$PM_c = TC.PWD_c \tag{2.62}$$

Notional wage in sector s This general specification combines various wage equation found in the literature: the Phillips curve and the WS curve. The WS curve ¡U+00E0¿ la Layard et al. (2005) requires the following constraints : RHO˙W˙P[s] = RHO˙W˙PROG[s] = 1, RHO˙W˙U[s] = RHO˙W˙Cons[s] = 0.

$$\begin{aligned}\Delta\left(\log W_s^n\right) = {} & \rho_s^{W,Cons} + \rho_s^{W,P}\ \Delta\left(\log P\right) + \rho_s^{W,Pe}\ \Delta\left(\log P^e\right) \\ & + \rho_s^{W,PROG}\ \Delta\left(\log PROG_s^L\right) - \rho_s^{W,U}\ \left(UnR - DNAIRU\right) \\ & - \rho_s^{W,DU}\ \Delta\left(UnR\right) + \rho_s^{W,L}\ \Delta\left(\log F_{L,s} - \log F_L\right)\end{aligned} \tag{2.63}$$

$$W.F_L = \left(\sum_s W_s\ F_{L,s}\right) \tag{2.64}$$

$$P = PCH \tag{2.65}$$

Notional interest rate of the Central Bank (Taylor rule)

$$\Delta\left(R^{n}\right) = \rho^{Rdir,Cons} + \rho^{Rdir,P}.\Delta\left(\frac{\Delta\left(P\right)}{P_{t-1}}\right) - \rho^{Rdir,UnR}.\Delta\left(UnR\right) \tag{2.66}$$

$$\Delta\left(R_{s}\right) = \Delta\left(R\right) \tag{2.67}$$

$$\Delta\left(r^{DEBT,G}\right) = \Delta\left(r\right) \tag{2.68}$$

$$\begin{aligned} DISPINC^{BT,VAL} = {} & PWAGES.WAGES + PROP^{INC,H,VAL} \\ & + SOC^{BENF,VAL} + TRSF^{HH,VAL} \end{aligned} \tag{2.69}$$

Disposable income after tax

$$DISPINC^{AT,VAL} = DISPINC^{BT,VAL} - INC^{SOC,TAX,VAL} \tag{2.70}$$

Income & Social Taxes

$$INC^{SOC,TAX,VAL} = RINC^{SOC,TAX}.DISPINC^{BT,VAL} \tag{2.71}$$

Property incomes

$$PROP^{INC,H,VAL,n} = \varphi^{PROP^{INC,H}}.PNOS.NOS \tag{2.72}$$

$$SOC^{BENF,VAL} = RR^{POP}.W.PROG^{L}.P.POP + RR^{Un}.W.Un \tag{2.73}$$

Transferts of households Should be endogenous? Check V2
Should be Notional!!!

$$CH^{n,VAL} = DISPINC^{AT,VAL}.\left(1 - MPS^{n}\right) \tag{2.74}$$

$$\Delta\left(MPS^{n}\right) = \rho^{MPS,R}.\Delta\left(R - \frac{\Delta\left(P\right)}{P_{t-1}}\right) + \rho^{MPS,UnR}.\Delta\left(UnR\right) \tag{2.75}$$

$$\left(CH_{c}^{n} - NCH_{c}\right)\ PCH_{c} = \varphi_{c}^{MCH}\ \left(CH^{n,VAL} - PNCH.NCH\right) \tag{2.76}$$

$$PNCH.NCH = \sum_c PNCH_c \, NCH_c \tag{2.77}$$

$$NCH = \sum_c NCH_c \tag{2.78}$$

$$\Delta \left(\log \varphi_c^{MCH} \right) = \left(1 - \sigma^{LESCES} \right) . \Delta \left(\log \frac{PCH_c}{PCH^{CES}} \right) \tag{2.79}$$

$$\varphi_c^{CH} = \frac{CH_c}{CH} \tag{2.80}$$

$$SAV^{H,VAL} = DISPINC^{AT,VAL} - PCH.CH \tag{2.81}$$

$$RSAV^{H,VAL} = \frac{SAV^{H,VAL}}{DISPINC^{AT,VAL}} \tag{2.82}$$

$$Stock^{SAV,H,VAL} = Stock_{t-1}^{SAV,H,VAL} + SAV^{H,VAL} \tag{2.83}$$

Mark-up adjustments

$$\mu_s = \alpha_s^{\mu} \; \mu_s^n + (1 - \alpha_s^{\mu}) \; \mu_{s,t-1} \tag{2.84}$$

Expected inflation This equation define the expected inflation and not the expeected price. P˙e does not necessary converge to P. If the wage equation is a WS curve, were only in the very long terme may not converge does not

$$\Delta \left(\log P^e \right) = \alpha^{Pe,P1} . \Delta \left(\log P_{t-1} \right) + \left(1 - \alpha^{Pe,P1} \right) . \Delta \left(\log P_{t-1}^e \right) \tag{2.85}$$

Expected production

$$\Delta \left(\log Y_s^e \right) = \alpha_s^{Ye,Y} \; \Delta \left(\log Y_s \right) + \left(1 - \alpha_s^{Ye,Y} \right) \; \Delta \left(\log Y_{s,t-1}^e \right) \tag{2.86}$$

$$\log F_{f,s} = \alpha_{f,s}^{0,F} \; \log F_{f,s}^n + \left(1 - \alpha_{f,s}^{0,F} \right) \; \left(\log F_{f,s,t-1} + \Delta \left(\log F_{f,s}^e \right) \right) \tag{2.87}$$

$$\Delta\left(\log F^{e}_{f,s}\right) = \alpha^{1,F}_{f,s}\ \Delta\left(\log F^{e}_{f,s,t-1}\right) + \alpha^{2,F}_{f,s}\ \Delta\left(\log F_{f,s,t-1}\right) + \alpha^{3,F}_{f,s}\ \Delta\left(\log F^{n}_{f,s}\right) \tag{2.88}$$

Capital stock of sector s

$$F_{K,s} = (1-\delta_s)\ F_{K,s,t-1} + IA_s \tag{2.89}$$

Investment in sector s Put IMPULSE! + Conditionnalit¡U+00E9¿ sur IA!!!

Explain this equation

$$\begin{aligned}\Delta\left(\log IA_s\right) = {} & \alpha^{IA,Ye}_{s}\ \Delta\left(\log Y^{e}_{s}\right) + \alpha^{IA,IA1}_{s}\ \Delta\left(\log IA_{s,t-1}\right) \\ & + \alpha^{IA,SUBST}_{s}\ \Delta\left(SUBST^{F}_{K,s}\right) \\ & + \alpha^{IA,Kn}_{s}\ \left(\log F^{n}_{K,s,t-1} - \log F_{K,s,t-1}\right)\end{aligned} \tag{2.90}$$

$$SUBST^{F}_{f,s} = \alpha^{6,F}_{f,s}\ SUBST^{n,F}_{f,s} + \left(1-\alpha^{6,F}_{f,s}\right)\ SUBST^{F}_{f,s,t-1} \tag{2.91}$$

$$SUBST^{MGPD}_{cc,c} = \alpha^{6,MGPD}_{cc,c}\ SUBST^{n,MGPD}_{cc,c} + \left(1-\alpha^{6,MGPD}_{cc,c}\right)\ SUBST^{MGPD}_{cc,c,t-1} \tag{2.92}$$

$$SUBST^{MGPM}_{cc,c} = \alpha^{6,MGPM}_{cc,c}\ SUBST^{n,MGPM}_{cc,c} + \left(1-\alpha^{6,MGPM}_{cc,c}\right)\ SUBST^{MGPM}_{cc,c,t-1} \tag{2.93}$$

$$SUBST^{CI}_{ce,s} = \alpha^{6,CI}_{ce,s}\ SUBST^{n,CI}_{ce,s} + \left(1-\alpha^{6,CI}_{ce,s}\right)\ SUBST^{CI}_{ce,s,t-1} \tag{2.94}$$

$$SUBST^{CI}_{ct,s} = \alpha^{6,CI}_{ct,s}\ SUBST^{n,CI}_{ct,s} + \left(1-\alpha^{6,CI}_{ct,s}\right)\ SUBST^{CI}_{ct,s,t-1} \tag{2.95}$$

$$SUBST^{MGRM}_{c} = \alpha^{6,MGRM}_{c}\ SUBST^{n,MGRM}_{c} + \left(1-\alpha^{6,MGRM}_{c}\right)\ SUBST^{MGRM}_{c,t-1} \tag{2.96}$$

$$SUBST^{CHM}_{c} = \alpha^{6,CHM}_{c}\ SUBST^{n,CHM}_{c} + \left(1-\alpha^{6,CHM}_{c}\right)\ SUBST^{CHM}_{c,t-1} \tag{2.97}$$

$$SUBST^{GM}_{c} = \alpha^{6,GM}_{c}\ SUBST^{n,GM}_{c} + \left(1-\alpha^{6,GM}_{c}\right)\ SUBST^{GM}_{c,t-1} \tag{2.98}$$

$$SUBST_c^{XM} = \alpha_c^{6,XM}\ SUBST_c^{n,XM} + \left(1 - \alpha_c^{6,XM}\right)\ SUBST_{c,t-1}^{XM} \quad (2.99)$$

$$SUBST_{c,s}^{CIM} = \alpha_{c,s}^{6,CIM}\ SUBST_{c,s}^{n,CIM} + \left(1 - \alpha_{c,s}^{6,CIM}\right)\ SUBST_{c,s,t-1}^{CIM} \quad (2.100)$$

$$SUBST_{c,s}^{IM} = \alpha_{c,s}^{6,IM}\ SUBST_{c,s}^{n,IM} + \left(1 - \alpha_{c,s}^{6,IM}\right)\ SUBST_{c,s,t-1}^{IM} \quad (2.101)$$

$$SUBST_c^{X} = \alpha_c^{6,X}\ SUBST_c^{n,X} + \left(1 - \alpha_c^{6,X}\right)\ SUBST_{c,t-1}^{X} \quad (2.102)$$

$$\log CH_c = \alpha_c^{0,CH}\ \log CH_c^n + \left(1 - \alpha_c^{0,CH}\right)\ \left(\log CH_{c,t-1} + \Delta\left(\log CH_c^e\right)\right) \quad (2.103)$$

$$\begin{aligned}\Delta\left(\log CH_c^e\right) = \alpha_c^{1,CH}\ \Delta\left(\log CH_{c,t-1}^e\right) + \alpha_c^{2,CH}\ \Delta\left(\log CH_{c,t-1}\right) \\ + \alpha_c^{3,CH}\ \Delta\left(\log CH_c^n\right)\end{aligned} \quad (2.104)$$

$$\log PY_s = \alpha_s^{0,PY}\ \log PY_s^n + \left(1 - \alpha_s^{0,PY}\right)\ \left(\log PY_{s,t-1} + \Delta\left(\log PY_s^e\right)\right) \quad (2.105)$$

$$\begin{aligned}\Delta\left(\log PY_s^e\right) = \alpha_s^{1,PY}\ \Delta\left(\log PY_{s,t-1}^e\right) + \alpha_s^{2,PY}\ \Delta\left(\log PY_{s,t-1}\right) \\ + \alpha_s^{3,PY}\ \Delta\left(\log PY_s^n\right)\end{aligned} \quad (2.106)$$

$$\Delta\left(\log W_s\right) = \alpha_s^{W,Wn}\ \Delta\left(\log W_s^n\right) + \alpha_s^{W,W1}\ \Delta\left(\log W_{s,t-1}\right) - \alpha_s^{W,W1Wn1}\ \log\frac{W_{s,t-1}}{W_{s,t-1}^n} \quad (2.107)$$

2.41 Labor participation ratio

$$PARTR = \alpha^{0,PARTR}.PARTR^n + \left(1 - \alpha^{0,PARTR}\right).PARTR_{t-1} \quad (2.108)$$

$$R = \alpha^{0,R}.R^n + \left(1 - \alpha^{0,R}\right).R_{t-1} \quad (2.109)$$

$$\begin{aligned}\log PROP^{INC,H,VAL} = \alpha^{0,PROP,INC,H,VAL}.\log PROP^{INC,H,VAL,n} \\ + \left(1 - \alpha^{0,PROP,INC,H,VAL}\right).\Big(\log PROP_{t-1}^{INC,H,VAL} \\ + \Delta\left(\log PROP^{INC,H,VAL,e}\right)\Big)\end{aligned} \quad (2.110)$$

$$\Delta\left(\log PROP^{INC,H,VAL,e}\right) = \alpha^{1,PROP,INC,H,VAL}.\Delta\left(\log PROP_{t-1}^{INC,H,VAL,e}\right) + \alpha^{2,PROP,INC,H,VAL}.\Delta\left(\log PROP_{t-1}^{INC,H,VAL}\right) + \alpha^{3,PROP,INC,H,VAL}.\Delta\left(\log PROP^{INC,H,VAL,n}\right) \tag{2.111}$$

$$\log PROP^{INC,G,VAL} = \alpha^{0,PROP,INC,G,VAL}.\log PROP^{INC,G,VAL,n} + \left(1-\alpha^{0,PROP,INC,G,VAL}\right).\left(\log PROP_{t-1}^{INC,G,VAL} + \Delta\left(\log PROP^{INC,G,VAL,e}\right)\right) \tag{2.112}$$

$$\Delta\left(\log PROP^{INC,G,VAL,e}\right) = \alpha^{1,PROP,INC,G,VAL}.\Delta\left(\log PROP_{t-1}^{INC,G,VAL,e}\right) + \alpha^{2,PROP,INC,G,VAL}.\Delta\left(\log PROP_{t-1}^{INC,G,VAL}\right) + \alpha^{3,PROP,INC,G,VAL}.\Delta\left(\log PROP^{INC,G,VAL,n}\right) \tag{2.113}$$

Glossary

$C_{E,s}$	
C_E	
$C_{K,s}$	
C_K	
$C_{L,s}$	Labor cost in sector s
C_L	
$C_{MAT,s}$	
C_{MAT}	
CH	
CH_c	
CH_c^e	
CH_c^n	
$CH^{n,VAL}$	Transferts of households
CHD	
CHM	
CI	
CI_c	
$CI_{ce,s}$	Energy demand by type of energy in sector s
$CI_{cmo,s}$	Demand for material commodity cmo by sector s
$CI_{ct,s}$	Demand for transport commodity ct by sector s
CI_s	
CI^{bis}	
CID	
CID_c	
CID_s	
CIM	

CIM_c	
CIM_s	
CU_s	Unit cost of production in sector s
CU_s^n	Notional unit cost of production in sector s
CUR_s	
$DISPINC^{AT,VAL}$	Disposable income after tax
$DISPINC^{BT,VAL}$	
DS	
DS_c	
DSD	
DSM	
F_E	
$F_{f,s}$	
$F_{K,s}$	Capital stock of sector s
F_K	
F_L	
F_{MAT}	
$F_{f,s}^e$	
$F_{f,s}^n$	Demand for production factor f of sector s
G	
GD	
GDP	
$GDP4$	
GDP_c	
GDP^{bis}	
GDP^{ter}	

GM	
GOS	
GOS_s	
GOS_s^{VAL}	
$GR_{E,s}^{PROG}$	Endogenous energy efficiency
I	
$I_{c,s}$	Investment in commodity c by sector s
I_c	
I_s	
IA_s	Investment in sector s
I^{bis}	
ID	
ID_c	
ID_s	
IM	
IM_c	
IM_s	
$INC^{SOC,TAX,VAL}$	Income & Social Taxes
$inclue$	
M	
M_c	
μ_c	
μ_s	Mark-up adjustments
μ_s^{n2}	
μ_s^n	Notional mark-up
M_c^{bis}	
$MGP_{cc,c}$	

$MGPD$	
$MGPD_c$	
$MGPD_{m,c}$	
$MGPM$	
$MGPM_c$	
$MGPM_{m,c}$	
MGR	
MGR_{cc}	
MGR_c^{bis}	
$MGRD$	
$MGRM$	
MPS^n	
MS_c	
NCH	
NOS	
NOS_s	
NOS_s^{VAL}	
P	
P^e	Expected inflation
$PARTR$	
PCH	
PCH_c	
PCH^{CES}	
$PCHD$	
$PCHD_c$	
$PCHM$	

$PCHM_c$	
PCI	
$PCI_{c,s}$	
PCI_c	
PCI_s	
PCI^{bis}	
$PCID$	
$PCID_{c,s}$	
$PCID_c$	
$PCID_s$	
$PCIM$	
$PCIM_{c,s}$	
$PCIM_c$	
$PCIM_s$	
PDS	
PDS_c	
$PDSD$	
$PDSD_c$	
$PDSM$	
$PDSM_c$	
PE_s	
PG	
PG_c	
PGD	
PGD_c	
$PGDP$	Agregated GDP (value & volume) calculated by using agregates

$PGDP4$	
$PGDP_c$	
$PGDP^{bis}$	Agregated GDP (value & volume) calculated from the GDP per using commodity
$PGDP^{ter}$	
PGM	
PGM_c	
$PGOS$	
$\varphi_{E,ce,s}$	
$\varphi_{f,s}$	
φ_c^{CH}	
φ_c^{MCH}	
$\varphi_{m,c}^{MGPD}$	
$\varphi_{m,c}^{MGPM}$	
$\varphi_{ct,s}^{TRSP}$	
PI	
PI_c	
PI_s	
PI^{bis}	
PID	
$PID_{c,s}$	
PID_c	
PID_s	
PIM	
$PIM_{c,s}$	
PIM_c	
PIM_s	

PK_s	
PM	
PM_c	Price of imported commodity c
$PMAT_s$	
PM_c^{bis}	
$PMGP_{cc,c}$	
$PMGPD$	
$PMGPD_c$	
$PMGPD_{cc,c}$	
$PMGPM$	
$PMGPM_c$	
$PMGPM_{cc,c}$	
$PMGR$	
$PMGR_{cc}$	
$PMGR_c^{bis}$	
$PMGRD$	
$PMGRD_c$	
$PMGRM$	
$PMGRM_c$	
PMS_c	
$PNCH$	
$PNOS$	
PQ	
PQ_c	
PQD	
PQD_c	
PQM	

PQM_c	
$PROG_{f,s}$	Technical progress of the production factor f
$PROP^{INC,G,VAL}$	
$PROP^{INC,G,VAL,e}$	
$PROP^{INC,H,VAL}$	
$PROP^{INC,H,VAL,e}$	
$PROP^{INC,H,VAL,n}$	Property incomes
PVA	
$PWAGES$	
$PWAGES_s$	
PX	
PX_c	
PXD	
PXD_c	
PXM	
PXM_c	
PY	
PY_s	
PY_s^e	
PY_s^n	
PYQ	
PYQ_c	
PYQ_c^{bis}	

$PYQS_c$	YQS[c] is the volume of the production expressed at market price. It should not be seen as a composite of several "goods": production at base price, margins and taxes. Its does not increase when the volume of the margins and taxes increase. The price does instead. This is equivalent to assuming that YQS[c] is always proportionnal to and YQ[c] since the volume of margins and taxes depends on the latter. Writing it following the specification composite of several goods, YQS[c] = YQ[c] + MGPD[c] + NTAXPD[c], would lead to inacurate results since a decrease in the quantity of margins used per unit of production would not lead to a decrease of the selling price.
Q	
Q_c	
QD	
QD_c	
QM	
QM_c	
R	
R_s	
$r^{DEBT,G}$	
R^n	Notional interest rate of the Central Bank (Taylor rule)
$RSAV^{H,VAL}$	
$SAV^{H,VAL}$	
$SOC^{BENF,VAL}$	
$Stock^{SAV,H,VAL}$	
$SUBST_c^{CHM}$	
$SUBST_{ce,s}^{CI}$	

$SUBST^{CI}_{ct,s}$	
$SUBST^{CIM}_{c,s}$	
$SUBST^{F}_{f,s}$	
$SUBST^{GM}_{c}$	
$SUBST^{IM}_{c,s}$	
$SUBST^{MGPD}_{cc,c}$	
$SUBST^{MGPM}_{cc,c}$	
$SUBST^{MGRM}_{c}$	
$SUBST^{n,CI}_{ce,s}$	
$SUBST^{n,CI}_{ct,s}$	
$SUBST^{n,F}_{f,s}$	
$SUBST^{n,MGPD}_{m,c}$	
$SUBST^{n,MGPM}_{m,c}$	
$SUBST^{X}_{c}$	
$SUBST^{XM}_{c}$	
$TRSP_s$	Leontief hypothesis
VA	
VA_s	
VA^{VAL}_{s}	
W	
W_s	
W^{n}_{s}	Notional wage in sector s
$WAGES$	
$WAGES_s$	
X	
XD	

XM	
Y	
$Y_{c,s}$	
Y_s	Mettre VERIF sur le PRIX !!!!! PYbis[s]
Y_s^e	Expected production
$YCAP_s$	Production capacity
YQ	
YQ_c	
YQ_c^{bis}	
YQS_c	