8 Money and Exchange Rates under Flexible Prices

$$\mathsf{m}_t^d - \mathsf{p}_t = -\eta \mathrm{E}_t\{\mathsf{p}_{t+1} - \mathsf{p}_t\}, \tag{1}$$

$$\frac{M_t^d}{P_t} = L(Y_t, i_{t+1}). \tag{2}$$

$$1 + i_{t+1} = (1 + r_{t+1})\frac{P_{t+1}}{P_t}. \tag{3}$$

$$\mathsf{m}_t^d = \mathsf{m}_t.$$

$$\mathsf{m}_t - \mathsf{p}_t = -\eta \mathrm{E}_t\{\mathsf{p}_{t+1} - \mathsf{p}_t\}. \tag{4}$$

$$\mathsf{m}_t - \mathsf{p}_t = -\eta(\mathsf{p}_{t+1} - \mathsf{p}_t). \tag{5}$$

$$\mathsf{p}_t = \frac{1}{1+\eta}\mathsf{m}_t + \frac{\eta}{1+\eta}\mathsf{p}_{t+1}, \tag{6}$$

$$\mathsf{p}_{t+1} = \frac{1}{1+\eta}\mathsf{m}_{t+1} + \frac{\eta}{1+\eta}\mathsf{p}_{t+2};$$

$$\mathsf{p}_t = \frac{1}{1+\eta}\left(\mathsf{m}_t + \frac{\eta}{1+\eta}\mathsf{m}_{t+1}\right) + \left(\frac{\eta}{1+\eta}\right)^2 \mathsf{p}_{t+2}.$$

$$\mathsf{p}_t = \frac{1}{1+\eta}\sum_{s=t}^{\infty}\left(\frac{\eta}{1+\eta}\right)^{s-t}\mathsf{m}_s + \lim_{T\to\infty}\left(\frac{\eta}{1+\eta}\right)^{T}\mathsf{p}_{t+T} \tag{7}$$

$$\lim_{T\to\infty}\left(\frac{\eta}{1+\eta}\right)^{T}\mathsf{p}_{t+T}=0. \tag{8}$$

$$\mathsf{p}_t=\frac{1}{1+\eta}\sum_{s=t}^{\infty}\left(\frac{\eta}{1+\eta}\right)^{s-t}\mathsf{m}_s. \tag{9}$$

$$\frac{1}{1+\eta}\left[1+\frac{\eta}{1+\eta}+\left(\frac{\eta}{1+\eta}\right)^{2}+\ldots\right]$$

$$=\frac{1}{1+\eta}\left(\frac{1}{1-\frac{\eta}{1+\eta}}\right)=1$$

$$\mathsf{m}_t = \bar{\mathsf{m}} + \mu t.$$

$$\mathsf{p}_t = \mathsf{m}_t + \eta\mu. \tag{10}$$

$$\mathsf{m}_t = \begin{cases} \bar{\mathsf{m}} & t < T, \\ \bar{\mathsf{m}}' & t \geq T. \end{cases}$$

$$\mathsf{p}_t = \begin{cases} \bar{\mathsf{m}} + \left(\frac{\eta}{1+\eta}\right)^{T-t} (\bar{\mathsf{m}}' - \bar{\mathsf{m}}), & t < T, \\ \mathsf{p}_t = \bar{\mathsf{m}}', & t \geq T. \end{cases}$$

$$\mathsf{p}_t = \frac{1}{1+\eta}\sum_{s=t}^{\infty}\left(\frac{\eta}{1+\eta}\right)^{s-t}\mathsf{m}_s + b_0\left(\frac{1+\eta}{\eta}\right)^{t}, \quad (11)$$

$$b_0 = \mathsf{p}_0 - \frac{1}{1+\eta}\sum_{s=0}^{\infty}\left(\frac{\eta}{1+\eta}\right)^{s}\mathsf{m}_s.$$

$$\mathsf{p}_t = \frac{1}{1+\eta}\sum_{s=t}^{\infty}\left(\frac{\eta}{1+\eta}\right)^{s-t}\mathrm{E}_t\{\mathsf{m}_s\}, \quad (12)$$

$$\mathsf{m}_t = \rho\mathsf{m}_{t-1} + \epsilon_t, \qquad 0 \le \rho \le 1, \quad (13)$$

$$\mathsf{p}_t = \frac{\mathsf{m}_t}{1+\eta} \sum_{s=t}^{\infty} \left(\frac{\eta\rho}{1+\eta} \right)^{s-t}$$

$$= \left(\frac{\mathsf{m}_t}{1+\eta} \right) \frac{1}{1 - \frac{\eta\rho}{1+\eta}} = \frac{\mathsf{m}_t}{1+\eta-\eta\rho} \tag{14}$$

$$\mathsf{m}_t - \mathsf{p}_t = -\eta \dot{\mathsf{p}}_t, \tag{15}$$

$$\mathsf{p}_t = \frac{1}{\eta} \int_t^{\infty} \exp[-(s-t)/\eta] \mathsf{m}_s \mathrm{d}s + b_0 \exp(t/\eta) \tag{16}$$

$$\mathsf{m}_t - \mathsf{p}_t = -\frac{\eta}{h}(\mathsf{p}_{t+h} - \mathsf{p}_t). \tag{17}$$

$$\mathsf{p}_t = \frac{1}{1 + \eta/h} \sum_{s=t}^{\infty} \left(\frac{\eta/h}{1 + \eta/h}\right)^{(s-t)/h} \mathsf{m}_s + b_0 \left(\frac{1 + \eta/h}{\eta/h}\right)^{t/h}$$

$$\mathsf{p}_t = \frac{1}{h + \eta} \sum_{s=t}^{\infty} \left(1 + \frac{h}{\eta}\right)^{-(s-t)/h} \mathsf{m}_s h + b_0 \left(1 + \frac{h}{\eta}\right)^{t/h}$$

$$
\begin{aligned}
\mathsf{p}_t = \frac{1}{\eta}\int_t^\infty \mathrm{e}^{-(s-t)/\eta}\mathsf{m}_s \mathrm{d}s = \mathsf{m}_t \\
+ \int_t^\infty \mathrm{e}^{-(s-t)/\eta}\dot{\mathsf{m}}_s \mathrm{d}s = \mathsf{m}_t + \eta\mu
\end{aligned}
\tag{18}
$$

$$
\mathsf{p}_t = \mathsf{m}_t + \eta\mu + b_0 \mathrm{e}^{t/\eta}, \tag{19}
$$

$$
\text{Seignorage} = \frac{M_t - M_{t-1}}{P_t} \tag{20}
$$

$$\text{Seignorage} = \frac{M_t - M_{t-1}}{M_t} \cdot \frac{M_t}{P_t} \tag{21}$$

$$\frac{M_t}{P_t} = \left(\frac{P_{t+1}}{P_t} \right)^{-\eta}.$$

$$1 + \mu = \frac{M_t}{M_{t-1}} = \frac{P_t}{P_{t-1}},$$

$$\text{Seignorage} = \frac{\mu}{1+\mu} \cdot (1+\mu)^{-\eta} = \mu(1+\mu)^{-\eta-1}. \tag{22}$$

$$(1+\mu)^{-\eta-1} - \mu(\eta+1)(1+\mu)^{-\eta-2} = 0,$$

$$\mu^{\text{MAX}} = \frac{1}{\eta}. \tag{23}$$

$$\mathsf{m}_t - \mathsf{p}_t = -\eta \mathsf{i}_{t+1} + \phi \mathsf{y}_t, \tag{24}$$

$$P_t = \mathcal{E}_t P_t^* \tag{25}$$

$$\mathsf{p}_t = \mathsf{e}_t + \mathsf{p}_t^*. \tag{26}$$

$$1 + i_{t+1} = (1 + i_{t+1}^*)\mathrm{E}_t\left\{\frac{\mathcal{E}_{t+1}}{\mathcal{E}_t}\right\}. \tag{27}$$

$$\mathsf{i}_{t+1} = \mathsf{i}_{t+1}^* + \mathrm{E}_t\mathsf{e}_{t+1} - \mathsf{e}_t \tag{28}$$

$$(\mathsf{m}_t - \phi\mathsf{y}_t + \eta\mathsf{i}_{t+1}^* - \mathsf{p}_t^*) - \mathsf{e}_t = -\eta(\mathrm{E}_t\mathsf{e}_{t+1} - \mathsf{e}_t) \tag{29}$$

$$\mathsf{e}_t = \frac{1}{1+\eta} \sum_{s=t}^{\infty} \left(\frac{\eta}{1+\eta} \right)^{s-t} \mathrm{E}_t \{ \mathsf{m}_s - \phi \mathsf{y}_s + \eta \mathsf{i}^*_{s+1} - \mathsf{p}^*_s \} \tag{30}$$

$$\mathsf{m}_t - \mathsf{m}_{t-1} = \rho(\mathsf{m}_{t-1} - \mathsf{m}_{t-2}) + \epsilon_t, \qquad 0 \le \rho \le 1 \tag{31}$$

$$\mathrm{E}_t \mathsf{e}_{t+1} - \mathsf{e}_t = \frac{1}{1+\eta} \sum_{s=t}^{\infty} \left(\frac{\eta}{1+\eta} \right)^{s-t} \mathrm{E}_t \{ \mathsf{m}_{s+1} - \mathsf{m}_s \} \tag{32}$$

$$\mathrm{E}_t \mathsf{e}_{t+1} - \mathsf{e}_t = \frac{\rho}{1+\eta-\eta\rho} (\mathsf{m}_t - \mathsf{m}_{t-1}).$$

$$\mathsf{e}_t = \mathsf{m}_t + \frac{\eta\rho}{1 + \eta - \eta\rho}(\mathsf{m}_t - \mathsf{m}_{t-1}).$$

$$U_t = \sum_{s=t}^{\infty} \beta^{s-t} u \left(C_s, \frac{M_s}{P_s} \right), \tag{33}$$

$$P_t = \mathcal{E}_t P^*,$$

$$\alpha \log C + (1 - \alpha) \log(\bar{L} - L_t),$$

$$\bar{L} - L_t = \bar{L}\left(\frac{M_t/P_t}{C_t}\right)^{\varepsilon},$$

$$\alpha \log C + (1-\alpha)\log(\bar{L} - L_t)$$
$$= [\alpha - \varepsilon(1-\alpha)]\log C_t + \varepsilon(1-\alpha)\log\frac{M_t}{P_t}$$

$$B_{t+1} + \frac{M_t}{P_t} = (1+r)B_t + \frac{M_{t-1}}{P_t} + Y_t - C_t - T_t, \quad (34)$$

$$U_t = \sum_{s=t}^{\infty} \beta^{s-t} u \left[-B_{s+1} - \frac{M_s}{P_s} + (1+r) B_s + \frac{M_{s-1}}{P_s} + Y_s - T_s, \frac{M_s}{P_s} \right]$$

$$u_C \left(C_t, \frac{M_t}{P_t} \right) = (1+r) \beta u_C \left(C_{t+1}, \frac{M_{t+1}}{P_{t+1}} \right), \qquad (35)$$

$$\frac{1}{P_t} u_C \left(C_t, \frac{M_t}{P_t} \right) = \frac{1}{P_t} u_{M/P} \left(C_t, \frac{M_t}{P_t} \right) + \frac{1}{P_{t+1}} \beta u_C \left(C_{t+1}, \frac{M_{t+1}}{P_{t+1}} \right) \qquad (36)$$

$$\frac{u_{M/P}\left(C_t, \frac{M_t}{P_t}\right)}{u_C\left(C_t, \frac{M_t}{P_t}\right)} = 1 - \frac{P_t/P_{t+1}}{1+r} = \frac{i_{t+1}}{1+i_{t+1}} \quad (37)$$

$$\frac{B_{t+2}}{1+r} + \frac{M_{t+1}}{P_{t+1}(1+r)} = B_{t+1}$$

$$+ \frac{M_t}{P_{t+1}(1+r)} + \frac{Y_{t+1} - C_{t+1} - T_{t+1}}{1+r}$$

$$\frac{B_{t+2}}{1+r} + \frac{M_{t+1}}{P_{t+1}(1+r)}$$

$$= \left(B_{t+1} + \frac{M_t}{P_t}\right) - \frac{M_t}{P_t}\left[1 - \frac{P_t}{P_{t+1}(1+r)}\right]$$

$$+ \frac{Y_{t+1} - C_{t+1} - T_{t+1}}{1+r}$$

$$1 - \frac{P_t}{P_{t+1}(1+r)} = \frac{i_{t+1}}{1+i_{t+1}}$$

$$\sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}\left[C_s+\frac{i_{s+1}}{1+i_{s+1}}\left(\frac{M_s}{P_s}\right)\right]$$

$$= (1+r)B_t+\frac{M_{t-1}}{P_t}+\sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}(Y_s-T_s) \tag{38}$$

$$\lim_{T\to\infty}\left(\frac{1}{1+r}\right)^{T}\left(B_{t+T+1}+\frac{M_{t+T}}{P_{t+T}}\right)=0$$

$$u\left(C,\frac{M}{P}\right)=\frac{[C^{\gamma}(M/P)^{1-\gamma}]^{1-\frac{1}{\sigma}}}{1-\frac{1}{\sigma}}, \tag{39}$$

$$\frac{M_t^d}{P_t} = \left(\frac{1-\gamma}{\gamma}\right)\left(1 + \frac{1}{i_{t+1}}\right) C_t. \tag{40}$$

$$u\left(C, \frac{M}{P}\right) = \frac{\left\{\left[\gamma^{\frac{1}{\theta}} C^{\frac{\theta-1}{\theta}} + (1-\gamma)^{\frac{1}{\theta}} \left(\frac{M}{P}\right)^{\frac{\theta-1}{\theta}}\right]^{\frac{\theta}{\theta-1}}\right\}^{1-\frac{1}{\sigma}}}{1-\frac{1}{\sigma}}$$

$$P_t^{\mathrm{C}} \equiv \left[\gamma + (1-\gamma)\left(\frac{i_{t+1}}{1+i_{t+1}}\right)^{1-\theta}\right]^{\frac{1}{1-\theta}}.$$

$$1 + r_{t+1}^{\mathrm{C}} = (1 + r)\frac{P_t^{\mathrm{C}}}{P_{t+1}^{\mathrm{C}}}.$$

$$\frac{M_t^d}{P_t} = \left(\frac{1-\gamma}{\gamma}\right)\left(1 + \frac{1}{i_{t+1}}\right)^{\theta} C_t.$$

$$\Omega\left(C, \frac{M}{p}\right) = \left[\gamma^{\frac{1}{\theta}} C^{\frac{\theta-1}{\theta}} + (1-\gamma)^{\frac{1}{\theta}}\left(\frac{M}{P}\right)^{\frac{\theta-1}{\theta}}\right]^{\frac{\theta}{\theta-1}}$$

$$\frac{Z_t}{P_t^{\mathrm{C}}} = \frac{(1+r)B_t + \frac{M_{t-1}}{P_t} + \sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}(Y_s - T_s)}{P_t^{\mathrm{C}}\sum_{s=t}^{\infty}\left[(1+r)^{s-t}\left(\frac{P_t^{\mathrm{C}}}{P_s^{\mathrm{C}}}\right)\right]^{\sigma-1}\beta^{\sigma(s-t)}}.$$

$$C_t = \frac{\gamma}{(P_t^{\mathrm{C}})^{-\theta}} \cdot \frac{(1+r)B_t + \frac{M_{t-1}}{P_t} + \sum_{s=t}^{\infty} \left(\frac{1}{1+r}\right)^{s-t} (Y_s - T_s)}{P_t^{\mathrm{C}} \sum_{s=t}^{\infty} \left[\prod_{v=t+1}^{s} (1 + r_v^{\mathrm{C}})\right]^{\sigma-1} \beta^{\sigma(s-t)}}.$$

$$C_t = \gamma(1-\beta)\left[(1+r)B_t + \frac{M_{t-1}}{P_t} + \sum_{s=t}^{\infty} \left(\frac{1}{1+r}\right)^{s-t} (Y_s - T_s)\right]$$

$$G_t = T_t + \frac{M_t - M_{t-1}}{P_t}, \tag{41}$$

$$B_{t+1} = (1+r)B_t + Y_t - G_t - C_t. \tag{42}$$

$$-T_t = \frac{M_t - M_{t-1}}{P_t}. \tag{43}$$

$$\bar{C} = rB_t + \frac{r}{1+r}\sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}(Y_s - G_s) \tag{44}$$

$$u\left(C, \frac{M}{P}\right) = \log C + v\left(\frac{M}{P}\right), \tag{45}$$

$$\frac{v'\left(\frac{M_t}{P_t}\right)}{1/\bar{C}} = 1 - \frac{P_t/P_{t+1}}{1+r}$$

$$\frac{M_{t+1}}{P_{t+1}}\left(\frac{\beta}{1+\mu}\right) = \frac{M_t}{P_t}\left[1 - \bar{C}v'\left(\frac{M_t}{P_t}\right)\right] \tag{46}$$

$$\frac{\overline{M}}{P} = \bar{C}\left(\frac{1}{1-\frac{\beta}{1+\mu}}\right).$$

$$\frac{1}{P_t}\left(\frac{1}{C_t}\right) = \frac{1}{P_t}v'\left(\frac{M_t}{P_t}\right) + \frac{1}{P_{t+1}}\left(\frac{\beta}{C_{t+1}}\right) \tag{47}$$

$$\frac{1}{P_t}\left(\frac{1}{C_t}\right) = \frac{1}{P_t} v'\left(\frac{M_t}{P_t}\right)$$

$$+ \frac{\beta}{P_{t+1}} v'\left(\frac{M_{t+1}}{P_{t+1}}\right) + \frac{1}{P_{t+2}}\left(\frac{\beta^2}{C_{t+2}}\right)$$

$$\frac{1}{P_t}\left(\frac{1}{\bar{C}}\right) = \sum_{s=t}^{t+T-1} \beta^{s-t} \frac{1}{P_s} v'\left(\frac{\bar{M}}{P_s}\right) + \frac{1}{P_{t+T}}\left(\frac{\beta^T}{\bar{C}}\right) \quad (48)$$

$$\frac{1}{P_t}\left(\frac{1}{\bar{C}}\right) = \sum_{s=t}^{\infty} \beta^{s-t} \frac{1}{P_s} v'\left(\frac{\bar{M}}{P_s}\right), \quad (49)$$

$$\lim_{T\to\infty} \frac{1}{P_{t+T}} \cdot \frac{\beta^T}{\bar{C}} = 0 \tag{50}$$

$$\frac{1}{P_{t+1}} = \frac{1}{\beta P_t} - \frac{\bar{C} v'(\bar{M}/P_t)}{\beta P_t}. \tag{51}$$

$$\lim_{T\to\infty} \frac{1}{P_{t+T}} \cdot \frac{\beta^T}{\bar{C}} > 0$$

$$\frac{1}{P_t}\left(\frac{1}{\bar{C}}\right) > \sum_{s=t}^{\infty} \frac{1}{P_s}\beta^{s-t} v'\left(\frac{\bar{M}}{P_s}\right).$$

$$\lim_{M/P \to 0} \frac{M}{P} v'\left(\frac{M}{P}\right) = 0, \tag{52}$$

$$\frac{1}{\bar{C}} = v'\left(\frac{\bar{M}}{P_{T-1}}\right) \tag{53}$$

$$\lim_{M/P \to 0} \frac{M}{P} v'\left(\frac{M}{P}\right) > 0. \tag{54}$$

$$\mathsf{m}_t - \mathsf{p}_t = -\eta \mathsf{i}_{t+1} + \phi \mathsf{y}_t + \epsilon_t$$

$$
\begin{aligned}
&(\mathsf{m}_t - \phi \mathsf{y}_t + \eta \mathsf{i}^*_{t+1} - \mathsf{p}^*_t) - \mathsf{e}_t \\
&\quad = -\eta(\mathrm{E}_t \mathsf{e}_{t+1} - \mathsf{e}_t) + \epsilon_t
\end{aligned} \tag{55}
$$

$$
\mathsf{e}_t = \frac{1}{1+\eta} \sum_{s=t}^{\infty} \left(\frac{\eta}{1+\eta} \right)^{s-t} \mathrm{E}_t\{\mathsf{m}_s - \phi \mathsf{y}_s + \eta \mathsf{i}^*_{s+1} - \mathsf{p}^*_s - \epsilon_s\} \tag{56}
$$

$$
U_t = \sum_{s=t}^{\infty} \beta^{s-t} u(C_s) \tag{57}
$$

$$
B_{t+1} + \frac{M_t}{P_t} = (1+r)B_t + \frac{M_{t-1}}{P_t} + Y_t - C_t - T_t
$$

$$M_{t-1} \geq P_t C_t. \tag{58}$$

$$M_{t-1} = P_t C_t$$

$$B_{t+1} = (1+r)B_t + Y_t - T_t - \frac{P_{t+1}}{P_t} C_{t+1}. \tag{59}$$

$$U_t = \sum_{s=t}^{\infty} \beta^{s-t} u \left\{ \frac{P_{s-1}}{P_s} \left[(1+r)B_{s-1} - B_s + Y_{s-1} - T_{s-1} \right] \right\}$$

$$\frac{P_{s-1}}{P_s}u'(C_s) = (1+r)\frac{P_s}{P_{s+1}}\beta u'(C_{s+1}).$$

$$\frac{u'(C_s)}{1+i_s} = (1+r)\beta\frac{u'(C_{s+1})}{1+i_{s+1}} \tag{60}$$

$$\frac{M_{t-1}}{P_t} = C_t.$$

$$M_t \geq P_t C_t.$$

$$U_t = \sum_{s=t}^{\infty} \beta^{s-t} \left\{ u(C_s) + v\left[\frac{M_s}{P_s} + g\left(\frac{\mathcal{E}_s M_{\mathrm{F},s}}{P_s} \right) \right] \right\} \tag{61}$$

$$g\left(\frac{\mathcal{E} M_{\mathrm{F}}}{P} \right) = a_0 \left(\frac{\mathcal{E} M_{\mathrm{F}}}{P} \right) - \frac{a_1}{2} \left(\frac{\mathcal{E} M_{\mathrm{F}}}{P} \right)^2, \tag{62}$$

$$\begin{aligned} B_{t+1} + \frac{M_t}{P_t} + \frac{\mathcal{E}_t M_{\mathrm{F},t}}{P_t} &= (1+r) B_t \\ &+ \frac{M_{t-1}}{P_t} + \frac{\mathcal{E}_t M_{\mathrm{F},t-1}}{P_t} + Y_t - C_t - T_t \end{aligned} \tag{63}$$

$$u'(C_t) = u'(C_{t+1}), \tag{64}$$

$$\frac{1}{P_t}u'(C_t) = \frac{1}{P_t}v'\left[\frac{M_t}{P_t} + g\left(\frac{M_{\mathrm{F},t}}{P_t^*}\right)\right] + \frac{1}{P_{t+1}}\beta u'(C_{t+1}) \tag{65}$$

$$\frac{1}{P_t^*}u'(C_t) = \frac{1}{P_t^*}v'\left[\frac{M_t}{P_t} + g\left(\frac{M_{\mathrm{F},t}}{P_t^*}\right)\right]g'\left(\frac{M_{\mathrm{F},t}}{P_t^*}\right) + \frac{1}{P_{t+1}^*}\beta u'(C_{t+1}) \tag{66}$$

$$g'\left(\frac{M_{\mathrm{F},t}}{P_t^*}\right)=\frac{1-\beta\dfrac{P_t^*}{P_{t+1}^*}}{1-\beta\dfrac{P_t}{P_{t+1}}}.$$

$$\frac{M_{\mathrm{F},t}}{P_t^*}=\frac{1}{a_1}\left(a_0-\frac{1-\beta\dfrac{P_t^*}{P_{t+1}^*}}{1-\beta\dfrac{P_t}{P_{t+1}}}\right) \tag{67}$$

$$\mathsf{m}_t-\mathsf{e}_t=-\eta(\mathrm{E}_t\mathsf{e}_{t+1}-\mathsf{e}_t). \tag{68}$$

$$\mathsf{m}_t - \bar{\mathsf{e}} = -\eta(\bar{\mathsf{e}} - \bar{\mathsf{e}})$$

$$\mathsf{m}_t = \bar{\mathsf{m}} = \bar{\mathsf{e}}.$$

$$\mathsf{m}_t - \bar{\mathsf{e}}_t = -\eta\mu$$

$$u\left(C, \frac{M}{P}\right) = \log C + \log\left(\frac{M}{P}\right),$$

$$\frac{M_t}{\mathcal{E}_t} = \bar{C}\left[\frac{1+r}{1+r-(\mathcal{E}_t/\mathcal{E}_{t+1})}\right], \tag{69}$$

$$\frac{M_t}{\mathcal{E}_t} = (\bar{Y} + rB_t - \bar{G})\left[\frac{(1+\mu)(1+r)}{(1+\mu)(1+r)-1}\right].$$

$$\mathsf{m}_t - \mathsf{e}_t = -\eta\dot{\mathsf{e}}_t. \tag{70}$$

$$\bar{\mathsf{m}} = \bar{\mathsf{e}}. \tag{71}$$

$$M_t = B_{\mathrm{H},t} + \bar{\mathcal{E}}\, B_{\mathrm{F},t}. \tag{72}$$

$$\frac{\dot{B}_{\mathrm{H}}}{B_{\mathrm{H}}} = \dot{\mathsf{b}}_{\mathrm{H}} = \mu, \tag{73}$$

$$\bar{\mathcal{E}}\, \dot{B}_{\mathrm{F}} = -\dot{B}_{\mathrm{H}}. \tag{74}$$

$$\tilde{\mathsf{e}}_t = \mathsf{b}_{\mathrm{H},t} + \eta\mu, \tag{75}$$

$$\mathsf{b}_{\mathrm{H},t} = \mathsf{b}_{\mathrm{H},0} + \mu t,$$

$$\bar{\mathsf{e}} = \mathsf{b}_{\mathrm{H},0} + \mu T + \eta\mu.$$

$$T = \frac{\bar{\mathsf{e}} - \mathsf{b}_{\mathrm{H},0} - \eta\mu}{\mu}. \tag{76}$$

$$T = \frac{\log(B_{\mathrm{H},0} + B_{\mathrm{F},0}) - \mathsf{b}_{\mathrm{H},0} - \eta\mu}{\mu}. \tag{77}$$

$$\tilde{e}_t = \log B_{H,t} + \eta\mu + b_T e^{(t-T)/\eta},$$

$$T = \frac{\log(B_{H,0} + B_{F,0}) - b_{H,0} - \eta\mu - b_T}{\mu}$$

$$p_t - p_t^* = m_t - m_t^* - \phi(y_t - y_t^*) + \eta(i_{t+1} - i_{t+1}^*).$$

$$e_t = m_t - m_t^* - \phi(y_t - y_t^*) + \eta(E_t e_{t+1} - e_t). \qquad (78)$$

$$\mathsf{e}_t = \mathsf{m}_t - \mathsf{m}_t^* - \phi(\mathsf{y}_t - \mathsf{y}_t^*) + \eta(\mathrm{E}_t\mathsf{e}_{t+1} - \mathsf{e}_t)$$

$$\mathsf{e}_t = \mathsf{m}_t - \mathsf{m}_t^* - \phi(\mathsf{y}_t - \mathsf{y}_t^*) + \frac{\eta}{h}\mathrm{E}_t\mathrm{d}\mathsf{e}_{t+h} \tag{79}$$

$$\mathsf{e}_t = \frac{1}{h+\eta}\sum_{s=t}^{\infty}\left(1+\frac{h}{\eta}\right)^{-(s-t)/h}\mathrm{E}_t\{\mathsf{k}_s\}h, \tag{80}$$

$$\mathrm{d}\mathsf{k}_{t+h} = h^{1/2}v\mathrm{d}z_{t+h}, \tag{81}$$

$$\mathsf{e} = G(\mathsf{k}),$$

$$G(\mathsf{k}_t) = \mathsf{k}_t + \frac{\eta}{h}\mathrm{E}_t \mathrm{d}G(\mathsf{k}_{t+h})$$

$$= \mathsf{k}_t + \frac{\eta}{h}\mathrm{E}_t\{G(\mathsf{k}_{t+h}) - G(\mathsf{k}_t)\}. \qquad (82)$$

$$\mathrm{E}_t\{G(\mathsf{k}_{t+h}) - G(\mathsf{k}_t)\}$$

$$\approx \mathrm{E}_t\{G'(\mathsf{k}_t)\mathrm{d}\mathsf{k}_{t+h} + \frac{1}{2}G''(\mathsf{k}_t)(\mathrm{d}\mathsf{k}_{t+h})^2\}$$

$$(83)$$

$$\mathrm{E}_t\{(\mathrm{d}\mathsf{k}_{t+h})^2\} = \mathrm{E}_t\{hv^2(\mathrm{d}z_{t+h})^2\} = hv^2.$$

$$\mathrm{E}_t \mathrm{d}G(\mathsf{k}_{t+h}) \approx \frac{hv^2}{2} G''(\mathsf{k}_t).$$

$$G(\mathsf{k}) = \mathsf{k} + \frac{\eta v^2}{2} G''(\mathsf{k}) \tag{84}$$

$$G(\mathsf{k}) = \mathsf{k} + b_1 \exp(\lambda \mathsf{k}) + b_2 \exp(-\lambda \mathsf{k}),$$

$$\lambda = \sqrt{\frac{2}{\eta v^2}}.$$

$$G(\mathsf{k}) = \mathsf{k} - b[\exp(\lambda \mathsf{k}) - \exp(-\lambda \mathsf{k})]. \tag{85}$$

$$\begin{aligned} \mathrm{E}_t\{S(\bar{\mathsf{k}} + \mathrm{d}\mathsf{k}) - S(\bar{\mathsf{k}})\} &= S'(\bar{\mathsf{k}})\mathrm{E}_t\{\mathrm{d}\mathsf{k} \mid \mathrm{d}\mathsf{k} \leq 0\} \\ &\quad + \frac{1}{2}S''(\bar{\mathsf{k}})\mathrm{E}_t\{(\mathrm{d}\mathsf{k})^2 \mid \mathrm{d}\mathsf{k} \leq 0\} \end{aligned} \tag{86}$$

$$S(\bar{\mathsf{k}}) = \bar{\mathsf{k}} + \frac{\eta}{h} S'(\bar{\mathsf{k}}) \mathrm{E}_t\{\mathrm{d}\mathsf{k} \mid \mathrm{d}\mathsf{k} \leq 0\}$$

$$+ \frac{\eta v^2}{2} S''(\bar{\mathsf{k}}). \tag{87}$$

$$S(\mathsf{k}) = \mathsf{k} + \frac{\eta v^2}{2} S''(\mathsf{k}).$$

$$S(\bar{\mathsf{k}}) = \lim_{\mathsf{k} \to \bar{\mathsf{k}}} S(\mathsf{k}) = \bar{\mathsf{k}} + \frac{\eta v^2}{2} S''(\bar{\mathsf{k}}).$$

$$S(\overline{\mathsf{k}}) = \overline{\mathsf{k}} - b\left[\exp\left(\lambda\overline{\mathsf{k}}\right) - \exp\left(-\lambda\overline{\mathsf{k}}\right)\right] = \overline{\mathsf{e}},$$

$$S'(\overline{\mathsf{k}}) = 1 - \lambda b\left[\exp\left(\lambda\overline{\mathsf{k}}\right) + \exp\left(-\lambda\overline{\mathsf{k}}\right)\right] = 0.$$

$$S(\overline{\mathsf{k}}) = \overline{\mathsf{k}} + b_1 \exp(\lambda\overline{\mathsf{k}}) = \overline{\mathsf{e}}. \tag{88}$$

$$S(\overline{\mathsf{k}}) = \overline{\mathsf{k}} + b_1 \exp(\lambda\overline{\mathsf{k}}) = \overline{\mathsf{k}} - \mathfrak{R}, \tag{89}$$

$$S'(\overline{\mathsf{k}}) = 1 + \lambda b_1 \exp(\lambda\overline{\mathsf{k}}) = 0. \tag{90}$$

$$\mathfrak{R}' = \frac{1}{\lambda}.$$

$$U_t^n = \mathrm{E}_t \sum_{s=t}^{\infty} \beta^{s-t} \left[u(C_s^n) + v\left(\frac{M_s^n}{P_s^n}\right) \right], \; n = 1, \ldots, N \tag{91}$$

$$P^n = \mathcal{E}^{nm} P^m, \tag{92}$$

$$u'(C_t) = \beta \mathrm{E}_t\{(1 + r_{t+1}^m) u'(C_{t+1})\}, \tag{93}$$

$$C_t^n = x^n Y_t^{\mathrm{W}} \tag{94}$$

$$\frac{1}{P_t} u'(C_t) = (1 + i_{t+1}) \beta \mathrm{E}_t \left\{ \frac{1}{P_{t+1}} u'(C_{t+1}) \right\}$$

$$u'(C_t) = \beta \mathrm{E}_t \left\{ (1 + i_{t+1}) \frac{P_t}{P_{t+1}} u'(C_{t+1}) \right\}, \tag{95}$$

$$u'(C_t) = (1 + r_{t+1}) \beta \mathrm{E}_t \{ u'(C_{t+1}) \}. \tag{96}$$

$$(1 + r_{t+1})\mathrm{E}_t \left\{u'(C_{t+1})\right\}$$

$$= (1 + i_{t+1})\mathrm{E}_t \left\{\frac{P_t}{P_{t+1}} u'(C_{t+1})\right\}$$

$$1 + r_{t+1} = (1 + i_{t+1})\mathrm{E}_t \left\{\frac{P_t}{P_{t+1}}\right\} \tag{97}$$

$$\mathrm{E}_t \left\{\frac{P_t}{P_{t+1}} u'(C_{t+1})\right\}$$

$$= \mathrm{E}_t \left\{\frac{P_t}{P_{t+1}}\right\} \mathrm{E}_t\{u'(C_{t+1})\}$$

$$
\frac{1}{P_t}u'(C_t) = \frac{1}{P_t}v'\left(\frac{M_t}{P_t}\right) + \beta \mathrm{E}_t\left\{\frac{1}{P_{t+1}}u'(C_{t+1})\right\} \tag{98}
$$

$$
\frac{v'\left(\frac{M_t}{P_t}\right)}{u'(C_t)} = \frac{i_{t+1}}{1+i_{t+1}}.
$$

$$
u(C_t) + v\left(\frac{M_t}{P_t}\right) = \frac{C^{1-\rho}}{1-\rho} + \log\left(\frac{M_t}{P_t}\right)
$$

$$1 = \frac{P_t (x Y_t^{\mathrm{W}})^{\rho}}{M_t} + \beta \mathrm{E}_t \left\{ \frac{P_t}{P_{t+1}} \left(\frac{Y_t^{\mathrm{W}}}{Y_{t+1}^{\mathrm{W}}} \right)^{\rho} \right\} \tag{99}$$

$$\frac{M_{t+1}}{M_t} = (1 + \mu)\epsilon_{t+1}, \tag{100}$$

$$\frac{M_t}{P_t} = \omega (x Y_t^{\mathrm{W}})^{\rho}, \tag{101}$$

$$\omega = \frac{1 + \mu}{1 + \mu - \beta} = \frac{1}{1 - \frac{\beta}{1 + \mu}} > 0.$$

$$P_t = M_t \left(1 - \frac{\beta}{1+\mu}\right)(xY_t^{\mathrm{w}})^{-\rho}$$

$$\mathsf{m}_t - \mathsf{p}_t = \rho \mathsf{y}_t^{\mathrm{w}} - \left(1/\bar{i}\right) \mathrm{E}_t \left\{\mathsf{p}_{t+1} - \mathsf{p}_t\right\} - \left(\rho/\bar{i}\right) \mathrm{E}_t \left\{\mathsf{y}_{t+1}^{\mathrm{w}} - \mathsf{y}_t^{\mathrm{w}}\right\}$$

$$\mathsf{p}_t = -\rho \mathsf{y}_t^{\mathrm{w}} + \left(\frac{\bar{i}}{1+\bar{i}}\right) \sum_{s=t}^{\infty} \left(\frac{1}{1+\bar{i}}\right)^{s-t} \mathrm{E}_t \left\{\mathsf{m}_s\right\},$$

$$U_t^n = \mathrm{E}_t \sum_{s=t}^{\infty} \beta^{s-t} u(C_s^n). \tag{102}$$

$$P_t^n = \frac{M_t^n}{Y_t^n} \tag{103}$$

$$1 + i_{t+1} = (1 + i_{t+1}^*) \frac{\mathcal{F}_t}{\mathcal{E}_t}. \tag{104}$$

$$\mathcal{F}_t = \mathrm{E}_t\{\mathcal{E}_{t+1}\} \tag{105}$$

$$\mathrm{E}_t \left\{ \frac{1}{\mathcal{E}_{t+1}} \right\} > \frac{1}{\mathrm{E}_t \left\{ \mathcal{E}_{t+1} \right\}}$$

$$\frac{1}{\mathcal{F}_t} = \mathrm{E}_t \left\{ \frac{1}{\mathcal{E}_{t+1}} \right\},$$

$$\mathsf{f}_t = \mathrm{E}_t\{\mathsf{e}_{t+1}\} + \frac{1}{2}\,\mathrm{Var}_t(\mathsf{e}_{t+1}). \tag{106}$$

$$\mathrm{E}_t \left\{ \frac{\mathcal{F}_t - \mathcal{E}_{t+1}}{P_{t+1}} \right\} = 0. \tag{107}$$

$$\mathrm{E}_t \left\{ \frac{\frac{1}{\mathcal{F}_t} - \frac{1}{\mathcal{E}_{t+1}}}{P^*_{t+1}} \right\} = 0 \tag{108}$$

$$\mathsf{f}_t = \mathrm{E}_t\{\mathsf{e}_{t+1}\} + \frac{1}{2}\,\mathrm{Var}_t(\mathsf{e}_{t+1}) - \mathrm{Cov}_t(\mathsf{e}_{t+1}, \mathsf{p}_{t+1}). \tag{109}$$

$$\mathsf{e}_{t+1} - \mathsf{e}_t = a_0 + a_1(\mathsf{f}_t - \mathsf{e}_t) + \epsilon_t, \tag{110}$$

$$\mathrm{plim}(a_1^{\mathrm{OLS}}) = \frac{\mathrm{Cov}(\mathsf{f}_t - \mathsf{e}_t, \mathsf{e}_{t+1} - \mathsf{e}_t)}{\mathrm{Var}(\mathsf{f}_t - \mathsf{e}_t)}. \tag{111}$$

$$rp_t = \mathsf{f}_t - \mathrm{E}_t\{\mathsf{e}_{t+1}\},$$

$$\mathsf{f}_t - \mathsf{e}_t = \mathrm{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t + rp_t. \tag{112}$$

$$\mathsf{e}_{t+1} - \mathrm{E}_t\{\mathsf{e}_{t+1}\},$$

$$\mathrm{E}_t\{(\mathsf{f}_t - \mathsf{e}_t)(\mathsf{e}_{t+1} - \mathrm{E}_t\{\mathsf{e}_{t+1}\})\} = 0$$

$$\text{plim}(a_1^{\text{OLS}}) = \frac{\text{Cov}\left[\mathsf{f}_t - \mathsf{e}_t, \text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t\right]}{\text{Var}(\mathsf{f}_t - \mathsf{e}_t)} \tag{113}$$

$$\text{Cov}[\mathsf{f}_t - \mathsf{e}_t, \text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t]$$

$$= \text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t) + \text{Cov}[\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t, rp_t]$$

$$\text{Cov}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t, rp_t) < 0.$$

$$\text{plim}(a_1^{\text{OLS}})\{\text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t)$$

$$+ 2\text{Cov}[\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t, rp_t] + \text{Var}(rp_t)\}$$

$$= \text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t)$$

$$+ \text{Cov}[\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t, rp_t] \qquad (114)$$

$$\frac{1}{2}[\text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t)$$

$$+ \text{Var}(rp_t)] > \text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t)$$

$$\text{Var}(rp_t) > \text{Var}(\text{E}_t\{\mathsf{e}_{t+1}\} - \mathsf{e}_t). \qquad (115)$$

$$0 = \mathrm{E}_t \left\{ \left(r^n_{t+1} - r^m_{t+1} \right) \frac{u'(C_{t+1})}{u'(C_t)} \right\}, \tag{116}$$

$$\frac{(1 + i_{t+1}) P_t}{P_{t+1}} - \frac{(1 + i^*_{t+1}) P^*_t}{P^*_{t+1}}.$$

$$\frac{(1 + i_{t+1}) P_t}{\mathcal{F}_t} \left(\frac{\mathcal{F}_t - \mathcal{E}_{t+1}}{P_{t+1}} \right).$$

$$0 = \mathrm{E}_t \left\{ \left(\frac{\mathcal{F}_t - \mathcal{E}_{t+1}}{P_{t+1}} \right) \frac{u'(C_{t+1})}{u'(C_t)} \right\}. \tag{117}$$

$$0 = \mathrm{E}_t \left\{ \left(\frac{\mathcal{F}_t - \mathcal{E}_{t+1}}{P_{t+1}} \right) \left(\frac{C_t}{C_{t+1}} \right)^{\rho} \right\}. \tag{118}$$

$$\begin{aligned} \mathsf{f}_t - \mathrm{E}_t\{\mathsf{e}_{t+1}\} = \frac{1}{2} \mathrm{Var}_t(\mathsf{e}_{t+1}) \\ - \mathrm{Cov}_t(\mathsf{e}_{t+1}, \mathsf{p}_{t+1}) - \rho \mathrm{Cov}_t(\mathsf{e}_{t+1}, \mathsf{c}_{t+1}) \end{aligned} \tag{119}$$

$$0 = \mathrm{E}_t \left\{ \left(\frac{\mathcal{F}_t - \mathcal{E}_{t+1}}{P_{t+1}} \right) \left(\frac{Y_t^{\mathrm{W}}}{Y_{t+1}^{\mathrm{W}}} \right)^{\rho} \right\}$$

$$\mathsf{f}_t = \mathrm{E}_t\{\mathsf{e}_{t+1}\} + \frac{1}{2}\,\mathrm{Var}_t(\mathsf{e}_{t+1})$$

$$- \mathrm{Cov}_t(\mathsf{e}_{t+1}, \mathsf{p}_{t+1}) - \rho\mathrm{Cov}_t(\mathsf{e}_{t+1}, \mathsf{y}^{\mathrm{w}}_{t+1})$$

$$\frac{1}{1+i^*_{t+1}}(1+i_{t+1})/\mathcal{F}_t = 1/\mathcal{E}_t$$

$$U_t = \sum_{s=t}^{\infty} \beta^{s-t} u(C_s). \tag{120}$$

$$C = \left[\gamma^{\frac{1}{\theta}} C_{\mathrm{H}}^{\frac{\theta-1}{\theta}} + (1-\gamma)^{\frac{1}{\theta}} C_{\mathrm{F}}^{\frac{\theta-1}{\theta}}\right]^{\frac{\theta}{\theta-1}}, \tag{121}$$

$$p_{\mathrm{H}} = \mathcal{E} p^*_{\mathrm{H}}, \tag{122}$$

$$p_{\mathrm{F}} = \mathcal{E} p^*_{\mathrm{F}}. \tag{123}$$

$$M_{\mathrm{H},t-1} \geq p_{\mathrm{H},t} C_{\mathrm{H},t}, \tag{124}$$

$$M_{\mathrm{F},t-1} \geq p^*_{\mathrm{F},t} C_{\mathrm{F},t}, \tag{125}$$

$$M^*_{\mathrm{H},t-1} \geq p_{\mathrm{H},t} C^*_{\mathrm{H},t},$$

$$M^*_{\mathrm{F},t-1} \geq p^*_{\mathrm{F},t} C^*_{\mathrm{F},t},$$

$$P = \left[\gamma p_{\mathrm{H}}^{1-\theta} + (1-\gamma) p_{\mathrm{F}}^{1-\theta}\right]^{\frac{1}{1-\theta}}, \tag{126}$$

$$P^* = \left[\gamma (p^*_{\mathrm{H}})^{1-\theta} + (1-\gamma) \left(p^*_{\mathrm{F}}\right)^{1-\theta}\right]^{\frac{1}{1-\theta}}. \tag{127}$$

$$P = \mathcal{E} P^{*}.$$

$$\begin{aligned} P_t B_{t+1} + M_{\mathrm{H},t} + \mathcal{E}_t M_{\mathrm{F},t} &= P_t(1 + r_t) B_t \\ &+ M_{\mathrm{H},t-1} + \mathcal{E}_t M_{\mathrm{F},t-1} + p_{\mathrm{H},t} Y_t - p_{\mathrm{H},t} C_{\mathrm{H},t} \\ &- p_{\mathrm{F},t} C_{\mathrm{F},t} - P_t T_t \end{aligned} \tag{128}$$

$$\begin{aligned} &P_t^{*} B_{t+1}^{*} + M_{\mathrm{F},t}^{*} + \frac{M_{\mathrm{H},t}^{*}}{\mathcal{E}_t} \\ &= P_t^{*}(1 + r_t) B_t^{*} + M_{\mathrm{F},t-1}^{*} + \frac{M_{\mathrm{H},t-1}^{*}}{\mathcal{E}_t} \\ &+ p_{\mathrm{F},t}^{*} Y_t^{*} - p_{\mathrm{H},t}^{*} C_{\mathrm{H},t}^{*} - p_{\mathrm{F},t}^{*} C_{\mathrm{F},t}^{*} - P_t^{*} T_t^{*} \end{aligned}$$

$$T_t = \frac{M_{\mathrm{H},t} + M^*_{\mathrm{H},t} - M_{\mathrm{H},t-1} - M^*_{\mathrm{H},t-1}}{P_t},$$

$$T^*_t = \frac{M_{\mathrm{F},t} + M^*_{\mathrm{F},t} - M_{\mathrm{F},t-1} - M^*_{\mathrm{F},t-1}}{P^*_t}.$$

$$\frac{P_{s-1}}{P_s} u'(C_s) = (1+r)\frac{P_s}{P_{s+1}} \beta u'(C_{s+1}), \qquad (129)$$

$$C_{\mathrm{H},s} = \frac{\gamma}{1-\gamma}\left(\frac{p_{\mathrm{F},s}}{p_{\mathrm{H},s}}\right)^{\theta} C_{\mathrm{F},s}. \qquad (130)$$

$$\frac{p_{\mathrm{H}}}{p_{\mathrm{F}}} = \left[\frac{\gamma Y_{\mathrm{F}}}{(1-\gamma)Y_{\mathrm{H}}}\right]^{1/\theta}. \tag{131}$$

$$r = \frac{1-\beta}{\beta}.$$

$$P^{g}\mathrm{Gold}^{cb} + \mathcal{E}B_{\mathrm{F}}^{cb} + B_{\mathrm{H}}^{cb} + \mathcal{E}M_{\mathrm{F}}^{cb}$$
$$= M_{\mathrm{H}} + RR + NW$$

Table 8.1 Foreign Exchange Reserves and Monetary Base, September 1994

	Monetary Base (percent of GNP)	**Reserves (percent of GNP)**	**Reserves/Base (percent)**
Belgium	6.7	12.1	180
Denmark	8.6	8.1	94
Finland	11.2	10.4	93
France	4.6	4.6	100
Germany	9.9	6.2	63
Ireland	9.1	16.1	177
Italy	11.9	5.6	48
Mexico	3.9	4.7	120
Netherlands	10.0	13.6	136
Norway	6.3	18.7	297
Portugal	25.0	28.0	112
Spain	12.6	9.6	76
Sweden	13.0	12.1	93
United Kingdom	3.7	4.3	116

Source: Obstfeld and Rogoff (1995c).

Central Bank Balance Sheet

Assets	**Liabilities**
Net foreign-currency bonds	Monetary base
Net domestic-currency bonds	Net worth
Foreign money	
Gold	

Central Bank Balance Sheet

Assets	**Liabilities**
Foreign-currency bonds (+1)	Monetary base (+1)

Central Bank Balance Sheet	
Assets	**Liabilities**
Home-currency bonds (−1)	Monetary base (−1)

Central Bank Balance Sheet	
Assets	**Liabilities**
Home-currency bonds (−1) Foreign-currency bonds (+1)	Monetary base (—)

