Appendix A. Exchange rate regime choice :

disinflation, stabilization, and credibility

Consider a small, open economy. The authorities choose the exchange rate regime for each of two periods, Period 1 and Period 2, in order to minimize a combination of output and inflation variability. There is a cost associated to changing regimes between the two periods.

Main features of the model

In the long run (Period 2), prices are fully flexible and the real exchange rate balances the current account. The exchange rate regime is therefore neutral for the real economy and the only difference between a fixed and a flexible regime is the amount of price adjustment. In the short run (Period 1), prices are sticky; they only partially react to the nominal exchange-rate variation. This pass-through effect captures pricing to market, short term wage indexation and/or the degree of *de facto* dollarization. The two periods are linked both forward by rational expectations in Period 1 of Period 2 exchange rate, and backward by an inflation reputation effect: Period 1 inflation has a lasting impact on Period 2.

The authorities choose for each period an optimal degree of exchange rate flexibility, after the realization of permanent shocks to the economy, which everybody can observe. They can use the real exchange rate as an instrument in order to stabilize short run aggregate demand, but to a certain extent only, depending on how much they weight price stability. They face a commitment problem which they can solve by putting in place a *commitment technology* under the form of a regime change cost.

The real economy

The real side of the economy is described by three equations (with t = 1,2):

$$y_t = b_t - a\, r_t + u \qquad a > 0 \tag{1}$$

$$b_t = n\,(q_t + v) \qquad n > 0 \tag{2}$$

$$r_t = Eq^e_{t+1} - q_t + w \tag{3}$$

Equation (1) gives aggregate demand $\boldsymbol{y_t}$ as the sum of the trade account $\boldsymbol{b_t}$ and of domestic demand, the latter depending on the real interest rate $\boldsymbol{r_t}$ and on a permanent domestic demand shock $\boldsymbol{u}$.

Equation (2) gives the trade account $\boldsymbol{b_t}$ as a function of the (log-) real exchange rate $\boldsymbol{q_t}$ and of a permanent foreign demand shock $\boldsymbol{v}$. $\boldsymbol{n}$ is the openness ratio: the more open the country, the larger the impact of a foreign demand shock, and the larger the stabilizing role of the real exchange rate.

Equation (3) relates the real interest rate $\boldsymbol{r_t}$ to the expected real exchange rate depreciation and to a shock $\boldsymbol{w}$ either on the country risk premium or on the world interest rate.

- In the *long run*, the real exchange rate adjusts to balance the trade account, and aggregate demand only depends on the domestic demand and interest rate shocks: $q_2 = -v$, $r_2 = w$, and $y_2 = u - aw$. In the *short run*, the real exchange rate adjusts to stabilize output. Let $\tilde{q}_1$ be the "shadow" flexible exchange rate in Period 1, i.e. the real exchange rate that would obtain in a flexible regime. We have $\tilde{q}_1 = -x/(a+n)$ where $x = u+(a+n)v-aw$ is a compounded shock.[1] The real exchange rate tends to depreciate ($\tilde{q}_1$ rises) in the case of a negative demand shock or of a positive interest rate shock.

- Let now γ_t be the actual degree of exchange rate adjustment allowed by the authorities in Period t. γ_1 and γ_2 are comprised between 0 and 1: $q_1 = \gamma_1 \tilde{q}_1$ and $q_2 = \gamma_2 \tilde{q}_2$. We have $r_1 = (a+n)^{-1}\gamma_1 x - v + w$ and $y_1 = (1- \gamma_1)x$:

  - in a fixed exchange rate regime ($\gamma_1 = 0$), shocks are not accommodated in Period 1 but Period 2 adjustment impacts the first period through the real interest rate channel. For instance, in the case of a positive foreign demand shock v, the real exchange rate is expected to appreciate in Period 2 to balance the trade account, thereby lowering the real interest rate in Period 1;

  - in a free float ($\gamma_1 = 1$), shocks are accommodated by Period 1 real exchange rate. For instance, in case of a positive domestic demand shock, q_1 appreciates but q_2 cannot. A real exchange rate depreciation is therefore expected, which raises Period 1 real interest rate. The rise of r_1 contributes to the stabilization of aggregate demand.

Nominal adjustment under exchange rate pass-through

We shall now see how real exchange rate movements are split between nominal exchange rates and prices. Let $q_t = s_t - p_t$ where s_t is the nominal exchange rate and p_t the price level, both in logarithms.

- In the *short run*, the price level adjusts to the nominal exchange rate up to a pass-through coefficient $m>0$ which depends on the degree of *de facto* dollarization and on wage indexation. The nominal exchange rate moves so as to let the real exchange rate adjust in the required proportion γ_1:

  $$p_1 = ms_1 \tag{4}$$

  $$s_1 = (1-m)^{-1}\gamma_1 \tilde{q}_1 \tag{5}$$

  The larger the pass-through, the more volatile nominal variables are, meaning that exchange rate flexibility yields more price instability in highly indexed or dollarized economies.

- In the *long run*, the nominal exchange rate can only account for a proportion γ_2 of the real exchange rate adjustment and price adjustment therefore accounts for the remaining $(1-\gamma_2)$. In

[1] All individual shocks will be assumed to be orthogonal. Thus the variance of x will be obtained by summing the variances of its components.

addition, we suppose that nominal variables keep a memory of what happened in the short run through a reputation (or disinflation credibility) effect:

$$p_2 - p_1 = -(1-\gamma_2)\,(q_2 - q_1) + hs_1 \qquad 0 < h < 1 \qquad (6)$$

$$s_2 - s_1 = \gamma_2\,(q_2 - q_1) + hs_1 \qquad (7)$$

Note that exchange rate movements are the only source of price movements in the short run, as in a standard open economy version of the Barro-Gordon framework, but not in the long run, because the real exchange rate can adjust through a change in the price level. This setting is consistent with the monetary view of the balance of payments in a fixed exchange rate regime, where current account surpluses fuel inflation through reserve accumulation.

In a credibly fixed exchange rate regime ($\gamma_1 = \gamma_2 = 0$), all Period 2 real exchange rate adjustment is realized through price adjustment. In a credibly flexible regime ($\gamma_1 = \gamma_2 = 1$), Period 2 real exchange rate adjustment is realized through nominal exchange rate adjustment, and Period 2 inflation is only the consequence of Period 1 inflation through the reputation effect. For instance, a negative demand shock is accommodated by a nominal exchange rate depreciation, raising inflation in the short run and thus also in the long run. There is a reputation cost to exchange rate flexibility.

Making the exchange rate regime credible

The monetary authorities minimize a Barro-Gordon quadratic loss function which depends on aggregate demand and inflation variability in both periods. When announcing an exchange rate regime in Period 1, they have to convince the market that they will not renege on their commitment. They do so by putting in place a commitment technology. Suppose that changing regimes bears a reputation cost C, in the tradition of escape clause models. The cost $C = \theta(\gamma_2 - \gamma_1)$ depends on the amount of added flexibility and on a parameter θ. Moving from a fixed peg to free floating will bear a higher cost than moving from a fixed peg to a crawling peg. The total loss function is $L = L_1 + \beta E L_2$ with:

$$L_1 = \tfrac{1}{2}\,(y_1^2 + \lambda\,\dot{p}_1^2) \qquad \text{with } \dot{p}_1^2 = p_1$$

$$L_2 = \tfrac{1}{2}\,(y_2^2 + \lambda\,\dot{p}_2^2) + \theta(\gamma_2 - \gamma_1) \qquad \text{with } \dot{p}_2^2 = p_2 - p_1 \qquad (8)$$

The authorities proceed as follows. First, they solve the model for Period 1 under the hypothesis that the exchange rate regime will be the same for both periods: $\gamma_1 = \gamma_2 = \gamma$. Then, they define an optimal commitment technology θ so as to insure the credibility of the regime, in the sense that re-optimizing in Period 2 would not lead to a regime change. Given Period 1 exchange rate regime γ_1, the optimal Period 2 regime γ_2* is given by the minimization of Period 2 loss function, thus of $\dot{p}_2^2$:[2]

$$-\lambda(1-\gamma_2^*)v^2-\gamma_1^2\left((1-\gamma_2^*)+\frac{h}{1-m}\right)\frac{x^2}{(a+n)^2}+\theta=0 \qquad (9)$$

The regime is fully credible if $\gamma_2^* = \gamma_1 = \gamma$, i.e. if:

$$\theta=\lambda(1-\gamma)v^2+\gamma^2\left((1-\gamma)+\frac{h}{1-m}\right)\frac{x^2}{(a+n)^2} \qquad (10)$$

Assuming $\gamma(1-\gamma) \sim 0$, we have:

$$\theta(\gamma)=\lambda(1-\gamma)v^2+\gamma^2\left(\frac{h}{1-m}\right)\frac{x^2}{(a+n)^2} \qquad (11)$$

Thus the commitment technology θ is a convex function of required exchange rate flexibility γ, with $\theta(0)=\lambda v^2$ (hard pegs) and $\theta(1)=\left(\frac{h}{1-m}\right)\frac{x^2}{(a+n)^2}$ (free float). θ reaches a minimum for an intermediate degree of flexibility $\gamma=\theta(0)/2\theta(1)$. We now have the following results:

- countries close to free float but which want to retain a certain degree of exchange rate management need to commit strongly if they want to refrain from floating in the period after. The strength of the commitment $\theta(1)$ depends *inter alia* on the persistence of inflation reputation h and on pass-through m. This is because if h and/or m is high, then the quasi-floating regime of Period 1 entails a large cost in terms of Period 2 inflation. Monetary authorities are then more reluctant to allow the real exchange rate to adjust through prices in Period 2 and they prefer to make use of nominal exchange rate flexibility.

- fixed pegs are not credible unless they are backed by strong institutional commitments. The strength of the commitment $\theta(0)$ only depends on the aversion for inflation λ and on the magnitude of foreign demand shocks v^2. This because hard pegs cannot accommodate foreign demand shocks, thus creating an incentive to use the nominal exchange rate rather than the price level to move the real exchange rate in Period 2;

- intermediate regimes require a weaker ex-ante commitment, because they are tailored to produce a balanced trade-off between stabilization and inflation in Period 1 that is less likely to be questioned in Period 2.

[2] Remember that aggregate demand in Period 2 does not depend on the exchange rate regime.

Optimal regime choice

- We can now safely assume that the exchange rate regime is the same in the two periods. Let us first consider the case of a very short sighted government (***$\beta = 0$***) so as to discuss the influence of the parameters abstracting from credibility issues. The optimal Period 1 exchange rate regime is found by minimizing ***L_1***:

$$\gamma^* = [1 + \lambda \left(\frac{m}{1-m}\right)^2 \frac{1}{(a+n)^2}]^{-1} \qquad (12)$$

We can check that ***γ^**** is bounded by 0 (fixed peg) and by 1 (free floating). In this simplified case, the parameters which determine exchange rate regime choice are: the degree of exchange rate pass-through ***m***; the share of exports in aggregate demand ***n***; the elasticity of aggregate demand to the real interest rate ***a***, which depends on the structure of domestic debt; the aversion for inflation ***λ***. In particular, the optimal exchange rate regime is less flexible when:

- the pass-through ***m*** is higher (because real exchange rate depreciation translates into higher inflation);
- the openness ratio ***n*** is lower (because world demand shocks have a smaller impact);
- the aversion to inflation ***λ*** is higher (unsurprisingly, because a nominal peg is the best way to insure zero inflation).

- If monetary authorities are not short sighted and minimize their loss over the two periods, the solution cannot be derived analytically. We can guess that in addition to ***m***, ***n***, ***a*** and λ, the discount factor ***β*** and the inflation reputation parameter ***h*** will play a role. Appendix B shows how changes in the parameters affect the loss function, thus the optimal solution, in reference to a benchmark situation with ***$m = n = a = h = \beta = 0.5$***, ***$\lambda = 2$*** and ***$u^2 = v^2 = w^2 = 1\%$***:

- the benchmark model is indicated as the thin line on all figures. The optimal exchange rate regime is typically an intermediate one because exchange rate flexibility increases inflation volatility but decreases output volatility;
- in Figures B11 and B12, we explore government preferences. Unsurprisingly, higher aversion to inflation leads to a less flexible regime, and a shorter horizon leads to more flexibility, since the inflationary consequences matter less;
- in Figures B21 to B24, we explore country characteristics. Hard pegs are more likely to be chosen by countries with a higher exchange rate pass-through (e.g. partially dollarized countries), a less open economy, strong inflation reputation effect, and a lower impact of real interest rates on aggregate demand;

- in Figures B31 and B32, we explore the nature of the shocks: harder pegs are more likely in the case of shocks to domestic demand or to interest rates (which do not require a real exchange-rate adjustment in Period 2).

Finally, what does the model teach us?

Overall, the conclusions are the following:

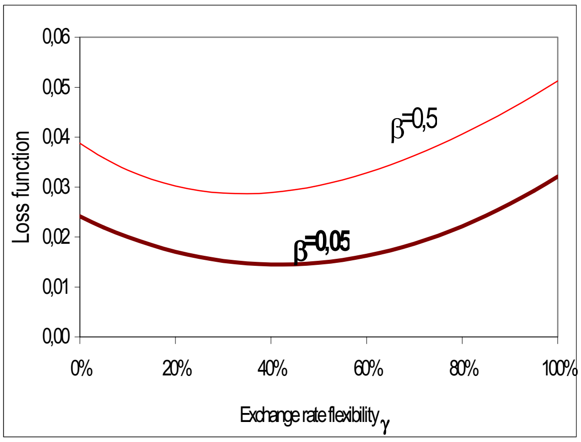
- When authorities weight inflation variability against output variability, the optimal exchange rate regime is typically an intermediate one. The optimal degree of exchange rate flexibility depends on the structure of the economy, the nature of the shocks it faces, and the preferences of monetary authorities.
- All things being equal, the following patterns will tend to favor less flexibility: a higher aversion to inflation and/or a longer time horizon; a higher degree of pass-through (for instance in the case of a *de facto* dollarized economy or in an economy with flexible wage contracts); a less open economy; a more persistent inflationary reputation; an aggregate demand less reactive to real interest rates, for instance due to lower indebtedness or longer debt contracts. Also, harder pegs are more likely for economy facing shocks to domestic demand or to interest rates than for economies facing shocks on foreign demand.
- The authorities face a commitment problem when they choose an exchange rate regime. This problem can be addressed by increasing ex-ante the cost of changing regimes. It turns out that corner solutions require a stronger ex-ante commitment. Countries which are close to floating but which want to retain a certain degree of exchange rate management have to commit not to move to a perfect float in the next period. Hard pegs need to be backed by strong institutional commitments, because they cannot accommodate foreign demand shocks and they thus create an incentive to use the nominal exchange rate to stabilize the current account. Intermediate regime require a weaker ex-ante commitment.

Appendix B. Figures

Note: The thin line on all figures is the loss function in the benchmark case.

Figure B1. Public preferences

B11. Discount factor β



B12. Aversion to inflation λ

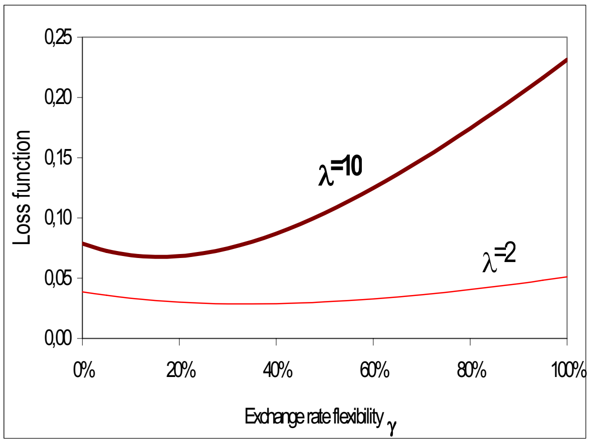
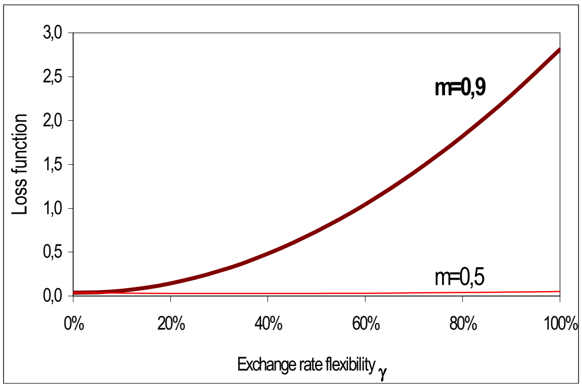
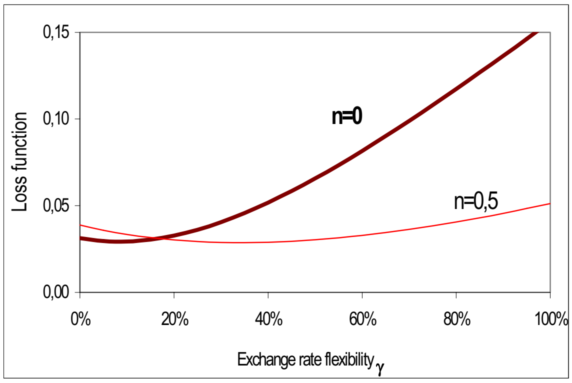


Figure B2. Country characteristics

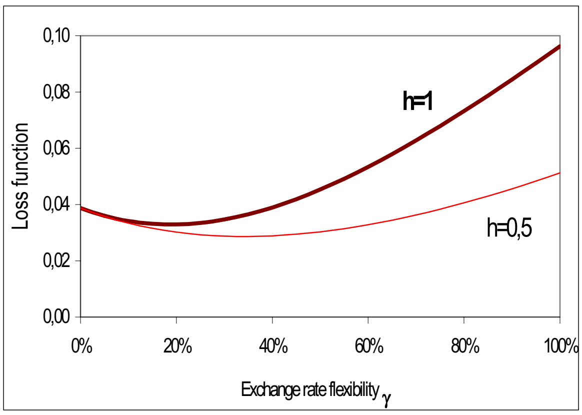
B21. Dollarization ***m***



B22. Openness ***n***



B23. Disinflation reputation ***h***



B24. Interest rate elasticity ***a***

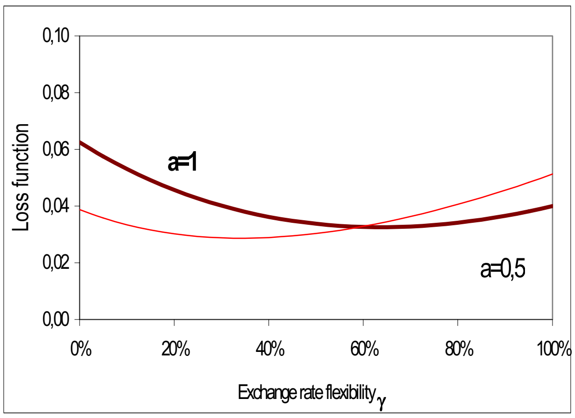
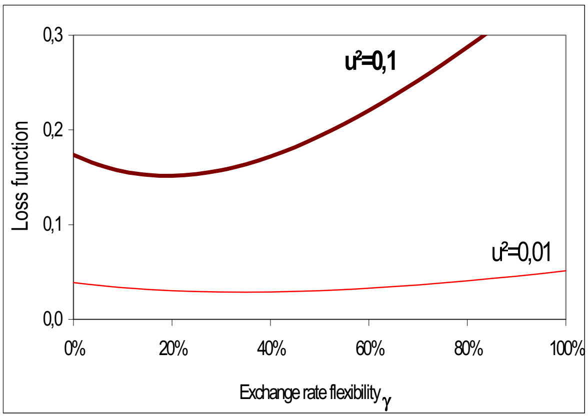
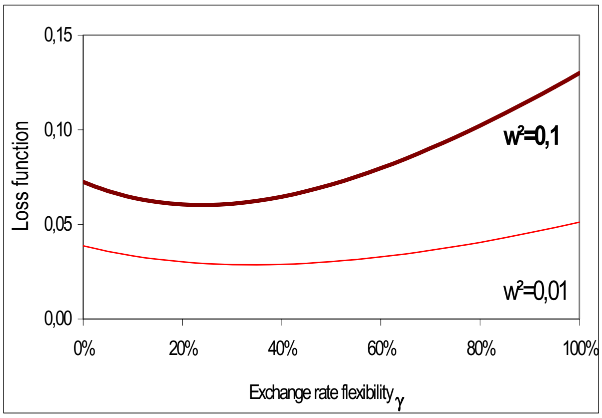


Figure B3. Nature of shocks

B31. Domestic shocks variability ***u²***



B32. Interest rate shocks variability ***w²***



Appendix C. Regression results

Table C1. Baseline regression results

	Estimations				$DP(Y_i=s)/dX_i$			
	Official regimes		De facto regimes		Official regimes		De facto regimes	
	1996	1999	Before crises	after crises	1996	1999	before crises	after crises
$P(Y_i=0\|X_i)$:								
Const.	-	-	-	-	0.307	0.278	0.064	0.196
OPEN	-	-	-	-	-0.008	-0.007	-0.004	-0.006
TDEBT	-	-	-	-	0.056	0.004	0.006	0.076
DOMVAR	-	-	-	-	0.014	-0.006	0.010	-0.028
CAPC					-0.294	-0.046	-0.201	-0.100
$P(Y_i=1\|X_i)$:								
Const.	-0.550	**-1.378**	-0.130	**-2.339**	0.196	-0.147	0.537	-0.031
	(0.434)	**(0.054)**	(0.921)	**(0.090)**				
OPEN	**0.045**	**0.036**	**0.066**	**0.080**	0.007	0.005	0.004	0.003
	(0.003)	**(0.007)**	**(0.057)**	**(0.026)**				
TDEBT	**-0.443**	-0.098	-0.155	**-1.295**	-0.096	-0.035	-0.055	-0.201
	(0.064)	(0.652)	(0.736)	**(0.007)**				
DOMVAR	**-0.162**	0.0394	-0.191	**0.383**	-0.044	0.007	-0.047	0.030
	(0.059)	(0.600)	(0.223)	**(0.053)**				
CAPC	**1.269**	0.469	**2.592**	1.646	0.100	0.128	-0.070	-0.239
	(0.050)	(0.453)	**(0.058)**	(0.164)				
$P(Y_i=2\|X_i)$:								
Const	**-4.925**	**-1.539**	**-5.376**	**-2.779**	-0.502	-0.131	-0.601	-0.165
	(0.000)	**(0.048)**	**(0.005)**	**(0.051)**				
OPEN	**0.0310**	**0.0342**	**0.060**	**0.0820**	0.001	0.002	0.000	0.003
	(0.102)	**(0.015)**	**(0.108)**	**(0.024)**				
TDEBT	0.112	0.103	0.291	-0.495	0.040	0.031	0.049	0.126
	(0.606)	(0.629)	(0.544)	(0.113)				
DOMVAR	**0.180**	0.017	0.155	**0.313**	0.030	-0.001	0.038	-0.002
	(0.071)	(0.839)	(0.401)	**(0.114)**				
CAPC	**2.505**	-0.141	**4.728**	0.729	0.194	-0.081	0.271	-0.139
	(0.010)	(0.837)	**(0.004)**	(0.536)				
Log-likelihood	-104.7	-129.7	-54.3	-75.22	-	-	-	-
% of correct predictions	59%	46%	72%	59%	-	-	-	-
Nb of observations	127	127	92	92	-	-	-	-

P-values in parenthesis.

Table C2. Results with manufacturing share

	Estimations				$DP(Y_i=s)/dX_i$			
	Official regimes		De facto regimes		Official regimes		De facto regimes	
	1996	1999	Before crises	after crises	1996	1999	Before crises	after crises
$P(Y_i=0\|X_i)$:								
Const.	-	-	-	-	0.326	-0.054	-0.055	-0.057
OPEN	-	-	-	-	-0.007	-0.008	-0.004	-0.006
TURN					0.056	0.029	0.015	0.079
TDEBT	-	-	-	-	0.201	-0.007	0.009	-0.027
DOMVAR	-	-	-	-	-0.235	-0.024	-0.200	-0.110
CAPC					-0.003	0.011	0.003	0.008
$P(Y_i=1\|X_i)$:								
Const.	-0.903	-0.208	1.287	0.484	0.036	-0.187	0.390	-0.376
	(0.321)	(0.817)	(0.460)	(0.832)				
OPEN	**0.038**	**0.040**	**0.059**	**0.128**	0.012	0.004	0.002	0.002
	(0.016)	**(0.009)**	**(0.102)**	**(0.026)**				
TDEBT	**-0.425**	-0.168	-0.255	-2.011	0.005	-0.023	-0.003	-0.166
	(0.103)	(0.454)	(0.586)	(0.001)				
DOMVAR	**-0.240**	0.032	-0.196	**0.621**	-0.079	0.002	-0.051	0.022
	(0.012)	(0.691)	(0.254)	**(0.058)**				
CAPC	0.686	0.198	**2.794**	**2.682**	-0.055	0.047	-0.095	0.173
	(0.313)	(0.763)	**(0.062)**	**(0.130)**				
IND	**0.046**	-0.034	-0.0371	**-0.148**	-0.015	0.005	0.008	0.017
	(0.077)	(0.166)	(0.495)	**(0.052)**				
$P(Yi=2\|X_i)$:								
Const	**-3.907**	1.209	-2.110	2.892	-0.362	0.241	-0.335	0.433
	(0.012)	(0.272)	(0.345)	(0.232)				
OPEN	**0.043**	**0.046**	**0.071**	**0.143**	0.003	0.004	0.002	0.004
	(0.031)	**(0.005)**	**(0.065)**	**(0.014)**				
TDEBT	0.007	-0.143	-0.080	**-1.355**	0.023	-0.007	0.016	0.086
	(0.975)	(0.533)	(0.875)	**(0.003)**				
DOMVAR	**0.209**	0.049	0.233	**0.597**	0.034	0.005	0.042	0.005
	(0.047)	(0.582)	(0.255)	**(0.073)**				
CAPC	**2.734**	-0.003	**5.482**	2.103	0.251	-0.023	0.296	-0.063
	(0.009)	(0.997)	**(0.003)**	(0.246)				
IND	**-0.064**	**-0.112**	**-0.144**	**-0.277**	-0.009	-0.016	-0.011	-0.025
	(0.073)	**(0.001)**	**(0.027)**	**(0.001)**				
Log-likelihood	-93.38	-117.12	-46.88	-56.46	-	-	-	-
% of correct predictions	62%	50%	74%	69%	-	-	-	-
Nb of observations	119	119	86	86	-	-	-	-

P-values in parenthesis.

Table C3. Results with central bankers turnover

	Estimations				$dP(Y_i=s)/dX_i$			
	Official regimes		De facto regimes		Official regimes		De facto regimes	
	1996	1999	Before crises	after crises	1996	1999	Before crises	after crises
P(Y$_i$=0|X$_i$):								
Const.	-	-	-	-	0.361	0.206	0.132	0.134
OPEN	-	-	-	-	-0.008	-0.004	-0.006	-0.006
TDEBT	-	-	-	-	0.054	0.015	-0.057	0.079
DOMVAR	-	-	-	-	0.002	-0.039	-0.009	-0.038
CAPC					-0.294	-0.012	-0.154	-0.078
TURN					-0.082	0.452	0.092	0.264
P(Y$_i$=1|X$_i$):								
Const.	-1.352	**-1.661**	-2.777	-2.010	-0.027	-0.350	0.277	-0.282
	(0.149)	**(0.069)**	(0.327)	(0.209)				
OPEN	**0.052**	**0.0303**	**0.132**	**0.072**	0.009	0.005	0.008	0.007
	(0.010)	**(0.053)**	**(0.089)**	**(0.059)**				
TDEBT	-0.398	-0.210	1.254	**-1.226**	-0.081	-0.061	0.027	-0.186
	(0.130)	(0.426)	(0.704)	**(0.016)**				
DOMVAR	-0.114	**0.229**	0.178	**0.456**	-0.042	0.032	-0.038	0.026
	(0.371)	**(0.052)**	(0.672)	**(0.066)**				
CAPC	**1.435**	0.409	3.351	1.392	0.154	0.148	-0.024	0.270
	(0.055)	(0.563)	(0.233)	(0.261)				
TURN	1.534	-0.702	-1.921	-1.351	0.491	0.438	0.213	0.637
	(0.254)	(0.569)	(0.482)	(0.451)				
P(Y$_i$=2|X$_i$):								
Const	**-5.070**	**-0.172**	**-7.725**	**-0.827**	-0.334	0.144	-0.409	0.148
	(0.010)	**(0.867)**	**(0.025)**	**(0.620)**				
OPEN	0.0103	**0.013**	**0.100**	**0.0513**	-0.002	-0.001	-0.002	-0.002
	(0.721)	**(0.495)**	**(0.217)**	**(0.189)**				
TDEBT	0.113	0.141	1.602	-0.412	0.027	0.046	0.030	0.107
	(0.069)	(0.577)	(0.629)	(0.157)				
DOMVAR	**0.450**	0.181	0.746	**0.445**	0.040	0.007	0.047	0.012
	(0.029)	(0.163)	(0.111)	**(0.078)**				
CAPC	**2.620**	-0.550	**5.474**	0.067	0.139	-0.135	0.178	-0.192
	(0.065)	(0.512)	**(0.079)**	(0.958)				
TURN	-4.340	**-5.699**	**-5.607**	**-6.195**	-0.409	-0.890	-0.305	-0.901
	(0.125)	**(0.009)**	**(0.120)**	**(0.016)**				
Log-likelihood	-71.7	-92.8	-31.8	-57.4	-	-	-	-

% of correct predictions	65%	31%	86%	67%	-	-	-	-
Nb of observations	98	98	76	76	-	-	-	-

P-values in parenthesis.

Appendix D. Predictions of the logit model

Table D1. Model predictions before 1997-1998 crises
15 highest and 15 lowest probabilities for each regime

Hard peg		**Soft Peg**		**Free Float**	
Chad	98%	Ireland	97%	Uruguay	59%
Guinea-Bissau	87%	Belgium	96%	Venezuela	52%
Rwanda	87%	Netherlands	96%	Argentina	41%
Togo	84%	Korea	96%	Japan	29%
Ethiopia	82%	Singapore	95%	Yemen	26%
Niger	80%	Luxembourg	94%	El Salvador	26%
Jordan	80%	Mauritius	93%	Panama	22%
Cameroon	74%	Austria	93%	Italy	18%
Benin	71%	Indonesia	92%	Tr & Tobago	17%
Côte d'Ivoire	70%	Switzerland	92%	Nicaragua	17%
Congo Rep.	70%	France	91%	Bolivia	17%
Mali	60%	Spain	91%	Guatemala	17%
Slovak Rep.	57%	Norway	90%	Costa Rica	16%
Chile	52%	Thailand	89%	Ecuador	13%
Central Africa	50%	Hungary	89%	Germany	13%
…	…			…	…
Venezuela	2%	Slovak Rep.	42%	Slovak Rep.	1%
Denmark	2%	Latvia	42%	Senegal	1%
Korean Rep.	2%	Mali	39%	Coted'Ivoire	1%
Ecuador	2%	Uruguay	38%	Sri Lanka	1%
Greece	1%	Côte d'Ivoire	29%	Togo	1%
Ireland	1%	Benin	28%	Lesotho	0%
CostaRica	1%	Congo Rep.	27%	Belgium	0%
Canada	1%	Cameroon	24%	Luxembourg	0%
UK	1%	Jordan	20%	Jordan	0%
Norway	1%	Niger	18%	Grenada	0%
Netherlands	1%	Togo	15%	Chad	0%
Italy	1%	Ethiopia	15%	Malaysia	0%
Germany	1%	Guinea-Bissau	12%	Sweden	0%
Austria	0%	Rwanda	12%	Hong Kong	0%
Japan	0%	Chad	2%	Singapore	0%

Table D2. Model predictions after 1997-1998 crises
15 highest and 15 lowest probabilities for each regime

Hard peg		**Soft Peg**		**Free Float**	
Hong Kong	90%	Czech Rep.	92%	Japan	91%
Ethiopia	85%	Gabon	89%	Indonesia	76%
Nicaragua	82%	Malaysia	88%	Sierra Leone	68%
Mali	81%	Papua NG	88%	Guinea-Bissau	68%
Luxembourg	80%	Russia	88%	Ecuador	59%
Panama	80%	Tr & Tobago	87%	Egypt	35%
Benin	75%	Dominican Rep.	86%	Nigeria	26%
Chad	70%	South Africa	86%	China	25%
Cameroon	69%	Chile	85%	Germany	24%
Jordan	69%	Venezuela	84%	Brazil	20%
Bolivia	66%	Thailand	83%	Nicaragua	16%
Niger	66%	Swaziland	83%	Italy	15%
Togo	66%	Korea	83%	Bangladesh	14%
Central Africa	62%	Yemen	81%	Korea	13%
Estonia	60%	Lesotho	79%	India	10%
…	…	…	…	…	…
Brazil	13%	Jordan	31%	Togo	0%
South Africa	12%	Cameroon	31%	Panama	0%
T&Tobago	12%	Chad	30%	Belgium	0%
Malaysia	12%	Benin	25%	Ireland	0%
Venezuela	11%	Bolivia	24%	Czech Rep.	0%
Gabon	11%	Indonesia	22%	Grenada	0%
Russia	10%	Luxembourg	20%	Chad	0%
Czech Rep.	8%	Panama	20%	Latvia	0%
Ecuador	8%	Mali	18%	Slovak Rep.	0%
Papua NG	6%	Ethiopia	14%	Estonia	0%
Korean Rep.	4%	Hong Kong	10%	Malaysia	0%
Nigeria	4%	Sierra Leone	10%	Swaziland	0%
Indonesia	3%	Japan	8%	Luxembourg	0%
China	1%	Nicaragua	2%	Hong Kong	0%
Japan	1%	Guinea-Bissau	0%	Singapore	0%

Appendix E. Definition of variables and data sources

Variable	Definition	Source
IMF_{xx}	Official regime at end year xx	IMF, Exchange Arrangements and Exchange Restrictions, yearbook xx+1
BQCPRE	Official/de facto regime according to BQC before 97-98 crisis	Bénassy-Quéré, A., and B. Coeuré (2001), "On the identification of de facto currency baskets", mimeo.
BQCPOST	Official/de facto regime according to BQC after 97-98 crisis	Bénassy-Quéré, A., and B. Coeuré (2001), "On the identification of de facto currency baskets", mimeo.
$CAPC_{xx}$	Capital controls index at end year xx, calculated over at least 7 of the 9 capital controls items	IMF, Exchange Arrangements and Exchange Restrictions, yearbook xx+1
$OPEN_{xx}$	Openness ratio at year xx (exports/GDP in %)	World Bank, World Development Indicators, 2001.
DOL	Dollarization ratio, last year available (1995). Foreign currency deposits/broad money, in %.	Balino, T., A. Bennett, and E. Borensztein (1999), Monetary Policy in Dollarized Economies, IMF Occasional Paper, 171.
STAB	Index of political stability, 1-opposition seats/government seats in parliament (1 if dictatorship)	Beck, T., G. Clarke, A. Groff, Ph. Kefer, and P. Walsh (2000), New Tools and new tests on comparative political economy: The database of political institutions", World Bank working paper, 2283, http://paradocs.pols.columbia.edu/datavine/BrowseFrameSet.jsp?dsetID=100
IND	Share of industry in valu added (%)	World Bank, World Development Indicators, 2001.
TURN	turnover rate of cenrtral bankers over 1980-1989.	Cukierman, A., Webb, S.B. and Neyapti, B. (1992), "Measuring the independence of central banks and its effects on policy outcomes", World Bank Review, 6 (3), 353-398 ; and De Haan, J. and Kooi, W.J. (2000), "Does central bank independence really matter? New evidence for developing countries using a new indicator", Journal of Banking and Finance, 24, 643-664.
$TDEBT_{xx}$	total debt/GDP at end year xx (domestic+foreign debt)	World Bank, World Development Indicators, 2001
DOMVAR	Domestic demand instability (SD of growth rate over 1982-1996 in %)	World Bank, World Development Indicators, 2001

Note: xx stands for 1996 (before crises) or 1999 (after crises).