Cuadernos de economía

ARTÍCULO

The determinants of the choice of exchange rate regimes in Latin America: a mixed multinomial logit approach

Pedro Álvarez Ondina,[a] José Luis Pérez Rivero,[b,*] Saúl de Vicente Queijeiro[b] and María Rosalía Vicente Cuervo[b]

[a]*Departamento de Investigación de Bankia, Madrid, Spain*
[b]*Departamento de Economía Aplicada, Universidad de Oviedo, Spain*

Abstract The choice of the exchange rate regime is one of the most significant monetary policy decisions that any economic authority has to make nowadays. Indeed, there have been many studies from a theoretical and empirical point of view, but the only common conclusion would be the lack of consensus. In the past this topic has been modeled by binary probit or cross-sectional multinomial logit models, both of which have weaknesses in the assumptions of the choices. In this paper, such issue is faced by means of a panel mixed multinomial logit model, which allows for substitution pattern among the three types of exchange rate regimes: fixed, intermediate, and flexible. Three types of choice determinants are explored: those stated by the Optimum Currency Area (OCA) theory, types of shocks and vulnerability to currency crises, using a sample of 21 Latin American countries over the period 1980-2004.

Determinantes de la elección del régimen cambiario en América Latina: una aproximación a un modelo logit multinomial mixto

Resumen La elección del régimen cambiario constituye una de las decisiones de política económica más relevantes a las que se enfrentan las autoridades monetarias de cualquier país. Existe una amplia literatura, tanto teórica como empírica, cuyo principal resultado es la falta de consenso acerca de los determinantes de la elección del régimen cambiario. Tradicionalmente, este problema se había tratado mediante modelos probit binarios o modelos logit multinomiales de corte transversal, presentando ambos debilidades en la estimación. En este artículo, esta cuestión se afronta mediante un modelo logit multinomial con datos de panel que permite la

*Corresponding author.
E-mail: jrivero@uniovi.es (J.L. Pérez Rivero).

Crisis Cambiarias;
Logit multinomial
mixto

correlación de los errores en el tiempo, así como una mayor flexibilidad en la elección de las alternativas. Se analizan tres tipos de determinantes en la elección de régimen cambiario: aquellos que se derivan de la teoría de las Áreas Monetarias Óptimas, los relativos a los tipos de shocks y los que se refieren a la propensión a las crisis cambiarias, utilizando una muestra de 21 países de América Latina para el periodo 1980-2004.

1. Introduction

The choice of the exchange rate regime is one of the most relevant economic decisions that any economic authority has to face nowadays. No wonder therefore, a wide literature, both theoretical and empirical, has arisen in order to identify the most important factors that determine and explain this decision.

From the theoretical point of view, the first arguments are derived from the Optimum Currency Area theory (OCA), formulated by Mundell (1961), which points out the advantages of fixed exchange rates regimes in small and open countries, with a high level of trade with those countries to which they peg their currency.

The reformulation of Mundell-Fleming model by Poole (1970) indicated that the nature of the shocks —real or monetary, external or internal— determines the role of exchange rates and, consequently, the reasons for choosing a determined exchange rate regime.

During the 80's, the literature on credibility and time inconsistency (Barro and Gordon, 1983; and Giovazzi and Pagano, 1988) inspired the processes of stabilization and the choice of exchange rate as nominal anchor.

The explicit introduction of a decision-maker agent in the models opened the door to a new line of work identified with political economy, in which the regime choice is related to the characteristics of the institutions and the incentives of the decision-maker (Edwards, 1996).

The last decade of the twentieth and early twenty-first century witnessed a process of financial liberalization and strong exchange rate turbulences. In this context, the analyses have focused on the limitations imposed by the "impossible trinity" (Eichengreen, 1994) to the choice of exchange rate regime and its aftermath of "fear of floating" (Calvo and Reinhart, 2002), "original sin" (Eichengreen and Hausmann, 2003) or the succession of financial crises (Calvo, 1998).

The empirical literature has followed the cycles marked by theoretical work, trying to test the empirical relevance of the variables identified in the theoretical models. Thus, the early works (Heller, 1978; Dreyer, 1978) used as explanatory variables those related to optimum currency areas. Subsequent works incorporated also characteristics of shocks (Savvides, 1993; Melvin, 1985; Collins, 1996). In the mid-90's of last century, variables referring to characteristics of institutions and the political system began to be included (Leblang, 1999; Edwards, 1996; Méon and Rizzo, 2002). Finally, recent works have added variables related to financial openness and contrast a long list of variables that take into account the different theoretical aspects (Wong, 2005; Carmignani et al., 2008). However, the results of this literature have been disappointing.

In a previous study (Alvarez et al., 2007) we have reviewed 41 papers in this field of research, extending and updating the survey of Juhn and Mauro (2002). In line with these authors, the main conclusion of our survey is the lack of a consensus with regard to the factors that affect the choice of a certain exchange rate regime. This is clearly observed in Table 1, which shows the main explanatory variables used in the 41 reviewed studies and the empirical findings with regard to the probability that such variables are significant and positively correlated with the choice of a free floating or a flexible exchange rate regime. Table 1 shows that only one variable, the size of the economy, presents a clear influence in the choice of a flexible exchange rate regime along the 41 examined papers.

There are several reasons that may explain this fact (Álvarez Ondina et al., 2007). The first explanation takes into account the classification of exchange rate regimes. Many authors use the classification provided by the IMF. Since many problems come up with this classification, other alternatives as Reinhart and Rogoff (2003) or Levy-Yeyati and Sturzenegger (2003) are also commonly used. Levy-Yeyati et al. (2010) used a broad set of the most widespread variables in this literature and different methods of classifying exchange rate regimes, without finding many significant differences between them.

A second possible explanation for the diversity in results is the sample and the explanatory variables choices. Measures for exchange rate regime determinants are especially diverse in the literature, due to the fact that there are many different definitions. For instance, this is the case of proxies for political instability.

Another problematic matter is related to the state-dependence effect. Traditional approaches consider that the choice of the exchange rate regime takes place in each period. Nonetheless, a more appropriate approach states that once the choice has been made, it will be kept until significant changes in the independent variables take place. In other words, the regime in each period is highly correlated with the past choice. The inclusion of such issues in the model may potentially be problematic in the estimation.

Some other problems arise from possible multicollinearity between regressors, non-stationary time series, and the simultaneous estimation of long-term and short-term variables.

Table 1 Survey of explanatory variables in empirical literature (a positive coefficient indicates a trend towards a flexible exchange rate regime)

	Explanatory variables	Positive* (+)	Negative (−)	Non-significant	Total
Optimum Currency area Theory Factors	Openness	12	19	10	41
	Economic development	10	5	6	21
	Size of the economy	21	2	5	28
	Inflation differential	5	2	5	12
	Capital mobility	0	4	3	7
	Geographical trade concentration	5	9	7	21
	International financial integration	5	2	4	11
Other factors (macro, external and estructural)	Growth	4	3	1	8
	Negative growth	1	1	0	2
	Inflation	8	3	4	15
	Moderate to high inflation	2	4	0	6
	Reserves	4	9	10	23
	Capital control	4	5	6	15
	Terms of trade volatility	3	2	4	9
	Variability in export growth	2	0	0	2
	External variability openness	0	1	0	1
	Real exchange rate volatitlity	3	2	1	6
	Product diversification	3	3	3	9
	Current account	2	3	1	6
	External debt	5	6	0	11
	Growth of domestic credit	5	4	1	10
	Money shocks	2	3	1	6
	Foreign price shocks	2	0	1	3
	Financial development	4	4	1	9
	Fiscal balance	0	2	0	2
	Central government balance	0	0	2	2
Historical and political factors	Political instability	10	1	4	15
	Central bank independence	1	0	1	2
	Party in office has majority	2	4	0	6
	Number of parties in coalition	1	0	1	2
	Coalition government	1	0	2	3
	Political regime (Dem/Dic)	4	1	2	7
	Electoral system (proportional/M)	2	0	0	2
	Expansive fiscal policy	0	1	0	1

Source: Álvarez Ondina et al. (2007).

It is also important to take into account the differences in the econometric techniques. Given the nature of the dependent variable, discrete choice models (logit and probit) are mostly used. While some of these models impose strict independence among the choices, exchange rate regime classification into fixed, intermediate, and flexible is not always a clear issue.

Nonetheless, recent econometric developments have led to more flexible models such as the mixed logit model which is characterized by two key features: on the one hand, it allows for the correlation of errors across time, choice, and unit of analysis (country, in this case); and, on the other hand, it makes possible to relax the assumption of independence among the choices imposed by standard logit models (Hensher et al., 2003). This latter characteristic makes this model especially appealing for the analysis of exchange rate regime determinants since it seems to better adapt to the real context of the choices made by countries. Hence, countries with a current float regime seem to be more likely to switch to an intermediate rather than a fixed regime, or vice versa.

For all this, the mixed logit model is the modelling strategy adopted in this paper in order to examine the impact of several macroeconomic factors on the choice of exchange rate regimes in Latin American countries. Following Von Hagen and Zhou (2007) and Wong (2005), the mixed logit model is adapted to the case of a multinomial choice between fixed, intermediate and flexible exchange rate regimes. Our analysis differs from these two previous works in both the area (Latin American countries —a relatively homogeneous group— versus a sample of developing nations) and period of study (our analysis extents to 2004 while the other two papers end in 1999). Moreover, each theory is tested independently in this paper, avoiding the accumulation of explanatory variables.

In particular, we test the influence of three types of choice determinants: those stated by the Optimum Currency Area

(OCA) theory, types of shocks and vulnerability to currency crises.

Finally, we use a panel data approach rather than cross-section in order to take into account the state dependence effect that, otherwise, will not be captured.

In the next section, the mixed logit model is briefly described, followed by data sources. Then estimation results are presented and, finally, we draw some conclusions and make some suggestions for future research.

2. Modelling framework: a mixed logit approach

In this paper, a mixed multinomial logit model is used in order to assess the determinants of the choice among the three following exchange rate regimes: flexible, intermediate, and fixed. As Von Hagen and Zhou (2007) and Wong (2005) point out the main advantages of this model, compared to the standard logit, are the twofold: on the one hand, it allows for correlation of errors across time, choice, and country, which makes the model appealing for discrete choice situation in a macroeconomic setting with panel elements; and, on the other hand, it relaxes the Independence from Irrelevant Alternatives (IIA) assumption and then allows for some substitution between exchange rate regimes.

Consider a sample of N countries (i = 1, ...,N), each of one facing a choice among J alternatives of exchange rate regimes (Y_{it} = J, where J = 0, 1, 2, which respectively indicate fixed, intermediate, and flexible regimes) in each of T periods (t = 1, 2,... T). Country i is assumed to consider the full set of alternatives and choose the one with the highest utility, which can be written as follows:

$$P(Y_{it} = J) = P(U_{itj} > U_{itk}) \; j, k = 0, 1, 2 \text{ and } j \neq k \quad (1)$$

$$U_{itj} = \beta_j x_{it} + u_{itj} \quad (2)$$

$$u_{itj} = \alpha_{ij} + \varepsilon_{itj} \quad (3)$$

where β_j is the vector of coefficients to be estimated, x_{it} is the vector of explanatory variables, and u_{itj} is the error terms split in two elements: ε_{itj} is a random term with zero mean and independent and identically distributed (i.i.d.) over countries, time, and regimes; while α_{ij} is a random term with zero mean which represents cross-country and regime-specific unobserved characteristics and is assumed to be i.i.d across countries and constant over time. In particular α_{ij} is supposed to follow a bivariate normal distribution with covariance matrix $\Omega = \begin{pmatrix} \sigma_{11} & \sigma_{12} \\ \sigma_{21} & \sigma_{22} \end{pmatrix}$.

To account for the dynamic linkage in regime choices the following dynamic model is specified:

$$U_{itj} = \beta_j x_{it} + \gamma_{kti} d + u_{itj}, \; k = 1, 2 \quad (4)$$

$$u_{itj} = \alpha_{ij} + \varepsilon_{itj} \quad (5)$$

where *d* represents the dummy for either the lagged intermediate or lagged flexible regime.[1]

Assuming an i.i.d. Type I extreme value distribution for ε_{itj} and denoting the density of α_{ij} by $f(\alpha_{ij})$, the probability of regime choice j, given α_{ij} and the vector x_{it} of exogenous variables, could be written as:

$$P_{ijt} = \int_{\alpha ij} P(Y_{it} = j \mid \alpha_{ij}, x_{it}) \; f(\alpha_{ij}) \; d\alpha_{ij} \quad (6)$$

where $P(Y_{it} = j \mid \alpha_{ij}, x_{it}) = \exp(\beta x_{it} + \alpha_{ij})/[1 + \sum_j \exp(\beta x_{it} + \alpha_{ij})]$
j = 1, 2, $\beta_0 = 0$ (7)

This kind of models is known as mixed logit models because the choice probability P_{ijt} is a "mixture of outcome of logit models with f as the mixing distribution" (Hensher and Greene, 2003). The integral in equation (6) does not have a closed form in general, therefore simulation will be used.

The idea of simulation is to draw random numbers from the distribution that is being integrated over, that is, α^r_{ij}. Then, for each draw $P(Y_{it} = j \mid \alpha^r_{ij}, x_{it})$ is calculated. Once this process has been repeated R times, the average of the resulting $P(Y_{it} = j \mid \alpha^r_{ij}, x_{it})$ will be taken as an approximation of P_{ijt}:

$$P_{ijt}^* = 1/R \sum P(Y_{it} = j \mid \alpha^r_{ij}, x_{it})$$

As R → ∞, the law of large numbers indicates that that average would be a consistent estimate of the true probabilities (Wong, 2005).

3. Data

In this study we use panel data set of 21 Latin American countries for the period 1980-2004.[2] With regard to the dependent variable we follow the IMF classification (IMF, 2004), distinguishing three types of exchange rate regime: fixed, intermediate, and flexible. The definition of the explanatory variables together with data sources are shown in Table 2. In particular, we test the influence of three types of choice determinants: those stated by the optimum currency area (OCA) theory, types of shocks and vulnerability to currency crises.

4. Results

Tables 3-5 show the results of the estimation of the models. The first important consideration lies in the crucial role of the previous exchange rate regime choice to explain the current regime, since lagged dependent variables (d1 and d2) are statistically significant in all the estimations.

Table 3 presents the results for the Optimum Currency Area Theory model. We find that the variables "size of the economy" and "openness" are both statistically significant with positive sign. Therefore, those countries with higher levels of Gross Domestic Product per capita and openness (measured as the sum of imports and exports of goods as

---

1.   The dummy for lagged fixed intermediate is excluded in order to avoid the perfect multicollinearity problem.

2. Our sample of countries consists of the following: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Trinidad ánd Tobago, Uruguay and Venezuela.

Table 2 Explanatory variables

	Variables	Code	Definition	Source
State dependency	Intermediate regime in t-1	d1	dummy variable that takes value 1 in the case of intermediate regime in the previous period	Own elaboration
	Flexible regime in t-1	d2	dummy variable that takes value 1 in the case of flexible regime in the previous period	Own elaboration
Optimum Currency area Theory	Size of economy	lgdp	Logarithm of GDP	IFS/IMF
	Openness	openness	(Exports + Imports)/GDP	IFS/IMF
	Trade concentration	xshare	Share of total exports to 3 largest trading partners	EIU
Types of Shocks	Current Account	cacc	Current Account Balance/GDP	IFS/IMF
	Inflation	inf	Average annual inflation rate	IFS/IMF
	Nominal effective exchange rate	neer	Nominal effective exchange rate standard deviation in the last 3 years	IFS/IMF
	Terms of trade	toftrade	Terms of trade Annual Variation	EIU
Vulnerability to exchange rate crises	Fiscal balance	fb	Fiscal balance	IFS/IMF
	External Debt	fxdebt	External Debt /GDP	IFS/IMF
	External Debt (% exports)	netfxexp	Net External Debt /exports	EIU
	M2/GDP	M2gdp	Money supply/GDP	IFS/IMF
	Currency crisis	crisis	dummy variable that takes value 1 in the case of crisis episodes defined following Frankel and Rose (1996)	Own elaboration

Table 3 Latin America, 1980-2004. Optimum currency area theory

Regime		Coef.	Std. Err.	z	P > z	[95% Conf.	Interval]
Intermediate	α	−3.61098	0.91466	−3.95	0.000	−5.40367	−1.81829
	lgdp	0.27982	0.09171	3.05	0.002	0.10006	0.45957
	openness	0.00247	0.00125	1.97	0.048	0.00002	0.00493
	xshare	−0.00977	0.01172	−0.83	0.405	−0.03273	0.01320
	d1	5.24328	0.51826	10.12	0.000	4.22751	6.25906
	d2	2.84351	0.58912	4.83	0.000	1.68886	3.99816
Flexible	α	−5.18942	1.03643	−5.01	0.000	−7.22078	−3.15805
	lgdp	0.15100	0.09690	1.56	0.119	−0.03892	0.34092
	openness	0.00350	0.00145	2.42	0.015	0.00067	0.00634
	xshare	0.01291	0.01179	1.09	0.274	−0.01020	0.03602
	d1	4.13936	0.73155	5.66	0.000	2.70554	5.57318
	d2	6.27356	0.70154	8.94	0.000	4.89858	7.64855
S_{11}	0.03238						
S_{21}	−0.00379						
S_{22}	0.00182						

a percentage of GDP) are more likely to choose flexible exchange rate regimes. It is important to take into account that the positive sign of "openness" contrasts the OCA theory.

With respect to the types of shocks (Table 4), only those regarding the current account turn out to be significant. The positive sign indicates a larger tendency to flexibility in the case of current account deficit.

Table 5 presents the results for the model that includes the variables related to the vulnerability to crises. A first point to highlight is that the existence of currency crises in previous periods increases the tendency to flexibility, whereas the variable that represents the fear to float, that is "external debt", shows its influence in the opposite direction, with a negative sign. A second interesting point is the significant negative impact of the variable "money

Table 4 Latin America, 1980-2004. Types of shocks

	Regime	Coef.	Std. Err.	z	P > z	[95% Conf.	Interval]
Intermediate	α	−2.595325	0.452445	−5.74	0.000	−3.482100	−1.708550
	cacc	0.068346	0.032508	2.10	0.036	0.004632	0.132060
	inf	−0.000003	0.000327	−0.01	0.992	−0.000644	0.000638
	neer						
	toftrade	0.018363	0.018416	1.00	0.319	−0.017731	0.054457
	d1	5.879678	0.626645	9.38	0.000	4.651476	7.107880
	d2	3.353415	0.675082	4.97	0.000	2.030280	4.676551
Flexible	α	−3.615500	0.646659	−5.59	0.000	−4.882928	−2.348072
	cacc	0.086560	0.043574	1.99	0.047	0.001157	0.171962
	inf	0.000052	0.000618	0.08	0.933	−0.001160	0.001263
	neer	0.00350	0.00145	2.42	0.015	0.00067	0.00634
	toftrade	0.000973	0.022871	0.04	0.966	−0.043854	0.045800
	d1	4.418351	0.825681	5.35	0.000	2.800046	6.036656
	d2	6.627213	0.760783	8.71	0.000	5.136106	8.118320
S_{11}	0.17486						
S_{21}	−0.02108						
S_{22}	0.00254						

Table 5 Latin America, 1980-2004. Vulnerability to crises

	Regime	Coef.	Std. Err.	z	P > z	[95% Conf.	Interval]
Intermediate	α	−2.248722	0.576949	−3.90	0.000	−3.379521	−1.117923
	fb	−0.000890	0.001222	−0.73	0.467	−0.003286	0.001506
	fxdebt	−0.000003	0.000327	−0.01	0.992	−0.000644	0.000638
	netfxexp	−0.001009	0.000518	−1.95	0.051	−0.002024	0.000006
	M2gdp	−0.003759	0.001114	−3.37	0.001	−0.005943	−0.001576
	crisis	1.748476	0.601211	2.91	0.004	0.570125	2.926828
	d1	5.688675	0.626550	9.08	0.000	4.460660	6.916690
	d2	3.901544	0.778401	5.01	0.000	2.375906	5.427181
Flexible	α	−2.993492	0.768196	−3.90	0.000	−4.499129	−1.487855
	fb	0.003923	0.003689	1.06	0.288	−0.003307	0.011153
	fxdebt						
	netfxexp	−0.001539	0.001233	−1.25	0.212	−0.003956	0.000878
	M2gdp	−0.002954	0.000939	−3.15	0.002	−0.004795	−0.001113
	crisis	0.306635	0.711732	0.43	0.667	−1.088335	1.701604
	d1	4.306499	0.864147	4.98	0.000	2.612802	6.000195
	d2	6.950929	0.904814	7.68	0.000	5.177528	8.724331
S_{11}	0.27289						
S_{21}	−0.01840						
S_{22}	0.00124						

supply" on the probability of intermediate-flexible regimes with respect to the fixed regime. This might be interpreted as a sign of the inconsistent monetary policies that have been applied in Latin American over the last two decades.

Finally, results in Tables 3-5 show that the estimated variance and covariance terms of the random effects (S11, S12, S22) are in general very small, almost zero. As Von Hagen and Zhou (2007) point out such results could be interpreted as an indication that the models are largely capturing the determinants of countries' choice and therefore, the influence from potential omitted variables is little.

5. Concluding remarks

In this paper, we have examined the impact of several macroeconomic variables related to OCA theory, types of shocks and vulnerability to currency crises on the choice

of exchange rate regime (fixed, intermediate and flexible). Particularly, we have used a panel mixed multinomial logit model to the choices of ERR in 21 Latin American countries for the period 1980-2004.

First, none of the tested models seem to provide a reasonable explanation for the choice of exchange rate regime, consistent with the conclusion of the recent paper by Rose (2011). Thus, we should stress the importance of the previous ERR choice to explain the current regime, which seems to confirm the existence of a strong inertia in the choice of the exchange rate regime.

Secondly and regarding to OCA variables, we have observed that those countries with higher levels of Gross Domestic Product per capita and openness are more likely to choose flexible exchange rate regimes, contrasting the OCA theory. Larger tendency to flexibility is also shown in the case of current account deficit.

Third, the existence of currency crises in previous periods seems to increase the tendency to flexibility, whereas the variable that represents the fear of floating, "external debt", shows its influence in the opposite direction. Finally, the negative coefficient of "money supply" might be interpreted as a sign of the inconsistent monetary policies that have been applied in Latin American over the last two decades.

In order to improve these first results certain issues must be considered: on one hand, the inclusion of institutional and political variables as possible explanatory factors; on the other hand, checking the robustness of the results with alternative specifications of the dependent variable, as well as the analysis of the sensitivity of results using different samples of countries.

References

Álvarez Ondina, P., Pérez Rivero, J.L., De Vicente Queijeiro, S., Vicente Cuervo, M.R., 2007. ¿Por qué los países fijan el tipo de cambio? Applied Economic Department Working Papers. University of Oviedo.

Barro, R., Gordon, D.B., 1983. Rules, discretion and reputation in a model of monetary policy. Journal of Monetary Economics 12, 101-121.

Calvo, G.A., Reinhart, C.M., 2002. Fear of floating. The Quarterly Journal of Economics 117, 379-408.

Calvo, G.A., 1998. Capital flows and capital-market crises: the simple economics of sudden stops. Journal of Applied Economics 1, 35-54.

Carmignani, F., Colombo, E., Tirelli, P., 2008. Exploring different views of exchange rate regime choice. Journal of International Money and Finance 27, 1177-1197.

Collins, S.M., 1996. On becoming more flexible: exchange rate regimes in Latin America and the Caribbean. Journal of Development Economics 51, 117-138.

Dreyer, J.S., 1978. Determinants of exchange-rate regimes for currencies of developing countries: some preliminary results. World Development 6, 437-445.

Edwards, S., 1996. The determinants of the choice between fixed and flexible exchange-rate regimes. National Bureau of Economic Research. Working paper No. 5756.

Eichengreen, B., Hausmann, R., 2003. Original sin: the road to redemption. En: Eichengreen, B., Hausmann, R. (Eds). Debt denomination and financial instability in emerging market economics.

Eichengreen, B., 1994. International monetary arrangements for the 21st century. The Brooking Institution. Washington DC.

Giovazzi, F., Pagano, M., 1988. The advantage of trying one's hands: EMS discipline and Central Bank credibility. European Economic Review 32, 1055-1082.

Heller, R.H., 1978. Determinants of exchange rate practices. Journal of Money, Credit and Banking 10, 309-321.

Hensher, D.A., Greene, W.H., 2003. The mixed logit model: the state of practice. Transportation 30, 133-176.

IMF, 2004. Classification of exchange rate arrangements and monetary policy frameworks. International Monetary Fund (december).

Juhn, G., Mauro, P., 2002. Long-run determinants of exchange regimes: a simple sensitivity analysis. International Monetary Fund. Working paper WP/02/104.

Leblang, D., 1999. Domestic political institutions and exchange rate commitments in the developing world. International Studies Quarterly 43, 599-620.

Levy-Yeyati, E., Sturzenegger, F., 2003. A de facto classification of exchange rate regimes: a methodological note. American Economic Review 93, n.º 4 (septiembre).

Levy-Yeyati, E., Sturzenegger, F., Reggio, I., 2010. On the endogeneity of exchange rate regimes. European Economic Review 54, 659-677.

Melvin, M., 1985. The choice of and exchange rate system and macroeconomic stability. Journal of Money, Credit and Banking 17, 467-478.

Méon, P.G., Rizzo, J.M., 2002. The viability of fixed exchange rate commitments: does politics matter? A theoretical and empirical investigation. ULB Institutional Repository 2013/8392. Université Libre de Bruxelles.

Mundell, R.A., 1961. A theory of optimum currency areas. The American Economic Review 51, 657-665.

Poole, W., 1970. Optimal choice of monetary policy instruments in a simple stochastic macro model. Quarterly Journal of Economics 84, 197-216.

Reinhart, C.H., Rogoff, K.S., 2003. The modern history of exchange rate arrangements: a reinterpretation. The Quarterly Journal of Economics CXIX, 1-48.

Rose, A., 2011. exchange rate regimes in the modern era: fixed, floating, and flaky. CEPR Discussion Papers 7987.

Savvides, A., 1993. Pegging the exchange rate and the choice of a standard by LDCs: a joint formulation. Journal of Economic Development 18, 107-125.

Von Hagen, J., Zhou, J., 2007. The choice of exchange rate regime in developing countries: a multinational panel analysis. Journal of International Money and Finance 26, 1071-1094.

Wong, A., 2005. Exchange rate arrangements in the low-income countries: a panel mixed logit analysis. University of California-Berkeley.