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**MONETARY UNION: EUROPEAN LESSONS,  
LATIN AMERICAN PROSPECTS**

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**MONETARY UNION: EUROPEAN LESSONS,  
LATIN AMERICAN PROSPECTS**

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**Abstract**

In this paper selective issues of long-run sustainability of monetary unions are analyzed. Using theoretical insights and the experience of EMU up to now we argue that empirical evidence on OCA criteria for EMU suggests that benefits for the countries participating in EMU outweigh costs by a relatively large margin although by varying degrees from country to country. We also conclude that the Stability Pact is a sufficient but not a necessary condition for EMU to succeed and that EMU has been driven by political considerations. A sound financial sector is a precondition. With regard to lessons to be drawn for Latin America and the Caribbean we first find that there has been a strong push towards the floating cum inflation-targeting corner and to regional trade integration. Moreover, it seems that, in contrast to EMU, the benefit-cost balance of a move to monetary union is much less favorable in Latin America and the Caribbean and, most important, the political dimension missing.

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## **1. Introduction**

The world is in a state of flux regarding the choice of monetary and exchange rate regimes. One option is giving up national currencies to join a monetary union. Since Mundell (1961) the literature has emphasized conventional OCA criteria in shaping this decision. EMU, the largest historical experiment in giving up sovereignty in monetary (and other) policy areas, has captured the imagination of policy makers and researchers alike. It has also brought other issues, related to complementary areas of reform and integration, to the forefront of theory and policy analysis. These issues shape the discussion about monetary union and, more generally, on optimal regime choice for countries in other regions, including Latin America and the Caribbean (LAC).

The purpose of this paper is to assess selective issues on the long-run sustainability of monetary unions, in the light of theory and of the experience of EMU, and to draw its lessons for regime choice, and monetary union in particular, for LAC. In section 2 we briefly review recent world trends in exchange rate and monetary regimes and a summary of estimates of the benefits and costs of EMU. This leads to discussing three important issues that are crucial in the theory and EMU experience of monetary union, related to complementary areas of policy coordination and integration among prospective union members (Section 3). Then we discuss the issues that shape monetary and regime choice in LAC, with particular consideration of recent trends and literature and the prospects for monetary union in the light of the EMU experience. Section 5 concludes briefly.

## **2. Monetary and Exchange Rate Regimes: From the Real World to Optimality Considerations**

### **2.1 World Trends in Monetary and Exchange Rate Regimes**

The world is in a state of flux regarding the choice of monetary (M) and exchange rate (ER) regimes. Many countries and full regions have shifted regimes – gradually by careful design (as in EMU) or quickly forced by markets (as in Ecuador 2000 or Argentina 2002). Here we review recent world trends in ER and M regimes. This will help in the subsequent discussion of selective issues on monetary union illustrated by EMU and the regime challenges faced by LAC.

The world evolution in ER regimes is illustrated by IMF data on countries' official regime definitions (Figure 1). The share of fixed ER regimes in the world – comprising no independent currency, currency boards, or pegged ERs – has declined from 68% of countries in 1979 to 49% in 2001, while managed and independent floats have increased from 17% to 42%. Intermediate regimes, where ERs are adjusted by indicators (sliding pegs, bands, and sliding bands), have fallen from 15% of countries in 1979 to 9% in 2001. As a long-term time trend, a shift to the floating ER corner is evident.

More recently, based on finer IMF data, there is some evidence favoring the two-corner hypothesis: ERs adjusted by indicators have declined from 12% to 9% while common currency cases have increased from 20% to 21% and managed floats have risen from 14% to 17% between 1999 and 2001.

Official data on ER regimes have been criticized for being a poor indicator of ER flexibility. Calvo and Reinhart (2000) argue that nominally independent floaters among emerging countries exhibit fear to float through various forms of ER interventions. They provide evidence of low exchange rate volatility relative to international reserve volatility, in comparison to industrial country floaters. Levy-Yeyati and Sturzenegger (2002) take up this point by constructing a new database of ER regimes, inferred from cluster analysis of ER and reserve behavior. In their classification, de facto fixed ERs stand at 57% of the world distribution in 2000 (above the IMF's 49% for 2001) while de facto managed (dirty) and independent (free) floats are 20% (well below the IMF's 42%). However, they also confirm a long-term trend decline in de facto fixed ERs and a rise in de facto independent floats between 1979 and 2000.<sup>1</sup> Von Hagen and Zhou (2001) test the hollow-out hypothesis for 25 transition economies in Europe and find that although corner regimes dominate in the steady state intermediate regimes will not disappear completely.<sup>2</sup>

The recent world evolution in monetary (M) regimes is reflected by a survey conducted among 93 central banks in 1998 by Mahadeva and Sterne (2000) and the larger IMF data of annual country-based official regime definitions since 1999 (Figure 3). The evidence shows a relative uniform distribution of conventional M regimes (ER, monetary aggregate, and inflation targets) for 1998 in the Mahadeva and Sterne data. The IMF data

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<sup>1</sup> This trend is also confirmed by Fischer (2001).

shows a dominance of ER targets that, however, tends to weaken between 1999 and 2001. This is consistent with the growing trend away from monetary and ER anchors and toward inflation targets observed during the last decade.<sup>3</sup>

As of March 2001, the combined world distribution of ER and M regimes (IMF classification) shows an obvious concentration of regime combinations on the diagonal of Table 1. It is less evident, however, that the most popular combinations are a currency board or a pegged ER with an ER target (51 countries), followed by no independent currency (39 countries), and a managed float with no conventional or explicit monetary regime (26 countries). In the corner of managed and independent floats, different combinations of the two latter ER regimes with monetary regimes are observed.

Conditional probabilities of having one regime in place, given the choice of the other regime, differ strongly in various cells of Table 3. For example, the conditional probability of having an independent float when an inflation target is in place is 81%. The opposite conditional probability – adopting an inflation target when an independent float is in place – attains only 28%.

Managed floats – often based on non-disclosed or ad-hoc rules of interventions – are strongly associated to no conventional or explicit monetary regime (26 of 31 countries). This stands in contrast to independent floats, which are more likely to be associated to explicit money or inflation targets (20 of 47 countries). Hence rule-based ER regimes tend to be associated to rule-based monetary regimes.

There are various reasons for the large and still ongoing shifts in ER and M regimes that are observed worldwide, including the following:

- (i) Multilateral adoption of a currency union, often as part of economic and eventual political union (as in EMU);
- (ii) Transition toward monetary union in the future, leading to adoption of intermediate exchange-rate regimes, as in some central and eastern European countries aiming toward euro accession;
- (iii) Domestic weakness caused by a combination of fiscal dominance, weak banking systems, inflexible ER system, and price and wage rigidities, leading to ER and financial

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2 Kuttner and Posen (2001) argue that exchange rate regimes, central bank autonomy and domestic targets must not be considered in isolation but that they are interconnected and thus have to be analyzed jointly.

crises. This contributes to abandonment of intermediate ER regimes in favor of one corner (dollarization, e.g. Ecuador) or the other (floating ER, e.g. Argentina);

(iv) Small countries that are highly integrated into and highly synchronous with the world economy tend to adopt pegged ERs or abandon their national currencies in favor of adopting a dominant foreign currency or monetary union with similarly small states (e.g., ECCA). There are exceptions to the latter countries: those small open economies where integration intensifies their high production specialization and asynchronicity with the world economy (e.g. Iceland);

(v) Among countries that have managed or independent floats in place, a monetary regime shift from MA to inflation targeting.

Economic cost-benefit and political considerations drive countries to modify their ER and M regimes. We discuss next the costs and benefits of one particular regime shift: joining a monetary union, exemplified by EMU.<sup>4</sup>

## **2.2 Overview of Costs and Benefits of Giving up a National Currency**

Table 4 in the annex summarizes some of the empirical estimates of specific costs and benefits in the EMU context (and elsewhere, if applicable). Major results are reported in the bullet points below.

- The traditional OCA literature (Mundell 1961, McKinnon 1963) argues that countries joining a monetary union will benefit from lower transaction costs associated from trading goods and assets in different currencies. Lower transaction costs would enhance trade and therefore generate higher benefits from economic specialization.
- Recent empirical evidence stresses the large positive effects of currency unions on trade (Rose 2000, Glick and Rose 2001) and income (Frankel and Rose 2002). However, new evidence suggests that Rose and associates might be grossly overestimating the impact

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<sup>3</sup> As of early 2002, 20 countries have adopted inflation targeting regimes (Schmidt-Hebbel and Tapia 2002).

<sup>4</sup> There is a large body of recent literature on optimal exchange rate regimes that we will not review in this article. For the case of emerging market economies see Larraín and Velasco (2002) and for Latin America see French-Davis and Larraín (2002) and Escaith et al. (2002).

of currency unions on trade due to sample selection and non-linearities (Persson 2001) and the endogeneity of the decision to join the union (Tenreyro 2001).

- Other potential microeconomic efficiency gains from joining a currency union are due to elimination of nominal exchange rate volatility and hence lower interest rates, lower real exchange rate volatility, deeper financial integration, and (in the case of joining a dominant currency area, like the euro) international acceptance of the currency.
- The microeconomic efficiency gains of a currency union might be offset by lower macroeconomic flexibility. Countries joining a currency union lose their ability to stabilize output through an independent monetary policy and give up nominal exchange rate flexibility. In sum, the traditional approach states that countries with close international trade and financial links are more likely to be members of an OCA whereas countries with asymmetric business cycles are less likely (Artis and Toro 2000).
- For candidates of a currency union microeconomic benefits increase and macroeconomic costs decline with their degree of trade integration and business cycle symmetry. Empirical studies for the EU show that countries with closer trade linkages exhibit highly correlated business cycles.
- OCA criteria are dynamic: net benefits of a currency union increase after joining the union because trade integration and business cycle correlation become higher than before joining the union (Frankel and Rose 1998, 2002, Rose and Engel 2001).
- Non-traditional OCA factors that determine the choice to join a currency union include the distribution of seigniorage, interregional fiscal transfers, and substituting the traditional lender of last resort. The net effect of the former seems to be very small but unevenly distributed, especially as seigniorage is shared among EMU participants, there are different views regarding the importance of the latter two factors.
- There is fairly conclusive evidence that benefits of EMU outweigh costs by a relatively large margin. This seems to be especially true for smaller members at the center of the union, where the loss of the exchange rate instrument does not have any significant costs (e.g. Austria, Benelux).
- However net benefits of monetary union are not the same for all members. EMU members at the periphery may not be as strongly viable members in the long run in



comparison to the states of the U.S. (Kouparitsas 1999). Analogously, EMU is estimated to be successful for all original 12 EU countries only if fiscal reforms are pursued in order to attain larger comovement among all members (Haug et al. 2000).

- Output variability decreases through the aggregation effect and the mean of stochastic variables fluctuates by less than its components.
- The loss of seigniorage is marginal once price stability has been reached and minimum reserve requirements are harmonized and remunerated. Differences in preferences regarding cash holdings (currently the predominant reason for "winners and losers") might diminish over time as the importance of cash is being reduced (plastic money, etc.) but not eliminated (need for cash in the underground and criminal economies).
- Crespo-Cuaresma et al. (2002) estimate the growth effects of EU membership using an endogenous growth model and panel data. They find a growth bonus from EU membership which is relatively higher for poorer member countries and which is permanent.

### **3. Fundamental Issues On Long-Run Sustainability of a Monetary Union**

This section discusses three key issues that are crucial in the theory and experience of European economic and monetary union: the role of fiscal policies, labor market issues and financial market integration and supervision.<sup>5</sup>

The euro area is now characterized by one common currency and one monetary policy. Albeit sovereignty of member countries is constrained by the law of the EU, they remain separate political entities pursuing independent policies. Hence the issue arises whether a monetary union can work without a political union. A political union does not seem to be necessary for the success of a monetary union, especially if the three fundamental issues are resolved.

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<sup>5</sup> We do not discuss trade and goods market integration, because EMU seems to suggest that this integration is a prerequisite for forming a MU and reaping its benefits.

### **3.1. Role of Fiscal Policies: Unpleasant Fiscal Arithmetic, Monetary Dominance, and Fiscal Coordination**

The relationship between fiscal and monetary policies in monetary unions has been an object of many studies in recent years. Much of this is a reaction to the Maastricht Treaty of 1992 and the Pact for Stability and Growth (SGP), adopted by the EU-Council 1997.<sup>6</sup> The Treaty institutionalized binding fiscal rules for monetary convergence; the Pact specified these rules and empowers the Council to impose sanctions for non-compliance as a non-interest bearing deposit (maximum 0.5% of GDP) which is converted into a fine after two years, unless the excessive deficit has been corrected.

Are such fiscal rules really necessary for the success of a MU? Some authors suggest that they may be a nuisance (see Eichengreen and Wyplosz 1998). Some argue from the perspective of static macroeconomics, on which the theory of optimum currency areas is built. According to this view no restrictions on the use of fiscal policies should be imposed: IS and LM curves can be shifted independently. Of course, for reasons of policy efficiency, policy coordination should seek optimal policy mixes. Yet, given that monetary policy is centralized in MUs and, in the case of EMU, shaped by the ESCB, it is argued that “nationalized” or even “regionalized” fiscal policies should be fixed individually and complemented by an interregional fiscal transfer mechanism to cope with asymmetric shocks within the MU.

From a neoclassical perspective, binding fiscal rules could also be unwarranted. If Ricardian Equivalence holds, fiscal deficits are macroeconomically irrelevant and have no effects on real interest rates. If it does not hold but financial markets are efficient, sovereign credit risk will be priced like any other financial risk and reflected by interest rate spreads or by credit rationing. Why should there exist bureaucratic and political procedures, based on an ambiguous pact, which determine “excessive deficits” and result in fining states? Would big EU members really comply with fiscal rules or, if needed, just demonstrate their political muscle? Instead, these authors argue, one should trust in the functioning of market mechanisms.

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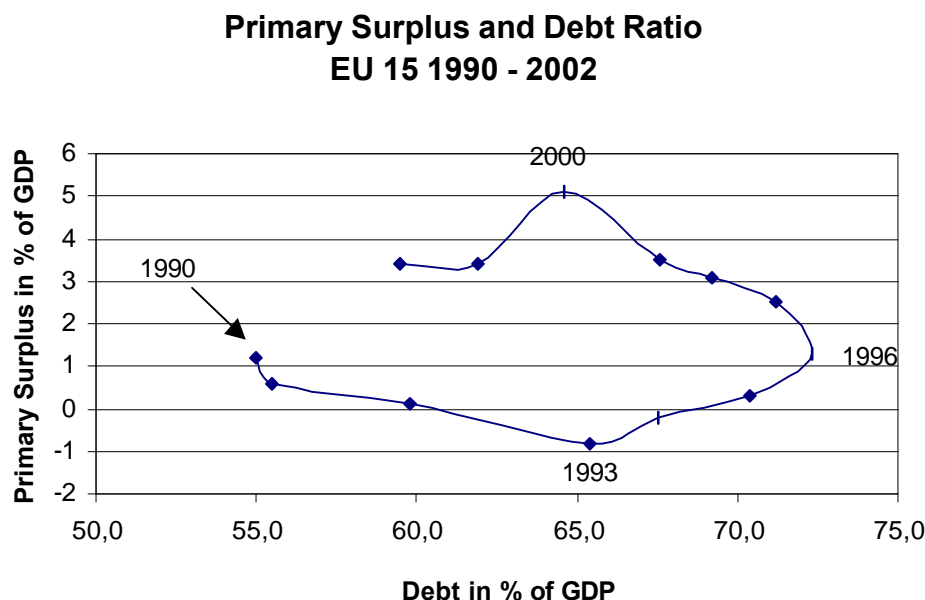
<sup>6</sup> Resolution of the European Council on the Stability and Growth Pact Amsterdam, 17 June 1997; Official Journal C 236, 02/08/1997: 0001-0002

In contrast to these views, there is now a growing literature on why fiscal rules make sense in a monetary union. Obviously, issues about imperfect financial markets, especially with the pricing of sovereign credit risks can be raised. Yet, another basis of justifying fiscal rules are insights of dynamic macroeconomics. E.g., Sargent-Wallace's unpleasant monetarist arithmetic argues that a restrictive monetary policy, yielding a small inflation tax (seigniorage) only, may be insufficient to balance exogenously determined primary public deficits. Public debt may explode. To avoid this, monetary policy needs to adapt at some future date, providing more seigniorage. Then monetary policy yields to fiscal policy in a game of chicken between monetary and fiscal authorities (Sargent-Wallace 1981). Winckler-Hochreiter-Brandner (1998) reversed this analysis. They demonstrate that the architecture of EMU implies the opposite, i.e. an unpleasant fiscal arithmetic. In Euroland, fiscal authorities have to yield to the ESCB at some date. Dixit (2001) extensively analyzes games of monetary and fiscal interactions in the EMU, indicating that freedom of national fiscal policies undermines the ESCB's monetary commitment. Dixit thereby justifies fiscal constraints like the Stability and Growth Pact (SGP). In addition, the coordination among regional fiscal authorities seems necessary.

Woodford (1995, 1998), Canzoneri-Diba (1996), Buiter (1998) in a critical review, recently Daniel (2001), and many others have contributed to develop the fiscal theory of the price level. According to Woodford's model, economies are always confronted by various random shocks which trigger unexpected variations in the level of net deficits and public debt. Fiscal sustainability requires two possible reactions in the case of negative shocks: (1) higher inflation taxes respectively more seigniorage, based on a shift to a more expansionary monetary policy stance, thus diminishing the burden of nominal debt or (2) introduction of fiscal policies aimed at reducing primary deficits in subsequent periods. The former would indicate a fiscal dominant regime, since monetary policy adapts, whereas the latter describes a monetary dominant regime, since fiscal policies change. The term "dominance" reminds us of the term "unpleasant arithmetic".

Unfortunately, empirical tests aimed at assessing regime shifts from fiscal to monetary dominance in the EU (or the other way around) are highly inconclusive, see

Canzoneri-Diba (1996)<sup>7</sup>. A visual inspection of aggregate EU data suggests however, (although only few observations are taken into account) that in 1993, when the Maastricht Treaty became effective, a regime shift from fiscal to monetary dominance took place. Monetary dominance was reinforced in 1996 as is visually illustrated in the figure below.



Fiscal rules in monetary unions are necessary, but that does not imply a formal SGP. A formal SGP hence is not necessary, but is it sufficient? Based on the seminal paper by Mundell (1961) some argue that the SGP is not sufficient to maintain a monetary union since it lacks a transfer mechanism to cope with asymmetric shocks. However, Kletzer and von Hagen (2001) argue that the welfare effects of such fiscal insurance schemes are quite ambiguous. The authors conclude that this is the main reason why in contrast to Mundell's claim and popular arguments in the policy debate no substantial fiscal insurance schemes against asymmetric shocks are necessary in a MU. The SGP is thus sufficient.

<sup>7</sup> First, most EU countries adapted their measures of public debt to Maastricht standards in 1990, thereby precluding comparison of pre and post-1990 debt series. Second, only annual data are available. To increase the number of observations, a panel study should be pursued. However, due to many special circumstances in the individual EU states a host of dummy variables have to be included. Third, one needs to concentrate on statistical procedures to test for structural breaks.

Another criticism has been that the SGP unnecessarily constrains national fiscal policy in case of idiosyncratic shocks. However, one can argue that, *under normal circumstances*, the SGP does *not* unduly constrain fiscal policy. E.g., if the Pact's goal of close to balance or in surplus *over the medium term*, i.e., over the business cycle, is reached, then automatic stabilizers can work unconstrained without endangering the 3% deficit limit. In addition the Treaty stipulates that, under *exceptional circumstances*, the 3% deficit limit may be overshoot without invoking the excessive deficit procedure.

### **3.2. Labor Mobility, Wage Flexibility and Integration**

The elimination of the nominal exchange rate as an instrument to absorb idiosyncratic shocks raises the question about how such shocks can be dealt with without straining MU. Mundell (1963) argued that a MU is feasible as long as there is sufficient labor market mobility and/or aggregate and relative real wage flexibility. In contrast to the US, Europe is said to lack both (Layard et al. 1994; Tyrväinen 1995) and thus EMU is bound to raise unemployment and political tensions (Feldstein 1997 and 1998). While labor mobility in Europe has been low and has hardly changed even since the establishment of the single market, there is some evidence that real wage flexibility has increased in recent years.

At the same time there remain uncertainties regarding the evolution of trade unions. First, it is still an open question how trade unions have responded to the establishment of EMU: Cukierman and Lippi (2001) argue that EMU alters the strategic interactions among wage bargaining partners. In a MU, trade unions become relatively smaller, feel macroeconomically less responsible and thus will be more aggressive when negotiating wage contracts. As a result, unemployment will rise. Knell (2001) extends this model to open economies and, in contrast, finds that the establishment of EMU has had no effect on unemployment, essentially because a shadow MU existed before 1999. Well before 1999 trade unions were concerned with international competitiveness and price stability, which was guaranteed by the anchor central bank (the Bundesbank). As a consequence there was no regime shift for these countries when Stage Three of EMU started.

Yet, there are at least two issues regarding the evolution of trade unions and the centralization and decentralization of wage bargaining processes, respectively, in EMU.

The first relates to the question of whether trade unions will remain nationally segmented or whether they will attempt to "regain their relative size" by cooperating and eventually merging across EMU. Calmfors (2001) argues that transnational wage setting seems unlikely due to prohibitive coordination costs. If at all, one could imagine trans-EMU wage bargaining taking place in multinational firms.

The second issue relates to unemployment as a regional (and sectoral) problem (Soltwedel et al. 1999). Unemployment rates show large intra-EMU dispersion, with very high rates observed in weak regions like Eastern Germany, the Mezzogiorno and various regions in Spain, Portugal, and Greece. The European Commission (2000), the IMF (1999), and the OECD (1999) have identified European unemployment as a predominantly structural problem which can only be tackled through fundamental labor market reform. At the same time highly different unemployment rates call for a decentralization of wage bargaining and wage setting, down to firm levels, to allow for larger relative wage dispersion (Davies and Hallet, 2001).

To conclude: Stage Three of EMU did not imply regime shifts in labor markets of those participating countries that had a long history of pegging their currency to the DEM (e.g. Austria, Belgium, the Netherlands). Labor mobility did not change and, in any case, is not necessary for a smooth functioning of EMU. The really important issues are real wage flexibility and structural adjustment. While some progress has been made much more is needed.

### **3.3 Financial Integration and Supervision**

Financial market integration is a worldwide phenomenon, driven by globalization and technological progress. Adoption of the euro added another catalytic dimension for financial integration in the Eurozone. Following its introduction in January 1999, the (unsecured) money markets integrated almost immediately and smoothly (Gaspar et al. 2001) into a single market as reflected by the substantial decline in bid-ask spreads (Galati and Tsatsaronis 2001). Bond markets have widened and deepened appreciably but government bonds remain only imperfect substitutes for each other. Yield differentials of equal quality sovereign bonds persist. E.g. German and Dutch government bonds are both rated AAA but continue to be differently priced. At the same time there was a sharp rise in

non-sovereign bond issues. The euro quickly emerged as the second most important bond issuance currency after the US dollar. Yet progress has been uneven. The "Lamfalussy Report" (2001) finds that the process of financial market integration remains slow and incomplete. Padoa-Schioppa (2002) identifies market-related factors (fragmented infrastructure for cross-border clearing and settlement of security transactions) and policy-related conditions (regulatory obstacles) as inhibiting factors. This is also true for other financial sectors and, in particular, in the field of banking and capital-market supervision.

The European cross-border clearing and settlement infrastructure, which is essential for smoothly and efficiently functioning securities markets, remains highly fragmented. There are some 20 different systems in operation at the present time (Giovannini Report 2001, von Thadden 2001) resulting in expensive and cumbersome cross-border transactions and clearing procedures. Major steps in integration and consolidation of the infrastructure have yet to be undertaken.

The unified monetary policy of the euro area is confronted with regulatory and supervisory authorities which are specialized both nationally and across sectors. This does not pose a problem as long as financial markets remain nationally segmented. In this case the principle of home country control and host country responsibility greatly overlap (De Grauwe 2000). Increasing cross-border mergers or market integration, however, blur responsibilities and may contribute to slower and less efficient crisis management.

The ECB's regulatory and supervisory roles are defined in Protocol No. 3 of the Statute of the ESCB and the ECB. Art. 3 only states that "the ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system". Art. 25 lays down the consultative role of the ECB in prudential supervision. Thus regulatory and supervisory functions are assigned to national authorities. While precise institutional responsibilities differ markedly across EMU, national central banks are involved in one way or another in all Eurozone countries<sup>8</sup> (Hochreiter 2000), a point which is also frequently stressed by the ECB.

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<sup>8</sup> This remains true also after the recent changes in the supervisory structures in Austria and Germany where an independent Financial Market Authority was established.

This set of separated institutional arrangements has drawn severe criticism. Favero et al. (2000) argue that European integration will intensify competition among financial institutions, reducing profits and raising systemic risk. The problems will grow once cross-border mergers proliferate. Hence the latter authors call for more centralization of prudential supervisory structures, possibly by assigning a larger role to the ECB. Benink and Whilborg (2002) argue that market discipline should play a bigger role when regulating banks.

Yet, the "Brouwer Report" on Financial Stability (European Commission 2000) concludes that "the existing institutional arrangements provide a coherent and flexible basis for safeguarding financial stability in Europe. *No institutional changes are deemed necessary*". (European Commission 2000: 7; emphasis added). Europe, however, does need a strengthening of cross-sector and cross-border cooperation of financial regulators and supervisors (European Commission 2000).

Once a crisis hits there is a need for effective crisis management and emergency financing. Bruni and de Boissieu (2000) distinguish three financing channels to defuse a crisis: tax payers money, private capital and central bank financing through its Lender of Last Resort (LOLR) function. While there are a number of arguments in favor and against the central bank's LOLR function, there is a broad agreement on its need at the macroeconomic but not at the microeconomic level (Freixas 2001). In the Eurozone (more precisely in the ESCB) there are no clear provisions for a LOLR function and, in particular, how the function is allocated between the ECB and national central banks (Bruni and De Boissieu 2000). As far as the ESCB is concerned, the Treaty does not assign LOLR responsibilities. This view of a de facto decentralized function raises concerns about the handling of a fast-developing liquidity crisis (Prati and Schinasi 2000). Yet, while past experience – before EMU – has shown that central banks have been quick and efficient in defusing national and international crises, it remains an open question if past pre-EMU experience can offer much guidance in EMU.

Our own conclusion is that no major change of the European institutional regulatory and supervisory architecture is in the offing at the present time. The same is true for a more precise delineation of LOLR functions in the ESCB. The first major (systemic) crisis will provide the litmus test regarding the adequacy of current institutional arrangements and the



improvements now being implemented in the field of supervision (e.g. the round table of chairs of supervisory committees, the strengthening of central bank involvement in some of the euro area countries).

## **Section 4: Recent Trends and Future Options of Monetary Regimes in Latin America and the Caribbean (LAC)**

In this section we review recent trends in monetary and exchange rate regimes in LAC and discuss future regime, with particular attention to MU, in the light of the recent literature and the EMU experience.

### **4.1. Exchange Rate and Monetary Regime Trends in LAC.**

The world trend away from pegged ER regimes and toward more flexible arrangements noted in section 2 is even more pronounced in LAC.<sup>9</sup> Regarding M regimes, the world trend toward inflation targeting among floaters is also more intense in LAC.

In 1994 LAC's dominant regime combination was an ER regime of limited flexibility (adjustable peg or band) combined with an ER or a monetary growth target (Table 3). Since then LAC has evolved according to the two-corner hypothesis. In 2002 five countries that comprise 87% of regional GDP (Brazil, Chile, Colombia, Mexico, and Peru) are positioned close to the lower-right hand corner, having adopted a managed float with inflation targeting. Their typically independent central banks have invested in strengthening their domestic currencies by stabilizing under inflation targeting and modernizing their monetary policy frame. At the same time they have made progress toward a floating ER regime where "fear to float" is mostly reflected by occasional but at times intensive exchange rate interventions (Schmidt-Hebbel and Werner 2002).

Three small countries that represent 2% of regional GDP have adopted the U.S. dollar (the upper left-hand corner in Table 3): Ecuador, El Salvador, and Panama. Many smaller economies, particularly in Central America and the Caribbean, may follow suit. 6

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<sup>9</sup> According to the IMF classification, the share of countries with fixed ER regimes, among 18 LA countries, fell from 67% in 1979 to only 16% in 2002, the share of independent floaters increased from zero in 1979 to 32% in 2000, and intermediate regimes of ER adjustment by indicators have remained stable at 27%, while managed floats have increased from 27% to 44%.

very small island economies in the Caribbean form the ECCU monetary union whose currency is pegged to the US dollar.

Smaller LAC economies with diversified trade and that suffer from idiosyncratic shocks (and therefore are not highly synchronous with the US or world economy), face stiff tradeoffs regarding their regime choice between the upper left and lower right corners. Among the latter are Costa Rica, Uruguay, and Bolivia that have currently in place ER regimes of limited flexibility under various nominal anchors for their monetary policy. Two large economies in currently critical situation – Argentina and Venezuela – have recently been forced off their rigid ER regimes but their final choice of ER and M regimes is still open.

In sum: LAC is a very heterogeneous region where countries differ widely in size, structure, and politics. Hence they also vary significantly in economic factors and political conditions that shape their choice of M and ER regimes.

#### **4.2. Regional trade blocks and accession to outside blocks**

Like in the European experience, monetary regime choices are strongly determined by trade integration and accession. A strong push toward unilateral trade opening, bilateral trade agreements, regional agreements, and accession to free trade with the US and the EU is observed in LAC since the 1990s. Total trade has increased significantly in most LAC countries during the last two decades. Regional common-market agreements – Mercosur, the Andean Pact, the Central American Common Market, and CARICOM – determine some regional initiatives of macroeconomic coordination and eventual adoption of a common regional currency. However a large gap separates reality from rhetorics in all regional trade agreements, marred by frequent political setbacks and administrative violations of agreements that severely hamper trade integration. In fact, LAC's regional agreements lag behind the level of European trade integration attained by the 1957 Treaty of Rome. This offers a stark contrast to the free-trade agreement NAFTA, which has been highly successful in binding Mexico more closely into the economies of the U.S. and Canada. The prospects for a continental agreement towards a Free Trade Area for the Americas (FTAA) to be reached in 2005 and similar free trade arrangements to be attained

at continental or regional (Mercosur) levels with the EU bring the discussion of currency choice and its costs and benefits to the forefront.

#### **4.3. Costs and Benefits of Giving up National Currencies in LAC**

There are few studies for LAC countries or regions on OCA criteria, micro benefits, and macro costs of unilateral dollarization or adopting a common currency. However some recent work focuses on some OCA criteria for the region and assesses the benefits of sub-regional monetary union and unilateral dollarization.

Ahmed (1999) analyzes the sources of economic fluctuations in LAC's three largest economies – Argentina, Brazil, and Mexico – to assess the implications for their choice of ER regimes. External shocks account only for 20% of output fluctuations and US interest rate shocks have anomalous effects (first expansionary, then contractionary) on Latin American output levels. These findings point against the choice of fixed ERs, MU or unilateral dollarization in these three countries. However real ERs are found to be only weakly responsive to US interest rate and terms-of-trade shocks in the three countries, weakening arguments that favor floats.<sup>10</sup>

As opposed to the findings by Frankel and Rose (1998) and Rose and Engel (2001) for the EU, Calderón et al. (2002) show that the impact of trade integration on business cycle synchronization is much smaller in developing countries in general and, in the case of LAC, is not significantly different from zero.<sup>11</sup> For Caricom countries, Kendall (2000) finds little evidence of exchange rate convergence, confirming the more general results by Rose and Engel (2001) quoted above.

Morandé and Schmidt-Hebbel (2000) assess the pros and cons of unilateral dollarization and joining a MU for Chile. High production and export specialization in commodities and highly idiosyncratic external and domestic shocks explain the negative (or low positive) output correlation between Chile and prospective currency partners in

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<sup>10</sup> These and subsequent findings are subject to the standard limitation that they are based on historical samples under national currencies and unstable domestic policies, reflected in low trade integration and low business cycle correlation. OCA benefits are potentially endogenous to monetary regimes.

<sup>11</sup> This can be rationalized by differences in the pattern of trade. LAC and developing-country trade is relatively more intensive in homogeneous primary goods than by differentiated manufactured goods. Hence trade opening causes more specialization in the former categories, leading to lower cyclical output correlation with trading partners.

Mercosur, the U.S. or the EU. Chile is found to be a less likely candidate for currency union or unilateral dollarization than Argentina, Brazil or Mexico.

#### **4.4. Monetary Union in Mercosur and Nafta**

In discussing the options of a monetary union for Mercosur, Eichengreen (1998) finds that Mercosur members exhibit unusually large real exchange rate volatility, reflecting, *inter alia*, the influence of idiosyncratic macroeconomic shocks. Levy Yeyati and Sturzenegger (2000) find that Mercosur countries fail the tests implied by OCA criteria. Intra-Mercosur trade integration is very low in comparison to the EU, as documented by Belke and Gros (2002), and hence much larger intra-Mercosur exchange-rate variability is required. Mercosur institutions and policies are weaker than those in the EU, making Mercosur more subject to idiosyncratic shocks that require more exchange-rate flexibility. Weak output correlation and nationally segmented labor markets reduce the scope for labor markets to absorb asymmetric shocks that are larger in Mercosur than in Nafta or EMU. Mercosur countries exhibit large differences in fiscal policy, banking strength, prudential financial regulation, and labor market flexibility, exemplified in extremis by Argentina's current crisis. Before achieving significant progress in domestic reform and international coordination in these areas, a common Mercosur currency remains a distant dream.

Recent studies assess the costs and benefits for Canada and Mexico to join the U.S. in a MU (Buitier 1999, Morales 1999, Chriszt 2000). Regarding prerequisites, much progress in financial and labor market integration has to be achieved and the issue of LOLR has to be addressed before adopting a Nafta MU. Even if economic arguments favor such a union, political factors may be the largest remaining hindrance. At present, the will to relinquish monetary sovereignty to the U.S. is not well developed in its two partners and the U.S. does not appear enthusiastic to share its monetary sovereignty. Buitier argues that the difficulty in attaining political accountability by a North American central bank ensures that a Nafta MU is highly unlikely.

#### **4.5. Dollarization**

Substitution of the US dollar for national currencies has a long history in LAC. Currency and asset substitution was a rational response to high domestic inflation, weak banks, and pervasive devaluation fears. De facto dollarization of transactions and asset

holdings exhibits hysteresis and hence is difficult to reverse (Calvo and Végh 1992). Large de facto dollarization is widespread in small and medium-sized LAC economies, for example in Bolivia, Guatemala and Uruguay. In addition, all LAC economies hold large amounts of US dollar-denominated net foreign liabilities, exposing them to significant wealth losses in the wake of currency devaluation. De facto dollarization and large dollar debts often dominate conventional OCA criteria when evaluating official dollarization – as recently demonstrated by El Salvador. Panizza et al. (2000) argue that official dollarization in Central American and Caribbean economies may reduce inflation and financial fragility by reducing the volatility of key relative prices. Edwards (2001), confirming the inflation gain from dollarization, argues against dollarization by providing evidence that dollarized countries grow at significantly lower rates and are not spared from major current account reversals.

#### **4.6. Lessons from EMU and Prospects for Regime Choice in LAC**

The EMU experience offers lessons for prospective MU plans in LAC. First, a sound fiscal policy plays a dominant role among the prerequisites for successful MU. Maastricht and the SGP engineered a reversion from fiscal to monetary dominance in the Eurozone. LAC has accomplished on average significant progress towards fiscal stability during the last decade but many countries remain fiscally fragile – Argentina is just the extreme case of fiscal profligacy and conflict.

Second, EMU is not an example regarding labor market flexibility, as noted above. Neither is LAC, where two models of labor markets are observed. In non-English speaking countries (i.e., most of LAC), labor markets are beset by rigid legislation and rules, modeled on the Continental European example, that contribute to wage rigidity, unemployment, and large informal employment. This stands in stark contrast to small English-speaking countries in the Caribbean, where labor legislation and practices follow the liberal Anglo-American model (IDB 1996, Heckman and Pages 2001).

Third, EMU shows that a sound financial sector is a precondition for efficient financial intermediation (required to reap the micro benefits of a MU) and low likelihood of future banking crises (required to maintain fiscal solvency). This stands in contrast to LAC, where most banking sectors are fragile – beset by large bad debts and exposed to significant

maturity, currency, and credit risks. Moreover, prudential regulation and supervision of banks and capital markets follow different standards in different LAC economies.

Fourth, with much progress in price stabilization – LAC’s average inflation rates have fallen from more than 100% per annum in the 1980s to single-digit levels in recent years – seigniorage is now a negligible source of fiscal revenue in most LAC economies. But this does not mean that the sacrifice of seigniorage when unilaterally dollarizing is uncontroversial in LAC. Few countries – particularly not the larger ones – are willing to give away their seigniorage revenue without compensation from the U.S. or a say in monetary policy – both still unacceptable propositions for the U.S.

This leads to our fifth inference: the difficult politics of MU. EMU is and now and the future a foremost political agreement, of which economic integration and MU are only part of. Europe’s growing willingness to sacrifice national sovereignty – in macroeconomic management, structural policies, and, eventually, politics – puts MU on a very different footing than what LAC is currently aiming at. There is scarce evidence that LAC countries are at present willing to sacrifice sovereignty in economic matters – much less so in politics – even if the net benefits of closer integration were obvious to everybody. Why? For two reasons: the still ongoing task of developing nation states and large country heterogeneity. Some countries are beset by domestic conflicts that require massive efforts in addressing their roots in order to build up or rebuild their nation state. And those countries that have largely accomplished the latter task and have reformed their economies have little incentives to join their weaker neighbors in closer integration and MU.

Finally, a positive lesson emerges from theory and country experience in Europe and LAC. There is no conflict between the long-term strategies that lead to strengthening national currencies and joining a MU. To a large extent, the preconditions for successful national monetary policy under inflation targeting cum floating exchange rate are identical to the prerequisites for joining a MU: lack of fiscal dominance, strong prudential regulation and supervision of financial markets, flexible labor markets, high international factor mobility, large trade integration. This is clearly exemplified by countries in Central Europe – like Poland, the Czech Republic, and Hungary – that are reforming their economies and have adopted inflation targeting to strengthen domestic monetary policy in their transition to EU accession and eventual euro adoption.

## Section 5: Conclusions

The paper started by documenting the worldwide move away from intermediate exchange-rate regimes and largely toward floating exchange rates. This move to the corners can be explained by initial conditions and optimality considerations – both tend to be very different in different countries. In LAC, for instance, unilateral dollarization was adopted because of the result of bad initial macroeconomic conditions (like in Ecuador) or because of longer-term optimality considerations based on OCA criteria (like in El Salvador). At the other extreme, adoption of a floating cum inflation targeting can be the result of an initial crisis situation (as in Brazil) or as a gradual evolution toward more flexibility and monetary policy independence (as in Chile).

Our review of the empirical evidence on OCA criteria for EMU members leads to the unsurprising but strong conclusion that the evidence that benefits of EMU outweigh costs by a relatively large margin although net benefits are not similar for all members. This result may have been influenced by the fact that the majority of the present members of EMU have been in a quasi-MU with Germany long before Stage Three of EMU started due to their fixed exchange rate arrangements.

Our review of three key issues that are crucial in the theory and experience of European economic and monetary union led us to the following conclusions:

- First, while fiscal rules are necessary in EMU, the SGP is sufficient but not necessary.
- Second, it is not so much labor mobility that is important for a smooth functioning of EMU but rather real wage flexibility and structural adjustment.
- Third, no major change of the European institutional regulatory or its supervisory architecture structure from national to supranational "dominance" is in the offing. Yet, this does not jeopardize monetary union, at least for the time being.

Finally, what are the prospects for regional or sub-regional monetary union in LAC? Recent trends confirm even more strongly for LAC than for the rest of the world the two-corner hypothesis, particular the flight to the floating cum inflation-targeting corner. A strong push toward bilateral and multilateral regional trade agreements and trade agreements with the US and the EU have been reached during the last decade and are expected to be signed in the near future. However, with exception of highly successful

NAFTA, the multilateral intra-regional trade agreements have been marred by political setbacks and administrative violations that severely hamper effective trade integration. Some empirical evidence on the costs and benefits of giving up national currencies in LAC show significantly less favorable conditions for LAC countries than for EU nations. Low intra-regional trade, large idiosyncratic shocks, major differences in institutions and policies, and large heterogeneity in development levels point against intra-regional monetary union under current conditions. Dollarization seems to be more feasible for those smaller LAC economies that are highly correlated and integrated with the U.S. and/or are pushed to abandon their national currencies because of unfavorable domestic conditions. However for the majority of medium-sized and large economies, neither intra-regional monetary union nor dollarization appear to dominate their recent decision to strengthen national currencies by adopting a floating exchange rate with inflation targeting. However, in doing so and succeeding to lock in macroeconomic stability and relative price flexibility, the latter countries may be on the best course to start a successful path toward intra-regional monetary union in the long term.



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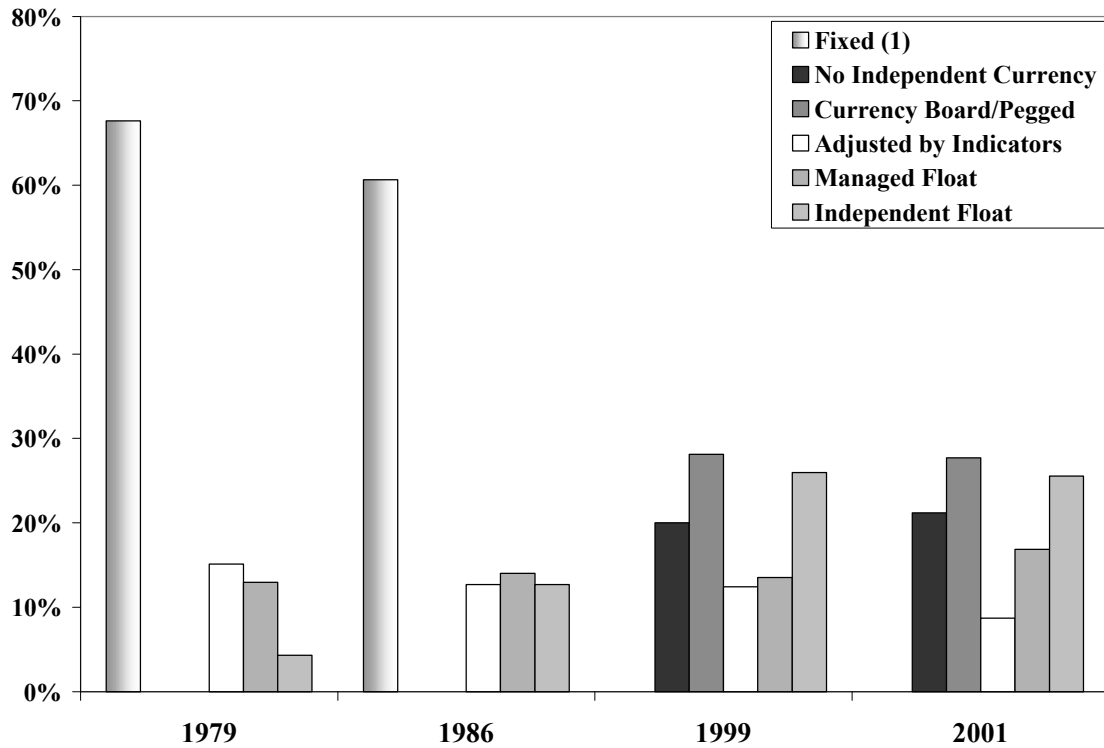
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## APPENDIX

Figure 1

### Country Distribution by Exchange Rate Regimes

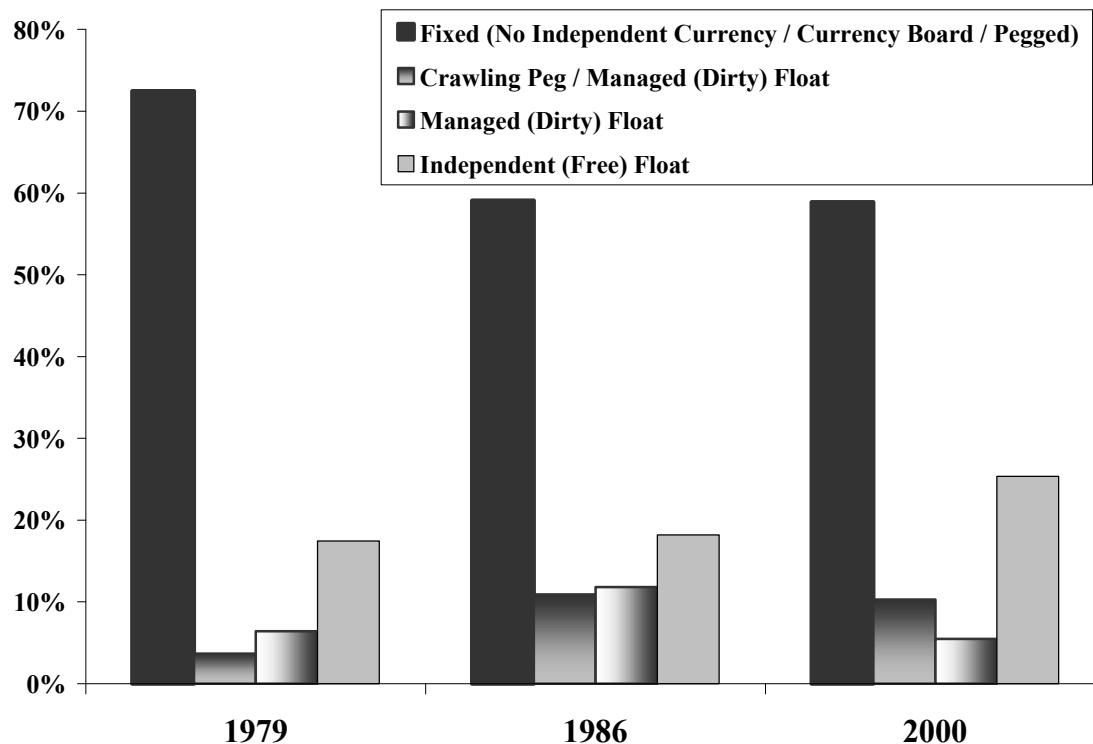
IMF Classification: 1979, 1986, 1999 and 2001



**Source:** Authors' calculations based on the International Monetary Fund's *International Financial Statistics*.

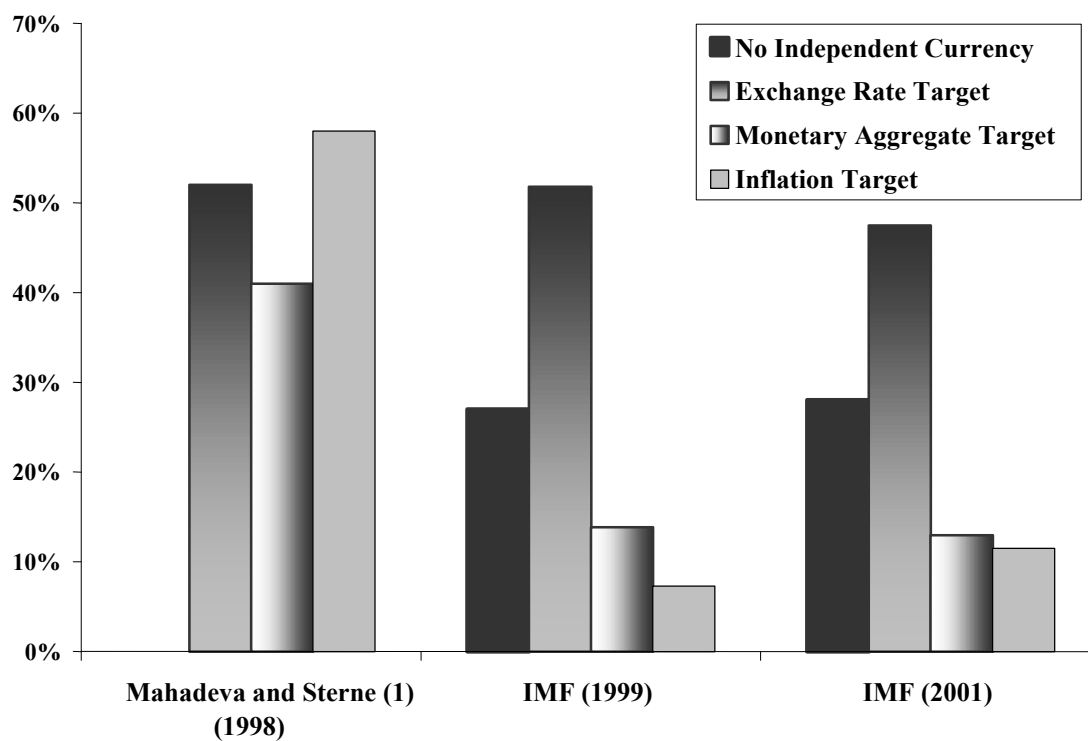
(1): For 1979 and 1986, the "No Independent Currency" and "Currency Board/Pegged" categories were both classified as "Fixed" by the IMF.

**Figure 2**  
**Country Distribution by Exchange Rate Regimes,**  
**Levy-Yeyati and Sturzenegger Classification Based On Cluster Analysis: 1979, 1986**  
**and 2000**



**Source:** Authors' calculations based on Levy Yeyati and Sturzenegger (2002).

**Figure 3**  
**Country Distribution by Monetary Regimes,**  
**IMF (1999 and 2001) and Mahadeva and Sterne (2000) Classification**



**Source:** Authors' calculations based on the International Monetary Fund's *International Financial Statistics* and Mahadeva and Sterne (2000).

(1): Data set only considers countries (or monetary areas) with an independent currency.  
 Sum of percentages exceeds 100% as countries can fit in more than one class.

**Table 1**  
Conditional Adoption of Exchange Rate and Monetary Regimes  
IMF Classification 2001

	<b>No Independent Currency</b>	<b>Currency Board and Pegged Exchange Rate</b>	<b>Exchange Rate Adjusted by Indicators</b>	<b>Managed Float</b>	<b>Independent Float</b>	<i>Total Number of Cases</i>
<b>No</b>	<b>39, 100%, 100%</b>					39
<b>Independent</b>						
<b>Currency</b>		<b>50, 75%, 100%</b>	<b>16, 25%, 100%</b>			66
<b>Exchange</b>						
<b>Rate Target</b>		<b>1, 5%, 2%</b>		<b>3, 17%, 10%</b>	<b>14, 83%, 30%</b>	18
<b>Money</b>			<b>1, 6%, 6%</b>	<b>2, 13%, 6%</b>	<b>13, 81%, 28%</b>	16
<b>Target</b>						
<b>Inflation</b>						
<b>Target</b>						
<b>None/Other</b>				<b>26, 58%, 84%</b>	<b>20, 42%, 42%</b>	48
<i>Total Number of Countries</i>	39	51	17	31	47	

**Source:** Authors' calculations based on the International Monetary Fund's *International Financial Statistics*.

Note: There are 185 countries and 187 cases for the monetary regimes, and 185 countries (cases) for the exchange rate regimes.

In bold: number of cases. First percentage: likelihood of exchange rate regime conditional on corresponding monetary regime. Second percentage: likelihood of monetary regime conditional on corresponding exchange rate regime.



**Table 3**  
**Exchange Rate and Monetary Regimes in Latin America and the Caribbean,**  
**1994 and 2002**

	No Independent Currency	Currency Board	Peg	Adjustable Peg/ Exchange Rate Band	Managed Float	Free Float
<b>1994</b>						
No Independent Currency	Panama					
Exchange Rate Target		Argentina	Venezuela	Bolivia, Brazil Chile, Ecuador Dominican Rep. Guatemala Mexico Nicaragua Uruguay		
Monetary Aggregates Target				Bolivia Colombia Costa Rica	Peru	
Inflation Target				Chile		
None/Other Mon Regime						
<b>2002</b>						
No Independent Currency	Ecuador El Salvador Panama					
Exchange Rate Target				Costa Rica Honduras Nicaragua Uruguay		
Monetary Aggregates Target				Bolivia	Guatemala Jamaica	
Inflation Target					Brazil Chile Colombia Mexico Peru	
None/Other Monetary Regime					Argentina Dominican R. Paraguay Venezuela	

Source: Mishkin and Savastano (2000), Mahadeva and Sterne (2000), and central banks.

Note: each country is classified under its dominant nominal anchor.

**Table 4**  
**Benefits and Costs of a Monetary Union**  
**Empirical estimates for EMU**

<b>Benefits and Costs</b>	<b>Author(s)</b>	<b>Effect in % of GDP</b>	<b>Notes</b>
<b><u>BENEFITS</u></b>			
<b><u>Microeconomic efficiency</u></b>			
1. Savings on transaction cost			
<ul style="list-style-type: none"> <li>• Inter-bank transactions</li> <li>• Foreign exchange transactions</li> </ul>	(1) p. 21	+ 0.5 % p.a.	
2. Savings from enhanced competition and growth effects due to membership in the MU	(9)	Permanent positive growth effect	
3. Effect of enhanced financial market integration	(4) p. 41	+ 0.5 - 0.7 % p.a.	Ref. to de Gregorio (1999)
4. Reduced real exchange rate volatility	(6) p. 56  (11), (12) (15)		Increase in volatility only has a temporary effect on trade variables.  Being a member of a CU reduces st. dev. of RER by 2.5-6.0%
5. Gains from enhanced international role of euro	(2), (3)	+ 0.4 % p.a.	
<b><u>Macroeconomic stability</u></b>			
1. Reduced output and inflation variability		> 0	Due to aggregation effects
2. Countries with closer trade linkages exhibit highly correlated business cycles. Being a member of a currency union raises international business cycle correlation by 0.1.	(11), (12), (13), (14)  (15)		Empirical studies for the EU
<b><u>COSTS</u></b>			
1. Loss of policy instruments	(10)	Generally low	Some reduction of synchronization of output fluctuations possible
2. Cost of asymmetric shocks	(10)	Negligible for most EU members	For some (B, SF, I, F, E) some SR effects of monetary policy

3. Higher real exchange rate persistence	(15)		Real exchange rates adjust more slowly to shocks in members of currency unions
4. Loss of seigniorage	(1) p. 122 and own calc. Based on (7, 8)	Negligible <sup>12</sup>	
5. Potential for political tensions	(16)		According to (16) even civil war not excluded.

Notes:

- (1) European Commission (1990).
- (2) Portes, Richard and Rey, Hélène (1998).
- (3) Portes, Richard (2000).
- (4) Heinemann, Friedrich and Jopp, Mathias, (2002).
- (5) De Gregorio, José (1999).
- (6) Sekkat, Khalid (1998).
- (7) Eduard Hochreiter, Riccardo Rovelli and Georg Winckler (1996).
- (8) Eduard Hochreiter and Riccardo Rovelli (2001).
- (9) Crespo-Cuaresma, Jesús, Dimitz, Marie Antoinette and Ritzberger-Grünwald, Doris(2002)
- (10) Schubert, Helene and Wehinger, Gert (1998).
- (11) Frankel and Rose (1997)
- (12) Frankel and Rose (1998)
- (13) Fatas (1997)
- (14) Clark and van Wincoop (2001)
- (15) Rose and Engel (2001)
- (16) Feldstein (1997, 1998)

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<sup>12</sup> Assuming countries' inflation rates converged already before MU, single market in operation and unified (remunerated or non-remunerated reserve requirements). Under these conditions SE loss is dependent on difference between capital share in common central bank and the regions' relative bank note circulation.

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