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MACROECONOMIC STABILITY AND CURRENCY REGIMES. LESSONS FROM EUROPE FOR LATIN AMERICA

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Abstract

The European Monetary System (EMS) was established in Europe in 1979 and has been working until 1998 through the fixed (stable but adjustable) parities of the exchange rate mechanism (ERM). The most widely shared definition of this agreement is that a consensus was reached in Europe to get rid of the competitive devaluation's of the seventies and to switch to fixed exchange rates as an "engine for disinflation", in order to create an area which could benefit from the "public good" of monetary stability.

Key words: macroeconomic stability, European Monetary System, exchange rate mechanism, latin american currency crises.

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Introduction

The European Monetary System (EMS) was established in Europe in 1979 and has been working until 1998 through the fixed (stable but adjustable) parities of the exchange rate mechanism (ERM). The most widely shared definition of this agreement is that a consensus was reached in Europe to get rid of the competitive devaluation's of the seventies and to switch to fixed exchange rates as an "engine for disinflation", in order to create an area which could benefit from the "public good" of monetary stability.

The distinction is usually made among a first phase of the EMS (1979-1986), where wide inflation differentials were reduced through frequent realignments, a second phase of stable exchange rates (1987-1992) and, after the 1992-1993 crises, a third phase (1993-1998) of formally fixed but actually managed parities, with extremely large bands, allowing 15% up and down fluctuations. During this final period, monetary and fiscal policies oriented to foster convergence to the Maastricht Treaty criteria[1] were successfully implemented. Eleven out of the 15 EU member-states took part in the launch of the Euro on January 1, 1999 and two years later also Greece joined the EMU; on January 1, 2002, these twelve countries introduced the Euro. It is also common to distinguish between a core EMS[2] and a peripheral EMS.[3] The assumption is that the latter –that is, the high-

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[1] The Maastricht Treaty includes an agreement aimed at paving the way to the European Monetary Unification through the strengthening of monetary cooperation among central banks and the compliance with four conditions at the moment of the admission in the union: 1) a country's inflation rate cannot be higher than 1.5% point of the average of the three lowest inflation rates in the EMS; 2) a country's long-term interest rate cannot be higher than 2% with respect to the ave-rage in the three low-inflation countries; 3) a country's budget deficit/GDP ratio cannot exceed 3%; 4) a country's public debt/GDP ratio cannot exceed 60%; 5) during the three years preceeding the entrance into the union, the country's currency has to belong to the ERM and cannot be devaluated. However, an escape clause was also devised for the fourth criterion: if a country's debt/GDP ratio still exceeds 60%, the country should prove to be diminishing it sufficiently, and approaching the reference value at a satisfactory pace.

[2] The core EMS is composed by: Germany, that soon became the leader country of the EMS; the Benelux countries and Denmark, the financial markets of which were already very much integrated with the German one; and also France, after the high inflation of the first eighties was over.

[3] The Peripheral EMS is composed by: Italy, Spain, United Kingdom, Ireland, Portugal and Greece. However, it is worth noting that Spain, Portugal and Greece joined the system during the eighties while United Kingdom joined only in 1990.

inflation and weak-currency countries at the EMS inception– were led to consider the DM the "nominal anchor" of the exchange rate systemand to peg the DM in order to follow the Bundesbank's monetary policy and take advantage of the Bundesbank's high anti-inflationary reputation by progressively renouncing to monetary policy autonomy. The peripheral EMS' central banks have been trying to curb the cost of disinflation in terms of output and employment losses. The main strategy was to strengthen the credibility of their commitment to pursue low inflation and so to change the inflation expecta-tions of financial operators.

The negative aspect of the DM pegging by the peripheral EMS was the asymmetric functioning of the system: the determination of the money stock for the whole area was in the hands of a sole Central Bank, the Bundesbank, the Governor of which was however taking into account only the macroeconomic conditions prevailing in his own country.

More or less stringent ways to peg to a leader country's nominal anchor can be devised: *i*) an agreement to abide by fixed exchange rates, where the independent monetary policy by the nominal anchor solves the (n – 1) problem; *ii*) unilateral or common pegging with respect to its hard currency; *iii*) a currency board; *iv*) the indexation of public debt to the hard currency; *v*) the adoption of the currency of the leader country of the economic area of belonging. Latin America countries presently use the last four currency arrangements (sometimes with the help of forms of capital controls) but the first one. Yet, fixed exchange rates was the option chosen in 1979 by the countries of the EMS. Indeed, the great divide between Europe and Latin America is that in these latter countries the choice of the currency regime cannot take the shape of the European "one market, one money" –a fixed exchange rate agreement backing a wider economic integration project. Even though it is questionable whether the EMU countries fulfil the optimality conditions for a "currency area", the leap to the Euro seems to be successful. In Latin America, the institutional scenario is very different. By comparison with the European scenario, the aim of this paper is to investigate the main obstacles– the U.S. leadership of the main trade agreement of the area (NAFTA), full dollarization or double circulation in some small countries of Central America, and the conditioning influence of the U. S. dollar, administration and multinationals on the Cono Sur trade accord (Mercosur) –impeding to think of a common Latin American currency in the near future.

The second section of this paper, by comparing two alternative interpretations of the slow disinflation process of the EMS countries, analyses the functioning of the European agreement of fixed exchange rates. The third section evaluates the 1992-1993 EMS collapse and stresses striking similarities of the LA currency crises –Chile (1982), Mexico (1994), Brazil (1998), Argentina (2001-2)– with the European experience. The fourth section criticises the monetary and fiscal policy mix that has been putting, both during the EMS period and the convergence process to the Euro, a deflationary bias on the European macroeconomic performance. The fifth section maintains that most of the frequent episodes of macroeconomic volatility in LA countries could have been originated, similarly to the EMS experience, by problems related to fixed exchange rates. The sixth section concludes with a policy suggestion. For the exchange rate regime with the US dollar not to cause macroeconomic instability, a cooperative strategy should be pursued by the Latin American countries as for monetary and fiscal policies.

The "Inflation bias" problem and the assessment of the EMS functioning

Two analytical frameworks will be used to explain two decades of "high inflation" in Europe and the subsequent difficult disinflation process. The first relates to the "time inconsistency" model of monetary policy.[4] The assumption is that the macroeconomic equilibrium depends on the fundamentals underlying the Phillips curve, on inflation expectations related to the monetary authorities' reputation, and on the inflation-unemployment trade-off pursued by national monetary authorities. The "new classical" interpretation is based on the a priori assumption that "high

[4] See Barro-Gordon [1983].

inflation" has to be traced back to the government authorities' tenet that the "natural" unemployment rate (Un) corresponding to the vertical long-term Phillips curve is stuck at a too high level due to a series of labour market distortions. Therefore, the government authorities are willing to bring the "natural" unemployment back to its previous lower level, as expressed by the following equation:

$$U^* = (1 - \delta) \qquad [1]$$

where U* is the target for the unemployment rate and δ (where $0 < \delta < 1$) is the intensity of the desire of lower unemployment by manipulating the macroeconomy by means of monetary policy. More precisely, a value different from one of the parameter δ reflects the monetary authorities' expectation the "natural" unemployment rate has to be decreased to the level corresponding to the efficient resources' allocation by means of "active" policies. Let us now introduce a Phillips Curve:

$$U = Un - \alpha (\pi - \pi e) \qquad [2]$$

where parameter α represents the unemployment responsiveness to a divergence between actual and expected inflation. The parameter α expresses the incentive to make a "surprise inflation" in order to raise the output and employment levels above their "natural" levels. The "time inconsistency" problem applies because the Central bank is assumed to act after wage contracts have been signed. The equation indicates that the higher α, the flatter the curve and the wider the responsiveness of the unemployment rate to an "unannounced" money growth expansion.

Let us assume that a loss function in quadratic form has been chosen by the authorities:

$$L = [\beta (\pi - \pi^*)^2 + (U - U^*)^2] \qquad [3]$$

where π^* is the target for the inflation rate and β is the parameter indicating the "inflation aversion", on which the credibility of monetary policy depends. By substituting equations [1] and [2] in equation [3], and putting equal to zero the target for the inflation rate, the social loss function becomes:

$$L = \beta \pi^2 + [\delta Un \alpha (\pi - \pi e)^2] \qquad [4]$$

Under the constraint that agents have a perfect foresight of the inflation rate ($\pi = \pi e$), the monetary authorities' minimisation of the social loss function (equation 4), after some rearrangements, yields the following rational expectation solution:

$$\pi = \alpha (\delta Un)/\beta \qquad [5]$$

Therefore, the equilibrium inflation rate positively depends on both parameters α (the higher α, the flatter the Phillips curve and the greater the incentive for a "surprise" inflation) and α (the higher the divergence of the unemployment target from its "natural level", the higher the equilibrium inflation rate) and negatively depends on parameter β (the degree of "inflation aversion", fostering the decrease in the inflation rate).

The second analytical framework deals with the incentive to monetisation stemming from high public deficits and debts. The government budget constraint, in case the monetary financing of deficits is excluded due to the anti-inflationary commitment, is as follows: $G - T + rB = dB/dt$, where $(G - T)$ is the "primary deficit" and rB the "secondary deficit" (the amount of the interest (r) payments times the stock of public debt (B)). The overall public deficit is then matched by bond-issuing (dB/dt). It can be easily shown that the accumulation of high public debts positively depends on the level of the public deficit and on the difference between the real interest rate and the growth rate of the economy, as a proportion of the public debt/GDP ratio.[5] The stock of debt as a ratio of GDP is $b = B/Y$, where Y is the GDP. Given that $B' = b' Y + b Y'$ (denoting derivatives with the apostrophe), and with ε as the GDP growth rate, after some algebraic computations we obtain:

[5] I draw on De Grauwe [1997:143].

$$b' = (G/Y - T/Y) + (r - \varepsilon) \qquad [6]$$

If we focus only on the inflation component of the GDP growth rate, we can write:

$$b' = G/Y - T/Y + (r - \pi)b \qquad [7]$$

By applying the Fisher equation: $r = \gamma + \pi e$, where γ is the real interest rate, we have:

$$b' = G/Y - T/Y + (\gamma + \pi e - \pi)b \qquad [8]$$

The credibility by which during a disinflation process the monetary and fiscal authorities' commitment to disinflation is burdened, will be now applied to the EMS functioning. Since the discretionary use of monetary policy feeds inflation expectations, high inflation spreads over in the economy. An advantage of switching from a flexible to a fixed exchange rate with a currency as a nominal anchor is that its central bank has a high anti-inflationary reputation. By lowering inflation expectations, it helps in curbing an inflationary process. However, when a country fixes its exchange rate with a nominal anchor, the credibility problem of both the monetary and the fiscal authorities are to be tackled. First, the lower is the anti-inflationary reputation of a central bank using a hard currency as a nominal anchor, the tighter has to be its monetary policy in order to reduce stubborn inflation expectations, and thus the higher will be the costs in terms of lower output and higher unemployment. Second, the tighter the monetary policy, the more the interest rate increases in the Peripheral country, the more the "secondary deficit"aggravates the overall deficit, the less credible is the fiscal authorities' commitment to reduce the public debt, the higher are fears of debt monetisation.

Although the frequent realignments of the first period (1979-1986) of the EMS did not fully compensate for the inflation differentials with Germany,[6] a full-fledged fixed exchange rate system was operating in Europe only in 1987-1992, when the bilateral parities inside the ERM did not change at all. In 1990 the capital markets' liberalisation was accomplished in all the EMS countries, and in 1992 the free circulation of labour and goods was completed too. By monitoring the consistency of the peripheral EMS' monetary and fiscal stances with their commitment to defend fixed parity with the DM, financial operators in international markets were more and more in the position to evaluate the degree of credibility of national authorities and influence the EMS functioning.

To analyse the disinflation process, let us consider two different versions of equation 5. I assume a common value of the "natural" rate of unemployment (Un), but two different values for each parameter α, β and δ, fitting with a peripheral EMS (say, I for Italy) and a core EMS (say, G for Germany), respectively. The following couple of equation are then obtained:

$$\pi_I = \alpha (\delta_I \, Un)/\beta_I \qquad [5^*]$$

$$\pi_G = \alpha (\delta_G \, Un)/\beta_G \qquad [5^{**}]$$

The disinflation process has been encountering two problems, that can be analysed by taking the difference between equation [5*] and equation [5**].

The first one is the sluggish decrease of inflation rates. By assuming, for the sake of simplicity, a common value of the parameter á expressing the transmission mechanism across the EMS countries, the positive value of the inflation differential $(\pi_I - \pi_G)$ is explained by the following disequalities. The disequality $\alpha_I > \alpha_G$, reflecting the idea of a "too high" level of the unemployment rate is more strongly held in Italy than in Germany. The disequality $\beta_I < \beta_G$, reflecting the idea that the "inflation aversion" was lower in the Italian authorities' loss function than in the German authorities' one.

The second is that public deficits and debts were expanding during the EMS functioning. A country with a record of "undisciplined" monetary policy, leading to high inflation and competitive devaluations –as most of the peripheral EMS countries had at the inception of the EMS– is bound to

[6] See Farina [1993: 449-458].

suffer from high interest rates and a rising public debt due to a high risk premium (see equation 8). Hence, the credibility of monetary policy also depended on the governments' capacity to put under control the public deficit /GDP ratio and an expansionary path of the public debt/GDP ratio.

As for the first problem, the "new classical" interpretation of the EMS functioning maintains that the sluggish reduction in the inflation rates is entirely to be traced back to static inflation expectations held in international capital markets, reflected by the wide interest differentials with Germany prevailing in the peripheral EMS countries throughout the EMS period. The idea is that in these latter countries the central bank's alleged objective to reduce the "natural" unemployment rate was augmenting the "devaluation risk premium" inside the interest rate of peripheral EMS' financial assets.

As for the second problem, the "new classical" interpretation is that interest rates were rising because of the excess demand of funds to finance high public deficits and the "default risk premium" asked by financial operators to hold increasing quantities of Treasury bonds in their portfolios. The tenet is that during the EMS period, mostly in the peripheral EMS, fiscal authorities created the unsustainable public deficit/GDP ratio by not complying with the "tax smoothing" doctrine.[7] That is, the peripheral EMS countries should be taken as responsible for having failed to annul –in periods of recovery of the business cycle– the debt created to cope with the output gap caused by a previous recession, thus causing the debt accumulation.

According to this view, financial markets are afraid that the peripheral EMS' fiscal authorities could find themselves in the position to force the central bank to engineer a large monetary expansion. This acceleration in money creation would lead to a substantial fall in the public debt in real terms and the loss of reputation stemming from the alternative more radical decision to renege on the debt would be avoided. Whatever was the value of the parameter expressing the transmission mechanism large (a flat Phillips curve) or small (a steep Phillips curve) the unemployment responsiveness to a "surprise inflation" –the anti-inflationary commitment by the monetary authorities was not considered credible. The failure by the Peripheral EMS' authorities to convince financial operators of their commitment to keep both the monetary and fiscal stances on the track compatible with fixed exchange rates reflects in a higher "default risk" that widens the interest differentials with Germany.

Let us assess the coherence of the "new classical" view of the first problem of the EMS functioning, that focuses on the "time inconsistency" problem faced by monetary authorities. The assumption of a higher value attributed by peripheral EMS' authorities to parameter ä has to be questioned. The real wage rigidity was at the time prevailing in the EMS countries.[8] After an expansionary monetary manouvre by the peripheral EMS' monetary authorities, large employment increase could not be expected. The thesis that the "time inconsistency" problem was continuously endangering the EMS functioning, being an incentive to renege on the commitment to tight money creation and engineer a "surprise inflation" aimed at rasing the "natural" rate of unemployment, seems a too extreme interpretation. The "time inconsistency" problem then cannot bear the whole burden of explaining the weakness of the European system of fixed exchange rates, but may be part of a more general explanation.

In the second half of the eighties, following the agreement on the completion of the internal market, a stronger commitment to abide by the ERM bilateral parities was reached. In order to keep fixed the bilateral parity with the DM, the Peripheral EMS were obliged to more tightly gear their monetary stances on the Bundesbank's money growth. However, the deflationary process had to take place along the same short-run Phillips curve because agents were unwilling to downward correct their inflation expectations. The consequence was that the peripheral EMS

[7] See the simulations computed in Buti *et al*. [1997].

[8] "Nominal wage rigidity is a good deal lower in the EU than in the US (...) about 1/8 of the US value" (Lockwood B., Miller M. and Zhang L. [1996: 253-255].

declining, but still positive, inflation differentials with Germany were transmitting enlarging price differentials leading to the DM real depreciation. The consequent real appreciation of their currencies did not find any nominal accommodation, because the commitment to switch to stable bilateral parities gained compliance in the 1987-1992 period.

A competitiveness loss followed in the peripheral EMS, with huge increases in current account deficits. Throughout the first two phases of the EMS, data show opposite trends of the German and other large EMS economies' current account over GDP ratios. The trade imbalances created by the declining competitiveness did not anyway translate to a balance of payments deficits. In fact, the peripheral EMS' current account deficits were in the short run compensated by capital inflows attracted by interest rates higher than the expected variation in the exchange rate with Germany inside the band.[9] However, in the absence of a structural adjustment (such as a wage dynamics slower than the German one allowing the level of inflation rates to fall to the German one), these short-term capital inflows were a very fragile remedy to the trade deficits. Indeed, the real appreciation of the exchange rate was putting the peripheral EMS in danger of a sudden shift in the financial markets' expectations about the credibility of their commitment to the strategy of DM pegging. Since trade within the EMS was a crucial factor determining the activity level, competitiveness undoubtedly represented a very important indicator when financial markets evaluated the credibility of fixed exchange rate systems. In many peripheral EMS, a higher "devaluation risk premium" was widening the interest differential with Germany. This was the signal that financial operators and institutions were aware that the higher unemployment and large trade deficits would have required a reduction in wages and prices. Real wage rigidity was threatening the credibility of exchange rates. Data showing that in most peripheral EMS' throughout the eighties a positive value of the difference $(r - \varepsilon)$ could reflect the effects of tight money creation and a high "risk premiums" on the financing of investment. The growth rate was severely depressed by high interest rates, thus provoking a long period of insufficient labour demand which depresses growth.[10] This growing macroeconomic instability was the signal that financial operators and institutions were aware that large trade deficits and the rise in unemployment would have required a reduction in wages and prices. But real wages were rigid, so that the remaining adjustment instrument was devaluation and the credibility of fixed exchange rates was in danger.

Therefore, to explain the persistence of inflation expectations, a different perspective from the "new classical" view seems more sensible. The pessimistic expectations on the anti-inflationary commitment are likely to be due to the perception of the fragility of the commitment to fixed exchange rates, due to the enlarging divergence between peripheral EMS' unit labour costs and those of the core EMS. The confidence in this commitment was declining because of the rising unemployment rates in presence of a slow decrease in inflation rates. Financial markets started expectating a "surprise inflation" also because the unemployment rise was impinging on the expansion of public expenditures. The lack of confidence by the financial operators in the peripheral EMS' monetary authorities then derived from a credibility problem concerning both the monetary policy's "time inconsistency" and fixed exchange rates among the Core and the Peripheral EMS .

As for the second problem of the EMS functioning, the accumulation of public deficits and debts, the "new classical" interpretation based on the expectations of default leading to debt monetisation has to be contended. Econometric estimates show that the reason for the accumulation of public debt in peripheral EMS should not be found in the lack of compliance with "tax smoothing".[11] By observing equation 8, it is easy to check that expected inflation rates continuously higher than the ex post inflation ($\pi e > \pi$) can represent a significant determinant of the rise of the public debt / GDP ratios. The first derivative of the public debt / GDP ratio (b') has been rising under the double effect of high interest rates lowering

[9] See Farina [2000: 12-15].

[10] See Fitoussi [1999].

[11] See Farina and Tamborini [2001: 39-42].

the growth rate at the denominator and putting an upward tendency to the stock of public debt at the numerator. Then, the main determinant of the rise of the stock of public debt was not the expansion of the "primary deficits" but the bond issuing to finance the "secondary deficit" (rB), that was burdened by rising nominal interest rates. On the other hand, the fiscal authorities' low credibility was increasing the "default risk premium". Expectations that fiscal authorities would have made recourse to debt monetisation also undermined the peripheral EMS' monetary policy. In the second half of the eighties, most peripheral EMS were unable to impede the increasing interest payments to determine a self-aggravating trend in the stock of public debt.

The sustainability of a fixed exchange rate with a nominal anchor: the European and the Latin American cases

In 1989-1990, an exogenous shock materialised in the EMS under the shapes of the German political unification process. Inflationary tensions suddenly arose in Germany both as a consequence of rapidly increasing public expenditures stemming from the restructuring of the backward East-Germany industrial sectors and the extension of the wage contracts to Eastern workers. To the inflationary expansion in Germany was corresponding an output recession in the other EMS countries triggered by the slowdown of the U.S. economy. Since the Bundesbank's monetary stance was geared to a sharp contraction in order to fight inflation, a deflationary bias was transmitted to the other EMS countries just during a period of wide output gaps that would have required a drift towards more relaxed monetary conditions.

A devaluation would have boosted income and employment by increasing exports till a nominal wage rise compensates for the increase in imported inflation. Even if renouncing to monetary policy autonomy is an effective incentive for orienting monetary and fiscal policies to the realisation of a deflationary process, the more the central bank of the core EMS country providing the nominal anchor tightens money creation, the more the real appreciation of the currency caused by the price differential negatively affects the current account in peripheral EMS. As said above, the limit of the "new classical" interpretation of the EMS functioning is the idea that macroeconomic instability just consist in the low credibility of monetary and fiscal policies, causing the stubbornness of inflation expectations. The fact is that surrendering monetary policy autonomy to the hard currency in Europe had reduced the peripheral EMS' inflation bias caused by the perverse incentive that "time inconsistency" inserts in the authorities' behaviour, but the real appreciation had yet to be annulled.[12]

The obvious remedy to the growing inconsistency between the Bundesbank's monetary policy, which was oriented to tame inflation domestically, and the other Central banks' need to stabilise a declining output, would have been a dm nominal appreciation *vis-à-vis* the other EMS currencies. The EMS countries failed to grasp how unavoidable was the correction of the bilateral parities and kept neglecting the accumulation of trade imbalances due to the real appreciation put forward by the deterioration in the peripheral EMS' fundamentals. Why the EMS countries did not take action to prevent that the nominal exchange rate adjustment were imposed by market forces, that is by international capital markets, stems from at least two reasons. First, the France government was unwilling to pay for the consequences of the German unification and accept a devaluation with respect to the DM of the French Franc and the other ERM currencies, just at a moment in which France and no more Germany was the best performer as for low inflation. Second, governments of EMS countries were not aware that the financial markets' expectations were increasingly oriented to considering the significant unemployment rise in Europe as a signal that pressures would have soon mounted in many peripheral EMS (namely, Italy, United Kingdom, Spain and Portugal) against the commitment to defend the fixed exchange rates and in favour of activating a "surprise inflation" aimed at boosting output.

The German unification shock worsened macroeconomic instability already existing in most peripheral EMS. Once

[12] "(A) decrease in inflation is not the end of the story. Just on the contrary, it is the beginning of a new era. What surprises me is that governments are not prepared to all this: inflation is the first enemy, and who cares of appreciation" (See Dornbusch [2001: 168]).

the deterioration of competitiveness triggered by the real appreciation *vis-à-vis* the DM became apparent, it was commonplace to think that peripheral EMS' central banks could have been forced to relax monetary policy and sustain demand, even at the cost of inflationary tensions eventually leading to a devaluation and new bilateral parities with the DM. Provided that a coordinated devaluation by the peripheral EMS would have implemented, the credibility of the European fixed exchange rate agreement would have still been recoverable. Yet, this multilateral agreement did not materialise. Then, in the summer of 1992 financial operators started speculating against the currencies of the countries with the worst values of current account and/or public deficit and debt as a percentage of GDP. Speculative attacks on the Italian lira and the British pound forced, in September 1992, these two currencies to quit the EMS.

In 1993, a new attack, which was aiming at the devaluation of the currency in a low inflation country such as France convinced the EMS governments to abandon the convergence strategy based on fixed exchange rates, and maintain the system alive but with bands so wide than financial markets would not have any chance to speculate against. The countries the currency of which was depreciating after the 1992-1993 EMS crises experienced a remarkable recovery in the current accounts, with a shift in some countries (mainly, Italy) to a substantial surplus. Germany, on the other hand, suffered from negative values of the current account due to the restructuring process. This strong correlation between the trade flows of the core and peripheral Europe was the consequence of the presence of inflation differentials with Germany leading to DM real depreciation and the peripheral EMS currencies' real appreciation.[13]

The thesis of currency crises as the unavoidable outcome of speculative attacks,[14] due to the intrinsic instability of financial markets generating self-fulfilling expectations, seems insufficient in understanding the EMS September 1992 crisis. The alternative thesis has been put forward that the crisis was the unavoidable outcome of the lack of co-operation among the ERM members.[15] A co-ordinated response consisting of small devaluations by all the peripheral EMS with respect to the nominal anchor would probably have been sufficient to validate market expectations. The following fall in the interest rate would have then helped in overcoming the crisis and save the EMS. The reason why this co-operative devaluation scheme was not organised by the peripheral EMS is traced back to a co-ordination failure, whereby there was no common possible realignment *vis-à-vis* the DM that could distribute benefits and costs across the devaluating countries in such an even way to be endorsable by all.[16]

Similarities between the causal relationship that provoked the 1992-1993 EMS collapse and LA currency crises –Chile (1982), Mexico (1994), Brazil (1998), Argentina (2001-2002)– are striking. At the end of the eighties, the lack of a nominal adjustment of inflation differentials was causing in many peripheral EMS countries the real appreciation of the currency. Along with the deterioration of the current account, the public deficit was increasing as a percentage of the GDP due to the tendency to heavily rely on the fiscal expansion to cope with negative shocks. Pairwise, the strategy of switching from flexible to fixed exchange rates with the U.S. dollar was followed by Chile, by Mexico (also in alternation with U.S. dollar pegging), by Brazil with a currency change and a wide indexation of the economy, by Argentina with a currency board.[17] Not surprisingly, the most important similarity with the EMS was real appreciation. In presence of a stable (or slightly depreciating) nominal exchange rate with the U.S. dollar, real wage rigidity has been impeding the real depreciation of the currency. Provided that wages and prices would have turned flexible, a devaluation of the currency recovers the trade imbalances and alleviates the wide indebtedness of both the private and public sectors. Once market expectations came to the conclusion that disinflation was pursued just by relying on the fixity of the exchange rate with the U.S. dollar, in LA countries the currency crisis became unavoidable.

[13] See Farina [2001: 284-287].
[14] See Obstfeld [1986].
[15] See Buiter, Corsetti and Pesenti [1998].
[16] *Ibidem*, p. 163-175.
[17] See Dornbusch [2000: 163-213].

To make the LA countries' various linkages with the U.S. dollar similar to the EMS functioning is the asymmetry embedded in all currency regimes relying on a nominal anchor to foster macroeconomic stability. In the EMS, the determination of the money stock for the whole area was in the hands of a sole Central bank, the Bundesbank, the Governor of which was however taking into account only the macroeconomic conditions prevailing in his country. In the LA currency regimes just the same happens due to the "monetary dominance" of the Fed. Yet, differently from the EMS, speculative attacks are much more difficult to counteract. A common reason for the weakness of the currency of any LA country is in the lack of any "safety net" in these currency regimes. The solution of which would have prevented the EMS collapse –a co-ordinated devaluation by the peripheral EMS– is not available to a LA country in case of a currency crisis. In all types of currency regimes with the U.S. dollar as a nominal anchor to import the Federal Reserve reputation, not only the exchange rate risk is not eliminated but any crisis is much more expensive.

Therefore, despite the common origin in the volatility of the nominal anchor, a first lesson to be drawn from the previous analysis of the EMS functioning is that the re-current LA currency crises are in principle much more difficult to handle than the EMS 1992-1993 crises. In Latin America, the nominal anchor is utilised by unilateral pegging or currency board. The various currency regimes with a link to the U.S. dollar lack a multilateral agreement among the LA countries on a coordinated fixing of exchange rates. Furthermore, no agreement between any LA country and the U.S. has been signed. The LA countries' attempt to stabilise their currencies by the link to a hard currency is then dangerously exposed to variations in the value of the U.S. dollar and/or in the U.S. business cycle. Macro-economic instability fueled by the U.S. dollar differently transmits across the LA nations, depending on how tight is the country's dependency from the U.S. dollar and/or economy and how strong are its economic ties with the other LA ones. Differently from multilateral –although asymmetric– exchange rate agreements such as the EMS, "unilateral" exchange rate regimes such as the Latin American ones cannot be conducive to macroeconomic stability.

Monetary and Fiscal Policies under the European Monetary Union

The institutional setting devised for the European Monetary Union consists of a centralised monetary policy and decentralised (i.e. national) fiscal policies. The European Central Bank (ECB) has been assigned the task to conduct monetary policy, and cope with symmetric shocks by pointing to monetary stability as the sole objective, while the national governments should use fiscal policy for counteracting asymmetric shocks.

The New Classical Economics has been very influential in creating the intellectual climate from which the asymmetric set-up of a centralised monetary policy and decentralised fiscal policies has been conceived. The rationale underlying the monetary dominance view is "policy ineffectiveness", whereby it is illusory to engineer a public deficit aimed at sustaining demand, since the "natural" levels of output and employment cannot be manipulated by "active" policies. The doctrine of central bank's credibility, put forward by the "new classical" approach to the monetary-fiscal policy mix, provides the theoretical basis on which –during the two decades of the EMS fixed exchanged rates– the central banks progressively converged on a restrictive, or at least non-accommodating, monetary policy stance. In the new monetary-union regime, this theoretical background has played a crucial part in identifying the ECB's full independence from national fiscal authorities as a means to enforce credibility. The interaction between the monetary authority and each national fiscal authority has been sketched as a "Chicken Game". The hypothesis is that both policy authorities have an incentive to co-ordinate themselves, but there is a conflict of interest. In fact it is *assumed a priori* that i) governments would prefer an expansionary fiscal stance, and ii) co-ordination of the EPAS on expansionary policies yields a lower social pay-off than does co-ordination oriented to restriction.

Table 1
Fiscal Policy

		Restriction	*Expansion*
Central Bank	Restriction	4, 2	– 1, –1
	Expansion	0, 0	1, 3

In table 1,[18] the Pareto-optimal equilibrium between the central bank and each of the FAs consists in the restriction/restriction Nash equilibrium. On the basis of the above mentioned hypotheses the 'monetary dominance' Nash equilibrium – common restriction, where the monetary authorities have the maximum pay-off –is presented as 'virtuous', while the other Nash equilibrium– common expansion, where the pay-off for the fiscal authorities is maximum –is presented as 'vicious'. Once the existence of a monetary union is hypothesised, and once the fiscal authorities have been attributed the opportunistic behaviour proposed by "public choice theory" (politicians maximise their personal utility by increasing public indebtedness), there is a danger that the game will conclude with the worse outcome for both authorities: the pay-off pair (– 1, –1) corresponding to fiscal expansion and monetary restriction. The only way by which the central bank can avoid being 'exploited' by the fiscal authorities is to undertake the 'pre-commitment' of declaring – in a credible manner, whence the importance of its reputation– that, between the two possible Nash equilibria, it prefers the restriction/restriction outcome.

Therefore, the "new classical" approach to the monetary-fiscal policy mix maintains that any co-ordination among the ECB and the national fiscal policies would be counter-productive, due to the proclivity by governments to expand the public deficit. The ECB's declared strategy consists in the implementation of a mix of monetary and inflation targeting; that is, to pursue monetary stability by controlling a monetary aggregate, but also taking into account prices expectations and the exchange rate with the U.S. dollar. Monetary stability as the sole target has been unanimously interpreted as the attempt to communicate to international capital markets the ECB's eagerness to inherit the Bundesbank's reputation as a low inflation central bank. When the central bank is faced by the fiscal authorities' opportunistic behaviour, it must act as a "Stackelberg leader". In order to evade the pressure applied by the government for a common expansionary strategy, the central bank has to convince the government that expansionary fiscal manoeuvres will not be accommodated. If the central bank is capable to gain a high credibility for its tight monetary stance, the government will pursue the Pareto-optimal solution of responding to the monetary restriction with the co-operative behaviour of fiscal restriction. When monetary authorities are resolute in their adoption of a rigidly restrictive stance, fiscal authorities will behave as the followers of the tight monetary policy, as a restrictive fiscal stance will be the only strategy that averts the worst outcome for all. This game-theory framework of the relationship between the two authorities supports the widely-held opinion that a *country by country* relationship between the ECB and single fiscal authorities strengthens monetary dominance. It has been hypothesised that the present setting, whereby the fiscal authority of the EMU comes split across the twelve EMU governments, has been devised just anticipating the high probability that the worst outcome of the game turns out, that is a monetary restriction and a fiscal expansion.[19]

The present institutional set-up of the EMU is at risk of causing under-stabilisation after a negative shock because the monetary-fiscal policy mix is bound to characterise as two restrictive stances. It has been longly debated whether or not the group of the EMU economies can be considered an "optimal currency area". With reference to equation 4, it can be said that the more the EMU countries will pursue by means of sound policies a common value of desired decrease in the "natural" unemployment rate (parameter δ), and the Governors' will agree on a common "inflation aversion" (parameter β), the faster the various business cycles (approximated with the parameter α, reflecting the transmission mechanism) will converge.

However, any symmetric shock is likely to be unevenly distributed across the EMU countries, so that the ECB could

[18] The example of the game in figure 4 is taken from Artis–Winkler [1999].

[19] It has been argued "that monetary unification without coordination among decentralized FAs may actually reduce the inflation bias and the bias towards public spending. (...) The reason is that a large union containing many non-cooperating fiscal players strengthens the strategic position of the common central bank, which favours lower inflation than the fiscal players do because it does not internalize the beneficial impact of unanticipated inflation in relaxing government budget constraints" (Beetsma-Bovenberg [1998: 240-241]).

face the necessity to weight the different output gaps going on in different economies. It is very likely that a symmetric shock unevenly propagates across the EMU countries, due to the strong trade interdependencies and the influence of the national financial market on the common interest rate.[20] Hence, whenever a negative supply shock will hit the EMU (say, a oil price increase or a more rapid wage dynamics), more or less pronounced asymmetric shocks will follow, and national fiscal policies will be implemented to cope with the worsening of the output level and the inflation rate. The Stability and Growth Pact (SGP) has been agreed on by the EMU partners because the past experience tells that expansionary fiscal policies easily transform in high public debt, so that the building reputation of the new currency in the international capital markets would be negatively affected. In order to avoid the macroeconomic instability stemming from rising public deficits (especially in the member countries still burdened by high public debt), after the complete loss of monetary policy autonomy the SGP has tightly constrained the capacity to counteract a recession by fiscal authorities. The ceiling of 3% was imposed by the SGP to the public deficit/GDP ratio. Governments are then forced not only to drop discretionary fiscal manoeuvres but also limit the functioning of automatic stabilisers (in case the surplus in "primary deficit" is not yet sufficient to compensate for the deficit in the interest payments stemming from a too high public debt).[21]

The deflation bias of the EMS institutional setting stems from the "constrained" fiscal policy of the EMU countries and the ECB's statutory commitment to monetary stability as the sole policy target. The difference between the EMS and the EMU is that in the present case the disagreement will not be among the Peripheral EMS' central banks and the central bank of the EMS's leader country, but inside the ECB Board of Governors where all opinions are supposed to count equally. Possible conflicts between single national governments, asking for more expansionary money creation after a negative shock and the ECB, should not be overlooked.[22]

An agreement among the national governors on a monetary policy, capable to keep under control inflation and at the same time to sustain growth, is then needed. This is the reason why the "Taylor Rule" has gained new interest among EMU policy-makers, whereby in the ECB reaction function the computation of the output gap could reflect macroeconomic conditions partly referred to the whole EMU area and partly referred to one or more countries facing a sharp recession.

Let us introduce the Taylor Rule function, which assumes that the central bank fixes the interest rate by looking at the deviation from the target not only of the inflation rate but also of the output level. In its simplest analytical formulation, this behavioural function consists in the following equation:

$$r = \lambda + \lambda_1 (\pi^e_{t-1} - \pi^*) + \lambda_2 (y_t - y^*) + \zeta x_t \qquad [9]$$

where π^e_{t-1} is expected inflation, π^* is target inflation, y is the log of the real GDP and y* is the log of the potential GDP, x is any possible variable influencing monetary policy (for instance, the Euro/U.S. dollar exchange rate), λ_1 is the weight for the inflation rate and λ_2 is the weight for the output target.[23] In order to influence the future inflation rate, the central bank has to react to variations in the expected inflation rate. By assuming "adaptive expectations", and putting x_t equal to zero for simplicity, the equation becomes:

$$r = \lambda + \lambda_1 (\pi_t - \pi^*) + \lambda_2 (y_t - y^*) \qquad [10]$$

Had a Taylor Rule been adopted by the Bundesbank in the first nineties, the EMS collapse could have been avoided. The problem with the EMS credibility was that the Bundesbank was dictating monetary policy by taking into account just the German inflationary macroeconomic conditions and not the opposite, contractionary, business cycleof the other EMS countries. The Bundesbank was sharpening

[20] See Farina and Tamborini [2001: 21-34].
[21] See Buti *et al*. [1998].
[22] See De Grauwe [2001].
[23] John Taylor recommends a higher coefficient for the inflation rate (1.5) than for the output target (0.5). See Taylor [1993].

money restriction for the whole EMS area at a time in which macroeconomic conditions in Europe would have required much lower interest rates. Indeed, the recession hit the peripheral EMS when already high interest rates, compensating the financial operators for fears of fiscal indiscipline, were depressing the growth rate of the economy. Therefore, the more the peripheral EMS' central banks were under the domestic pressures of rendering more discretional the monetary policy in order to sustain aggregate demand, the less credible became the peripheral country's pegging to the nominal anchor. Empirical research has investigated the inconsistency between the DM pegging and the lack of covariation among business cycles inside the EMS.[24]

Now the years of "high inflation" are over in Europe, and the SGP sets a so tight limit to the management of macroeconomic conditions that the under-stabilisation problem could very easily materialise in a number of EMU countries. To add the output level objective in the loss function should not be feared, as the possibility to relax the monetary stance could prove to be very helpful in the present institutional setting of the EMU.

Monetary and fiscal policies under dollarization

Provided that a country with a record of high inflation and/or suffering from high macroeconomic volatility has a high business cycle covariance, a large trade volume, and stable relative prices with another country potentially providing a nominal anchor, the strategy is often suggested to abandon its own currency and adopt the latter country's currency.[25] However, whenever a LA country linked to the U.S. dollar by a currency arrangements switch to dollarization, the absence of the above provisions could prove to be even more prohibitive. A U.S. dollar revaluation –whatever is its origin, for instance a restrictive monetary policy to counteract a too expansionary business cycle– may transmit so high interest rates to provoke a deep recession. It has been shown that the lower is the covariance of a LA country business cycle with the U.S. one, and the more important the financial *vis-à-vis* the trade transmission mechanism, the more likely is a deflationary bias. [26]

Surely, the long run growth opportunities of the LA economies does not directly depend on the macroeconomic performance but on well-known real determinants, such as technical progress and human capital. Also some market liberalisation processes will be essential for positing the LA economic systems on a sound growth path. However, growth in LA is also hampered by too frequent episodes of macroeconomic volatility.[27] The question then becomes whether reforms in domestic goods, capital and labour markets are the only policy needed to pave the way to a more robust growth of LA economies, or monetary and fiscal policies can rather also play a role in limiting macroeconomic instability.

To answer this question, the European experience is worth emphasising. The EMS fixed exchange rates agreement, was preceded by the progressive fall in barriers to trade, and then complemented by the nominal convergence process fostered by the Maastricht Treaty, till the realisation of the monetary union. Among the LA countries, only Mexico is carrying on a strategy possessing both the pillars of a trade accord and a monetary policy tightly linked to that of the leader country of its economic area. On the contrary, LA countries adopting currency regimes with a nominal anchor –such a unilateral pegging, a currency board or dollar-indexed public debt issuing– do not entertain

[24] It doesn't seem that during the EMS the Bundesbank has followed this rule. Econometric estimates have been worked out by Wyplosz [1999] to simulate what level the German interest rate would have been during the European recession and Germany inflationary expansion of the first nineties, had the Bundesbank followed the Taylor Rule by taking into account: i) German macroeconomic conditions alone (and not the other EMS countries' output gaps); ii) macroeconomic conditions in the whole EMS. The results of this counterfactual experiment shows that during the period 1989-93 the Bundesbank did not follow a "Taylor Rule" at all, because the actual German interest rate was much higher than the two simulated interest rates of the "Taylor Rule" equation. German monetary authorities were implementing a so tight monetary stance that no room for the consideration of an output target was left. In particular, had the Bundesbank followed the Taylor Rule by taking into account the German or the whole EMS macroeconomic conditions, the simulation says that the interest rate level would have been on the average 7% and 5% lower, respectively.

[25] See Alesina and Barro [2001: 384].
[26] See Carrera, Feliz and Panigo [2001].
[27] Gavin and Hausmann [1998: 91-99].

any integration process with the country providing the nominal anchor. Even worst, countries such as Argentina, that has a bilateral trade with Brazil that is the 25% of its total world trade, assumed to be able to pursue an unilateral tight link with the Fed's monetary policy (the currency board) while the Brazil's currency was floating with respect to the U.S. dollar. It was easy to forecast that an upward rally of the U.S. dollar jeopardises the macroeconomic equilibrium in Argentina, both directly and indirectly through the impact of a devaluating real on the Argentinean trade with Brazil. Furthermore, differently from a co-operative agreement such as the EMS, no commitment by the U.S. government to a common strategy in the occurrence of a currency crisis –similar to the 1992 request for a DM revaluation *vis-à-vis* all the other ERM currencies– can be invoked. Hence, the U.S. cannot be asked to take into account macroeconomic conditions of the LA country hit by asymmetric shock while using the U.S. dollar as a nominal anchor.[28] Therefore, any comparison between the European monetary unification and dollarization is unwarranted. For instance, in case an asymmetric shock hits an EMU country, a certain degree of fiscal expansionary manouvre is allowed by the SGP, and may even happen that the ECB implicitly adopts a Taylor Rule. On the contrary, due to the absence of a common central bank and the lack of any agreement on fiscal deficits with the U.S., after a shock the macroeconomic performance of the LA country will worsen much more than in the case of an EMU country.

To impose the co-movement with the U.S. interest rate is not a sufficient condition to shelter a LA country from financial crises. The other way round, the surrendering to the Fed's monetary policy is a possible source of crisis of the banking system. It is certainly true that the low monetary policy credibility and the low reputation for fiscal discipline makes negligible the cost of dollarization. Yet, the recent Argentinean crisis demonstrates that the opening of the economy triggered by the tight link to the U.S. dollar, with the much stronger capitalisation followed to the banks' privatisation and the increasing foreign ownership of the banking system, is not a sufficient shield from insolvency. It may easily happen that the bold decision to allow a foreign country to dictate monetary policy domestically is taken as a powerful strategy allowing the needed leap in efficiency –in the goods, labour and financial markets– to be waived. Thus, benefits from dollarization should not be overvalued. The most important problem with dollarization is not that seignorage and the lender of last resort function are renounced, but "unilateralism". The failure of the Argentina currency board reveals the negative side of unilateral currency arrangements.

The fact is that the Argentinian financial instability has its roots in the inefficiency of both the industrial and the public sectors.[29] On the one hand, there is no nominal adjustment –even the more extreme one, dollarization– which can substitute for low competitiveness due to a wage dynamics higher than productivity growth. On the other hand, since in a currency board domestic monetary circulation is tightly linked to reserves, the cost of reneging on the currency board is high when a loose fiscal management disrupts the commitment not to monetise the public debt. As the long-standing macroeconomic instability of this country has shown, when a crisis comes it is difficult to reach an agreement on where the cuts in public expenditures are to be done. The Brazilian solution to macroeconomic instability, however, is also flawed by major shortcomings. Brazil has tried to defend the currency's liquidity premium by making recourse to dollar-indexed government bonds as a substitute for the hard currency of its economic area and as a "quasi-money" demanded in alternative to the domestic currency. The bond-indexation allowed that during periods of weakness of the real the public debt is rendered a close substitute of the U.S. currency, but has also increased the risk of fiscal policy crises and of monetary policy hampering growth in case of a rise in the U.S. interest rate.

Therefore, along with reforms in goods, capital and labour markets, macroeconomic policies oriented to improve

[28] However, as well-known, a process of trade and monetary integration has recently been proposed by the present U.S. administration, with the aim to connect the Mercosur to the NAFTA accord.

[29] "Dollarization can do little to reduce foreign debt burdens, build effective state institutions, or reduce societal conflicts, all essential sources of continuing economic difficulties in much of the region" [Starr, 2001:75].

nominal convergence with the nominal anchor's country are needed. The European economic and monetary integration has forcefully shown that the creation of the common market is the pre-condition for the creation of a common money. Economic integration has led to a common market of monopolistic competition, where the expansion of exchanges mainly consisting of intra-EMS trade has brought about a very similar intersectoral matrix in the European countries. A second lesson to be drawn from the EMS functioning is that –whatever is the currency arrangement– if the covariance with the business cycle of the country providing the nominal anchor is low, a follower of a Stackelberg leader for monetary policy is bound to import macroeconomic instability. It is worth noting that LA countries that switched to a currency board (Argentina) or to dollarisation (e.g. Equador) have a small exchange with the U.S., while much stronger trade ties with their neighbour Cono Sur countries. The Cono Sur countries' low percentage of U.S. trade has impeded that competitiveness with U.S. could foster more efficient conditions of production in these South America countries.

In what direction to strengthen economic relationships is a crucial question in Latin America. After having joined the NAFTA, the Mexican economy not only has dramatically improved trade relations with the leader country of the region but also is much benefiting from FDI. As well-known, the geographic vicinity to the U.S. furthered trade exchanges and financial investments, much lower wages have favoured the dislocation of industrial plants closely linked to U.S. companies, and also temporary worktime in the U.S of Mexican workers contributed to lessen the unemployment problem. The rapid increase of convergence with the U.S. business cycle has made easier for Mexico to maintain very stable the flexible exchange rate with the U.S. dollar. The same cannot be said of the other main LA countries, where economic integration with the North-American "giant" is far less developed.

The first step forward a reduction in LA of episodes of macroeconomic instability hampering the growth process is the furthering of real convergence among the LA economies. In fact, the fragility of the LA currency arrangements is very much interwoven with the backwardness of their productive structures. The long history of loose monetary and fiscal policies has interplayed with the limited capacity to keep the pace of the productivity dynamics of the U.S. economy. The tendency to build up unilateral relationships with the U.S. should be replaced by a number of co-operative agreements. Free trade aimed at improving productive interdependencies,[30] and co-ordination in macroeconomic management aimed at fostering convergence across business cycles,[31] should be put in the strategic agenda of the LA countries before the choice of the exchange rate regime. While the Mexican economy is bound to further integrate with the U.S. economy, the nations belonging to Mercosur should expand co-operation from free trade to monetary policy agreements effectively fostering convergence among too divergent currency regimes. If Cono Sur economies will be able to exploit the high intra-Mercosur trade and pursue anti-inflationary monetary and fiscal policies to reach convergence across business cycles, they may eventually create a common currency floating *vis-à-vis* the U.S dollar. In fact, the strategy of fixing the exchange rate to a hard currency should not be taken as a dogma. Just as in the case of the impressively good macroeconomic performance of some EMS countries after the 1992-1993 devaluations, if the financial conditions were sound and labour market were more flexible, even a depreciation *vis-à-vis* the U.S. dollar could be beneficial in order to sustain the output and employment levels.

Conclusions

The European experience of fixed exchange rates has demonstrated that a group of countries plagued by high inflation can cooperate to achieve monetary stability. However, the asymmetric EMS functioning, in presence

[30] "The (East Asian) 1997-1998 crisis revealed how the success of any one country pegging to the dollar as a nominal anchor depends heavily on also having its trade partners and competitors securely anchored as well" [McKinnon, 2001: 317].

[31] "Even when business cycles are synchronized across countries, a common monetary policy may be unable to exert a stabilising influence if its effects are highly heterogeneous across countries. (…) In that differences in the relevant mechanisms translate into differences in output fluctuations if (common) monetary policy actions affect the strength of business cycle fluctuations" (See Mihov [2001: 372]).

of real wage rigidity (that was impeding a more rapid annulment of price differentials with the core EMS) provoked a real appreciation by the peripheral EMS, which aggravated in 1990-1992 after the inflationary tensions triggered by the German political unification. Had a co-ordinated devaluation by the peripheral EMS taken place, the real appreciation problem would have solved, benefits in terms of higher output and employment would have been equally shared, and trade flows re-equilibrated. The new strategy launched after the 1992-1993 EMS crises pointed to considering the nominal convergence imposed by the four criteria subscribed in the Maastricht Treaty as a device alternative to the defence of the fixed parities. The objective to foster nominal convergence, by compelling Central Banks' Governors and Treasury Ministers to comply with the Maastricht criteria despite the recessionary business cycle, was fulfilled. As well-known, the completion of the disinflation process allowed also the covariance of the EMS countries' business cycles to improve. Although the public debt/GDP criterion –differently from inflation rates, nominal interest rates, and the public deficit/GDP ratio– was not met by two of the 11 countries (Belgium and Italy), also these countries were admitted to participate in the European Monetary Union.[32] The "fixed but adjustable" exchange rates became "irrevocably fixed" on January 1999, and after three years, on January 1, 2002, a new currency, the Euro, has started circulating in Europe. Two concluding remarks are worth stressing.

First, the "new classical" view maintains that the successful disinflation was due to the shift in inflation expectations, favoured by the "monetary dominance" of a leader nation providing the nominal anchor. For sure, by the pegging to the nominal anchor, which put under pressure authorities in order that sound monetary and fiscal policies be implemented, the fixed exchange rate agreement has proved capable to change inflation expectations slowly, but eventually curbing inflation. Yet, contrary to the "new classical" view, the high "natural" unemployment rate from which most European economies still suffer is not so much originated by labour market distortions (the assumption of a high vale of parameter δ in equation 1), but mainly by the real appreciation brought about by the fixed exchange rates. The consequent deflationary bias heavily impinged on macroeconomic stabilisation in Europe. In particular, the NAIRU of most EMS countries has been affected by an excessive fall in aggregate demand during the nineties, when both monetary and fiscal policies have been drastically geared to restriction.[33] Tight monetary policy, and higher interest rates than the nominal anchor's ones, had a depressing impact on investment, thus worsening the problem of technological backwardness in strategic industrial sectors and strengthening expectations held in the goods markets of a stagnating demand in Europe.

From this point of view, the lesson from Europe to Latin America is straightforwardly clear. After a period of loose macroeconomic policies, the complete loss of credibility in the domestic currency by international markets has strongly to be impeded. Monetary and fiscal authorities have to struggle and gain credibility, forcing both the private and the public sectors to behave in coherence with monetary stability. For this objective to be fulfilled, benefits can be expected from a currency arrangement with respect to a hard currency as a nominal anchor. Yet, a pegging to a hard currency or a currency board should not be taken as the only necessary tool for adjustment. In fact, the tight link to a hard currency is bound to have deflationary consequences. Therefore, a careful macroeconomic governance is needed in order monetary stabilisation not to affect opportunities for growth. Contrary to the presumption that dollarization *per se* creates the conditions for macroeconomic stability,[34] any currency

[32] The escape clause of the Maastricht Treaty was invoked, allowing the admission of countries with a declining trend of the public debt/GDP ratio.

[33] See Farina and Tamborini [2001: 43-48].

[34] The following thesis has been recently put forward: "There is by now an overwhelming body of evidence that countries can effectively solve the exchange-rate problem –that is to say, they can effectively eliminate exchange-rate instability– by dollarizing or installing a currency board without first having to satisfy a long list of economic preconditions like strengtheneing their bank systems, balancing their budgets, funding their public debts, and removing labor-market rigidities. (...) Indeed, countries like Equador and Argentina have dollarized or installed currency boards not because they succeeeded in opushing through other reforms, but precisely because their economic and financial problems have proven so intractable. They have done so precisely in order to prevent those problems from spilling over into the currency market". [Eichengreen, 2001: 268-269].

arrangement with the U.S. dollar as a nominal anchor, used to buy credibility to a disinflation process, has to be backed by a sensible macroeconomic management. A fall in aggregate demand, that would undermine the credibility of the link to the U.S. dollar, and increase public deficits and debts as a percentage of the GDP, has to be prevented.

The EMS 1992-1993 collapse also shows that sometimes the recourse to a nominal devaluation cannot be avoided and only a coordinated realignment prevents a nominal divergence across the countries of the exchange rate agreement. Due to their limited trade connections and their loose economic integration with the nominal anchor's country, LA countries never experienced a co-operative exchange rate agreement. While in the EMS a co-ordinated devaluation could have in principle taken place after the exogenous shock of German political unification, in the LA case the pre-condition for a co-ordinated devaluation is lacking. In fact, after the crises of their unilateral currency regimes during the nineties, Chile, Mexico and Brazil did not conduct a devaluation process to complete monetary stabilisation but embarked in a costly default process.

The fact is that coordinated realignment like the one that the EMS countries were unable to implement in 1992-1993 is enormously more difficult to materialise in LA. As well known, the LA economies'business cycles are much more divergent than the EMS countries' ones. Macroeconomic instability fueled by the U.S. dollar differently transmits across LA nations, depending on how tight is the dependency from the U.S. dollar and/or economy and how strong are the economic ties of any LA country with the other ones. As said above, "unilateral" exchange rate regimes, such as the Latin American ones, cannot be conducive to macroeconomic stability.

Second, the EMS 1992-1993 collapse has shown that a country, characterised by a divergent business cycle with respect to the country providing the nominal anchor, can incur in a currency crisis even when it is following correct monetary and fiscal policies. Therefore, a second precondition for a successful currency regime with a nominal anchor is to make real convergence to closely follow nominal stabilisation. The EMS agreement was set up after an integration period in which free trade was accelerating the unification of the European markets and the integration of the productive systems. On the contrary, LA countries sharply diverge as for degrees of economic integration among them, and only a minority has a growth path stably linked to the U.S. economy's one. Thus, the lack of strong trade ties and productive complementarities with the U.S. is a serious threat to the functioning of any currency arrangement set up by a LA country with the U.S. dollar.

Indeed, opportunities for growth should not only be expected from the capacity by LA governments to ameliorate their countries' economic structures and discipline their use of instruments of macroeconomic governance. Let us boldly assume that structural reforms, leading to higher productivity in the industrial sectors, sounder fiscal policies, and a better management of the banking system could improve the LA economies' capability to efficiently adjust after a shock. Yet, the huge divide as for stages of development, efficient markets and institutions, wealth and income distribution impinging on consumption models, makes impossible to believe in a move towards a symmetric convergence among economic systems in the American continent such as the one that has taken place in Europe. Since an integration process on an equal basis cannot be envisaged, tighter economic ties stemming from currency regimes linked to the U.S. dollar may only consist of a dependent integration of the LA countries with the U.S. This is perhaps the case of a country experiencing strong complementarities with the U.S. as Mexico, and in the near future might be the case of other backward and/or very small Central American nations. In fact, a process of trade and monetary integration has recently been proposed by the present U.S. administration, with the aim to connect the Mercosur to the NAFTA accord. Whether the Cono Sur large economies (Brazil, Argentina, and Chile) will keep being detached from the U.S. economic influence or the expansionary path of their economies will strengthen convergence with the U.S., will be decided in the polical as well as in the economic field.

If close ties between Mercosur and NAFTA will nor develop, a Latin American growth process dependent from the U.S. economy will be avoided, but trade costs between these countries and the U.S. would remain high and possible efficiency gains stemming from tighter trade connections with the U.S. will be lost.[35] The main problem of LA countries is how to reconcile the desire to start up an autonomous growth process, with the need for economic reforms to catch up with the efficiency standards of international markets. It is likely that is more sensible to tackle this problem by means of a co-operative floating *vis-à-vis* the U.S. dollar than by a currency board or dollarization. Anyway, for this reverse in currency strategy to get a chance, responsible politicians and sound macroeconomic governance should eventually show up on the Latin American stage.

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[35] Obstfeld and Rogoff [2000] argue that trade costs are the major source of exchange rate disconnections across countries.

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