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Policy Options for Joining the Euro

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Policy Options for Joining the Euro

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Policy Options for Joining the Euro

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Abstract

Assuming the eventual adoption of the Euro, the paper reviews the run-up and the medium run issues on the path towards the Euro. It shows that various policy options are possible, especially with respect to the exchange rate regime and management. It also shows the limits of monetary policy when fiscal and income policies are not consistent with monetary policy. In the run-up phase of accession, the main constraints come from the recommendation to target a conversion exchange rate, while major gains can be obtained from an increase in money demand and a fall in interest rates once market expectations converge towards the conversion. In the medium run preparation, a fixed exchange rate extracts a high price in terms of high real interest rates and losses of competitiveness, unless fiscal policy is tight and wage settlement are market-based or kept under control. Floating exchange rates do not necessarily solve these problems but enable monetary policy to regain some of the effectiveness that it loses under fixed exchange rates. Eventually, a sound fiscal and income policy opens the way to a scenario of accommodating monetary policy and convergence towards the Euro. A political reading of the Maastricht conditions suggests that early adoption of the Euro is unlikely to be supported by the incumbents. It would then only make sense as a way out of a crisis.

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1. Issues and Options.

The Euro is there. The choice for present and future EU members is not anymore whether to join it but rather when and how to join it.

The methodology of this paper is to assume that terminal conditions -adopting the Euro- are known. The discussion of the constraints and opportunities for economic policy can thus start from this final step, and then go backwards from there on towards today's strategies, and check their compatibility with the terminal conditions.

The Copenhagen (1993) declaration requires that candidate countries accept the aim of monetary union. No timing is set however. Even Sweden -which is not subject to the Copenhagen declaration, but well to the whole EU treaty- has not yet joined the ERM II despite joining the EU in 1995.

The most mentioned options for the exchange rate of the current applicant countries are

- The Currency Board or even Euro-ization corner solution,
- The Full Float corner solution,
- The managed float or the ERM II adjustable broad band pegged exchange rate.

Other macroeconomic policy instruments interact with the exchange rate option chosen and affect the global economic performance of the country along its accession path. They are

- The monetary policy,
- The fiscal policy,
- The income policy.

The credibility and the coherence of the policy options affect the expectations of domestic and foreign economic agents and hence determine the effectiveness of the policy instruments in reaching the objectives of growth, employment, inflation and redistribution pursued by the policy makers.

Starting from the eventual conversion of the domestic currency into Euros, the issues can be divided into final run-up issues and earlier medium run issues. The key run-up issues are the conversion exchange rate, money demand in sight of unification, the timing of convergence towards the conversion rate and the possibility of an unilateral move. Then the paper reviews the medium run issues: economic growth, real interest rates and debt (the most important issue, unless full euro-isation is adopted), aggregate demand and prices, then wages (two key issues in case of early adoption of the euro), and financial intermediation. On each issue the emphasis is on the existence of alternative options and on the interaction among various issues and policies. Before concluding, a few aspects of the common monetary policy and of the political economy of the Maastricht conditions are discussed.

2. Run-Up Issues

2.1. The conversion rate

The conversion rate can either be the current exchange rate at the date of conversion, or a different exchange rate, set by convention. In the second case, the conventional exchange rate can either be pre-determined or it can be decided on the eve of the conversion day. In any case, it seems useful to look at the implications of any given conversion rate.

The importance of the conversion rate for the trade balance and for economic activity is well known since Keynes' *Economic Consequences of Mr. Churchill*. An overvalued pound sterling hurts exports and economic activity in an economy where prices are not fully flexible downward. In a monetary union, the aggregate demand constraints on economic activity remain as long as local price and wages have not fully adjusted downward to undo the overvaluation of the conversion rate. The shortfall in revenue during the adjustment can raise the debt of some public and private agents. The only difference between a monetary union and a fixed exchange is that this debt can be incurred in the currency of the union instead of a foreign currency.

A second set of implications of the conversion rate is the issue of capital gains and losses on outstanding debts. An overvalued currency hurts domestic debtors, especially for the service and amortization of debt originally denominated in domestic currency and then converted into the currency of the union¹. An undervalued conversion rate, on the contrary, favors debtors in domestic currency. Alternatively, when domestic debts are already expressed in foreign currencies, then an overvalued conversion rate may benefit debtors more than an undervalued one, provided their economic activity is not killed by the overvaluation.

A third set of implications of the conversion rate regards the inflationary effects of the chosen rate. It can be claimed that an overvaluation forces domestic agents to lower domestic prices to bring them in line with world prices at the new exchange rate. An undervalued exchange rate, on the contrary pushes domestic prices upward towards world prices at the new exchange rate. This effect can be assumed to be temporary, lasting until domestic prices align with world prices.

With regard to inflation a difference exists between a monetary union and a fixed exchange rate. In a monetary union, the determinants of money demand are given by current and expected policies of the union and current and expected transactions. The effect of the final conversion rate on local inflation is thus at most temporary. With fixed exchange rate, expected domestic policies towards money and the exchange rate continue to play a key role. If the agents expect that the exchange rate will eventually adjust to a difference between domestic inflation and

¹ Debtors committed themselves to an amount in domestic currency on the basis of expected income in domestic currency, and of an implied conversion rate. If an overvalued conversion rate is chosen, it suddenly implies many more Euros per unit of domestic currency, and thus a commitment to many more Euros than the debtors' expected income in Euros. Indeed, as with Churchill's pound in 1925, firms cannot simply charge prices in Euro (gold) at the conversion rate of their initial prices in local currency (pounds). They have to lower prices in the new currency if they still want to compete with "foreign" producers in the new currency. Note, however, that if costs fall more than revenue, due to falling domestic prices in Euros after the conversion, debtors may fare better.

foreign inflation, they will not slow down price increases but just prepare the expected devaluation which will come even sooner². In a monetary union, this option is not available.

The effects of the conversion rate on economic activity, debts and inflation can be taken into consideration when choosing a conversion rate, assuming that such a choice be possible. The costs of overvaluation in terms of economic activity and debt seem to override any inflation-fighting benefits which should rather come from the Union's policy anyway. Despite the 1925-31 gold lesson, Britain re-experienced overvaluation with the EMS in 1990-92. Spain also joined the EMS at an overvalued rate in 1989, without reduction in inflation pressures : it eventually faced a recession and a set of successive devaluations in 1992, 1993 and 1995. When joining a monetary union, the inflation-fighting benefits come mainly from the policy of the union, not much from the conversion rate.

The benefits from undervaluation for exporters and for domestic currency denominated debt, may seem to outweigh the costs in terms of foreign currency denominated debt, if the final devaluation is not expected. The benefits are nevertheless limited if agents are somewhat forward-looking. The final devaluation will indeed be discounted forward in higher nominal interest rates and possibly also in higher domestic prices and wages. It may also induce capital flight or currency substitution, driving the market exchange rate towards the anticipated conversion rate in the case of floating rates, or depleting the reserves in the case of managed rates. Moreover, future partners in the monetary union will be very reluctant to accept a strategy of depreciation by the entrants.

This leaves acceding countries with arguments for the identification of an equilibrium exchange rate which could serve as the conversion rate. Assuming that these countries want to avoid major shocks to domestic prices, interest rates and economic activity, the acceding countries may want to try to avoid large jumps to their nominal exchange rate at the time of the conversion. The question is whether and how this exchange rate can be arrived at. We discuss this in section 3.3. but look first at the equilibrium of the monetary market and the equilibrium interest rate.

For countries with a long and successful experience of a fixed exchange rate or of a currency board, the conversion rate issue is relatively straightforward, provided their exchange rate arrangement survived trade openness and capital mobility. If the reference is a basket of currencies or the currency of another major trading partner than the Union, the misalignment issues remain to be dealt with, either by adjusting the reference at the time of the unification or preferably in advance.

2.2. : Money Demand Effects

To study the equilibrium on the money market, it is convenient to assume first a standard real money demand function of the type

$$(M/P)^D = L(Y, i, b), \quad (1)$$

² On the credibility of a fixed exchange rate without the guarantees of a monetary union see also section 3.2. and 3.3.

where M represents the nominal money stock, P the aggregate price level, Y the gross national income, i the nominal interest rate and b a fixed cost of converting assets into money. Real money demand is assumed to be an increasing function of Y and b , which will be assumed to be constant in what follows. It is a decreasing function of the opportunity cost i of holding money. Real money demand can be graphed in the $M/P, i$ space, as is done in figure 1.

Money supply can sometimes be assumed to be fully controlled by the issuing bank and unaffected by other variables in the economy. It can also be assumed to be a function of the short-term nominal interest rate if higher interest rates induce banks to make more loans and create more checkable deposits or if higher interest rates attract foreign capital inflows and these inflows are converted into domestic liquidity. Capital inflows actually respond rather to the domestic interest differential than to the absolute level of the domestic interest rate. Moreover, there are a number of variables reflecting specific relations between the agents and their bank, which we will denote z and assume to be constant. Hence the money supply curve will be assumed to take the form

$$M = g(i - i^* - c, z). \quad (2)$$

Figure 1 presents the money supply curve in real terms, i.e. dividing it by the price index P . The figure graphs the market with the downward sloping demand (1) and the upward sloping supply (2) in the $M/P, i$ space.

[figure 1 : money market]

As the date of conversion nears, the expected inflation of the acceding country converges to this of the Union and the nominal interest rate (i) tends to fall. Even before it actually falls, the credibility premium (c) separating it from the foreign interest rate is perceived as falling, making the domestic currency relatively more attractive. Moving along the money demand curve, this implies an increase in actual money demand.

Figure 2 shows that most of the convergence in short-term interest rates is downward convergence for the late qualifiers or peripheral countries of the Euro-area. This was also observed in central bank target rates. In the run-up to the Euro, Spain, among others, lowered its interest rates several times, while Germany once raised its own (from 3 to 3,3 percent in October 1997) to lower it again (to 3%) in the last month before monetary unification. Long term interest rates converged earlier, also downward (or towards German ones).

[figure 2] interest rate convergence.

Money demand thus generally increases in joining countries. Practically, the adjustment of the monetary market follows a combination of two paths. First³, the residents try to satisfy their money demand by either borrowing or exporting abroad, while strong rules on budget deficits and cautious monetary policy keep domestic money creation small. Second, some prices may

³ This first adjustment mechanism is daily business for a currency board. It is also likely that a currency board pays a lower credibility premium than a fixed exchange rate currency, hence the money demand effect may be smaller in currency board countries joining the Euro, than in fixed or even flexible exchange rate countries.

tend to fall and the domestic currency tends to appreciate, despite falling domestic nominal interest rates and despite the remaining expectation of depreciation included in the interest differential and in the forward exchange rate.

The observed movements in the exchange rate on figure 3 coincide with the above analysis. This is especially visible for Ireland and Greece⁴. On figure 3, the exchange rate is measured as the domestic currency price of the Ecu or Euro. Changes in the expected depreciation or credibility premium of the high interest rate currencies cause a sudden appreciation (downward jump). The general trend is a slow depreciation (slow upward move), especially in the last year, 1998 : is driven by the covered and uncovered interest parity (a higher domestic interest rate is compatible with financial market equilibrium if it compensates for the expected depreciation of the domestic currency⁵). For Greece, which initiated its accession in 1999, a jump appreciation followed the newly gained credibility and interest rates fell. In the last year (2000), the currency slowly depreciated to converge to the (revised⁶) central rate following the interest parity condition.

[figure 3] convergence of exchange rates towards the conversion rate

This discussion of money supply and money demand reveals the importance of the expected exchange rate change and the expected inflation in the determination of the monetary equilibrium. The expected exchange rate change drives the equilibrium interest rate until the monetary unification and the expected inflation due the policies of the union itself drives it afterwards.

2.3. The timing of the approach towards the conversion rate

Subsection 2.1. has suggested that the conversion rate could be set in various ways, but that governments could care about a rate which does not involve major jumps in goods and asset prices. Subsection 2.2. has suggested that the money market would drive expectations of inflation and of interest rates of acceding countries towards the level prevailing in the Union. This in turn suggests that the market is able to eventually abandon the expectation of changes in the exchange rate, unless it receives other signals. In this last case, interest rates will not converge until the last day, and asset prices will jump on the day of convergence and unification.

⁴ For the other countries on figure 3 (Finland, Italy, Portugal and Spain), the convergence from below is more visible in 1997 and towards the German Mark. In late 1998, the interest rate of Euro adopters falls below the ECU interest rate (which includes the British Pound), hence an expected appreciation of these currencies towards the Euro and a convergence to the Euro parity from above. This peculiarity of a transition from the ECU basket to the Euro currency is unique to the founding of the Euro. Future accessions to the Euro will look more like the data for Greece, based on a bilateral arbitrage, not a multilateral one.

⁵ The uncovered interest parity condition is discussed further in subsection 3.2. on the medium run issue of real interest rates. The condition can be stated as follows : the interest differential between two currencies (domestic = i , foreign = i^*) compensates investors for the expected depreciation ($\Delta S^e/S$), and also includes a risk⁵ premium (k) and a liquidity⁵ premium (l) for the domestic currency :

$$i = i^* + k + l + (\Delta S^e/S).$$

⁶ Effective 17.01.00, the central rate of the Greek Drachma versus the Euro was revalued by 3.5%, to GRD 340,75 per Euro.

There are a number of options to approach the conversion rate. The first one is to let the market find a rate and validate the rate of the last day of trading. The day itself need not even to be announced, but this is probably too much indeterminacy. For practical reasons, banks and governments will want to know the conversion date. But this deprives governments from the opportunity to choose the day on the basis of a realized exchange rate that suits them. If there are other ways to reach such an exchange rate, governments will not care much about this lost and uncertain opportunity.

Given a date, but leaving the conversion rate to the market implies that agents are left guessing what the rate will be on the last day. In this context of a floating exchange rate, with forward looking expectations, the rate will be what everybody else believes it will be. Speculation will not be stabilizing anymore, there is not point in selling high and buying low : the rule of the game is simply to guess the rate of the last day. As Obstfeld (1998) notes, this increases the volatility of the exchange rate, raises the probability of validating a major misalignment at the time of the conversion. Governments may want to avoid such misalignments, even if they do not know for sure the "best" conversion rate and even if they think that all other prices in the economy can quickly adjust to the chosen conversion rate.

Figure 4 suggests a way to understand the effect of a terminal conversion date ($t_{\text{conversion}}$) on the market determination of the exchange rate. The dampening effect of Friedmanian speculation generates a path for the exchange rate where peaks and troughs are capped compared to another hypothetical path. This effect disappears once a terminal conversion date comes in sight. If expectations converge towards a given rate (S_{expected}), then these expectations can become self-fulfilling provided the conversion rate is set to be the market rate on the eve of the conversion. There is no incentive for speculators to sell Euros for domestic currency when the Euro seems to have become too expensive.

[figure 4 : Role of speculation and of a conversion date]

The next option is then to set the conversion rate by a political decision. This raises two issues : first the convergence of the actual rate towards the announced rate and second the timing of the announcement. Convergence is probably a major reason to announce a rate, otherwise the good old way of fixed exchange rate management of changing a parity over a week-end could do. At the time of the creation of the Euro, such a change of parity was avoided on purpose. The idea was probably to avoid that the introduction of the Euro would be remembered as an exercise in redistribution of wealth, purchasing power and competitiveness which would cause distrust or resentment within the Union. The initial treaty spoke only about maintaining the external value of the ECU (article 109 1 4) but this was quickly understood as maintaining also the bilateral parities of the participating currencies. If the case of Greece is any guide, the agreement is again to avoid a major change in value of the joining currency at the time of the conversion.

Can convergence then be ensured ? The way suggested by Obstfeld (1998) is to offer unlimited forward contracts at the conversion rate to be settled on the opening of trade of the first day of

monetary unity⁷. The Union will only accept this if this doesn't commit it to buy amounts which would modify the monetary base of the new union significantly. It will thus require that the central bank of the joining country doesn't create money autonomously beyond pre-agreed norms and that it lets the exchange rate converge slowly towards the conversion rate, accepting any interest rate that is determined by free capital mobility.

A more radical way of forcing the convergence is to announce that the joining currency can, at any time, be redeemed at the conversion rate by the Union or at the limits of a more and more narrow target zone. Again, this will be acceptable to the monetary policy of the Union if the joining central bank doesn't overflow the union with new issues of its currency. This will drive expectations so much towards the announced rate that intervention will not even be needed. The possibility of an early conversion may needlessly accelerate the capital movements and convergence of interest rates compared to what would occur with a single pre-announced date.

The strategies just outlined to target a conversion rate and to bring the market towards it through forward contracts or through the threat of an early conversion require that enough confidence be established between the Central Bank of the Union and this of the acceding country. This cannot usefully be maintained for years. A long convergence period may be too costly, especially if some inconsistencies remain between monetary, fiscal and income policies, as we shall see in the discussion of the medium run issues. A time span of one to two years seems reasonable. Forward markets, which are expected to stabilize towards the conversion rate, usually do not trade over maturities of more than one or at most two years. A time horizon of 18 months to two years also seems to correspond to the usual transmission lag of monetary policy in industrial countries. Gearing monetary policy towards monetary unity about two years in advance seems thus sufficient and desirable to smooth the transition. The key, however, is the reciprocal commitment to monetary unification : this justifies exchange market intervention, which accelerates the stabilization of expectations, which then makes that interventions are not called for.

Figure 4 shows a hypothetical speculative path converging to an announced conversion rate (S announced). This path resembles very much the actual convergence path of the Greek Drachma on figure 3. It incorporates the pressure towards appreciation due to money demand effect, and the pressure towards depreciation due to the convergence of high domestic interest rates towards lower euro interest rates (uncovered interest parity effect).

This approach to the run-up to monetary unification is compatible with a loose interpretation of the Maastricht requirement of exchange rate stability, within the broad bands of the 1993 revision of the ERM, in the 2 years preceding unification. It will also bring interest and inflation rate

⁷ Indeed, where forward exchange rate markets exist, the open interest parity has a covered equivalent. It can be written

$$i = i^* + k + l + (F/S) - 1, \quad (A)$$

where F is the forward exchange rate, i.e. the price set today for the foreign currency in term of the domestic one one year from now. This relation always holds by arbitrage, and (F/S)-1 measures the percentage depreciation included in the forward rate F compared to the spot rate S. The forward market exists for largely traded currencies and for rather short maturities (up to 1 year). For such maturities, risk and liquidity premia are rather small. Obstfeld's proposal comes down to setting F. Since i^* is given by the Union, i converges to $i^* + k + l$, then S converges to F.

naturally closer to those of the Union, although it is not sure that the Maastricht margins of 1,5 percent are reasonable⁸. These margins have not been reached by Greece at the beginning of its run-up period, certainly not with short term interest rates.

The conversion rate has so far always been announced less than one year in advance. It remained, however, within the band set at the beginning of the two-year convergence period. The announcement has been done in May 1998 for the founding 11 who unified their currencies on 1-1-1999, but central rates existed since more than two years, except for Italy. The last change in a central rate occurred in March 1998 when the Irish punt was revalued by 3 percent⁹. For Greece which joined on 1-1-2001, the conversion rate was announced in June 2000. The last realignment (revaluation by 3,5%) took place in January 2000¹⁰. For these 2 countries, the central rate was thus revalued just before it was announced as the conversion rate, but the actual rate depreciated slowly (about 2% over about 6 months) towards it during the last run-up months (according to the interest rate parity, their short-term rate being higher than this of the Union).

Of course, it is also thinkable that the acceding country would lower its inflation towards the EU level or below, enjoy low nominal interest rates and let a small nominal appreciation develop in the run-up to monetary unification. There seem to be few examples of such approaches. The jump appreciation with slow partially compensating depreciation is the 'easier' option.

2.4. Other options : early conversion

The run-up strategies just described pertain to countries which have decided to target a conversion exchange rate and to avoid a final jump in exchange rate and prices. It is of course possible to go over to the conversion overnight at an agreed exchange rate with the Union or even to adopt the Euro unilaterally. The difficulty can be on the agreement about the rate, the more that the ECB shares the prerogatives about exchange rates with the European Council. If there is no discussion about the rate, most probably if it is close to a current and stable rate, then the remaining exchange rate issue is this of the possibility of misalignment.

It is also possible for any country to unilaterally cancel its currency and replace it by a foreign one, possibly this of a monetary union it hopes to eventually join. Two additional issues should then be considered : this of the cost of acquiring the monetary base and this of the stability of the financial system. Acquiring the monetary base can be done through borrowing abroad or through a very tight monetary policy which eventually leads to the replacement of domestic credit by foreign reserves in the assets of the central bank¹¹. The second policy is slower than the first one,

⁸ Gros (2000) estimates the Samuelson-Balassa effect at 3 to 4 percentage points of inflation and of nominal interest rate differential (see section 3.3). The other Maastricht criteria are not considered here, but see section 4.

⁹ OECD Economic Survey, Ireland 1999, DM central moved from 2.41105 to 2.48338 DEM per punt.

¹⁰ ECB Bulletin : February 2000, July 2000.

¹¹ The experience of countries which introduced a currency board (Argentina, Bulgaria, Estonia) suggests that, accelerated circulation of foreign currency savings, repatriated capital, official and private loans can take care of this, without too much downward pressure on prices or too much need to boost exports. The smaller the initial circulation of domestic currency, the easier. Figure 9 (below, see section 3.2.) shows that Estonia managed to introduce its currency with relatively low nominal interest rates and negative real interest rates. It was helped by pre-war gold and other reserves. Estonia introduced its currency board in June 1992 and liberalized most prices in December 1992. Slovenia (also visible on figure 9 below), introduced a new currency in quasi-war conditions (June-October 1991)

and probably more costly in terms of side effects on economic activity. It is hardly preferable to the exchange rate convergence policy suggested above. The overnight conversion with the help of a big loan has the advantage of eliminating all transition costs at the simple cost of servicing a loan. It is probably advisable to countries which suffer from high domestic real interest rates and low domestic monetary credibility. If the loan is provided and subsidized by the monetary union and eventually leads to monetary unification, the option is even more attractive¹². We return to real interest rate issues in the section about medium run issues.

The implications of the unilateral adoption of the Euro for the domestic financial sector will be discussed with the medium run issues. The disappearance of the domestic central bank and the absence of obligations of the European Central Bank towards the domestic banking system may weaken the financial sector and increase the risk of a banking crisis¹³.

3. Medium run issues.

3. 1. Medium run issue 1 : economic growth and stability

The key medium run issue for the transition countries is to maintain sustainable long run growth. Sustainability of any policies will mainly be reflected in low inflation and a low debt/GDP ratio. Growth itself will come from human and physical capital accumulation and improvement. Specific exchange rate arrangements are by no means a necessary condition of a successful growth strategy. What matters is that the exchange rate arrangement be consistent with the overall strategy and not the other way.

From the exchange rate point of view, the medium run is very different from the final run-up to monetary unification. A fixed exchange rate arrangement in this context resembles any fixed exchange rate arrangement much more than it resembles a monetary union. There may have been some misunderstanding in the past about the Maastricht strategy, but the EMS crises of 1992 and 1993 have clearly shown that fixed exchange rates could not sustain diverging fundamentals when monetary unification is still distant and uncertain. Markets understand that the output and employment cost of defending the exchange rate is not always worth the gain of price stability.

Empirical research suggests some increased correlation of economic activity fluctuations among countries linked not only by trade but also by exchange rate agreements (Rose 2000). This shows that exchange rate arrangements tend to reduce the occurrence of asymmetric shocks while maintaining or generating common shocks. This concurs with the view of some

and without reserves. It paid a high price in terms of high nominal and real interest rates to acquire the reserve backing and the credibility of its new floating Dollar.

¹² Another cost of circulating the Euro is the loss of seigniorage revenue for the adopter and the increase in seigniorage for the issuer of the Euro. That is one of the reasons for suggesting that the ECB provides the loan interest-free, since it earns seigniorage. Alternatively, this is a reason adopting a currency board instead of a foreign currency. Seigniorage revenue on foreign reserves is less than on domestic credit, but is larger than zero.

¹³ It should also be noted that managing a common currency requires less reserves at the Central Bank than managing individual currencies. Countries which adopt the Euro unilaterally do not benefit from these economies of scale.

macroeconomists that most aggregate demand shocks originate in economic policy decisions. This doesn't say that costs disappear, especially when monetary policy is not common, but is this of a leading country to which other countries link their exchange rate.

3.2. Medium run issue 2 : real interest rates and debt

The real interest rate acts directly on economic activity, especially in countries where financial intermediation plays an important role. It also acts indirectly in highly indebted countries by increasing the real interest burden of government debt. This last channel remains a threat in central Europe despite improvements in the debt/gdp ratio of some countries. The debt service and activity effects tend to reinforce each other¹⁴. If real growth is slow, the debt/gdp ratio remains unbearable, due to the slow growing denominator, which is also the source of income out of which debt is serviced. Debt reduction strategies may themselves be costly in terms of growth, especially if they operate through higher taxes. A medium run strategy of accession to the EMU should thus carefully take into account some determinants of the domestic real interest rate.

The interest differential between two currencies (domestic = i , foreign = i^*) compensates investors for the expected depreciation ($\Delta S^e/S$), and also includes a risk¹⁵ premium (k) and a liquidity¹⁶ premium (l) for the domestic currency :

$$i = i^* + k + l + (\Delta S^e/S). \quad (3)$$

This expression is the well known uncovered interest parity. Even if the devaluation doesn't take place, markets can charge a credibility premium ($c = \Delta S^e/S$) on a currency for a long time. This premium comes down to a real interest rate premium if the inflation differential is lower than the nominal interest differential. Indeed, assuming that Fisher's relation holds, the nominal interest rate of a currency equals the real interest rate plus the expected inflation rate ($i = r + \Delta P^e/P$). Assuming, for the sake of simplicity in the argument, that two countries have the same expected inflation rate, risk and liquidity premium, the uncovered interest parity becomes :

$$r = r^* + c. \quad (4)$$

This high real interest rate hurts growth, as it does not reflect higher profitability of investment and hence higher demand for funds with imperfect capital mobility. It rather reflects a scarcity of funds given the pressure of domestic public and private consumption demand.

Belgium and Italy paid a very high price in terms of high real interest rates and low growth when they tried to acquire credibility. Ireland did too in its first brief and failed attempt (Dornbusch

¹⁴ See data for Belgium, Italy and Ireland in Burda and Wyplosz (1996) : Deficits on figure 3.10, Debt, interest rates and growth rates on figure 15.7 and 15.8.

¹⁵ The risk premium reflects the volatility added to the market by the asset, it does not just reflect its own volatility but mainly its correlation with the market. Hence, for some assets or currencies, it can also be negative. Some assets denominated in small currencies have actually lost their portfolio diversification value once the currency has been absorbed into the euro.

¹⁶ The liquidity premium compensates holders of the asset for the thinness of the market which makes that it is difficult to find a counterpart at the current prices and that their trade in the asset may directly affect its price.

1987) but then succeeded. Belgium started very early to link its currency to the German Mark. The only major realignment was in February 1982 when wage indexation was also suspended for a short time. High debt, lack of government spending discipline, and continuing wage indexation combined with inefficient semi-centralized wage negotiations induced the financial markets to charge a premium on Belgian currency interest rates, despite low inflation and a stable exchange rate¹⁷. The data presented by Burda & Wyplosz in their textbook (1st and 2nd Edition) show the high real interest rates low real growth rate and high debt of Belgium until the mid-1990's.

Italy which suffered from similar labor market and government failures as Belgium managed until the early 1990's to avoid the real interest rate costs, by inflating its problems away and by realigning the lira in the EMS quite often. The attempts to target the exchange rate more closely after 1987 without credibly reforming the economy (wage indexation was abandoned, but governments did not gain much credibility despite a dramatic overhaul of the political landscape), brought their cost (data in Burda & Wyplosz, 2nd Ed.). Contrarily to Giavazzi and Pagano's (1987) suggestion, this cost was not enough to change the government's ways and was thus borne by the economy as a whole (and still is). To be fair to Italy, the sluggishness in the 1990's of the German economy, Italy's main trading partner, played also a role.

[figure 6 : real interest rates : selected European countries]

Denmark and Ireland were more successful (Giavazzi and Pagano 1990, Alesina & Perroti 1995, Perroti 1996). After Ireland's first failed stabilization, the second attempt included stronger and lasting measures both on the labor market and in the reduction of marginal tax rates and entitlement expenditure. A major devaluation in 1987 gave the traditional external "expenditure switching" impetus to compensate the domestic expenditure reduction. Real interest rates fell, real growth accelerated, and the high debt /GDP ratio fell.

Denmark also managed to gain credibility relatively fast. Moreover Denmark's non-participation in the monetary union but well in the ERM II tells another interesting story about risk and liquidity premia (see equation 3). Indeed, the interest rate spread between Danish and Euro debts did not increase after the introduction of the Euro in 1999, on the contrary. Financial markets perceive the Danish Crown as offering some diversification in a portfolio compared to, say, Belgium which has adopted the Euro. As we know from Capital Asset Pricing Models, the risk premium is not determined by the intrinsic volatility of an asset but by the risk it adds to a portfolio, i.e. by its correlation with other assets¹⁸.

¹⁷ The combination of low growth and high real interest rates is best explained by a credibility premium on the interest rate, which in turn slows growth. Low growth with low real interest would have required another explanation, possibly policies affecting aggregate demand (government deficit reduction using high taxes e.g.). It is harder to claim that low growth policies affected the real interest rate. The credibility premium on the currency should not appear, however, on Belgian debt in foreign currencies, unless the premium affects the debtor more than the currency. The Belgian case may be peculiar, however. Nominal interest rates and the prices of goods may be equalized with neighbouring countries and currencies due to financial and commercial integration, while wages and taxes continue to diverge because of their local determination. The lower rate of inflation in Belgium than in Germany would then have to be explained by a trend appreciation of the local and followed currencies compared to the rest of the world and by lower domestic demand in Belgium than in Germany.

¹⁸ On 28/9/2000 Denmark rejected the introduction of the Euro again by referendum.

Belgium, which seemed to have acquired full credibility by the mid 1990's (income policy finally came under control in 1994 and government deficits too) finally resumed faster growth and retrieved normal real interest rates. Contrarily to Denmark, Belgium seems to have faced an increase in risk premium after it adopted the Euro. Interest rate differentials between Belgian and German debt rose because the diversification argument for holding Belgian assets could not anymore compensate the liquidity premium required by the smaller size of the market.

[figure 7 : nominal government bond yield : B, DK, D]

Currency boards may be slightly different from fixed exchange rates with regard to the credibility problem. Yet they are not immune to credibility crises, especially when the 100% reserve backing applies only to base money but not to bank deposits. Argentina experienced it dearly during the Mexican crisis of 1994-95. It recorded a year of negative GDP growth, faced numerous bank failures and had to call the international financial community to rescue its financial system. It was hurt again by the Brazilian devaluation of 1999, although then the effects seemed to concentrate on trade, with less harm on interest rates and financial stability.

If fixed exchange rates and currency boards can be costly, especially when international financial markets charge a credibility premium, the question is which is the alternative monetary policy. The adoption of a foreign widely used currency is a way to adopt the foreign interest rate overnight. The premium on domestic financial instruments falls close to zero. If domestic inflation falls below the rate prevailing in the country of the adopted currency, a real interest rate problem subsists, but it is usually of a smaller size than with a fixed exchange rate¹⁹.

Another alternative monetary policy is independent monetary policy with a freely floating exchange rate. Currently, the most common guideline for such an independent policy is inflation targeting. This is also the scheme which has received most support in the theoretical literature. Empirically, it is too early to judge its superiority in delivering price stability, high growth, and low real interest rates.

There remain interest rate puzzles, even in countries relying on floating exchange rates and inflation targeting. The United Kingdom has very volatile interest rates, especially short term ones. Inflation and economic activity are volatile too compared to the continent, and real interest rates do not seem low. Poland still has high nominal interest rates, and apparently high real ones too. In both countries, the credibility of economic policy remains an issue. Inertial inflation and high financial intermediation margins also persist in Poland. There may also be local specificities which may require further research, possibly about the monetary transmission mechanism. More generally, the credibility premium can also apply under floating exchange rates, when inflation and devaluation expectations remain persistently higher than realized inflation and depreciation.

[figure 8 : ex-post real interest rates Germany and non EMU countries UK, Sweden]

¹⁹ The Economist, December 2, 2000, pp 26-27, graphs GDP and real interest rate data for major Latin American countries for the last 3 years (1997-2000). Mexico, with a managed float has the highest growth and the lowest real interest rates. Argentina, with a currency board, has slightly lower nominal interest rates than Brazil, which had a kind of fixed exchange rate until the devaluation of February 1999, but Argentina does not have a better growth performance than Brazil.

Figure 5 shows that nominal and real (ex-post) interest rates remain high in central Europe. High real interest rates seem to persist almost independently of the exchange rate regime followed recently. This last observation does not invalidate the argument that fixed exchange rates extract a credibility premium. It is also likely that other non-credible inflation-reduction strategies also cost a credibility premium²⁰.

[figure 9 : ex-post real interest rates Central Europe Estonia, Cz, H, PL, Slovenia]

To conclude on the relation between exchange rate choices and real interest rates, one can say the following. We don't know what can be gained on the interest rate side from fixing the exchange rate or from letting it float²¹, but we know that non credible exchange rate commitments, however long they last, extract a high credibility premium on real interest rates. In any case, there is no reason to think that fixing the exchange rate can buy low inflation for free, on the contrary. The credibility premium hurts growth and is even harder to bear when government debt is high. If ways can be found to gain credibility through a tight long-run fiscal policy, they should be considered seriously to support the general strategy of monetary policy (see e.g. Alesina & Perrotti, 1995, Perotti, 1996).

3.3. Medium run issue 3 : aggregate demand and prices

Transmission of monetary policy in countries with limited financial intermediation, may operate less through the effect of the real interest rate on domestic demand but rather through the effect of the real exchange rate on external demand.

The main medium run issue with the nominal exchange rate is the risk of misalignment of the real exchange rate, as long as inflation convergence is not achieved. At a given nominal exchange rate, higher inflation at home than abroad hurts exports and stimulates imports. Inflation convergence between fast-growing countries and the Union is difficult to achieve because of larger relative price changes (Grafe & Wyplosz 1997), the sectoral differences in productivity growth (Samuelson-Balassa effect)²² or the larger relative price shocks (Ball & Mankiw 1995

²⁰ Sargent and Wallace (1981) show that a non-credible monetary tightening can generate inflation instead of disinflation.

²¹ This is an area which definitely deserves more research. Why do some countries pay a high real interest premium with fixed exchange rates and other not : is it just a credibility premium or do other policies lower inflation and growth, while financial integration equalizes interest rates ? Are real interest rates affected by a change in monetary policy regime ? Is the volatility of the nominal exchange rate transmitted to inflation, output, employment and investment and does this transmission differ across exchange rate regimes ?

²² The Samuelson-Balassa effect assumes that labor productivity grows faster in the traded-good sector than in the non-traded goods sector. Wages, however, tend to be equalized across sectors because the efficient use of labor requires that it be mobile and paid at the opportunity cost. In fast-growing catch-up countries, the productivity gains in the traded goods sector is faster than it is in advanced industrial countries. The prices of the traded goods produced by the productivity-gaining sector are tied by international arbitrage, but productivity gains raise the sustainable wages. Then the prices of non-traded and productivity-lagging services are pushed up by average wage gains in the economy. This generates inflation, and especially in fast-growing countries, the average price level is pushed up.

effect) in fast growing, opening economies. The order of magnitude of the inflation differential is limited, it can be estimated to warrant a 2% percent additional overall price increase per year. A recent study by Gros (2000) puts it at 3,5 to 4% for central Europe, however.

The aim a monetary policy oriented towards price stability is to avoid that inflation increases above the rate justified by the Samuelson-Balassa effect. A fixed exchange rate can play a role, but it operates mainly through the price of traded goods. The excess price increases quite often come from excess demand or insufficient competition in the non-traded sectors of the economy. Instruments which can act more directly on non-traded goods demand would then be welcome.

Under a fixed exchange rate, with some capital mobility, a tight monetary policy raises interest rates and attracts capital inflows which themselves fuel domestic demand. The fixed exchange rate makes the interest differential a sure gain for foreign investors. This shows the impossibility of maintaining at the same time free capital mobility, a fixed exchange rate and an independent monetary policy. Other instruments than monetary policy can help. A tight fiscal policy does not raise interest rates, and it acts mainly on demand for non-traded goods, which is the main target. Moreover a tight fiscal policy often affects disposable income more directly than monetary policy, through taxes, pensions, and wages in the public sector, which all indirectly also affect wage settlements in the private sector. If wage negotiations in the private sector are overly affected by rent-seeking and monopoly positions, and do not respond fast enough to economic conditions, including unemployment, then direct interventions on wage formation may be required. Income policy is thus often presented as an additional instrument to fight inflation and unemployment.

It is not sure that an independent monetary policy on top of a fixed exchange rate is the best way to fight excess inflation in the non-traded sector but it often seems to be the only tool at hand. If the fixed or managed exchange rate options then seem premature, because monetary policy remains needed, then the flexible exchange rate option deserves also a further discussion in terms of exchange rate and price consequences.

Floating exchange rates give the possibility of fighting domestic inflation through a fall in domestic demand (real interest rates) and in external demand (nominal and real appreciation). The appreciation combined with the high interest rate is obviously also very attractive to foreign capital flows. The difference with fixed exchange rates, however, is that the risk of depreciation is large. Its timing is unknown but can be rather closer to the inflow than with fixed exchange rates. The volatility of the exchange rate reduces the capital flows. In a country which is relatively large and where prices are not immediately tied to world prices, the volatility of the exchange rate has a limited cost in terms of volatility of domestic prices²³.

Floating rates and independent monetary policy are then an option more suited to large countries, provided monetary policy indeed operates through internal demand fast enough. Fixed exchange rates are rather an option for small open economies where floating exchange rates would introduce too much price instability and where world prices and external demand act as the main transmission channels of monetary policy.

²³ Or it has a cost that is worth bearing, because the external demand effect is sought for as a way to control aggregate demand.

3.4. Medium run issue 4 : wages

The wage-setting issue is often underestimated. In countries with low financial intermediation, limited competition on the goods and factor markets, and with large public sectors, wages adjust slowly to economic conditions. The cost of this slow adjustment is borne in two ways at least. A first cost is high unemployment rates due to labor shedding by hard hit sectors, while other sectors feel no pressure to hire workers or lower wages. A second cost is a large external deficit, private or public, due to the lack of competitiveness of domestic output at the current wage cost, oligopoly markup and exchange rate. The relative importance of these effects varies, but a combination of them is usually observed.

The founding members of the Euro experienced the importance of adjusting their labor market as well as the importance of the other issues mentioned in the two previous points (real interest rates and aggregate demand issues). The first country which seriously tackled its labor market problems was probably the Netherlands. The famous Wassenaer agreements of 1982 opened paths for part-time employment and reasonable wage levels without abandoning the social safety net. The recovery of employment, budget and trade balance and the stability of the currency linked to the German Mark obtained praise from economists and policy makers inside and outside the country. In the late 1980's, after a first failed attempt, Ireland reduced its inflation and deficits in a package that included a wage agreement and also tax cuts (Giavazzi and Pagano 1990).

It is impossible to do justice to all countries, but it is necessary to show that the process has been widespread. Belgium had to wait until 1994 for its "global plan" to force social partners to accept a wage freeze to align their wage agreements to a comparison with neighboring countries (a device which suits only a small open economy like Belgium). Spain had to wait until the first Aznar government decided to further market-oriented reforms to gain full credibility in Europe.

The most curious case may be France. Throughout the 1980's and early 1990's it seemed to move at times forward and at times backwards. Since the turnaround of 1983, after the first Mitterand experiment of aggregate demand stimulation, it avoided major crises. Some observers nevertheless interpret the much trumpeted 35 hour week experiment, started in the late 1990's as an opportunity to stop wage increases. This is indeed the condition for success of such an experiment. It may moreover have put France on a more sustainable path of wages for monetary unity. This requires further research but shows at least that labor market considerations were important all over Europe while preparing for monetary integration.

3.5. Medium run issue 5 : financial intermediation

The development and deepening of financial intermediation is an issue in most applicant countries. It is expected to possibly contribute to economic growth.

There is no clear pattern of financial development to be related to various exchange rate arrangements, although this is certainly an issue for further research. The question was raised

again with the Asian crisis of 1997 (Chang & Velasco 2000), but no definite answers were given yet. Eastern Europe also offers contrasted experiences of crises. Estonia, on the one hand, faced a major banking crisis in 1993, less than one year after the introduction of the currency board. Bulgaria, on the other hand, established its currency board after its banking crisis of 1996.

Traditionally, high and variable inflation was seen as disruptive for savings and investment by redistributing gains arbitrarily and by shortening the planning horizon. For the development of the banking system itself, the existence of risk, and even the addition of risks has an ambiguous effect. As far as risk is often correlated with higher returns, the costs and benefits depends upon people's risk aversion. Volatility is thus not necessarily harmful for the profitability of financial intermediaries if it enables them to raise their margins or to exploit monopoly positions, sometimes with the help of cash-hungry governments. This may nevertheless keep the volume of financial intermediation to a low level. High and volatile real interest rates in domestic currency, as long as it doesn't fully disappear remain an obstacle to the development of deep and broad financial intermediation by banks and financial markets alike. The lack of competition in the financial market and in other market doesn't help either. Benchmarks are lacking both for borrowers and for lenders. High rates ration borrowers.

We can distinguish two types of currency risk. One is the exchange rate risk, the other one is the liquidity risk. The exchange rate risk comes from a change in relative value of goods and/or assets and liabilities in two currencies, even within the borders of a single country. The liquidity risk comes from the absence of a domestic currency to play the role of lender of last resort. If a country adopts a currency board or replaces the domestic currency by a foreign one, it has no way to face a bank run but to borrow abroad, let the depositors face losses or organize a fire sale of assets. This may be unnecessarily costly. If the banking system is well integrated into a network of foreign banks or if the international community sees an interest in lending, foreign money may easily come to the rescue. It is most likely that Brazil or Mexico could be able to influence a rate reduction from the Fed, Bolivia wouldn't.

Foreign currencies offer a deeper market as well as more stable purchasing power and interest rates which explain their popularity. Moreover, foreign currencies offer savings and anonymity advantages beyond the domestic currency. Finally, foreign currency deposits in domestic banks often are exempted from reserve requirements imposed on domestic currency deposits and other domestic banking regulations. All this is not necessarily detrimental to the local banking system, but it changes its operating and risk characteristics.

For the Euro to play a significant role in currency substitution, it will have to be convertible in notes and coins. But the strategy of currency substitution is a strategy of last resort.

3.6. A medium run strategy

Given the tendency of the currency to appreciate in the run-up to the monetary unification (money demand effect), it may be advisable, in order to avoid an excessively appreciated entry rate to operate a pre-run-up floating exchange rate with a soft monetary policy. The drawback of the soft monetary policy option is the likely inflationary bias, but the main advantage is the low real interest rate. Inflation and external deficits can be minimized by a policy mix agreement

which includes tight fiscal policy and reasonable wage agreements (for wages which are not totally decentralized). This will also enhance credibility which is the surest way to lower the real interest rate. If wages and fiscal policy are not forthcoming, the floating exchange rate gives monetary policy full power to fight inflation.

The fiscal policy is explicitly a part of the Maastricht requirement, although a budget deficit reaching 3 percent of GDP is not really a tight fiscal policy in a fast growing economy. The wage agreements are not a part of the deal, but were eventually part of the strategy of most participants. A peer monitoring of labor market policies was nevertheless introduced in the Treaty of Amsterdam of 1997 and started at the Luxembourg summit of late 1997.

Monetary policy clearly started to ease in Europe in 1996, while goods and labor market reforms were pursued and government deficits were kept under control. Nevertheless, the fall in real interest rates compensated any drawbacks of tighter fiscal or income policies. Financial market developed too. The exchange rate policy was less clear after the EMS crisis of 1992 and until the run-up period of 1997-98.

If the experience of the founders of the Euro is any guide for the future joiners, this strategy is possible. The costs occur when fiscal or wage choices are not in line with the exchange rate or inflation objective. When they are, extra help can come from the monetary side, and the exchange rate need not be fixed too soon nor too overvalued.

5. A brief review of the Maastricht strategy

The strategy of this paper was to study options for joining the Euro first and then see to which options the Maastricht strategy corresponds. We remember that the treaty of Maastricht set 5 conditions for joining the monetary union : exchange rate stability for 2 years, convergence of inflation and interest rates, and a ceiling of 60% of GDP for the consolidated public debt and another ceiling of 3% of GDP for the budget deficit.

From the above discussion, it appears that the criteria fit very well the option of fixing the exchange rate in advance of joining the monetary union. It is obvious for the exchange rate condition. The text has shown that the convergence in interest rates can follow from a credible commitment in the run-up to a monetary union at a pre-announced exchange rate. Moreover, the convergence in inflation can contribute to the credibility of the announced nominal exchange rate and can maintain the competitiveness of a country given fixed exchange rates. Inflation convergence is, however, easier to achieve within a monetary union than outside of it, whatever the exchange rate regime. The Maastricht strategy is thus rather a strategy of reaching fixed exchange rates than a monetary union. It can thus even raise the cost of monetary unification especially if countries try to fix the exchange rate before meeting the other conditions. Indeed, the fixed exchange rate option is costly when the financial markets charge a real interest rate premium on the currency²⁴.

²⁴ The fiscal criteria, if respected, could enhance credibility of the fixed exchange rate. But reaching them was harder, especially for highly indebted countries. Indeed these countries faced high debt service charges in their budget, the higher that the real interest rate was higher to maintain fixed exchange rates !

We could not identify a sure strategy to lower the real interest rate. Nevertheless we could show that credibility can play a key role. Credibility is enhanced when fiscal problems are solved and when fears of deviations in prices and wages are alleviated. Maastricht conditions like convergence in inflation, low debt and low deficits all help in this respect. All three are also helped by monetary unity but threatened by non-credible exchange rate policies.

The fixed exchange rate option is not the only option at hand, especially now that the issue is not anymore this of forming a monetary union, but this of enlarging it to new and relatively small members. For the candidate countries the issue of joining at an appropriate exchange rate remains of importance, but finding this rate does not require a preliminary period of fixed exchange rate. The Maastricht treaty seems to require one, but never required a long stability within a narrow band, while most EMS members tried to maintain it²⁵.

Beside the exchange rate convergence, the Maastricht criteria also served other purposes. Although economists disagree on the purposes and the efficiency of the criteria to reach them, it is worth reexamining these purposes briefly. Indeed their relevance may have been different at the time of forming the monetary union from the present time of enlarging it.

A set of game-theoretic considerations can support the debt, deficit and inflation conditions, especially at the time of forming the union. At that time, the Union had no monetary reputation and could only borrow some from its founding members. The conditions could try to give an advance indication of what the Union would like to be like. This could make anti-inflation policies less costly later on, because agents would expect and understand the resolve of the new central bank. The debt condition obviously served this purpose by taking away an incentive to finance governments or to bail out overexposed banking systems by printing money. Obviously, it was no guarantee or commitment that member states would not accumulate new debts later on (De Grauwe 1997). That is why the stability pact was added to limit future deficits.

A key game-theoretic point is the possibility to transfer the cost of a high debt or of a financial crisis to the other members of the Union. If a single country runs into trouble, it can spread the cost of the bail out thinly on a large number of partners, but it can also fear that it will bear high costs alone until these partners eventually decide to act. Moreover the partners can form a coalition to minimize their cost – however thin as it may be – and the intervention of the central bank. If the partner countries are themselves under pressure of high domestic debts, their attitude may instead be much more forthcoming. Anticipating this, more countries will be tempted to test the support of the central bank for their finances and the Union may indeed end up in an inflationary equilibrium or the markets may charge it a high credibility premium. The inflationary equilibrium is thus less likely if countries start from a low debt and do not want to be the first and single to risk the costs of a high debt²⁶.

²⁵ They possibly did it for other reasons than Maastricht.

²⁶ During the fiscal retrenchment of the second half of the 1990's, the real interest rates fell in Europe and central banks supported this trend. Part of this is the aftermath from the unification of Germany, but this unification was indeed also largely a fiscal problem.

The game-theoretic arguments matter less now, but could take more importance if the joining countries were numerous and highly indebted. Most of them managed to reduce their debt (Poland, Hungary) or to maintain it at a low level (Czech Republic, Slovakia, Estonia, Slovenia). The fact that these countries are numerous and belong to the same geographical area could affect the game-theoretic incentives on the management of the Union even if their financial weight is small.

Another rather political interpretation of the Maastricht conditions (De Grauwe 1997) is that the criteria were useless for the operation of the Union but offered the core countries a way of excluding countries they didn't trust or their public opinion didn't trust. A further political interpretation considers the timing and acceptability of adjustments which had to take place anyway. An advance adjustment could spare the young union the pressure of the public opinion. The coordinated adjustment in Europe and the hope to join the common currency in the first wave could give some countries additional arguments for doing what they had to do anyway (McKinnon 1997).

The political arguments continue to play a large role. They can explain why the official doctrine of the EU has so far been that monetary unification would only come after the accession to the European Union. The price shock of the single market and the financial shock of monetary unification are of limited importance. These shocks can be largely anticipated, and indeed are, especially given the relative flexibility of the candidate economies and given the advance measures taken under the association agreements and the pre-accession assistance.

The case of Greece confirms the above reputation arguments and even more the political arguments. Nevertheless, the economic policy of Greece also underwent important and welcome changes in 1999-2000. Their economic cost seems to have been lower than for the most indebted countries of the first wave. Was it to thank to good policies, to a short convergence period or to better market perceptions about the future Union ?

Conclusion : options remain open, but some things don't work.

When applicant countries deal with options for joining the Euro, the key medium run issue is to know how much real interest rate gain can be obtained from abandoning independent monetary policy early on. In countries with very low credibility, with a history of high inflation or of financial crises or in countries with no monetary record, it is likely that currency boards will bring more gains than losses. Their operation will be easier if the banking system is well supervised and open to foreign banks. Finally, their cost in terms of price misalignments will be minimal in small open economies with flexible labor markets and strong foreign competition. Obviously, the reserve or substitution currency should be the Euro and sufficient capital mobility with the Eurozone is needed. Once the Euro circulates in 2002, some countries may decide to switch from a currency board to the Euro. This will be easier again in small and flexible countries, and may bring the full benefit of equalization of interest rates with the Euro-area, provided enough confidence can be maintained in the banking system.

In countries which do not adopt a currency board or abandon the domestic currency, fixing the exchange rate is more likely to increase the level and volatility of real interest rates than to bring

them down. Markets decide however and they may cut the credibility premium of countries implementing a very strong and credible package of accompanying fiscal, financial, trade and investment measures. Whatever the medium-run exchange rate policy of these countries, the run-up issues of choosing the final conversion rate and of dealing with the increase in money demand should be well prepared. Countries which choose flexible exchange rates as long as possible will nonetheless have to define a clear and credible medium run monetary and economic policy and will not escape the definition of a conversion rate and of a strategy for dealing with run-up changes in money demand.

Options remain open thus. Nevertheless, some things do not work. A fixed exchange rate policy maintained without appropriate accompanying policies is not worth the credibility premium on interest rates. The political economy of the Maastricht conditions make it unlikely that the EU will support any early adoption of the Euro although it will not be able to ban it. The experience of successful countries like Ireland suggests that meeting the Maastricht conditions starting from the fiscal ones may be less costly than feared, especially if this enables monetary policy and financial markets to boost growth with lower interest rates.

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Draft graphs.**Constraints on Macroeconomic Policy**

by

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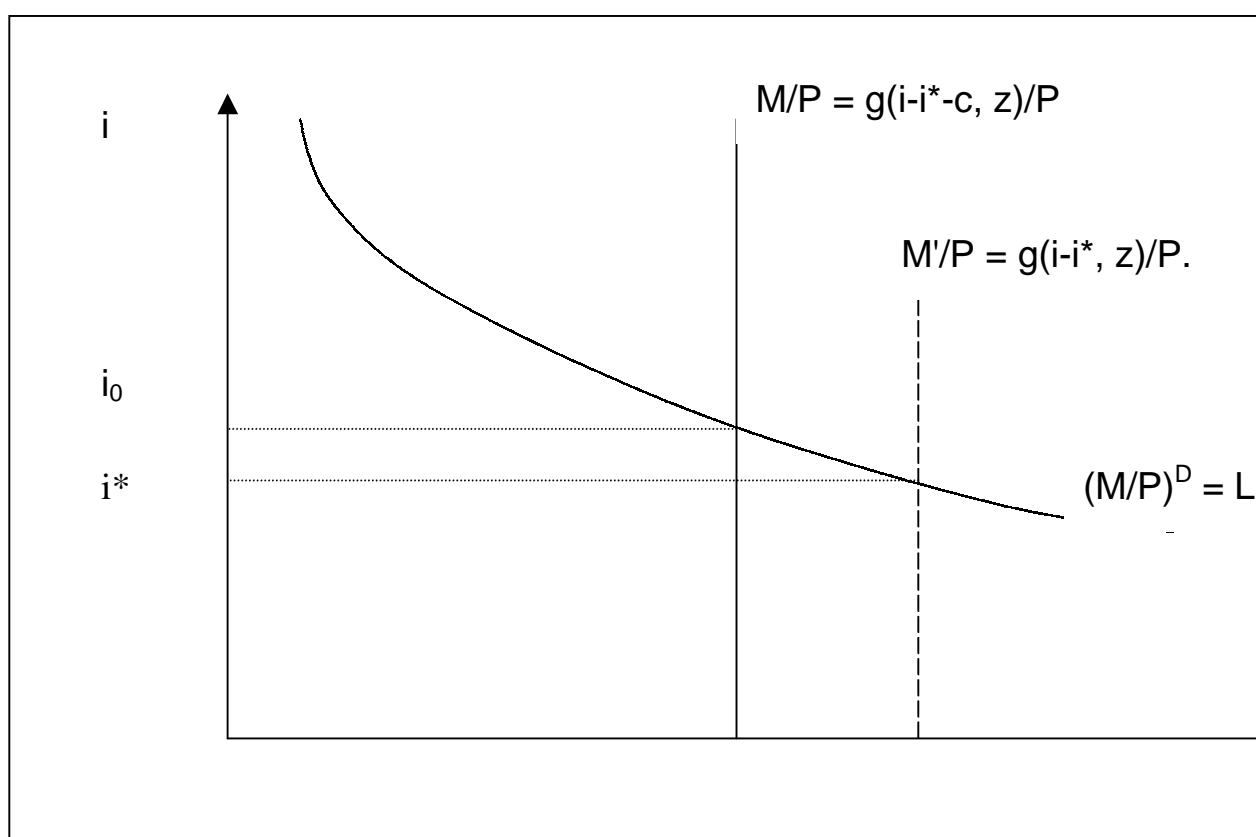


Figure 1 : Money Market

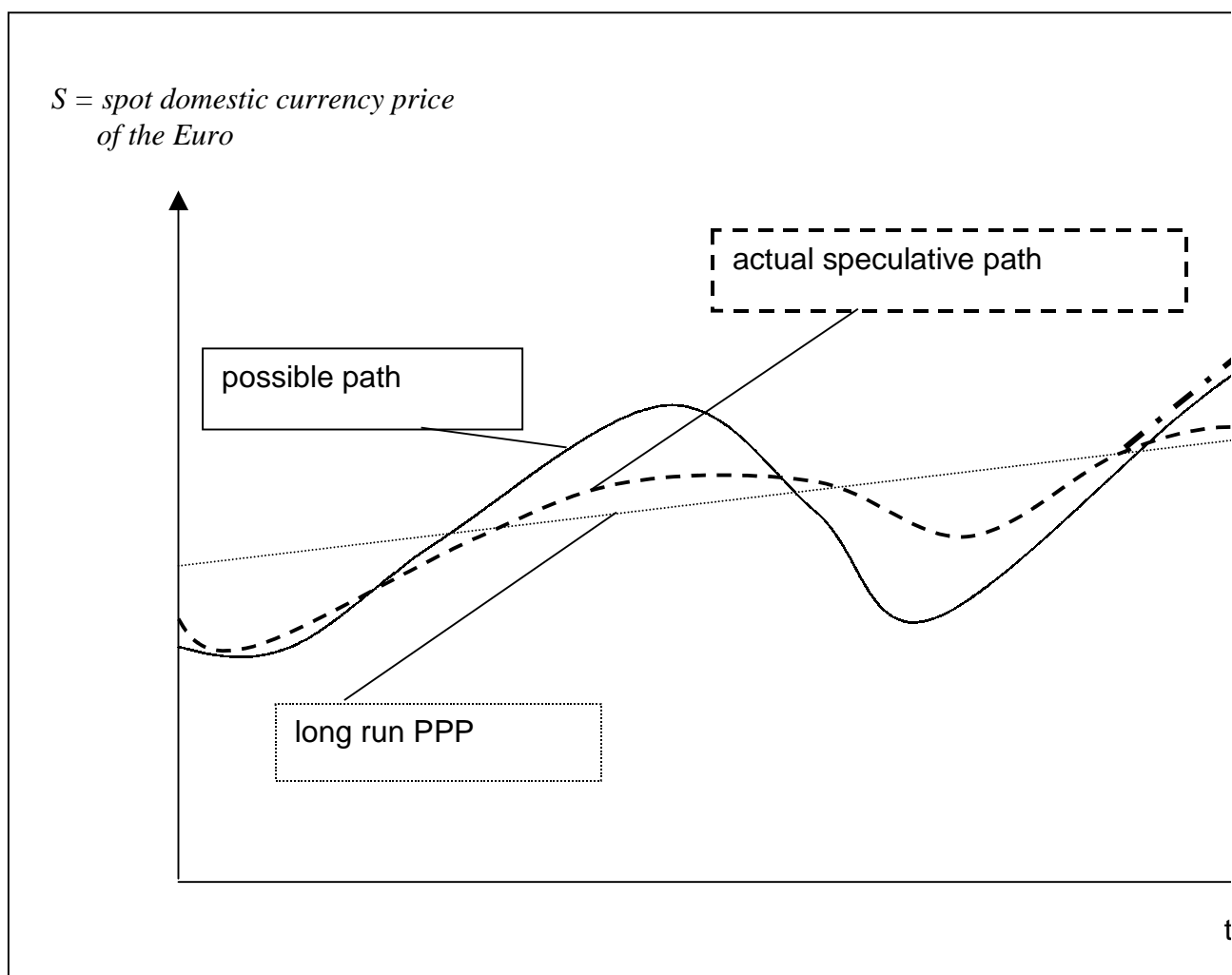


Figure 4 : Role of speculation and of a conversion date

