Anchor, Float or Abandon Ship:

Exchange Rate Regimes for the Accession Countries*

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Abstract

The paper considers alternative exchange rate regimes for the 10 East European accession candidates, both prior to EU accession and during the period following EU accession but prior to EMU membership. We conclude that from an economic point of view, EMU membership should be as early as possible. The prevailing interpretation of the exchange rate criterion for EMU membership is that it requires two years of successful membership in the Exchange Rate Mechanism (ERM). If ERM membership presupposes EU membership, this would postpone the earliest possible date for EMU membership till two years after EU membership. Unrestricted financial capital mobility would be required during this period. We argue that a stay of two years or more in this 'ERM purgatory' would be pointless and costly. A derogation, waiver or flexible interpretation of the exchange rate requirement would therefore be desirable. The treatment of Finland and Italy during their examination for EMU eligibility offers a precedent.

Any credible fixed exchange rate regime prior to EMU membership would risk running afoul of the inflation criterion for EMU membership because of the Balassa-Samuelson effect. A temporary recession might be required to crawl under the inflation hurdle. To avoid this, a derogation from the inflation criterion for EMU membership, or a re-interpretation in terms of the inflation rate for traded goods prices only, is recommended.

The use of the euro as a formal parallel currency in accession countries prior to EMU membership (or even prior to EU membership) deserves serious consideration. This would not require a derogation from any of the Treaty requirements.

I. Introduction

This paper investigates the appropriate exchange rate regimes, both prior to and following European Union (EU) accession, for those former centrally planned Central and East European countries that are currently candidates for full membership in the European Union. There are ten countries from the region of operations of the European Bank for Reconstruction and Development (EBRD) among the group of 'official' candidate countries – the thirteen countries for whom the process that will make EU enlargement possible was launched by the EU in March 1998. These are Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.[1] The exchange rate regime is a key determinant of a country's macroeconomic stability. Macroeconomic stability in turn is a key determinant of the investment climate. The choice of exchange rate regime by the ten accession candidates that are also countries of operation of the EBRD is therefore of great interest and relevance to this institution, and indeed to all who are interested in the transition process.

The original EU approach to accession enlargement had a two-tier system. The front-runners group contained the Czech Republic, Estonia, Hungary, Poland and Slovenia (henceforth Group 1).[2] A second group contained Bulgaria, Latvia, Lithuania, Romania and the Slovak Republic (henceforth Group 2).[3]

Following the November 1999 Helsinki summit, the two-tier system was abandoned and replaced by an informal 'queue'. Individual candidates for accession could advance or fall back, depending on their success in implementing the 'Acquis Communautaire' and satisfying the other conditions for entry. There is no longer any official presumption that countries will enter as a group, although we consider it likely that as many as eight out of the ten candidate countries from the EBRD's region of operations will become EU members by early 2004, in time to participate as full members in

1 The three other official candidates are Cyprus, Malta and Turkey. Accession negotiations have not yet been initiated with Turkey, however.
2 Outside the EBRD's region of operations, the front runner group also included Cyprus.
3 Malta was the sixth member of this group.

the EU Parliamentary elections of June 2004. In addition, there are countries like Croatia, which currently are not on the list of official EU accession candidates but are making good progress in the transition process, may well become full EU members before one or more of the countries that currently are on that list.

Further delays beyond 2004 are certainly possible, as enlargement has effectively become contingent on the success of internal reforms in the EU.[4] Key required *institutional* reforms include such contentious issues as the scope of the national veto, the rules (including the weighting of the national votes) governing qualified majority voting, and the size of the Commission. Critical substantive reforms include the reform of the Common Agricultural Policy and of Regional Policy.

The EU's Intergovermental Conference of December 2000 in Nice failed to reform EU institutions to the point that they might be workable in a Union of up to 27 members. The next serious attempt to create workable EU institutions has been put off till 2004.

The failure of the Nice IGC to effect adequate institutional reform of the key EU decision making bodies and procedures threatens both EU enlargement and the effectiveness of any enlargement that may occur. Especially relevant for the topic of this paper, it also creates a further

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4 The recognition, inside the EU, that the lack of preparedness of the existing EU members may become the binding constraint on enlargement, was reflected only gradually in the official statements and declarations of the EU. In the case of the countries of central and eastern Europe, the Copenhagen European Council in June 1993 concluded that: "The associated countries in central and eastern Europe that so desire shall become members of the Union. Accession will take place as soon as a country is able to assume the obligations of membership by satisfying the economic and political conditions. Membership requires: that the candidate country has achieved stability of institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities; the existence of a functioning market economy, as well as the capacity to cope with competitive pressure and market forces within the Union; the ability to take on the obligations of membership, including adherence to the aims of political, economic and monetary union."

The Copenhagen European Council then concluded that "The Union's capacity to absorb new members, while maintaining the momentum of European integration, is also an important consideration in the general interest of both the Union and the candidate countries." The Madrid European Council in December 1995 confirmed these criteria and referred also to the need: "to create the conditions for the gradual, harmonious integration of the candidate countries particularly through: the development of the market economy, the adjustment of their administrative

obstacle for would-be new EU members that also wish to join Economic and Monetary Union (EMU) at an early date.

The body making monetary policy in the European Central Bank (ECB), is the Governing Council. It currently has 18 members - 6 Executive Board members and 12 national central bank governors, one for each of the 12 EMU member countries. Formally, all 18 members have equal weight in the decision making process. Eighteen members is already too many from the point of view of effective discussion, deliberation and collective decision making. Enlarging an unreformed European Central Bank (ECB) to include 5, let alone 10, new members would turn the current 18 member ECB Governing Council into a very large, unwieldy, indeed unmanageable group.

While Article 10 of the statute of the ECB states that the decisions of the ECB Governing Council are adopted by simple majority of the members, each having one vote, it does not require a formal, explicit vote.[5] It has been the ECB's *practice* to reach decisions by consensus rather than by a formal majority vote. This practice of consensual rather than majoritarian decision making further increases the risk that the ECB of an enlarged but unreformed EMU would be systematically 'behind the curve'.

The good news is that the Nice Treaty does recognize the problem likely to face the ECB of an enlarged EMU under existing rules, and takes two small steps towards alleviating it. First, the ECB and the European Commission are invited to propose solutions. Second, the Treaty includes an "enabling clause" that allows limited ECB reform in what effectively is a single-issue Inter-Governmental Conference. Note, however, that any change to Article 10 of the statute of the ECB requires a unanimous European Council decision which must then be ratified by the Member States.

EU membership does not imply immediate membership in the EMU. It is true that for the current crop of accession candidates, any formal derogation from EMU membership, of the kind

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structures the creation of a stable economic and monetary environment."
5 In the event of a tie, the President of the Governing Council has the casting vote.

obtained earlier by the UK and Denmark, will no longer be possible. The obligation to join EMU, *once the Maastricht criteria for membership are satisfied*, will be part of the 'Acquis Communautaire' that candidate EU members will have to take on board.

However, whether and when the Maastricht criteria are satisfied will be to a significant extent at the discretion of the candidate members. Sweden, for instance, does not have an EMU derogation but has thus far evaded the obligation to join EMU by *choosing* not to satisfy the exchange rate criterion (interpreted here as successful membership in the Exchange Rate Arrangement (presumably the ERMII variant) for a period of at least two years).

The full set of macroeconomic Maastricht criteria for membership in EMU is as follows. There is a pair of *financial criteria*, a ceiling on the general government deficit - to - GDP ratio of 3 percent and a ceiling on the gross general government debt - to - GDP ratio of 60 percent. There also is an *interest rate criterion*: long-term (ten year) nominal interest rates on the public debt are to be within 2 percent of the average in the three countries with the best inflation record. Next comes the *inflation criterion*: the annual inflation rate cannot exceed the average of the three best performing countries by more than 1.5 percent. Finally, there is the *exchange rate criterion*: EMU candidates will (almost surely) have to join an ERMII arrangement. Within the (15 percent ?) bands of the ERMII arrangements, the exchange rate will have to be stable (without using capital or exchange controls etc.) for two years prior to joining EMU. There is also the institutional requirement that the *central bank* be independent.[6]

An important point to keep in mind is that, while the achievement of each of the individual targets or constraints implied by the Maastricht criteria is, at least in principle, under the control of the national monetary authority and the national government, the whole set of targets together is not. For instance, the targets on (nominal) interest rates and inflation put constraints on the real interest rate; and the target on nominal exchange rates and inflation put restrictions on real exchange rates.

6 For more details, see Appendix 1.

Real (risk-free) interest rates cannot be controlled by the national authorities of small open economies if there is a high degree of international capital mobility, although they may be able to influence national (default) risk premia. All candidate accession countries are small open economies both as regards international trade in financial claims and as regards international trade in goods and services. The real exchange rate (the relative price of traded to non-traded goods) *is* affected by fiscal policy and other structural measures, but also depends on how quickly productivity in the traded and non-traded goods sectors rises to Western European levels. This is something the authorities can control only indirectly and imperfectly.

Thus, if all Maastricht criteria must be satisfied simultaneously, the likelihood and timing of entry will depend on the degree and speed of *real* convergence of the economies of the accession countries with the existing EU members. These same criteria do not put very severe restrictions on the permissible monetary and exchange rate regime prior to and immediately following accession. Floating within a band or target zone measuring no more than 15 percent from a euro central rate, with intervention at or within the margins of the band, is permissible. Even without adopting a formal target zone, a country could manage its exchange rate to stay within 15 percent of some euro central rate. It is quite possible that such a policy or regime could be deemed consistent with the Maastricht criterion. Definitely permissible under the Maastricht exchange rate criterion are a conventional fixed exchange rate regime and a currency board with the euro. Any of the previous regimes could be combined with the adoption of the euro as a *parallel currency*. Under such a scheme the euro would be joint legal tender with the domestic currency.

According to the letter of the Treaty, full, unilateral euroisation, with the abolition of the domestic currency, is not compatible with the Maastricht criteria for joining EMU. The argument is that, once the domestic currency has been abolished, there no longer is any way for the Council of Ministers to determine the conversion rate at which the candidate EMU member's currency eventually

joins EMU. The candidate EMU member would have been able to determine its euro conversion rate unilaterally.[7]

Below we investigate the degree to which individual accession countries currently satisfy what we consider to be the two key Maastricht criteria for EMU membership - the inflation and the exchange rate criteria -, and how likely and desirable it is that these two criteria can be satisfied in the next five to ten years.[8][9]

II. Monetary and Exchange Rate Regimes in Accession Countries: Current Practice

Before turning to the question as to what the exchange rate arrangements of the accession candidates will be or ought to be, a quick glance at current practices is in order. Table 1 characterises

7 Note that it might be possible to respect the letter of the Treaty in this regard, while violating its spirit. Consider the case where the euro is made joined legal tender with the national currency, and the candidate EMU member's own currency is not formally abolished. and remains joint legal tender with the euro. The use of the local currency as a means of payment, numéraire and store of value could be discouraged in a variety of ways. In the limit, the last domestic banknote could lead a perfunctory existence, hanging framed on the wall of the office of the Governor of the central bank. The conversion rate ultimately decided by the Council would be irrelevant if the local currency had *de facto* if not *de jure* become defunct.

8 The central bank independence criterion does not normally feature prominently in discussions of EMU membership conditionality, but it may turn out to be a binding constraint for even some of the more advanced accession candidates. For instance, the Czech Republic was, early in 2001, considering a modification of its central bank statutes which appeared likely to violate the Maastricht criteria. These proposals were subsequently dropped. The new Polish government has also, since November 2001, made statements that, if acted upon, would undermine the independence of the National Bank of Poland. The Polish Peasants' party, the junior coalition partner in the government of prime minister Leszek Miller, proposed a bill in December 2001 that would increase the size of the Monetary Policy Council of the National Bank of Poland from 10 to 16 members. If implemented, this would permit Council to be packed with political appointees likely to support the government's view on the proper course of short-term interest rates. The proposed legislation would also change the central bank's mandate to emphasise growth and unemployment. These proposals, if implemented, would certainly violate the Maastricht criterion for central bank independence, and could even endanger Polish participation in the first enlargement wave, expected early in 2004.

9 The government debt and deficit criteria have been interpreted so flexibly for the 11 first-round EMU members that joined on January 1, 1999, and for Greece, which became an EMU member on January 1, 2001, that it is hard to conceive of them becoming a binding constraint for future EMU candidates. The interest rate criterion is bound to be satisfied if the inflation, exchange rate, debt and deficit criteria are satisfied.

the current exchange rate regime of each of the 10 countries and contains a brief description of the current account and capital account restrictions in effect.[10]

Table 1 here.

Among the 10 Central and East European accession candidates, three have a currency board (Bulgaria and Estonia with respect to the Euro, Lithuania with respect to the US$, to be changed to the euro on February 1, 2002), Latvia has a conventional fixed exchange rate regime with a peg against the SDR, Hungary a target zone with a central rate fixed against the euro and a 15% fluctuation band on either side plus an inflation target. The remaining five countries have a managed float. Managed floats cover a wide spectrum of possibilities as regards the ultimate nominal anchor. Among the five managed floaters, the Czech Republic has an inflation target net of administered prices, the Slovak Republic has a core inflation target, Poland has a headline inflation target and Slovenia has an M3 growth target. The Romanian central bank (NBR) has price stability as its primary mandate, but does not have an inflation target.

In addition to having differing exchange rate regimes, the 10 accession candidates differ somewhat in their approaches to the international mobility of financial capital. Note, from Table 1, that all of them have adopted IMF Article VIII, which proscribes controls on current account transactions. All ten countries have liberalised at least some types of capital account transactions, but there are differences. The Czech Republic, Hungary and the Baltic States have effectively freed financial investment flows, but have kept some restrictions in categories like real estate transactions. Poland, the Slovak Republic and Slovenia have additionally kept a number of restrictions on financial flows at short maturities.

Motivations for imposing capital controls differ among countries and instruments. So does their effectiveness. Controls on short-term capital flows are often motivated by the desire to avoid

10 Article VIII of the IMF Articles of Agreement obliges members not to impose controls on current-account transactions.

sudden large shifts in capital inflows or outflows, which could threaten exchange rate stability and/or undermine the liquidity or solvency of domestic financial institutions. Restrictions on the purchase of land or real estate by foreigners tend to be motivated by non-economic considerations.

The "short term" in "short-term capital flows" refers to the remaining time to maturity (or sometimes to the original maturity) of the financial instrument, not to the expected holding period of the investor. If there are liquid secondary markets for long-dated financial instruments, high frequency reversals of capital flows do not require the presence of short-term internationally traded securities. Even FDI is, in principle, easily reversed, if there is a liquid and deep market for ownership claims (equity). Nor does the absence of a large stock of foreign currency liabilities or the absence of significant non-resident ownership of domestic financial claims provide reasons for feeling relaxed about speculative attacks on the currency. What matters here is the capacity or ability (of resident and/or non-resident economic agents) to go short in the domestic currency and to go long in foreign exchange in any of a wide range of spot, forward or contingent claims markets.

The manner in which capital has, in the past, entered a country need bear no relationship to the manner in which capital can, at some later date, leave the country. Take, for instance a country like Poland, which has recently financed its current account deficit mainly through FDI, including privatisation receipts (that is, the capital account in recent years showed net inflows of FDI of a magnitude similar to the current account deficit). Does the fact that past current account deficits were largely financed by inflows of foreign direct investment make a sudden capital flows reversal less likely? Not if the FDI importing country has removed virtually all administrative obstacles to international financial capital mobility. In that case, a speculative attack against the domestic currency need not involve a reversal of FDI flows. Instead it could occur through large scale outflows of short-term (or long-term) *portfolio* capital.

While the range of financial instruments that can be traded internationally by the accession candidates remains fairly narrow, it is wide enough to expose each one of the 10 accession countries to the threat of sudden, large reversals in capital flows. This is even more the case because accession to the EU will require a further opening of the capital account. According to Article 56 of the Treaty on European Union, member states are required to fully liberalise their capital accounts both with regard to other member countries and with regard to third countries.[11] This opening of the capital account on accession, may well come about at the same time that the accession countries might want to enter ERM II to qualify for EMU at the earliest possible date. The experience of ERM I under free capital mobility was not very encouraging. ERM II under free capital mobility might likewise turn out to be destabilising.

This is a key factor motivating our recommendation, in the conclusion of this paper, that each accession candidate become an EMU member at the earliest possible date, preferably on the same date on which they become EU members. National monetary sovereignty for small economies, highly open to trade and financial flows – the case of each of the accession candidates - is an expensive and unnecessary luxury.

To adopt the euro at the same time as, or even before, the accession candidate becomes an EU members would, of course, require a waiver, derogation or re-interpretation of part of the exchange rate criterion in the Maastricht Treaty - the requirement that a country be a successful ERM member for 2 years before it can become an EMU member. The prevailing opinion appears to be that one has to be an EU member before one can join the ERM. This then implies that the earliest time an accession candidate can hope to join EMU is two years after joining the EU. The recent messages from Brussels and Frankfurt have hinted at even longer delays between EU accession and EMU membership.

11 Restrictions on every form of financial capital mobility are to be removed, including those on short-term capital. In most emerging market economies, the market for short-term government securities is the most liquid, restrictions on transactions in paper with a short term maturity might be able to stabilise flows to some degree, although the effectiveness of such controls will inevitably crumble as time passes.

For the accession candidates to avoid spending two years (or more) in ERM purgatory, one of two actions is required by the Council of Ministers. Either the judgement has to be made that a country can be in the ERM without being an EU member, or a formal derogation from the ERM membership requirement has to be granted. If, for instance, an accession candidate were allowed to euroise unilaterally (at a euro parity agreed with the Council of Ministers) no less than two years before the date on which it expects to become an EU member, the two years of unilateral euroisation prior to EU accession could count as the 2 year ERM membership required for EMU membership. Accession countries could then join EU and EMU on the same date, to the benefit of all concerned.[12]

It is important that the Treaty and Protocols do not explicitly require ERM *membership* as part of the exchange rate requirement. What they do require is the *observance of the normal fluctuation margins provided for by the exchange rate mechanism of the European Monetary System*, which is not the same thing. It is consistent with 'shadowing' the ERM without being a member.[13]

There are precedents for *de facto* ERM derogations, waivers, or at the very least, extremely flexible interpretations, or fudges, of the ERM membership requirement. Italy and Finland joined EMU at its start, on January 1, 1999, even though at the time the decision to admit these two countries was made, they had not yet spent two years in the ERM. Article 3 of Protocol No. 6 makes it very clear that the two year period over which compliance with the normal fluctuation

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12 The cost of acquiring the necessary euro monetary base to support unilateral euroisation could be matched by a euro loan from the ECB to the euroising central bank. This loan would become a grant when the country became a full EMU member, entitled to its share of euro seigniorage.

13 The third indent of Article 109j(1) of the Treaty refers to the exchange rate criterion as: *"the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System , for at least two years, without devaluing against the currency of any other Member State;"* Article 3 of Protocol No 6 specifies that: *"The criterion on participation in the exchange-rate mechanism of the European Monetary System referred to in the third indent of Article 109j(1) of the Treaty shall mean that a Member State has respected the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's*

margins of the ERM are to be met are the "…*last two years before the examination* "(emphasis added).[14] The examination took place no later than March 1998, when neither Italy nor Finland had been members of the ERM for two years.

Italy (re)joined the ERM on 25 November 1996. Finland (re)joined the ERM on 14 October 1996. The decision to admit Italy and Finland as members of EMU, along with the other nine candidate countries, was taken on 2 May 1998. The exchange rate data for the EMI's Convergence Report (EMI[1998]) went up to February 1998, inclusive. In producing this Report, the EMI fulfilled the requirement of Article 109j (1) of the Treaty establishing the European Community to report to the EU Council "on the progress made in the fulfillment by the Member States of their obligations regarding the achievement of economic and monetary union". The same mandate was also given to the European Commission and the two reports were submitted to the EU Council in parallel in March 1998 (see also Convergence Report 1998 (Commission)).

The language used in the Commission's Convergence Report shows clearly the tension between the judgement of the Commission (and the EMI) that Italy and Finland had satisfied the exchange rate criterion, and the verifiable facts. *"Although the lira has participated in the ERM only since November 1996, it has not experienced severe tensions during the review period and has thus, in the view of the Commission, displayed sufficient stability in the last two years."* (European Commission [1998, p24]). Also: *"Although the markka has participated in the ERM only since October 1996, it has not experienced severe tensions during the review period and has thus, in the view of the Commission, displayed sufficient stability in the last two years"*. (European Commission [1998, p. 29]). Note that the Commission's statements refer to *'the last two years'*, not to *'the last two years before the examination'*. There can be no doubt that the exchange rate criterion for EMU membership was interpreted extremely generously, that is, fudged for Italy and Finland. The only way it can be argued that both the letter and the spirit of the Treaty and Protocol

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currency on his own initiative for the same period."

were respected by the Commission and the EMI (and subsequently by the Council) is by accepting that the exchange rate requirement can be met as long as the ERM fluctuation margins have been respected, regardless of whether or not the candidate country was formally an ERM member.

More recently, Greece joined EMU on January 1, 2001. It had joined the ERM, with ±15 percent bands, at the start of EMU, on January 1, 1999. However, the decision to admit Greece to EMU had been taken on June 19, 2000, after just under 1½ year of ERM membership.

III. Monetary and Exchange Rate Regimes in Accession Countries: the Optimal Currency Area Perspective

What is the appropriate exchange rate regime for each of the accession candidates? In what follows we restrict the analysis to the comparison of two exchange rate regimes: a credible fixed exchange rate regime and a free floating exchange rate regime. The experience of these past 20 years seems to support the 'bi-polar' view that only the two extremes of the currency regime spectrum are viable in a world with few restrictions on the international mobility of capital (see e.g. Fischer [2001]). While we will concentrate on these two extreme regimes, we will also, in Section IV, consider the case for making the euro a *parallel* currency in accession candidates, that is, making it legal tender in all domestic transactions, on the same terms as the local currency. Where this matters, we specialise the free floating exchange rate regime to a free float with inflation targeting. The question of what constitutes a credible fixed exchange rate regime will be addressed in Section IV.

The following characteristics of an economy have been argued to make nominal exchange rate flexibility desirable.

(1) A high degree of *nominal* rigidity in domestic prices and/or costs.

(2) A relatively large size and low degree of openness to trade in real goods and services.

(3) A high incidence of asymmetric (nation-specific) shocks rather than symmetric or

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14 See footnote 13.

common shocks and/or dissimilarities in national economic structures or transmission mechanisms that cause even symmetric shocks to have asymmetric consequences.

(4) A less diversified structure of production and demand.

(5) A low degree of real factor mobility (especially labour mobility) across national boundaries.

(6) Absence of significant international (and supra-national) fiscal tax-transfer mechanisms.

Nominal cost and price rigidities

If there are no significant nominal cost and price rigidities, the exchange rate regime is a matter of supreme macroeconomic insignificance. Note that it is only *nominal* rigidities that matter. A country can be mired in real rigidities (rigid real wages, inflexible relativities, high non-wage labour costs, stagnating productivity, immobile factors of production) and its real economic performance will be miserable, without this having any implications for the choice of exchange rate regime. Unless these real rigidities can be addressed effectively through *nominal* exchange rate variations, the country's performance will be miserable with a credible fixed exchange rate, with a floating exchange rate, or with a system of universal bilateral barter.

The severity and persistence of nominal rigidities therefore becomes a key empirical and policy issue. Unfortunately, the available empirical evidence is extremely opaque and very hard to interpret. Even if information on the duration of nominal wage and price contracts and on the extent to which they are synchronised or staggered is available, its interpretation is obviously subject to the Lucas critique. These contracting practices are not facts of nature, but the outcomes of purposeful choices. Changes in the economic environment conditioning these choices will change the practices.

Testing price and wage data for persistence is equally unlikely to be enlightening. The pattern of serial correlation in the data reflects both 'true' structural lags, invariant under changes in the economic environment, and expectational dynamics that will not be invariant when the rules of the

game are perceived to have changed. There is no deep theory of nominal rigidities worth the name.

This leaves us in an uncomfortable position. We believe the numéraire matters, although we cannot explain why (using conventional economic tools). We believe that nominal wage and price rigidities are common and that they matter for real economic performance, but we do not know how to measure these rigidities, nor how stable they are likely to be under the kind of policy regime changes that are under discussion.

Size, openness and direction of trade

The relevant metric for 'size' in economics is market power. A large country has the ability to influence its external terms of trade (the relative price of exports and imports) or the world prices of the financial securities it deals in (the world rate of interest). From this perspective, even Poland, the largest of the 10 accession countries is small.

A country that is small as regards trade in real goods and services (a price taker in the world markets for imports and exports) cannot use variations in its nominal exchange rate to affect its international terms of trade. Of course, not all final and intermediate goods and services are internationally traded. Labour services in particular are overwhelmingly non-traded. Nominal wage rigidities are therefore sufficient to give the nominal exchange rate a (temporary) handle on the real economy, through its ability to influence relative unit labour costs and profitability.

A common theme in most Optimal Currency Area approaches is that an economy that is more open to trade in goods and services gains less from nominal exchange rate flexibility (see e.g. Mundell [1961], Mc Kinnon [1963]). It should be obvious that this proposition cannot be correct as stated. For an economy that is completely closed to trade in goods and services, the exchange rate regime is irrelevant, from the point of view of macroeconomic stabilisation. If there is a relationship between degree of openness and the cost of giving up exchange rate flexibility, the relationship cannot be monotone.

Most of the countries in Eastern Europe are much more open to trade today than the late joiners into the EU (Greece, Ireland, Portugal and Spain) were when they joined. The evidence is contained in Table 2.

TABLE 2 here

While trade accounted for 62% of GDP on average among the EU late comers, the ratio is almost twice as high for the accession countries of Group 1 and hardly lower for the countries in Group 2. Comparing the two largest economies in Group 1 with most recent EU members, Poland is much more open than Spain was when it joined the EU. Even today Spain's trade does not account for a higher share of GDP than Poland's trade. The picture doesn't change much if we value GDP at PPP rather than at current (market) exchange rates. Poland's trade today still accounts for a higher share of GDP than did Spain's when that country entered the European Union, but Spain's share of trade today is higher than that in Poland. The same is true for the averages in the ratio of Group 1 and the EU late joiners. Furthermore if valued at PPP exchange rates, the share of trade in GDP is higher for the late EU comers when they joined than for the countries in Group 2.

As can be seen from Table 3 below, all accession countries are conducting a large share of their trade with countries in Euroland.

Table 3 here

For the countries in Group 1, this share exceeds 50% and it rises to more than 70% if one includes all countries in the European Union and the countries in Group 1. Thus, the likelihood of these countries being hit hard by an external trade shock originating from a country or region outside the EU, is rather small.[15] Even during the turmoil of the Russian and Asian crises, the countries of Group 1, with the exception of Estonia, were not much more affected than the economies of Euroland (see Transition Report 1999).

According to conventional OCA theory, this concentration of trade suggests that the accession

15 But not negligible, as the recent oil price gyrations demonstrate.

countries have a very natural anchor in form of the euro if they chose to go for a currency board. Again, this argument does not appear robust. Presumably a flexible exchange rate vis-à-vis one's main trading partner would be desirable if there were frequent significant real shocks that required an adjustment of international relative prices, since, in the presence of nominal cost or price rigidities, such an adjustment is more easily achieved through an adjustment of the nominal exchange rate than through variations in domestic and foreign nominal costs and prices at a given nominal exchange rate.

Whatever the merits of the theoretical argument linking exchange rate flexibility and openness, it is clear that by most measures the accession countries are more open than Greece, Ireland, Portugal and Spain were when they joined the European Union. Furthermore most of them conduct a very high share of their trade with one currency block: Euroland.

Asymmetric shocks or transmission

The 'one-size fits all' monetary policy corset inflicted on the members of a monetary union is most costly if a member state is subject to severe asymmetric shocks or if its structure is such as to cause even symmetric or common shocks to have seriously asymmetric impacts on output and employment. The proposition that a fixed exchange rate is more attractive when the structure of production and demand is well-diversified should be seen as a statement about the conditions under which asymmetric shocks are less likely.

Differences in the structure of production or in the composition of demand may be suggestive of possible asymmetric shocks or asymmetric transmission of common shocks. Table 4 below compares the shares of manufacturing value added and of agricultural value added and employment of the Group 1 countries in 1997 with those of the EU late joiners in 1986.

Table 4 here

While it would be preferable to look at the structure of GDP at a more disaggregated level, at the one digit level the difference between the economies of Group 1 and the current EU do not look any

bigger than the difference between the EU late joiners and the EU average (at the time they joined). The two entries that stand out are Poland's share of male agricultural employment in total male employment during 1997, which was 21%, and Poland's share of agricultural value added in total value added in 1997, which was 5%. These two figures imply that the gap between agricultural productivity and economy-wide productivity is very large in Poland, and larger than in the other Group 1 countries.

Identifying and measuring the shocks perturbing the accession countries in the past is an exercise undertaken only by the brave. The further assumption that the patterns revealed in the historical sample would remain valid in the future, pre- and post-accession, is difficult to justify. We limit ourselves to a very simple descriptive statistic. Table 5 below shows how inventory changes in the Group 1 countries have been correlated during the period 1994-1998 with those in France and Germany since 1994.

Table 5 here

Statistically, business cycle fluctuations can be 'accounted for' by the inventory cycle. Surprising in Table 5 is the small negative correlation between the Netherlands and Germany, despite the Netherlands being effectively on a DM standard during all of the period. This suggests that there either were few common shocks or that the Dutch economy's response to these shocks, whether through the automatic servomechanisms of the market or through policy, neutralised most of the common shocks. Table 5 also suggests a weaker positive correlation between the German inventory cycle and the inventory cycles of Group 1 than between that of Germany and the other EU countries.

The correlation between, on the one hand, the central bank interest rate set in Frankfurt and, on the other hand, the central bank interest rates in Hungary, the Czech Republic, Estonia and Poland between January 1998 and September 2000 is shown in Table 6. It is consistent with the view that over the period in question, only Polish monetary policy followed the lead of first the Bundesbank and then the ECB fairly closely.

Table 6 here

There are three considerations that qualify the proposition that asymmetric shocks make the retention of nominal exchange rate flexibility desirable. Nominal exchange rate changes are the appropriate response only to asymmetric shocks to the markets for goods and services, that is, to IS shocks and aggregate supply shocks. In response to asymmetric monetary shocks (LM shocks), a constant nominal interest rate is appropriate. In a world with perfect international financial capital mobility, a constant nominal interest rate translates into a constant expected rate of exchange rate depreciation. A credible fixed exchange rate is the simplest way of delivering this optimal response to LM shocks.[16]

Second, it is important not to be excessively impressed with the efficiency of financial markets in general, and with the efficiency of the foreign exchange market in particular. The foreign exchange market and the exchange rate can be a source of extraneous shocks as well as a mechanism for adjusting to fundamental shocks. One cannot have the one without the other. The potential advantages of nominal exchange rate flexibility as an effective adjustment mechanism or shock absorber are bundled with the undoubted disadvantages of excessive noise and unwarranted movements in the exchange rate, inflicting unnecessary real adjustments on the rest of the economy.

Third, if one takes the (empirically plausible) view, that full international financial market integration (across the whole spectrum of financial instruments, including stocks and shares and other contingent claims) requires a common currency, then the argument can be made that asymmetric (real) shocks strengthen the case for a common currency (and more generally for any credible fixed exchange rate regime). The argument is that full diversification requires a credible fixed exchange rate, and that the ability to diversify internationally, and to share risk internationally is most valuable when shocks are asymmetric. With common shocks, there can be no risk sharing. Diversification is pointless. This

[16] This is a straightforward extension of Poole [1970] to an open economy setting with integrated global financial markets (see Buiter [1997]).

argument for the superiority of a (credible) fixed exchange rate regime in the presence of asymmetric shocks was, like the opposite argument of the traditional OCA literature, first made by Mundell [1973].[17]

Limited real resource mobility

It is clear that a high degree of real factor mobility can be an effective substitute for nominal exchange rate adjustments in the face of asymmetric shocks. Indeed, factor mobility permits long-term, even permanent, real adjustments to asymmetric real shocks, something nominal exchange flexibility cannot deliver. The real factors whose mobility matters are labour and real or physical capital.

Real capital mobility, both within and between nations, is imperfect or limited, even when financial capital mobility is perfect. Once real capital (plant, machinery and other equipment, infrastructure etc.) is installed, it becomes costly to shift geographically. There are some examples of 'flying capital', such as Jumbo jets, that move very easily and at a low cost, and there have been examples of whole factories being shipped over great distances by rail or by ship. The conventional view in the OCA literature is that, as a first approximation, real capital cannot be relocated. New gross investment can of course be redirected across national boundaries, and financial capital mobility can facilitate this process, by permitting the decoupling of national saving and gross domestic capital formation. This is not a process that is likely to be very significant at cyclical frequencies, however.

The technological developments of the past few decades may make the argument that physical capital, once installed, is very costly to move geographically, progressively less applicable. While a blast furnace is likely to be prohibitively expensive to move geographically, many modern assembly lines for high-tech products are extremely valuable in relation to their weight, bulk, fragility and general unwieldy nature - the proximate determinants of the cost of moving them geographically. They can be, and are, moved over large distances in response to changes in relative costs of production (or to changes in the other determinants of profitability).

17 We would like to thank Ron McKinnon for pointing this argument out to us.

There remain many obstacles to labour mobility between the accession countries and the current EU and EMU members. Many obstacles are cultural, including linguistic, or legal and administrative. While throughout the existing EU, work permits are a thing of the past, and mutual recognition of professional qualifications is becoming the norm rather than the exception, cross-border mobility among EU members continues to be limited.

Whatever the cultural, administrative or legal obstacles to labour mobility between the accession countries and the current EU members (in the years prior to accession and in the years following accession), the net migration flows between any two regions or countries are bound to be larger the larger the difference between their real wages or real per capita income levels. Table 7 contains some useful information in that regard.

Table 7 here

It shows that, at current market exchange rates, 1998 real per capita income in Group 1 (with the exception of Slovenia) relative to the Euroland average, is half or less what the EU late joiners had relative to the EC average in 1986. This suggests that migration flows from the accession countries to the existing EU members would be significantly larger than those experienced in the late eighties and nineties between the EU late joiners and the earlier members of the EC, especially if the interim or transitional arrangements agreed between the accession countries and the EU significantly relax the current legal and administrative obstacles to migration.

However, Table 7 also shows that at PPP exchange rates, these differences are much smaller. This reflects the fact, discussed at greater length below, that GDP comparisons at current exchange rates yield significantly lower relative GDP levels for transition economies than GDP comparisons at PPP exchange rates. This in turn reflects the fact that the relative price of non-traded goods in terms of traded goods is significantly higher in the advanced industrial countries than in transition economies, including the accession countries.

However, the difference in living standards only tells us something about the size of structural, long-term net migration between accession countries and the existing EU member states. It does not say anything about the size of net labour flows at business cycle frequencies. It is the latter kind of *cyclical* labour mobility that would have to take over the role of the exchange rate as a short-term shock absorber if nominal exchange rate flexibility is given up. There is no evidence, even in countries with a high degree of structural labour mobility, such as the USA, that net labour mobility has a significant cyclical component. This suggests that either cyclically sensitive labour mobility is not required for a successful monetary union, or that the USA should not be a monetary union. Finally, there is no reason to believe that the degree of labour mobility found at cyclical frequencies will be less between accession countries and the existing EU than it is between the existing EU member states.

Supranational fiscal stabilisation

Is a supranational budgetary authority with serious redistributive powers, spanning the existing EMU members and the accession countries, necessary to make up for the loss of the exchange rate instrument the accession countries were to adopt a currency board vis-à-vis the euro, or, in due course, were to join EMU? The brief *technical* answer is 'no'. Fiscal stabilisation policy works if and to the extent that postponing taxes, and borrowing to finance the resulting revenue shortfall, boosts aggregate demand. This will be the case either if there is myopia among consumers, who fail to realise that the present value of current and future taxes need not be affected by the timing of taxes, or if postponing taxes redistributes resources between households with different propensities to consume.

Unless the supranational federal fiscal authority in a currency union has access to the global financial markets on terms that are superior to those enjoyed by the national fiscal authorities, there is nothing the federal authorities can achieve by way of fiscal stabilisation that cannot be achieved equally well by national or even lower-tier fiscal authorities. National government financial deficits and surpluses, probably mirrored to some extent in national current account imbalances, are a perfect

substitute for supranational fiscal stabilisation.

A study by Bayoumi and Masson [1994], building on earlier work by Sala-i-Martin and Sachs [1992], analyses regional flows of federal taxes and transfers within the USA and Canada. They try to distinguish between long-term fiscal flows (the redistributive element) and short-term responses to regional business cycles, which they identify with the stabilisation element. They find that in the USA, long-run flows amount to 22 cents in the dollar while the stabilisation element is 31 cents in the dollar. For Canada, the corresponding figures are 39 cents and 17 cents respectively. While interesting, these studies tell us nothing of relevance to the issue of whether fiscal policy could compensate for the loss of the exchange rate instrument if an accession country were to give up monetary autonomy. The long-term redistribution properties of the budget are irrelevant, because the nominal exchange rate is not an instrument for long-term redistribution. The stabilisation properties of the fiscal system do matter, but the necessary stabilisation can be provided at the supranational, national or sub-national level.

To the extent that monetary union is part of a wider process of political integration, political pressures may grow for long-term redistribution among the nations that constitute the monetary union. What the redistribution figures in the studies of Bayoumi and Masson and of Sala-i-Martin an Sachs tell us, is the degree to which the United States and Canada are *societies*, rather than just *economies*, and the extent to which notions of national solidarity and regional social cohesion are translated into redistributive measures through the tax-transfer mechanism.

IV. Is there a Credible Fixed Exchange Rate Regime?

No fixed exchange rate regime is absolutely and unconditionally credible. Even a full monetary union or common currency area can break up. A minimal common, that is, supranational set of political institutions (Parliament, Court, a proto-executive) covering all nations (or regions) in the monetary union appears to be a necessary condition for its long-term survival. Examples of

failed monetary unions whose members never achieved any significant degree of political union include the monetary union of colonial New England, the Latin Monetary Union, the Scandinavian Monetary Union and the East African Currency Area.

There are also numerous examples of break ups of monetary unions once the political institutions that backed it were dissolved. When the South seceded from the Union, the Confederacy introduced its own currency. The successor states to the Austro-Hungarian empire could not sustain a currency union following the break-up of the empire after World War I. The same fate befell the CIS ruble zone following the demise of the Soviet Union, and the dinar zone following the break-up of the Federal Socialist Republic of Yugoslavia.

Consistent with the view that monetary union presupposes some minimal degree of political union, we do indeed find examples in which a monetary union was successfully maintained because it was followed by the subsequent political integration. The successful Zollverein (German Customs Union) was part of the successful process of German political unification.

Among the few *prima facie* exceptions to the rule that some minimal degree of political union is required for a monetary union to survive, seems to have been Afghanistan during the five or so years that the Taliban controlled most of the country. A single currency, issued by the Northern Alliance circulated both in the Northern Alliance enclaves and in the Taliban-controlled zone. The fact that the Taliban were recognised as the legitimate government of Afghanistan by only three countries cannot explain this anomaly: the Civil War Confederacy was not recognised as the legitimate government over the Southern states, yet it introduced its own currency.

Another apparent counterexample to the proposition that lasting monetary union requires some degree of political integration is provided by Belgium and Luxembourg. Until both countries joined EMU in 1999, these two countries maintained separate currencies which exchanged at par and were legal tender in both countries since 1921. Monetary policy is *de facto* under the control of

the Belgian monetary authorities, although formally a joint agency manages exchange regulations.[18] [19]

The CFA Franc zone, which endures despite the absence of any significant degree of political integration among its African members is not really an exception to the rule. First, the African currencies were devalued against the French franc; second, there has been a continuing strong French political influence in the CFA members, all of which are former French colonies.

The examples just given show that, historically, monetary unions can and have broken up; that monetary unions that were not supported by a significant degree of political integration have broken up.

When considering monetary unions, it is important to distinguish between, on the one hand, (formally) symmetric, bilateral or multilateral monetary unions and, on the other hand, asymmetric or unilateral monetary unions. A symmetric monetary union has a monetary authority that satisfies the following conditions:

- Its mandate spans the entire monetary union;
- Its acts as lender of last resort on the same terms in every union member state.
- Seigniorage is shared fairly among all union member states.
- It is accountable to the legitimate political representatives of the citizens of the whole union.

Thus, EMU is a (formally) symmetric monetary union. The recent dollarisations of Ecuador and El Salvador, the long-standing dollarisation of Panama and the euroisations of Kosovo and Montenegro are examples of asymmetric or unilateral monetary unions. If Argentina were to dollarise, it would be a unilateral or asymmetric dollarisation.

It is easier for a country that has unilaterally adopted another currency to give up its unilateral commitment to the monetary union, than it is for a country that belongs to a formally symmetric

18 These examples are taken from Graboyes. [1990].
19 A union between a mouse and an elephant is apt to produce results that are not replicable among

monetary union to leave the monetary union. The formally symmetric monetary union therefore represents the most credible fixed exchange rate arrangement.

After the symmetric and the unilateral monetary unions, the next most credible fixed exchange rate regime is a currency board. A currency board is defined by two rules: an exchange rate rule and a budgetary or fiscal rule. The exchange rate rule is a commitment to a fixed peg in terms of some currency or basket of currencies. The fiscal rule is the requirements that there can be no domestic credit expansion by the central bank, that is, there must be (at least) 100% international reserve backing of the monetary base. In the simplest case, foreign exchange reserves are the only financial asset of the monetary authority, with the monetary base (currency in circulation plus commercial bank reserves held at the central bank) the only financial liability. Unless stated otherwise, we consider only a single currency peg vis-à-vis the euro. The euro could, but need not, be legal tender in the country operating the currency board. Unilateral euroisation is the limiting case of a currency board that has the euro as joint legal tender, when the use of the local currency, as a unit of account, a means of payment and a store of value, has shrunk to nothing.

Many variations on the pure currency board model have been implemented in practice (see e.g. Ghosh, Gulde and Wolf [2000]). Most involve adding financial instruments to the asset and/or liability menu of the monetary authority. For instance, domestic commercial banks could have contingent credit lines with the monetary authority; the monetary authority could have contingent credit lines with foreign financial institutions, private or public and the monetary authority could have limited authority to extend credit to the government and/or the private sector. Each relaxation of the strict currency board model moves it closer to the traditional central bank managing the oxymoron of a 'fixed-but-adjustable' peg.

The credibility of currency board depends on the difficulty and cost of abandoning it. The costs are probably mainly reputational. It is also possible that the abandonment of a currency board could

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more similar-sized partners.

involve the domestic private sector, and even the government or its agents, in costly litigation for alleged breach of contract. A currency board created under a government decree is more easily abandoned than one established by law. A currency board established by law is more easily abandoned than one enshrined in the constitution. Ultimately, anything that has been made politically can also be unmade politically. The cost of abandoning a currency board may be higher than the cost of abandoning a conventional peg, but it is certainly not high enough to rule out that contingency. Ireland abandoned its currency board with the UK in 1979. Currency boards are prominent today both among the EU accession candidates and among other emerging markets. In the next Section we consider the strengths and weaknesses of currency boards in greater detail, and evaluate their suitability for the accession candidates.

V. Currency Boards: Do Not Enter Without Exit

A pure currency board has the two key features pointed out in Section IV: an irrevocably fixed exchange rate and the prohibition of domestic credit expansion by the central bank. The entire monetary base is backed by international reserves.

There are two arguments in favour of a currency board. The first is that, compared to a full-fledged central bank, it is a cheap way of managing monetary policy. All that is needed is a sufficient number of modestly skilled bank clerks who exchange, at a fixed rate, domestic currency for the foreign currency or basket of currencies in terms of which the peg is defined. Of course, banking supervision and regulation still are required, but these activities need not be undertaken by the monetary authority.

Under a currency board, the regulator/supervisor can only rely on the sticks of public disapproval, fines or prosecution. The carrot of a financial safety net, should a liquidity crisis hit, is no longer available, as neither the regulator/supervisor nor the monetary authority can expand domestic credit at their discretion in response to such a contingency.

The second argument in favour of a currency board is that it is a strong, 'double-barrelled' commitment device. Through the currency peg it represents a commitment to price stability. Through the 'no domestic credit expansion' constraint, it represents a commitment to budgetary restraint. The value of both these commitments depends either on the currency board arrangement being perceived as credible and permanent, or on the belief that, if it is abandoned, it will be replaced by something representing a comparable commitment to price stability and budgetary responsibility as a credible currency board. In other words, the value of the currency board commitment if there is some likelihood of an exit from the currency board, depends on the exit being a '*strong exit*.'

These considerations permit us to specify some key characteristics that any currency board must satisfy for it to be stability enhancing rather than instability amplifying.

First, a currency board arrangement must be recognised as *temporary*, and there must be a *'strong exit'* strategy**.** This follows from our basic position that the only exchange rate regimes sustainable in the long run are a free floating exchange rate and a formally symmetric common currency or monetary union. These two regimes therefore also define the two possible strong exits from a currency board. Note that a currency board is as vulnerable to speculative attacks as any fixed exchange rate regime. The notion that it is safe (or at least safer) because the stock of international reserves is at least as large as the domestic monetary base, is mistaken. The magnitude of the portfolio shift out of domestic currency-denominated assets into foreign exchange is not limited by the stock of domestic base money. At the most basic level, foreign currency-denominated bank deposits with domestic banks (common in Argentina) can be swapped into foreign currency instantaneously. Again in Argentina, domestic currency-denominated bank deposits could (until the restrictions imposed in the first week of December 2001), be turned into foreign currency instantaneously.

If it is possible to borrow domestic currency to go long in foreign exchange, the scope for speculative attacks is further enhanced. To discourage this, sky-high domestic interest rates would be

required. The only way to prevent a foreign exchange crisis would be a fully credible commitment by the monetary authorities to raise domestic interest rates to whatever level might be required to safeguard the currency peg. Such a commitment to bring about, if necessary, a banking crisis, and even , if the speculative pressures were to persist, a general financial crisis, a public debt crisis, or a full-fledged economic crisis, is not credible. If the peg is not credible, and a *weak e*xit is likely, domestic-currency-denominated financial instruments will carry a premium reflecting the expected rate of depreciation of the home currency. The 'peso-paradox', by raising the nominal and real cost of borrowing through domestic currency-denominated debt instruments, can put additional stress on public and private budgets.[20]

Second, no country should consider a currency board unless it can afford to do without a *lender of last resort*. One obvious drawback of a currency board is that there can be no lender of last resort, since domestic credit expansion by the monetary authority is ruled out (see Chang et al. [1998], della Paolera et al [1999]). There may be ways of partially privatising the lender of last resort function by arranging contingent credit lines, but the scope for that is inevitably limited. This means that a currency board should not be considered unless the banking system (and indeed the financial system in general) is solvent and strong, and there are institutions and mechanisms other than the lender of last resort function of the traditional central bank for dealing with bank runs and other liquidity crises.

Third, no country should consider a currency board unless it has a *sound fiscal framework* that will not require discretionary access to central bank financing by the general government. A nation adopting a pure currency board throws away the key to the drawer labelled 'monetary financing of government budget deficits'. In a well-run economy, with a benevolent, competent and credible policy maker, this would actually be a drawback (see Calvo et al. [1992]). Seigniorage can be a useful source

20 The 'peso paradox' refers to the phenomenon of a fixed exchange rate regime with unrestricted financial capital mobility which produces a domestic interest rate that persistently exceeds the foreign interest rate. This is consistent with financial market efficiency and rational expectations, if there is a (small) probability of a collapse of the peg followed by a substantial currency depreciation, and this (rare) event has not (yet) occurred in the sample.

of revenue for cash-strapped governments. There is no reason to believe that the inflation rate generated under a currency board is anywhere near the optimal rate from a neoclassical public finance point of view. However, political economy considerations, distilled from the often brutal lessons of history, suggest that the printing press is a great seducer, and that the freedom to issue monetary liabilities at will is likely to be abused. Using the rather blunt instrument of an outright ban on domestic credit expansion by the central bank my therefore be desirable, if the alternative is the opportunistic abuse of the power of the printing press by myopic and/or self-serving governments. Without a sustainable fiscal programme, interest rates on domestic public debt (both domestic- and foreign-currency denominated) will be higher because of a default risk premium. As default risk increases, quantity rationing will constrain the government's ability to borrow.

Fourth, the currency or basket of currencies involved in the peg should be appropriate from the point of view of the country's external trading pattern**.** Changes in the nominal effective exchange rate are potentially effective means of effecting a necessary change in international relative price or cost levels. Pegging the nominal exchange rate to a currency or basket of currencies that has but a small weight in the country's effective exchange rate index is therefore unlikely to be wise.

Criteria (2) and (3) relate to the domestic credit expansion or fiscal aspect of the currency board regime. Criterion (4) relates to the fixed nominal peg aspect of the currency board. Criterion (1) incorporates both the fiscal and exchange rate aspects.

Argentina fails on criteria (1), (3) and (4). The currency board has been presented and defended as a permanent arrangement. There is no chance of a strong exit to membership in a formally symmetric monetary union with the USA. There are no common, supranational institutions spanning the USA and Argentina that would make such a symmetric monetary union possible. Unilateral dollarisation may be a short-run temptation, but it is not a viable long-run option. If unilateral dollarisation were to occur, the first populist President elected, with a parliamentary majority, following

the event, will re-introduce a national Argentine currency, partly for symbolic reasons and partly to get hold of the seigniorage. Argentina never solved its fiscal federalism problems, nor did it tackle effectively the problem of overall limited revenue raising capacity and strong public sector unions. Finally, the US accounted for less than 10 percent of Argentina's exports and imports.

The most surprising thing about the Argentine currency board is that it has lasted as long as it has. The horrors of the Argentine experience with hyperinflation during the 80s may account to some extent for this durability. Argentina did, of course, have an earlier extended currency board episode, lasting from 1880 till 1935 (see della Paolera and Taylor [1999, 2001]). There would have been a strong exit into a free float-cum-inflation targeting in the mid-1990s, after 4 years or so of strong growth and with persistent upward pressure on the peso. The opportunity was missed, and all that is left now, if the weakened and adulterated currency board collapses, is a weak exit into a forced free float or into a unilateral full dollarisation, which will inevitably be only temporary.

There are interesting parallels here with Turkey before the collapse of its currency regime in February 2001. Turkey did not have a currency board, but it did have something very close to it, something that could be called a 'crawling peg board'. Like a currency board, Turkey's monetary regime ruled out domestic credit expansion by the central bank. The exchange rate was not fixed, but depreciated at a predetermined rate.

Turkey failed criteria (1), (2) and (3). It had no exit strategy. Membership in a formally symmetric currency union, that is membership in EMU, is a long-term ambition, not a medium-term possibility. The Turkish banking system was very weak, and there were long-lasting unresolved fiscal problems. The burden of the internal public debt was high and rising fast. The country had been involved in 16 earlier IMF programmes, each of which had failed. Unlike Argentina, the composition of the basket in terms of which Turkey's crawling peg was defined, did reflect the country's international trading patterns.

From an economic point of view, a currency board with the euro, or another credible fixed peg with the euro, can make sense for the 10 small, highly open accession candidates in the EBRD's region of operation. An accession candidate opting for a currency board with the euro would be pegging to a currency that accounts for the lion's share of its external trade. The other obviously viable option is a free float.

An accession country with a currency board involving a peg to the euro would have a natural 'strong exit' in the form of EMU membership, preferably at the same date as EU membership. Unilateral euroisation would be a valuable option before EU membership is achieved. As noted earlier, this would require a modification or re-interpretation of the exchange rate criterion for EMU membership.

Even the stragglers in banking sector reform, such as the Czech Republic, are now engaged in a determined effort at financial and 'real' restructuring of their banking sectors. This eliminates a further obstacle to a currency board or unilateral euroisation.

Finally, while fiscal restraint, like chastity, is something that has to be fought for every day, the accession candidates of Eastern and Central Europe appear to be in no worse budgetary shape than the majority of the existing EU and EMU members. This precondition for a successful currency board is therefore appears to be satisfied also. It is important that the additional pressures on public sector budgets caused by spending to meet the demands of the Acquis Communautaire, especially in the environmental and infrastructure fields, do not jeopardise the fiscal stability of the accession candidates.

The experience with existing currency boards

It has often been argued that currency boards (like all fixed exchange rate regimes) involve a significant cost in terms of foregone real growth in the long run, because the central bank is not able to stabilise output after asymmetric shocks. A recent paper by Ghosh et al. [2000] discredits this claim

to some extent by investigating systematically the growth performance of countries that have operated currency boards. When controlling for the usual factors thought to determine growth, they actually find, instead of a lower growth performance, a higher growth performance. The obvious criticism to this sort of approach is that there might be what econometricians call a *selection bias* in the sample on which the study is based. Countries that introduce currency boards might very well have "good" governments, while the quality of governments across the rest might be much more mixed.

Across transition countries, there is also very little evidence so far that currency stability in countries with currency boards has been bought at the cost of real output stability or growth. Even though Bulgaria and some of the Baltics have struggled following the Russian and Kosovo crises, it could be argued that the non-currency board counterfactual could have been even worse.

VI. Inflation targeting

Free floating does not pin down the nominal anchor. We restrict the discussion to free floating cum inflation targeting. Inflation targeting has been 'en vogue' in most industrialised countries for quite some time. Although the US Fed does not officially and formally target inflation, its actual operating procedures under Volcker and Greenspan mimic inflation targeting. The Bank of England has had an inflation target since 1992 and the ECB has, since its launch in 1999, had an inflation target that dare not speak its name.[21] New Zealand, Australia and Canada also use inflation targeting. So, why not the accession candidates?

Although there are quite a few differences among the above-mentioned monetary authorities in how inflation targeting is actually designed and implemented, there is a common core of key requirements for effective inflation targeting found in all three. This goes well beyond the government announcing some short term inflation target. This common core consists of the following:

21 The official ECB position is that it has a medium-term price stability target. An inflation rate (for the HICP index) between zero and two percent per annum is deemed consistent with the price

1. the public announcement of a numerical medium-term target for inflation for a clearly defined and easily monitored index for a representative basket of goods and services,[22][23]
2. an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated,
3. a credible toolbox for linking monetary instruments to medium term inflation outcomes, that makes use of all the information available,
4. transparency of the monetary policy strategy through communication with the public.

Inflation targeting is said to have the key advantage that a country can keep control over its monetary policy, which is, according to conventional optimum currency area theory, desirable in the presence of asymmetric shocks. Nevertheless, in many countries it has proven quite difficult to exploit this advantage.

Monetary independence through a floating exchange rate permits flexibility (the valuable ability to respond to shocks), but the downside of this flexibility are, first, opportunism, that is, discretion in the negative sense of lack of credible precommitment and, second, vulnerability to exchange rate shocks.

Opportunistic discretion has been discredited by the inflationary experience of the 70's, and 'rules based' monetary policy, that is, monetary policy based on credible precommitment, is advocated by all main stream economists. Of course, rules can, and should, in principle, be flexible, contingent rules that permit a response to news.[24] Unfortunately, it turns out to be rather complicated to write down the optimal rule (flexible, but with commitment). Thus, for example, in the case of New Zealand, one of the front runners in rules-based monetary policy, there is now a wide-spread sense that the central bank did not have enough positive discretion, that is, flexibility, in the wake of the Asian Crisis.

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stability target.
22 This can be a point target, a range or a ceiling.
23 The US Fed does not announce a numerical inflation target. Its official targets are maximum employment, price stability and interest rate stability.
24 See e.g. Buiter [1981].

Furthermore, the benefits of monetary independence in most accession countries should not be overstated. In addition to the universal problems of instrument uncertainty, monetary policy in the accession candidates is particularly unlikely to be very effective in stabilising output because credit, deposit and debt markets are still rather underdeveloped. Furthermore, especially in the less advanced countries, a substantial share of credits and deposits continues to be in foreign currency. Thus, changes in the cost and availability of domestic credit are unlikely to have a large immediate effect on output, either through the interest rate or through the credit channel.

Accepting inflation as the overriding goal of monetary policy and giving up the goal of stabilising the exchange rate can have important repercussions for the banking system. Especially in the less advanced countries of the region, large parts of the balance sheets of banks are still in dollars and other hard currencies. Even if the balance sheet of the bank itself is balanced as regards its foreign currency liabilities and assets, this need not be adequate insurance against loss in case of large fluctuations in the exchange rate. A large depreciation may lead to defaults by parties that have borrowed from the bank in hard currency without matching the currency denominations of their own debits and credits. Such borrower defaults can have a knock on effect on the banking system.[25]

A further important requirement for inflation targeting is the institutional commitment of the central bank to the aim of price stability. This involves the insulation of the policymaking board of the central bank from the partisan political process. Members of the policy-making board of the central bank should not have close ties to political parties or factions. They should be appointed for a single term of office, which should be longer than the political cycle.

Much of the success of the inflation targeting central banks depends on hard-gained reputation. Both the Bundesbank for much of its existence and the current chairman of the Fed had (or had until

25 While a large unexpected exchange rate change can cause default and bankruptcy when there is a significant degree of currency mismatch in the balance sheets of banks, commercial and industrial enterprises and households, such 'real effects' do not, of course, make monetary policy an effective and efficient stabilisation tool.

recently) almost god-like status in the public eye. Thus, they were or are very well insulated from short term political pressures. No government or even academic in Germany blamed slowdowns in the economy on the Bundesbank.

While reputations take time to establish, the experience of the Bank of England has shown that it is possible to gain the trust of the financial markets without having to painstakingly build a reputation over a long period of time. A crucial element in gaining a reputation quickly is transparency and active engagement in explaining policy decisions to the public.

The Bank of England, which gained operational independence only in June 1997, reaches out even further by publishing within a fortnight of its monthly rate-setting meetings, the minutes of these meetings and the votes of the individual members of its policy-making Monetary Policy Committee. It also publishes its quarterly Inflation Report, summarising its view on the performance of past and future monetary policy and the prospects for inflation. Some authors go as far as arguing that the communication of its strategy to the public has been central to the success of inflation targeting in industrialised countries in recent years. In the same vein, the less than wholly satisfactory performance of the ECB since January 1999 has been attributed by some to its lack of openness, transparency and accountability, both as regards its objectives and as regards its operating procedures.

The optimal inflation target

Over recent years a lot of research has gone into the question of what constitutes the optimal inflation target. This involves the composition of the target basket, the horizon over which the target is to be pursued and the numerical value assigned to the target. Currently the Czech central bank targets net inflation (inflation stripped of administrative prices and the effect of tax changes)[26] for up

26 Note that this is easier said than done. Simply stripping administered prices out of the price index is likely to be a nonsense. Statistical stripping is not the same as behavioural stripping. The behaviour of the non-administered price component is most unlikely to be independent of the behaviour of the administered prices. For instance, freezing administered prices in an inflationary environment is likely to increase the inflation rate of the non-administered prices.

to 30 months ahead. The Polish Central bank instead targets headline inflation for at most 18 months ahead.

The consensus for very open economies appears to be that ideally the central bank should target a medium term inflation target that filters out temporary variations in the inflation rate, such as those due to transitory exchange rate movements. The advantage of this approach over simple consumer price basket targeting are higher the more open the economy is and the more volatile the exchange rate. Paying attention to these issues is the more important the larger and more volatile capital flows are. Especially when domestic financial markets and the foreign exchange market lack depth and breadth, capital flows can easily have large transitory effects on the exchange rate and through that on the domestic currency prices of internationally traded goods and services.

The challenges posed by international financial integration will continue to be important for the accession countries, and on balance, its effects are likely to be beneficial, provided effective regulation and supervision of domestic financial institutions and markets can be established. With rapidly ageing populations, domestic saving rates are unlikely to be sufficient to finance the capital stock replacement and expansion necessary to catch up with the EU (see Transition Report 2000). FDI inflows are key to the international transfer of technology and know-how. International portfolio diversification offers insurance possibilities against asymmetric shocks that are not available domestically.

The downside of international financial integration is that the international financial market system can be a source of volatility, shocks and instability. Exchange rate volatility is reflected in import price volatility and temporary variations in the rate of inflation. This effect is stronger the more open the economy is to trade in goods and services. Undue sensitivity of domestic monetary policy to such short-term movements in the inflation rate can be destabilising for the real economy. Skilful monetary targeting filters out the noise in the observed price, exchange rate and inflation signals and extracts the signal concerning the underlying inflation rate. It is sometimes argued that if highly open

transition economies target inflation, they should target 'domestically generated inflation'. Unfortunately, there is no conceptually clean way of separating imported and domestically generated inflation.

VII. Balassa-Samuelson meets the EMU Inflation and Exchange Rate Criteria

There may be a conflict between a key structural feature of the accession countries and the inflation and exchange rate criteria for EMU membership. We will show that, unless the inflation criterion is relaxed or reinterpreted for accession countries adopting a currency board (or any other credible fixed exchange rate regime), EMU may only be achievable at the expense of an unnecessary recession in the accession countries.

Likewise, for those candidate EMU members that adopt a floating exchange rate, it is likely to be necessary for the exchange rate stability criterion to be interpreted asymmetrically if the inflation criterion to be satisfied. That is, unlike significant exchange rate depreciations, significant exchange rate *appreciations* should be permitted during the two year 'probationary period'.[27]

Together, the exchange rate criterion and the inflation criterion restrict the scope for changes in the real exchange rate of the accession candidate vis-à-vis Euroland. To have, say, a real appreciation requires either a nominal appreciation (if accession country and Euroland inflation rates are the same), or a higher domestic rate of inflation relative to Euroland (holding the nominal exchange rate constant).

Real exchange rates of transition economies are volatile and subject to large medium-term swings. There can be little doubt, however, that for most accession countries, there must be the

27 The exchange rate criterion does indeed only require that a Member State shall not have devalued its currency on its own initiative for a two year period. Revaluations are not mentioned explicitly. While this asymmetry in the treatment of devaluations and revaluations may be good news from the perspective of a country wishing to qualify for EMU membership, it raises concerns about a possible lack of symmetry in the interpretation of the price stability target by the ECB. Unlike the Bank of England, whose inflation target and 'open letter procedure' are both explicitly

expectation, as part of the process of transition and catch-up in productivity and living standards, of a significant trend appreciation of the real exchange rate. The reason for this belief is the Balassa-Samuelson effect (see Balassa [1964], Samuelson [1964, 1994], Heston, Nuxoll and Summers [1994]).

Let π_T^A denote the inflation rate of traded goods prices in the accession country, π_T^E the inflation rate of traded goods prices in Euroland and ε the proportional rate of depreciation of the accession country's currency vis-à-vis the Euro. Assume that the law of one price holds for traded goods, that is, the forces of international trade arbitrage equalise the prices of traded goods and services (expressed in a common currency) between Euroland and the accession candidate. Then

$$\pi_T^A = \pi_T^E + \varepsilon \qquad (1.1)$$

The inflation rate relevant for the inflation criterion for EMU membership is the inflation rate of a broad-based consumer price index, which includes both traded and non-traded goods. Let π^A and π_N^A be the CPI inflation rate, respectively the non-traded goods inflation rate, in the accession country and π^E and π_N^E the CPI inflation rate, respectively the non-traded goods inflation rate, in Euroland. The share of non-traded goods in the consumption bundle is α both in the accession country and in Euroland. It follows that

$$\pi^i = \alpha\pi_N^i + (1-\alpha)\pi_T^i \qquad i = A, E \qquad (1.2)$$

The prices of both types of goods are determined as constant proportional mark-ups on unit labour costs. Assume the growth rate of wages within a country is the same for both sectors and that the proportional mark-up on unit labour costs is constant. The growth rate of money wages in country i is w^i and the sectoral productivity growth rates are denoted g_N^i and g_T^i, $i = A, E$. It follows that

$$\pi^A - \pi^E = \varepsilon + \alpha\left[\left(g_T^A - g_N^A\right) - \left(g_T^E - g_N^E\right)\right] \qquad (1.3)$$

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symmetric, it is not clear whether the ECB frowns equally on price inflation and price deflation.

Thus, under reasonable assumptions, the difference between the CPI rates of inflation in an accession country and Euroland equals the proportional rate of deprecation of the nominal exchange rate plus the (common) share of nontraded goods in the consumption basket, multiplied by the excess of the productivity growth differential between the traded and non-traded goods sectors in the accession country over that same sectoral productivity growth differential in Euroland. It seems likely that the differential between productivity growth in the traded goods sector and productivity growth in the non-traded goods sector is larger in the candidate accession country than in Euroland, because productivity catch-up is likely to be faster in the traded goods sector than in the sheltered sector. This means that the relative price of non-traded goods to traded goods will be rising faster in the accession candidate than in Euroland. This in turn implies that, at a given exchange rate, the overall inflation rate will be higher in the accession candidate than in Euroland.

Table 7 is consistent with this presentation. It shows, first, that there is a sizeable gap in real per capita income, and therefore also in aggregate labour productivity, between the accession countries and the existing Euroland members. Aggregate productivity catch-up is therefore possible and, in our view, likely. Second, the real per capita GDP gap is much larger at market exchange rates than at PPP exchange rates. Group 1 average real per capita income is 21% of the Euroland level at market exchange rates and 48% at PPP exchange rates. This reflects the fact that the relative price of non-traded goods to traded goods is much lower in the accession countries than in Euroland, reflecting a larger differential between the traded sector productivity levels of Euroland and the accession countries than between the non-traded sector productivity levels. If there is gradual catch-up between the accession countries and Euroland on a sector-by-sector bases, the relative price of non-traded goods will rise in the accession countries, since their productivity growth differential between the traded goods sector and the non-traded sectors can be expected to be larger than the corresponding Euroland productivity growth differential.

Several authors have recently estimated the empirical magnitude of the impact of the Balassa-Samuelson effect on the real appreciation of accession countries. De Broek and Slok [2001] estimate in a panel regression that a one percentage point increase in the relative productivity levels in industry in accession countries compared to the EMU area increases the real exchange by 0.4%. Given this point estimate, they find that the catch-up of productivity in accession countries currently causes a real appreciation of around 1.5% per annum on average for all the accession countries. Given the dispersion of productivity growth differentials across countries, the effect is significantly stronger for some countries.[28]

Jakab and Kovacs [1999] estimate the effect on Hungarian data and find about 1.9% per year for Hungary over their sample period. Rother [2000], analysing Slovenian data, puts the effect at 2.5% per year. All these estimates have the obvious shortcoming that they are done on very short data sets, that do not allow the authors to filter out some of the cyclical factors. Subject to that *caveat*, estimates of the impact of the Balassa-Samuelson effect on the recent real appreciation of the Eastern European currencies against the euro appear to be in the range of 1.5% to 2.5% per annum. Thus, at constant exchange rates, this appreciation would raise annual inflation rates in accession countries by 1.5% to 2.5% compared to the EMU average, and by even more compared to the best three performing EMU countries (which the Maastricht criterion is based on).

While we have restricted our attention so far to the Balassa- Samuelson effect as the driving force behind an equilibrium real appreciation of the currencies, the economic literature points out several other channels that can give rise to a real appreciation during times of economic catch up. For instance, under the reasonable assumption that the tradable sector is more capital-intensive than the nontradable sector, it is easy to show that a reduction in the difference in the cost of capital in transition countries compared to existing EMU countries will give rise to a real appreciation.

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28 For how long this dispersion of productivity is likely to persist cannot be inferred from these regressions. If the growth rate differentials are viewed as resulting from catch-up processes involving productivity *level* differences, inferences can be made concerning the duration of the

For simplicity assume that capital is only used in the tradable sector. A decrease in the cost of capital in the transition country leads, *ceteris paribus*, to an increase in the capital labour ratio and to an increase in the marginal product of labour in the tradable sector. This in turn raises wages in the tradable sector. Labour mobility across sectors implies that wages in the nontradable sectors will have to rise as well. Companies in the nontradable sector will only be able to pay these higher wages if the relative price of nontradables compared to tradables rises.

Given these other channels, it is no surprise that Pelkmanns et al. [2000] find a larger equilibrium real appreciation for accession countries, when they base their estimation on relative price levels in accession countries compared to existing EMU member countries rather than on productivity growth differentials. They estimate the annual equilibrium real appreciation to be around 3.5 to 4% per annum, which at a constant nominal exchange rate to the Euro would easily imply an annual inflation differential above the permitted 1.5% in the Maastricht Treaty.

If, at full capacity utilisation and a fixed exchange rate, the inflation differential were to exceed the 1.5 percent permitted by the Maastricht inflation criterion, the only way the candidate EMU member could meet the inflation criterion at a fixed exchange rate would be to have a transitional recession to depress the inflation rate for at least one year to the level required by the Maastricht treaty. Following EMU membership however, the inflation rate in the former accession country would continue to exceed that of the older EMU members by the margin implied by the Balassa-Samuelson effect, for as long as these intersectoral productivity growth differentials have not converged.

A more elegant solution, permitting the EMU candidate to maintain a fixed exchange rate without incurring an unnecessary recession would be to redefine the inflation criterion of the Maastricht Treaty in terms of the inflation rate of traded goods only. Without such a redefinition, only a waiver or derogation would allow a candidate accession country with a strong Balassa-Samuelson effect to

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process once the speed of the process is given.

qualify for EMU while maintaining a fixed exchange rate and without incurring an unnecessary recession.

Establishing a currency board when the domestic rate of inflation is well in excess of what can be rationalised with reference to the Balassa-Samuelson effect would lead to a period of declining price and cost competitiveness because of inertia or stickiness in the domestic wage-price process. Bringing down inflation to the level warranted, at a fixed exchange rate, by the Balassa-Samuelson effect and recouping the initial loss of competitiveness would require a period of excess capacity. Inflation rates still differ markedly among the accession countries, as is evident from Table 8.

Table 8 here

In Group 1, the lowest inflation rate in 2000 was achieved by the Czech Republic, with 3.9%. Poland had the highest inflation rate with 10.1%, followed by Hungary with 9.8%. Poland's inflation rate for 2001 is likely to come out at between 5% and 6%, and Hungary's at just under 9%.

Note that if a candidate EMU member subject to the Balassa-Samuelson effect were to float its exchange rate (possibly within a band), it is unlikely that there would be problems in satisfying the Maastricht criteria for Balassa-Samuelson reasons. Consider the case where monetary policy in the accession country were to keep inflation at a level no more than 1.5% per annum above the Euroland level[29], but the inflation differential warranted by the Balassa-Samuelson effect is greater than 1.5% per annum at a given exchange rate and at full capacity. The equilibrium response of the exchange rate would be an appreciation. This could cause the accession country to fall foul of the exchange rate criterion, but only if the Balassa-Samuelson effect were truly massive. The Balassa-Samuelson effect is unlikely to exhaust the 15% bands of the ERM in two years, assuming the exchange rate starts off in the middle of the band.[30] Of course, as pointed our earlier, a floating exchange rate regime has other serious drawbacks for the accession candidates.

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29 or above the average of the 3 E(M)U members with the lowest inflation rates.

30 The Treaty is not completely clear as to whether staying within the 15% bands (without any unilateral devaluation of the central rate) is sufficient for satisfying the exchange rate criterion for

VIII. The Euro as Parallel Currency for Accession Countries

One way for an accession country to give visible expression to its desire for and commitment to eventual EMU membership, is to make the euro a parallel currency for the country in question. The euro would be declared legal tender for all transactions under the accession country's jurisdiction, on the same terms as the local currency. Residents would be able to operate checkable euro accounts with local financial institutions. The introduction of the euro as a parallel currency, that is, as a competing currency with legal tender status circulating alongside the fully convertible local currency would provide additional monetary discipline. Local narrow money and the euro would become closer direct substitutes. By making the euro a better direct substitute for the local currency, any attempt at inflationary financing would be reigned in by a shift in money demand away from the local currency and towards the euro. In the limit, any non-zero anticipated depreciation of the local currency against the euro would drive the demand for the local currency to zero; likewise, any non-zero anticipated appreciation of the local currency against the euro would reduce the local demand for euros for domestic transaction purposes down to zero – a pure Kareken and Wallace world (Kareken and Wallace [1981]).[31]

Even under less idealized circumstances, the sensitivity of the demand for local base money to expected depreciation/appreciation of the exchange rate would be certain to increase as a result of 'creeping euroisation' if the euro were made legal tender.

A variety of monetary and exchange rate regimes are consistent with such enhanced direct currency competition. At one extreme are the unilateral adoption of the euro as the only legal tender, and the abolition of the domestic currency. A currency board is consistent with the euro as parallel

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EMU membership.

31 Narrow or base money is assumed to be non-interest bearing. The Kareken and Wallace universe has the further interesting property that the level of the (expected) equilibrium exchange rate, while constant, is indeterminate. Nominal price and/or wage rigidities would eliminate this

currency, but so are managed and floating exchange rate regimes.[32]

There is some historical experience with parallel currencies, and with the behaviour of the inflation rates for the two currencies and the exchange rate between them. A parallel or bi-currency standard has been used successfully as a transitional mechanism to achieve monetary stability by Brazil in 1994 under the so-called "Real Plan". Brazil adopted a new currency, the *real*, pegged and fully backed by the US $. This real circulated alongside the old currency, the *cruceiro*, which was Brazilian fiat money unbacked by US dollars. After a few months, economic agents shifted, of their own volition, towards using the new currency for invoicing and contracting. They also increasingly abandoned the old currency as a transactions medium. The result was a speedy reduction in the real value of the old currency and its *de facto* (and later also *de jure*) abolition. Later on, of course, the link of the real and the US dollar was abandoned, and the *real* turned out to be a *nomina*l after all.

Parallel currencies have a much longer history, however, and can be found in eastern Europe during extraordinary times. In 1921, the Soviet government, as part of the so-called New Economic Policy, created a new currency, the *chervonets*, backed by gold. For two years, this currency circulated alongside the rouble (the called *sovznak*). Prices stabilised in the new currency immediately, but inflation and devaluation continued in the old currency along with monetary deficit financing (using the old currency). When the budget was balanced in 1924, the old currency had been effectively repudiated through hyperinflation and all contracts had become denominated in chervonets at stable prices (Cagan [1956], Rostowski and Shapiro [1992], Fischer [1994]). One can view this as a real-time approximation to a Kareken-Wallace equilibrium.

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indeterminacy, but not the requirement that the expected equilibrium exchange rate be constant.

32 Of course, if the euro and the local currency were to become perfect direct substitutes, even a floating exchange rate regime would turn out to support only constant exchange rate equilibria. Any expected depreciation or appreciation would imply the total abandonment of the currency that is expected to weaken.

IX. Conclusion: Exchange Rate Regime Options for Accession Countries, Before and After Enlargement

The criteria for accession to Economic and Monetary Union in their current form include a *ceiling* for the permissible rate of inflation one year prior to accession and a constraint on the permitted variations of the nominal exchange rate - membership in the ERM for a two-year period prior to accession (observing the normal fluctuation limits of the ERM for a period of two years etc). Without either a derogation (waiver) from the exchange rate requirement, or a ruling that ERM membership can start before EU membership, the accession candidates would face at least a two year period during which they are members of the EU but not part of EMU.[33] This means that the accession countries would have to manage their exchange rate for a period of at least two years after joining the EU with a completely open capital account – part of the 'acquis' requirements. There will be an unavoidable risk of a speculative attack on the new EU member's currency. Fighting off such speculative attacks is costly. Giving in to them is even more costly. The ability to use variations in the nominal exchange rate to adjust more swiftly and effectively to asymmetric shocks is a greatly overvalued commodity. Those who put store in it (and few central bankers do), attribute to the national monetary authorities a capacity for fine tuning which simply is not present in reality.

The reason why an exchange rate derogation is desirable is that the efforts by the new EU member to satisfy the exchange rate criterion represents an investment without any possible return – a pointless and costly exercise. Until the country joins EMU, it will forgo the full benefits from international financial integration, since these accrue only when currency risk has vanished. It will,

33 The Maastricht Treaty, in Article 109j.1, refers to "the observance of the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other Member State;" and to " - the durability of convergence achieved by the Member State and of its participation in the Exchange Rate Mechanism of the European Monetary System being reflected in the long-term interest rate levels." There is no explicit statement that the two-year observance of the normal fluctuation margins requires membership of the ERM, or indeed membership of the EU. Earlier in that same article, however, there are references to 'Member States' which could be interpreted as applying to

however, be exposed to the risk of a speculative attack against its currency, and more generally to excess volatility and persistent misalignment. As soon as the country has established that it can manage its exchange rate for the required period of time within the assigned bands, the capacity to manage the exchange rate is given up irrevocably and permanently when the country qualifies for EMU. Reputational capital is accumulated, through a costly and risky investment process. This reputational capital is scrapped at the moment the country joins EMU.

The same objection can also be made against the inflation criterion and the interest rate criterion: they involve up-front costs without any prospective benefits. Once a country joins EMU, its medium and longer term inflation profile is determined by the EMU-wide monetary policy and the operation of the Balassa-Samuelson effect. The investment in a reputation for monetary policy competence and for commitment to price stability is worth virtually nothing when monetary autonomy is given up as a country joins EMU.[34] National fiscal policy can still affect national inflation rates, but only transitorily. At most, inflation concerns should therefore imply fiscal constraints (and fiscal coordination). They do not call for an inflation criterion *per se*. Indeed, monetary union is the means *par excellence* for achieving inflation convergence (up to a Balassa-Samuelson differential). To make inflation convergence a precondition for monetary union is putting the cart in front of the horse.

What would be the consequence of an accession country joining EMU while its inflation rate is higher than its EMU equilibrium inflation rate? If there is inertia in the accession country's inflation process, the country would lose competitiveness for as long as its actual inflation rate exceeds its EMU equilibrium inflation rate. That competitiveness will ultimately be recouped through a period of unemployment in excess of the Nairu, or a period of excess capacity. While regrettable, there are no obvious negative externalities for the existing EMU members from the entry into EMU of a (small) accession country at an above-equilibrium rate of inflation. The decision as to the appropriate inflation

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the fluctuation margins clause as well.

34 If national central bank governors continue to be voting members of the Governing Council of the ECB, the investment, prior to EMU membership, in a reputation for monetary competence and a

rate of the new EMU entrant at the moment of entry can therefore be safely delegated to the new entrant. It also is worth pointing out that we know very little about the persistence of inflation momentum across a change in the currency – the numéraire. It is not obvious that, for instance, Polish zloty or Hungarian forint inflation inertia will be inherited by euro inflation rates in Poland and Hungary respectively.

With complete financial openness, the interest rates on euro-denominated government debt issued by different national authorities will differ only because of perceptions of differences in default risk. That may argue for fiscal constraints, to address sovereign default risk, but not for interest rate constraints *per se*.

The only demonstration of economic policy competence and restraint by accession candidate that is relevant to their future behaviour and performance once EMU membership has been achieved, is the demonstration of responsible fiscal behaviour. It therefore does make sense, in principle, to impose some kinds of fiscal-financial tests for EMU membership. Whether the two numerical fiscal-financial criteria of the Maastricht Treaty are appropriate yardsticks for national fiscal behaviour that is acceptable to the Community as a whole, is a separate issue, which is not pursued here for reasons of space.

What will happen if EMU candidates are required to meet the exchange rate and inflation criteria as currently interpreted in Frankfurt and Brussels? It is clear that these criteria do not provide a perfect fit for either a currency board or inflation targeting, the two best currency regimes if immediate EMU membership is not an option. Because of the Balassa-Samuelson effect, a currency board arrangement may well fail to produce an inflation rate below the Maastricht ceiling, unless the economy is run with a wasteful amount of spare capacity.

Inflation targeting, even when pursued competently, does not rule out either a highly volatile exchange rate or persistent, medium-term misalignments. The credibility of any inflation target would

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commitment to price stability will be seriously diluted, but it will not disappear altogether.

be undermined by the requirement that the exchange rate be kept within a specified target zone. Also, the inflation criterion of the Maastricht Treaty is a 'raw' consumer price index (the HICP), with no allowance for difference between actual and 'core' inflation, between transitory and permanent changes in the inflation rate or between inflation in traded goods prices and in non-traded goods prices. A sensible inflation target, chosen to deliver smooth convergence when EMU membership is achieved, would allow for persistent equilibrium inflation differentials due to Balassa-Samuelson and similar effects. The respecification of the EMU inflation criterion in terms of traded goods price inflation (and preferable in terms of 'core' traded goods price inflation), would require a change in the Treaty or a derogation (waiver).

Inflation targeting, combined with an exchange rate that floats within a target zone with symmetric 15% bands, appears to be the monetary and exchange rate regime for EU accession candidates favoured by many in Frankfurt and Brussels. When the defence of the bands is incompatible with the achievement of the inflation target, something will have to give.

The history of the pursuit of two nominal targets (or one nominal target subject to a nominal constraint) is not a happy one. The history of exchange rate target zones under unrestricted financial capital mobility is an especially unhappy one (see e.g. Buiter, Corsetti and Pesenti [1998]). Accession candidates wishing for early EMU membership should not have to spend two or more years in this unnecessary purgatory. Arriving university students ('pledges') wishing to join certain fraternities or sororities are frequently subjected to gruelling forms of hazing. When the older students (initiated members) inflicting these indignities were asked why they wanted the would-be new members to go through this pointless and painful process, the answer tends to be: "because *we* had to go through it". The logic behind the insistence that new EU members should satisfy the inflation and exchange rate criteria of the Maastricht Treaty before they can become EMU members, appears to be similar.

The only substantive argument against immediate EMU membership for all accession candidates who qualify for EU membership is that the current constitution of the ECB's Governing Council (a six-member Executive Board plus the national central bank governor of each EMU member state) and its current voting procedures (equal weight for each Council member) would become unmanageable with an additional five or ten members. We share these concerns, but the solution is surely to reform, before 2004, the composition and voting procedures of the Governing Council of the ECB, rather than to delay the EMU membership of the successful EU accession candidates.[35]

Introducing the euro as a parallel currency in transition countries prior to formal EU accession , but as soon as a firm date for EU membership has been agreed, deserves serious consideration because it would allow accession countries to euroise gradually without failing the letter of the European Union's declared position. Such an act does not prejudge the details of the monetary and exchange rate regime. It could be viewed as a means of signalling a desire for eventual euroisation, through full EMU membership, without the need for an immediate abandonment of the local currency through unilateral euroisation.

The only argument against unilateral euroisation as soon as a firm date for EU membership has been fixed, is a procedural one: it would (probably) violate the letter of the Maastricht Treaty. Either a ruling by the competent authorities that ERM membership can start before EU membership, or a formal ERM derogation, are required to 'legalise' the unilateral euroisation option. Once that hurdle is cleared, the conversion rate at which the euroisation takes place could be determined *jointly* by the candidate country and the Council of Ministers. This would seem to be an instance of flexibility without cost. It therefore deserves serious consideration.

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35 Our preference would be to have monetary policy determined exclusively by a slightly enlarged (to 7 members) Executive Board of the ECB. An odd number of voting members reduces the likelihood of ties. It was always anomalous to have *national* central bank governors as voting members of a policy making Governing Council that was required (by the letter and spirit of the Treaties) to give weight only to EMU-wide considerations and to ignore national interests, preferences and pressures.

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Appendix 1. Criteria for the Accession to EU and EMU

Criteria for accession into the EU:

In 1993, at the Copenhagen European Council, the Member States took a decisive step towards enlargement, agreeing that 'the associated countries in central and eastern Europe that so desire shall become members of the European Union.' The declaration went on to define criteria that need to be fulfilled by the countries before they can enter, often referred to as the Copenhagen Criteria.

As stated in Copenhagen, membership requires that the candidate country

has achieved: stability of institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities; the existence of a functioning market economy as well as the capacity to cope with competitive pressure and market forces within the Union; the ability to take on the obligations of membership including adherence to the aims of political, economic and monetary union.

has created : the conditions for its integration through the adjustment of its administrative structures, so that European Community legislation transposed into national legislation is implemented effectively through appropriate administrative and judicial structures.

Thus the only condition in these criteria that address the question of monetary regimes is that any entrant into the EU will also make every effort to join the European Monetary Union in the medium term. None will be able to negotiate an opt out like Great Britain.

Criteria for accession into EMU

The criteria for the accession into the Monetary Union are much more specific. They state clear targets for inflation, the nominal interest rate, the exchange rate, the budget deficit and the debt to GDP ratio.

Inflation Rate	A Member State has to show a price stability performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1 1/2 percentages points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index on a comparable basis, taking into account differences in national definitions.
Interest Rate	Over a period of one year before the examination, a Member State has to have an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability. Interest rates shall be measured on the basis of long-term government bonds or comparable securities, taking into account differences in national definitions.
Exchange Rate	The third indent of Article 109j(1) of the Treaty refers to the exchange rate criterion as: *"the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System , for at least two years, without devaluing against the currency of any other Member State;"* Article 3 of Protocol No 6 specifies that: *"The criterion on participation in the exchange-rate mechanism of the European Monetary System referred to in the third indent of Article 109j(1) of the Treaty shall mean that a Member State has respected the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on his own initiative for the same period."*
Government deficit	The general government deficit may not exceed 3% of GDP, or should be falling substantially or only be temporarily above though still close to this level.
Government debt ratio	Gross general government debt may not exceed 60% of GDP at market prices, or must at least show a sufficiently diminishing (rate) and approaching the reference value at a satisfactory (rate).

Thus a fixed exchange rate regime vis-à-vis the euro (including a euro currency board) would be consistent with the Maastricht criteria, as would a floating exchange rate regime that does not breach the normal fluctuation margins, currently 15%.

Table 1

	Exchange rate regime	Current Account Restrictions	Capital controls
Bulgaria	currency board arrangement (peg to euro at the rate of lev 1.955.83 per euro)	IMF Art VIII adopted in 1998	there are a number of capital controls, for example on capital market secu money market instruments, derivatives, credit operations, real estate transactions, personal capital movements, etc.
Czech Republic	managed float against euro, inflation target (net of administered prices)	IMF Art VIII adopted in 1995	capital controls were largely liberalised in 1999, but some controls for exa remain on capital market securities, money market instuments, collective investment securities, real estate transactions and direct investment
Estonia	target zone with 15% margin, inflation target	IMF Art VIII adopted in 1994	almost fully liberalised except for some such as restriction on purchase of by foreigners
Hungary	crawling peg to a baket of currencies comprising the euro (70%) and the US dollar (30%) in bands of +/-2.25%	IMF Art VIII adopted in 1996	almost fully liberalised except for some controls on the purchase of land by foreigners
Latvia	fixed exchange rate regime with currency peg to the SDR (0.8 lats = SDR)	IMF Art VIII adopted in 1994	almost fully liberalised, except for some controls on inward direct investme the purchase of land by foreigners
Lithuania	currency board arrangement (peg to US$ at the rate of 1US$ = 4 LTL)	IMF Art VIII adopted in 1994	almost fully liberalised, except for some controls on inward direct investme the purchase of land by foreigners
Poland	managed float since April 2000, headline inflation target	IMF Art VIII adopted in 1995	long-term controls liberalised, but some controls on short-term capital, dire investment and real estate transactions remain
Romania	managed float	IMF Art VIII adopted in 1998	there are a number of capital controls, for example on capital market secu money market instruments, derivatives, credit operations, real estate transactions, personal capital movements, etc.
Slovak Republic	managed float, core inflation target	IMF Art VIII adopted in 1995	there are a number of capital controls, for example on capital market secu money market instruments, derivatives, credit operations, real estate transactions, personal capital movements, etc.
Slovenia	managed float, annual M3 growth target	IMF Art VIII adopted in 1995	long-term controls liberalised in September 1999, but controls on short-ter capital, direct investment and real estate transactions remain

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Table 2

Trade (% of GDP)	% of GDP (current prices)		% of GDP (PPP)	
	1986	1998	1986	1998
group of EU late joiners				
Greece	44	40	15	19
Ireland	103	141	88	134
Portugal	63	72	22	44
Spain	38	56	18	37
group 1				
Czech Republic		121		44
Estonia		169		58
Hungary		102		42
Poland		56		26
Slovenia		115		67
group2				
Bulgaria		91		23
Croatia		89		44
Latvia		109		37
Lithuania		106		40
Romania		60		15
Slovak Republic		139		46
average late EU joiner	62	77	36	59
average group 1		113		48
average group 2		101		32

Table 3

	Trade with EU + group1 %of total trade	Trade with EU %of total trade	Trade with EMU %of total trade
group 1			
Czech Rep.	75	68	59
Estonia	62	60	39
Hungary	77	73	65
Poland	73	67	60
Slovenia	76	70	64
average	73	68	57
group 2			
Bulgaria		58	38
Croatia		54	32
Latvia		55	30
Lithuania		43	32
Romania		72	56
Slovak		54	49
average		56	40

Table 4

Sectoral structure of the economies

	manufacturing % of value added		agriculture % of value added		agriculture male employment *	
	1986	1995	1986	1997	1990	1997
Average EU85	**22**		**4**	2.4**	5.6	4.5
Average EU late joiners	**23**	**18**	**9**	**6.1****	**17.4**	**14**
Greece	15	10	13	11.2**	20.5	18
Ireland			9	6.3**	20.7	15
Spain	26	18	7	3.0**	12.6	10
Portugal	29	25	6	4.0**	15.6	12
Average EU95		**19**		**3.7****		8
Average group 1		**23**		**5**		**13**
Czech				4		7
Estonia		18		7		
Hungary		24		6		11
Poland		21		5		21
Slovenia		29		4		12

* male employment (% share of economically active population)

** data is for 1994

T**able 5**
The correlation in annual change of inventories across countries (1994-1998)

	Correlation with France	Correlation with Germany
Austria	-0.34	0.95
Belgium	0.72	-0.77
Denmark	0.44	0.02
Finland	0.66	0.16
France	1.00	-0.11
Germany	-0.11	1.00
Greece	0.96	-0.38
Italy	-0.10	0.29
Ireland	0.62	0.71
Luxembourg	0.67	0.28
Netherlands	-0.05	-0.02
Portugal	0.68	-0.03
Spain	0.45	-0.88
Sweden	0.89	0.34
United Kingdom	0.92	-0.46
average	0.46	0.01
Czech Republic	-0.62	0.21
Estonia	-0.45	0.84
Hungary	-0.55	0.31
Poland	-0.14	0.16
Slovenia	0.87	-0.28
average	-0.18	0.25

Table 6 Correlation of central bank interest rates (Jan 1998-Sept 2000)

	Hungary	Czech Rep.	Estonia	Poland	UK
Euro/Germany	-0.879991526	-0.457544	-0.0566075	0.872335	0.852456

Table 7 GDP compared to Euroland both in current $ and in PPP

GNP p.c. as percentage of EU averages				
	market prices		PPP	
	1986	1997	1986	1997
% of EU 99				
Greece	46	55		
Ireland	64	85		
Portugal	31	49		
Spain	57	64		
average	49	63		
Czech Rep.		25		57
Estonia		15		35
Hungary		21		46
Poland		18		35
Slovenia		44		67
average		25		48
% of EU 85				
Greece	39	48	62	68
Ireland	55	73	48	76
Portugal	27	42	49	62
Spain	49	55	62	68
average	42	54	55	69

Table 8 Inflation Rates

	1986	**2000**
Group1		
Czech Republic		3.9
Estonia		4.0
Hungary		9.8
Poland		10.1
Slovenia		8.9
average		**7.34**
Group2		
Bulgaria		9.9
Croatia		6.2
Latvia		2.8
Lithuania		1.0
Romania		45.7
average		**13.1**
EU late joiners		
Greece	23.0	
Ireland	3.8	
Portugal	11.7	
Spain	8.8	
average	**11.8**	
E(M)U average	**2.4**	**2.3**