

WHY NOT EUROISATION?

Sandrine Levasseur

Economist at the OFCE Economic Research Department

The debate about unilateral euroisation (i.e. the unilateral adoption of the euro as legal tender) that emerged in CEECs at the end of the 1990s has finally ebbed in 2000 following the very negative reaction of the EU officials. We argue, however, that we may potentially see a renewal of the debate in the future if the institutional path set by EU to introduce the euro is not modified. Indeed, both the political and the economic context are now radically different from the ones existing in 2000. In this paper, two main lines of argument are developed. First, the credibility of (implicit) sanctions in the event of unilateral euroisation is currently very low, even nil, because acceding countries are now de facto economically and politically integrated into the EU. Second, the recent economic slowdown and a recovery that has not been as strong and fast as expected, have resulted in a halt to the nominal convergence process that may delay their entry in EMU. Given the risk of unilateral euroisation, we argue that either consensual euroisation or, at least, a relaxation of nominal convergence criteria would be a better option from the viewpoint of both current and future members of EU.

JEL classifications: F33, F15, F02

In conformity with their rights and obligations related to EU membership, all acceding countries have now submitted to the officials of EU both a prospective date to join EMU and a strategy in order to reach it. “Estonia and Cyprus aim at introducing the euro early, in 2006 or 2007. The other acceding countries favour a later adoption of the euro. Hungary, Latvia, Poland and Slovakia mention 2008 or 2009 as target years for joining the euro area, while the Czech Republic targets euro adoption by 2009-2010.” (Italianer, 2003). Indeed, by acceding to EU, they enter as Member States with a derogation which provides that, sooner or later, they will have to join EMU. It should be recalled that in the context of EU accession negotiations, they have not tried to negotiate an “opting-out” clause, like the United Kingdom or Denmark. Adopting the euro as legal tender is truly the ultimate goal of acceding countries and, in that sense, accession to EU is only an intermediate step on the way.

April 2004

Special issue

The vote of confidence in the euro by citizens of acceding countries (more largely by citizens outside the euro area) is clearly illustrated by their currency behaviour. Tumpel-Gugerell (2003a) reports the following features. In the region of central and Eastern Europe, significant use of the euro as a parallel currency (i.e. a currency to carry out transactions or save) is made by private agents, alongside domestic currencies¹. The euro banknotes in circulation outside the euro area are estimated to be worth € 36 billion, accounting for around 10% of the total euro currency in circulation. Of this amount, an important share is thought to be circulating in Central and Eastern Europe, in particular in the western Balkans. The euro is used in paper form, but also in bank money form. In most countries of the western Balkans, the bulk of bank deposits is denominated in euros while in most acceding countries the euro is the most important foreign currency for the denomination of deposits. Moreover, data available for Bulgaria and Poland show that the euro is used as an invoicing or settlement currency in the international trade of these countries with the euro area.

The role of the euro on central and eastern European financial markets is also noticeable. For instance, in a number of countries (especially the Czech Republic, Hungary and Slovenia), the euro accounts for a high share of foreign exchange turnover, which may suggest that the euro plays a so-called “vehicle” role there (Tumpel-Gugerell, 2003a). This means that the euro may be used in the exchange of two third currencies, or of the domestic currency into another currency of the region. As regards financing currency, countries in the region have been active issuers of bonds in euros. Since the advent of the euro in 1999, total issuance by these countries has amounted to more than € 30 billion. Bond issuers have included private companies and sovereign borrowers alike.

Finally, all acceding countries involved in the accession process have an exchange rate regime with the euro as reference, ranging from Currency Boards (Estonia, Lithuania) to managed floating (the Czech and Slovak Republics, Slovenia)². Only Poland officially operates under independent floating. But even for countries under either managed or independent floating there is evidence of “fear of floating” against the euro as illustrated by substantial exchange rate market interventions by the authorities of these countries over the last year (ECB, 2003)³.

1. Note that Tumpel-Gugerell (2003a) defines the region of “central and eastern Europe” in a very broad geographic sense, since alongside the ten EU candidates, it “also includes the western Balkans as well as the countries of the European part of the Commonwealth of Independent States, such as Ukraine or Russia”.

2. The official exchange rate regime of the Czech Republic has been reclassified by the IMF (from independent to managed floating with the euro as reference currency) during the course of 2003.

3. So-called “fear of floating” describes a phenomenon by which even if the authorities of a country officially declare their exchange rate system as floating, they seek to limit the movements of their currencies (Calvo and Reinhart, 2002).

Moreover, adopting the euro seems truly the ultimate goal of both citizens and authorities in acceding countries, the aim being full use of the euro before the end of the decade. The question therefore is not *whether* the CEEC candidates will adopt the euro but *when* and *how*.

The EU legislation clearly defines the way towards the adoption of the euro as a legal tender, according to a three-step institutional path. The first step consists of the accession to EU, a step reached in May 2004 for all CEEC candidates except Bulgaria and Romania⁴. In the second step, the Member State must undertake procedures to participate in the “new” Exchange Rate Mechanism (hereafter ERM-II), which involves setting a central parity with the consent of EU officials and the respect of fluctuation bands (probably set at $\pm 15\%$) without devaluation. The third step will begin when, after two years of membership of ERM-II without *tensions*, the Member State will have passed the test of nominal convergence criteria (the now famous Maastricht criteria), evaluated over the last year preceding the examination. Countries will then be allowed, according to the EU legislation, to adopt the euro as legal tender.

The officials of the EU, especially in the European Commission and the European Central Bank, stress the necessity to respect the aforementioned steps⁵. Two arguments are put forward by the EU officials: (1) the need to achieve a high degree of nominal convergence before adopting the euro; (2) the obligation to comply with the same entry conditions as current euro-area Members (i.e. “principle of equal treatment”).

In our view, such insistent declarations made by EU officials on the path to the adoption of the euro are better understood if they are replaced in the context of the end of the last decade. At that time, an intense debate arose in CEECs concerning the option of unilateral euroisation, that is a unilateral (and full) adoption of the euro as legal tender. Put differently, CEECs analysed the possibility of an early introduction of the euro without respecting the institutional path defined in the EU legislation. Following the very negative reaction of EU officials to this option, the debate ebbed considerably in candidate countries. Indeed, in the late 1990s, unilateral euroisation would have weakened the prospects of a quick accession to EU while the net economic gains of unilateral euroisation were perceived as small (even negative) or uncertain. In any case, at that time most of candidate countries were gradually converging towards the Maastricht criteria. The debate is currently being reopened in a country that is a candidate for EU membership but not acceding in May 2004, namely Bulgaria.

4. For Bulgaria and Romania, the accession to EU is delayed to 2007/2008 according to the latest declarations from EU officials.

5. See recent declarations of ECB (2003), Italianer (2003), Tumpel-Gugerell (2003a and 2003b).

The present article updates the previous literature on the issue of euroisation. Indeed, as noted by Backé and Wójcik (2002), the momentum of change is considerable in candidate countries. This implies that the economic cost-benefit analysis of any policy' choice whether "to euroise or not to euroise" is shifting over time, and potentially fairly dynamically. A particular emphasis will be put on the existence of political costs due to unilateral euroisation. Indeed, the EU arguments against euroisation are mainly legal: the stress is put on the "institutional path" towards the euro, the "principle of equal treatment". But is that a sufficient and relevant argument against euroisation? What credible sanctions could be imposed against a euroising country? Put differently, what is the scope for penalties that could impose additional costs to be incorporated in the cost-benefit calculation of euroisation? So far, the EU has not expressed any intentions of penalty action *vis-à-vis* a euroising country. No penalties were imposed on Kosovo or Montenegro when they euroised.

The remainder of the article is made up as follows. The next section gives some definitions of what "euroisation" means. Then, after putting the debate on euroisation in an historical perspective, we shall survey the economic costs and benefits of unilateral euroisation in the current, and also prospective, macroeconomic environment. After that, we focus on the credibility of EU sanctions and, related to this point, on the costs and benefits for the EU of imposing penalties. Finally, a concluding section will consider the option of a consensual euroisation between acceding countries and EU officials⁶. Among acceding countries, the analysis will focus primarily on the Czech Republic, Hungary and Poland. On the one hand, these three countries are the largest acceding countries, so that a move towards euroisation by at least one of them can affect small CEECs in their own decision to "euroise or not to euroise". On the other hand, the three biggest countries show a sufficient degree of heterogeneity for a small country to be able to find that its own situation fits in well with the situation of one large country.

6. As a result, the case of Bulgaria— candidate, not yet acceding to EU— will not be analysed with any particular emphasis. Indeed, alongside the difference in the institutional process of integration to EU, the economic performance of Bulgaria is far from matching those of the countries acceding in May 2004. In this regard, Bulgaria is much closer to, say, Kosovo or Montenegro, two territories operating under official euroisation. For these reasons, the problems of euroisation in this latter group are different from those of acceding countries and therefore fall outside the scope of this article. For an analysis of euroisation in Balkan economies, see Gros (2002). And for a special focus on Bulgaria, see, for instance, Kostov and Kostova (2002).

I. Some definitions

In broad terms, euroisation denotes the use of a foreign currency (i.e. the euro) in the domestic monetary system of a non-issuer country. “Euroisation” is then just an adaptation of the term “dollarisation”, used to define the use of the dollar in non-issuer countries, essentially Latin America economies.

Unofficial euroisation denotes a phenomenon where economic agents voluntarily use the euro alongside the national currency. The spontaneous euroisation results from business concerns and is not a deliberate government policy of unilateral adoption of the euro. These are typical examples of unofficial euroisation of the type reported in the previous section⁷.

Unilateral (and official) euroisation is the unilateral decision of a sovereign country to abandon its national currency partially or entirely in favour of adopting the euro as legal tender without joining EMU. In other words, unilateral euroisation means transition to the euro without having signed an appropriate agreement with the EMU member countries and the relevant EU institutions. Two main consequences emerge from unilateral euroisation. Under the current EU legislation, (1) a country which euroises unilaterally does not participate in the ECB’s monetary policy decision-making; (2) there is no lender of last resort in countries euroising unilaterally in the event of a banking crisis.

Unilateral euroisation differs from the regulated introduction of the euro, which implies membership in EMU and the resulting use of the euro as legal tender and the right to issue the euro⁸. The adoption of the euro takes place under an agreement signed with the EU members and institutions (the European Council, the European Commission and the European Central Bank) and proceeds from the Treaties on the EU. As already mentioned, the Treaties necessitate that the three steps of the EU process be satisfied, and for the last step, that the nominal convergence criteria be fulfilled. The convergence criteria, known as the Maastricht criteria, are summarised in Box 1.

Finally, in very broad terms, consensual euroisation can be defined as an official introduction of the euro as legal tender, without respecting the institutional path of EMU, but resulting from an agreement between the euroising country and EU officials. Consensual euroisation will be defined more precisely in the concluding section.

7. See also Eesti Pank (2002) for more details regarding the forms of spontaneous euroisation in some CEECs.

8. A regulated introduction of the euro is sometimes labelled “contractual” euroisation. In what follows, we will use the terminology “euroisation” to denote all forms of adoption of the euro short of the right of the adopting country to issue it. Expressions such as “a regulated introduction of the euro”, “institutional path for adopting euro” or “membership in EMU” will be used to define an introduction of the euro in conformity with the current EU legislation.

1. The Maastricht convergence criteria

Before acceding to EMU (i.e. the third step of the European integration process), EU Member States need to respect the following criteria:

(1) the criterion on *price stability* requires that a Member State has a price 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 1.5 percentage points that of, at most, the three best performing Member States in terms of price stability.

(2) the criterion on *long term interest rates* requires that, observed over a period of one year before the examination, a Member State has had 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.

(3) the criterion on the *government budgetary position* requires that a Member State has a ratio of planned or actual government deficit to GDP that does not exceed 3% unless:

- either the ratio has declined substantially and continuously and reached a level that comes close to the reference value,
- or, alternatively, the excess of the reference value is only exceptional and temporary and the ratio remains close to the reference value.

(4) the criterion on *government debt* requires that a Member State has a ratio of government debt to GDP that does not exceed 60%, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace.

(5) the criterion on *exchange rates* requires two things

- (a) participation for at least two years in the ERM-II, defined by (probably) $\pm 15\%$ fluctuation bands around central parity (i.e. criterion related to *functioning of mechanism*)
- (b) stability of the exchange rate, evaluated as $\pm 2.25\%$ fluctuation around central parity, under "normal" conditions (i.e. criterion related to *stability of the exchange rate*)

2. The debate on euroisation in an historical perspective

The idea of an early introduction of the euro was first put forward in December 1996 when the Slovenian Prime Minister said that "Slovenia will do its best to join monetary union as soon as possible, perhaps even before full EU membership"⁹. This idea was dropped fairly soon, however, after the EU had signalled that it would not appreciate such an approach.

9. Quoted by Backé and Wójcik (2002). This section constitutes a shorter and updated version of their chronology on the debate about euroisation.

The euroisation debate remained dormant until early 1999 when two economists, Bratkowski and Rostowski, proposed in a Polish daily newspaper a rapid unilateral euroisation for Poland. In the following months, the public discussion about the issue gained some momentum in other accession countries as well, like Estonia. In the finance ministries and the central banks of most candidate countries, the hypothetical option of a speedy unilateral euroisation was examined at a technical-economic level. The conclusions were that (i) a unilateral euroisation would not deliver systematically positive net benefits. When the evidence of positive net benefits was certain, it appeared that (ii) it would not make sense to take such a step against the wishes of EU officials. Other key conclusions were that the option of a unilateral euroisation might be reconsidered in cases of either (iii) a substantially delayed EU accession or (iv) a postponed entry in EMU even though the respective accession country *considers* that it already fulfils the Maastricht convergence criteria. In our view, the latter conclusion is important for the purpose of this paper because it points to a *political* interpretation of Maastricht criteria, whose “vagueness” permits fairly broad interpretation in some cases.

In reaction to the euroisation debate, the EU officials substantiated their disapproval of the unilateral introduction of the euro in accession countries during the course of 2000, focusing in their statements essentially on institutional and legal arguments. As noted by Backé et Wójcik (2002), economic arguments appeared indirectly and in very general terms by reference to “the underlying economic reasoning of EMU in the [EC] Treaty”, but with no further elaboration, given that euroisation as such is considered inconsistent with the Treaty, and thus not feasible anyway. The current official position has not evolved since.

In the mid-2000, the debate on unilateral euroisation ebbed considerably in most accession countries. Only a few economists continued to make proposals in this direction: Buiter and Grafe (2001), Bratkowski and Rostowski (2001), and Coricelli (2001). We attribute this vanishing of interest in CEECs to the conjunction of two main phenomena. First, there were advances in the EU negotiation process, culminating in the course of 2002 with (in June) the EU officials’ list of “winners” for the next enlargement of EU and (in October) its date. Second, good economic performances since 1995 allowed for nominal convergence in a fairly sustainable way. Inflation was declining substantially from two-digit to one-digit; public deficits were below the target of 3% of GDP in most acceding countries; the level of public debt was very low. Only long-term interest rates were far from the EU members’ level, albeit on a substantially decreasing trend. Consequently, at that time, acceding countries had no interest in pursuing the agonizing path of unilateral euroisation. The political costs— not the economic costs— were probably perceived as prohibitive in accession countries.

3. Costs and gains from unilateral euroisation: an empirical overview

This section surveys the main costs and benefits related to euroisation or, more generally, to the adoption of the euro. Indeed, some of them result from using the euro, regardless of the way in which it is introduced in the economies. Nevertheless, an accurate analysis reveals some differences between unilateral and regulated introduction of the euro.

3.1. The costs

The costs arising specifically from unilateral euroisation are generally categorised as resulting from (i) a “money supply shock” due to insufficient reserves in euro; (ii) a loss of seigniorage revenues; (iii) the absence of a lender of last resort in the event of a banking crisis. Finally, the use of the euro, however it is introduced, induces (iv) inadequate responses of monetary and exchange rate policies to smooth asymmetric shocks.

3.1.1. Once-and-for-all costs of money supply shock

From a pure macroeconomic viewpoint, one necessary and sufficient condition for a successful unilateral euroisation is a sufficient level of official foreign exchange reserves to replace the national currency. However, this technical condition is not exempt from problems: which monetary aggregate concept to use? In the literature, no consensus emerges. According to Wójcik (2001), the main technical precondition is that official international reserves cover the monetary base (currency in circulation including vault cash and commercial bank reserves at the central bank, i.e. M0). By contrast, Gabrish (2002) argues that broad concepts (i.e. M3) should be used because the demand for money transactions is contemporaneously not precisely identifiable. The problem is that the central banks of candidate countries report only M1 and M2 data: a potentially large part of private savings in banks (for instance in M3) is then unknown. Alongside the official foreign exchange reserves, the deposits denominated in foreign currency are often considered as another precondition for a successful euroisation (Habib, 2002).

Inspection of Table 1 shows that official reserves currently suffice to cover M1 at best (in Romania, Slovenia, Bulgaria and Slovakia), but clearly not M2. In this latter regard, Romania and Bulgaria show a ratio of 65-70% while other- and more developed- CEECs have lower ratios, in the range 35-55 %. Including the share of deposits denominated in foreign currency in the broad monetary aggregate improves the picture in some acceding countries, especially in Slovenia and Estonia where this share is between 30 and 40% of M2 (Table 2). In Hungary, Slovakia and Poland, the figures are around 15%, with the Czech Republic exhibiting the lowest ratio (10%). Interestingly, the share of euro-denominated bank deposits in foreign deposits is appreciable in most acceding CEECs and has shown a fairly dynamic increase between 2001 and 2002 (Table 3)¹⁰. The two latter points are worth noting as witnessing to an increasing vote of confidence in the euro, which in turn reduces the need to consider a broad aggregate for *ex ante* assessment of the technical feasibility of euroisation. Considering the narrowest aggregate (i.e. M0) then appears sufficient, without risk of “money supply shock” due to an insufficient level of official reserves, to match the money demand from private agents. Moreover, based on the latest available data for M0, unilateral euroisation can be made with no devaluation at the time of transition towards the new legal tender (Table 1).

To conclude, there is no reason in our view why, technically speaking, a well-implemented unilateral euroisation should impede the normal course of current business. Admittedly, euroisation is a complete change in regime, so that private behaviour may be affected. But it should be recalled that adopting the euro is a desire of the private sector (both households and enterprises), as revealed by the degree of unofficial euroisation in CEECs.

10. The low share of the euro in foreign deposits for Lithuania is explained by the Currency Board arrangement based on the dollar up to February 2002 (and since then based on the euro), and for Latvia, by the peg to the SDR. Past colonial links of Cyprus and Malta with the United Kingdom result in a non-negligible share of sterling in their foreign currency deposits.

1. Ratio of official foreign exchange reserves to monetary aggregates

In %	Official Reserves/M0						Official Reserves/M1						Official Reserves/M2								
	1997	1998	1999	2000	2001	2002	2003	1997	1998	1999	2000	2001	2002	2003	1997	1998	1999	2000	2001	2002	2003
Czech Rep.	98	89	99	100	101	278	261	81	93	102	99	90	87	78	29	31	37	34	33	42	41
Poland	157	178	208	235	162	181	189	117	133	125	139	109	99	98	41	43	42	39	30	34	37
Lithuania	122	132	117	133	151	155	157	79	101	91	92	96	96	94	56	68	53	50	51	54	53
Hungary	198	195	211	215	191	146	164	111	113	129	139	107	73	86	43	44	52	55	43	30	35
Estonia	126	119	115	122	121	131	129	77	82	76	77	58	56	56	53	51	50	48	35	34	34
Bulgaria	164	177	188	208	173	184	205	154	151	169	173	148	153	158	66	70	78	72	60	63	65
Slovenia	350	340	297	354	373	562	578	219	203	170	195	232	233	224	41	40	36	38	41	54	54
Romania	137	124	90	128	148	127	137	163	151	158	221	294	286	303	47	34	33	53	67	64	71
Latvia	102	97	97	92	113	98	102	79	76	80	68	84	71	71	50	48	49	40	46	39	38
Slovakia	116	114	130	166	144	257	301	67	71	93	101	89	148	109	25	22	27	31	30	52	50

Note: M0 is equal to currency in circulation including vault cash and commercial bank reserves at the central bank; M1, to the sum of M0 and demand deposits other than those of the central government. M2 includes M1, plus "quasi-money", that is time savings and foreign currency deposits of resident sectors other than central government. Data on the 1st of September 2003. Source: IMF, own calculations.

2. Ratio of deposits denominated in foreign currency to broad money (M2)

In %

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bulgaria	27.2	50.4	43.6	39.2	39.1	40.0	..	..	..
Czech Republic	5.8	6.3	11.4	11.1	10.7	10.7	10.5	9.4	9.1
Estonia	..	..	..	28.5	31.1	35.6	31.5	30.8	30.7
Hungary	..	..	19.1	18.4	16.6	17.2	16.8	..	..
Slovenia	..	..	..	25.3	26.0	30.1	32.1	29.2	..
Slovakia	..	..	..	14.5	15.0	15.5	15.6	15.2	..
Poland	20.4	17.4	17.5	15.2	15.5	15.4	15.5	..	..

Sources: Official national sources and selected issues of IMF country report; own calculations.

3. Share of euro-denominated bank deposits in foreign deposits

In %

	End-2001	End-2002
Cyprus	13.5	23.4
Czech republic	50.9	59.6
Estonia	50.4	62.7
Hungary	41.0	58.1
Latvia	15.7	19.4
Lithuania	4.5	..
Malta	17.7	24.9
Poland	27.2	28.3
Slovakia	43.3	59.6
Slovenia	83.6	..
Bulgaria	29.3	32.3
Romania	18.9	..
Turkey	25.6	27.0

Source: ECB (2003).

3.1.2. Loss of seigniorage revenues

One cost of unilateral euroisation (and also the more easily quantifiable) is the loss of seigniorage revenues that accrue from the issue of a legal tender. Indeed, circulating cash represents a non-interest obligation of the central bank, matched on its balance sheet by interest-bearing reserve assets that are an ongoing source of revenue. Unilateral euroisation automatically terminates that revenue. This contrasts with a regulated introduction of the euro since EMU members participate in the sharing of seigniorage revenues that derive from issuing the euro.

The seigniorage loss is traditionally divided in two parts: first, the “stock cost” equal to the once-and-for-all expense of obtaining the new notes and coins needed to replace local currency in circulation; second, the “flow cost”, representing the continuing flow of income forgone because the issuer country (or *area* in the case of the euro) pays no interest to the adopting country. Both stock and flow costs will be smaller, the greater the degree of prior informal euroisation.

In what follows, we present a brief empirical overview of the seigniorage issue from two perspectives: one related to unilateral euroisation and the other to full membership in EMU. Indeed, unilateral euroisation induces a “dry loss”, since by abandoning its domestic currency for the euro, the country loses seigniorage incomes without any offsetting receipts. By contrast, full membership in EMU involves contribution to a pool of seigniorage income generated in the euro area (whose technical terms are defined in the Statutes of the ECB) and a redistribution from the pool to each national central bank. Since the share of contribution does not necessarily match the share of the contribution, the net gains may be negative or positive¹¹.

3.1.2.1. Estimates of seigniorage loss due to unilateral euroisation

According to the flow approach, losses of seigniorage revenues due to unilateral euroisation are evaluated for the current period to be in the range of 1-2% of GDP per year, depending on methodologies and/or countries (Habib, 2001; Hochreiter and Rovelli (2002); Backé and Wójcik, 2002 for a empirical survey)¹². Such losses are generally judged quite low. For comparison, the current income seigniorage incomes in Western industrialised countries are put at just below 1% of GDP.

Importantly, most empirical research shows a noticeable decrease of seigniorage incomes in candidate countries since the beginning of the transition process. Focusing on opportunity cost measures, such a decrease is due to the combined effect of falling interest rates and reductions in minimum reserve requirements, which restricted the monetary base (Habib, 2001). Consequently, this cost due to unilateral

11. The ECB Statutes (Articles 29 and 32 of Protocol No 18) stipulate that seigniorage income is redistributed among all EMU member countries according to their respective capital shares in the ECB. The capital share is calculated from the country's GDP and population share in EMU. It therefore does not take into account the various contributions of the different members to the overall holding of the euro. Consequently, the pooling of seigniorage flows under EMU has dire consequences for countries that operate with large currency holdings.

12. For a clear presentation of different concepts and measures of seigniorage incomes, see for instance Hochreiter and Rovelli (2002). Very briefly, the “opportunity cost” seigniorage is constructed by multiplying a certain interest rate (used as a proxy for the return on the central bank's portfolio) by the (annual average) monetary base. The “monetary” seigniorage is measured and defined as the change in the (annual average) monetary base. The two measures are the same only when the nominal interest rate equals the growth of the monetary base. For memorandum, the monetary base is constituted by currency and bank reserves.

euroisation should decline further in the medium term as a result of the nominal convergence towards EU standards. Schobert (2001) even argues that seigniorage incomes are much lower than those indicated by the traditional opportunity-cost-based approach. Allowing for (1) lower interest incomes earned on foreign currency assets, (2) interest paid on sterilisation instruments and (3) the exchange-rate effect on central banks' balance sheets, Schobert (2001) shows that seigniorage in the more developed CEECs (i.e. the Czech Republic, Poland, Hungary and Slovenia) has not played the intended revenue role since the second half of the 1990s. To sum up, the annual loss in seigniorage incomes no longer appears to be relevant for the balance of costs and benefits related to unilateral euroisation. This contrasts with the once-and-for-all cost of replacing the domestic currency. Estimates are in the range of 11-12% of GDP for Bulgaria, the Czech Republic and Hungary, and 7-8% of GDP for Poland and Estonia (Habib, 2001; Sulling, 2002). This once-and-for-all cost constitutes one of the main obstacles to unilateral euroisation, even justifying for some authors a sharing agreement with the ECB (Habib, 2001; Gros, 2002). On this latter point, see also the concluding section.

3.1.2.2. *Estimates of seigniorage incomes due to membership in EMU*

Empirical studies based on stock data show that full membership in EMU would result in positive net gains for all candidate countries except Malta and Cyprus (Feist, 2001; Fisher et al., 2002). Indeed, most accession countries are gainers in the redistribution of seigniorage wealth while Germany, Austria and Spain are unambiguously losers. Most accession countries enjoy per-capita gains of about 200-300 euros. The highest per-capita gain is for Romania and the smallest for the Czech Republic¹³. For comparison, the per-capita loss is 400-500 euros for Germany, Austria and Spain.

Note that these figures describe the once-and-for-all gain or loss of seigniorage wealth associated with participation in EMU: they are not annual values. Feist (2001) argues that, among other things, it will be seigniorage income based on a stock– not a flow– measure that will play a part in the choice of EMU membership. Indeed, assessing the future seigniorage income flows necessitates making assumptions about the evolution of the monetary base and interest rates, which is particularly intricate because of the very transitional situation of CEECs. As a result, empirical studies based on the “flow approach” are scarce and depend heavily on the working assumptions, and we do not report the empirical results of these studies¹⁴.

13. The Romanian per-capita gain is around 400 euros in both Feist (2001) and Fisher et al. (2002). But the Czech per-capita gain is only 30 euros in Fisher et al. (2002) against 200 euros in Feist (2001). See Fisher et al. (2002) for a methodological discussion.

14. For instance, the reader is referred to Fisher et al. (2002) or Magyar Nemzeti Bank (2002).

3.1.3. The absence of a lender of last resort

In the event of unilateral euroisation, domestic monetary authorities can no longer act as a lender of last resort. Costs arise since a euroising country formally gives up a central bank capable of discounting freely in times of financial crisis. This makes *a priori* a difference from a regulated introduction of the euro because in that case the ECB is legally the lender of last resort¹⁵. Nevertheless, Cohen (2003) argues that the loss of a lender of last resort can be quite easily offset on a unilateral basis. Euroisation “reduces the overall need for international reserves, since a share of external transactions that previously required foreign exchange can now be treated as the equivalent of domestic transactions. A portion of the central bank’s assets therefore could be dedicated instead to a public stabilization fund to help out domestic financial institutions under stress” (Cohen, 2003). Moreover, the absence of a lender of last resort is somewhat mitigated by a high participation of foreign institutions which may lend to their affiliates in troubled times (Backé and Wójcik, 2002).

Finally, the soundness of the financial sector appears as a necessary condition for a successful euroisation. While empirical evidence indicates that banking sectors are still under-developed in CEECs compared to EU countries, two important advances must be underlined. First, over the past few years, CEECs have intensified their efforts to bring about structural reforms. The privatisation of the commercial banking sector is now largely complete in most acceding CEECs and, connected with the privatisation process, the efficiency of the banking sector has increased considerably (Deutsche Bundesbank, 2003). Banking sectors in CEECs have been significantly re-capitalised and modernised (Méró and Valentinyi, 2003). Second, the statutory regulations governing risk provisions have been tightened in the past few years and adapted to international standards. The Basle capital rules are now met. For instance, to comply with the so-called capital adequacy ratio, a risk-weighted equity ratio of at least 8% must be maintained. In 2001, this ratio was between 11.9% in Slovenia and 19.6% in Slovakia (Deutsche Bundesbank, 2003). Importantly, the non-performing loans which caused financial crises in the 1990s have been reduced sharply in most acceding countries. Slovakia still exhibits poor performance with a 24.3% share of non-performing loans in total bank loans while Estonia shows the best performance with a corresponding share of 1.5% (Deutsche Bundesbank, 2003).

The presence of foreign investors in the CEECs’ banking sectors deserves special mention. At the end of 2001, the share of bank assets

15. More precisely, in the Treaty, there is no provision for the ECB to provide lender of last resort liquidity (LOLR) to banks within the EMU. Like the Bundesbank, it has, in fact, no LOLR capability, being allowed only to lend to banks against EMU government securities (Bratkowski and Rostowski, 2002).

owned by commercial banks that were predominantly in foreign hands was over 60 %. It was EU banks that were mainly attracted, accounting for nine of the ten largest investors in this sector (Deutsche Bundesbank, 2003). By spreading their banking expertise, foreign investors made a significant contribution to consolidating the banking landscape in CEECs (Mérö and Valentinyi, 2003; Deutsche Bundesbank, 2003). As a result, the new parent companies contribute to a decrease in the risk of a banking crisis. Moreover, the strong presence of foreign investors also decreases the risk of illiquidity in euro and hence the potential costs due to the loss of lender of last resort in the event of unilateral euroisation. Indeed, having diversified portfolios, foreign banks are less prone to shocks in the host country, and can then provide more stable funding during turbulent time¹⁶. As surveyed by Mérö and Valentinyi (2003), “*claims of foreign subsidiaries are not procyclical*” and “*regarding the net impact on the stability of lending, most of papers suggest a rather positive role of foreign banks*”¹⁷. In other words, no study strongly supports the hypothesis of a withdrawal of foreign banks from countries in trouble. Interestingly, in the Baltic economies that operate under a Currency Board (a softer version of unilateral euroisation), limits put by this regime on the lender-of-last-resort function have improved incentives for credit institutions and reined in moral hazard (Barisitz, 2002)¹⁸. Above all, sustained macrostabilisation as well as effective structural reforms and privatisation proved essential in creating preconditions for these successful “euroisations”.

To conclude, for aforementioned reasons, the loss of a lender of last resort does not appear a relevant argument against unilateral euroisation by the CEECs.

3.1.4. Loss of independent monetary and exchange rate policies

Adopting the euro induces *de facto* the renunciation of independent monetary and exchange rate policies. Costs then arise from the incapacity to smooth asymmetrical shocks by using these policies when prices and wages are sluggish¹⁹. These costs relating more generally to the fixity of the exchange rate are typically in line with the traditional Optimum Currency Area theory. According to this theory, a low degree of asymmetrical shocks is then a sufficient condition for a successful fixity of the exchange rate.

16. Providing funds in “bad” times is reinforced by the need to maintain international reputations and by the existence of sunk costs due to FDI.

17. Mérö and Valentinyi (2003) surveyed essentially evidence on Latin America countries. The only study for five CEECs (that of Haas and Lelyved, 2002) reaches similar conclusions.

18. More precisely, only Estonia and Lithuania are under an official Currency Board, whereas Latvia is under a fixed exchange rate peg, but operating like a quasi-Currency Board.

19. A limited scope for anti-cyclical fiscal policy, as will potentially be the case for EU acceding countries due to the Stability and Growth Pact (SGP), increases the potential costs of loss of monetary and exchange rate policies.

Empirical studies generally conclude that CEECs are not, and will not be, exposed to severe asymmetric shocks in the future, or to desynchronised business cycles with the EU²⁰. Poland, Hungary and Slovenia show a high business-cycle synchronisation with the EU, while for the Czech and Slovak Republics the degree of business-cycle synchronisation is weaker but nevertheless increasing over time. By contrast, the business cycles of Romania exhibit no synchronisation with those of the EU.

Two main features, to a large extent related, are usually put forward in these studies. First, the high level of trade between CEECs and EU contributes substantially to their business-cycle synchronisation²¹. Second, the degree of (a-)symmetrical shocks is endogenous with respect to the process of monetary integration. Fixity of the exchange rate, by promoting trade, increases further the business-cycle synchronisation (Frankel and Rose, 2000; Gaulier and Levasseur, 2001).

To sum up, despite the existing market rigidities, there are no important real costs for CEECs in giving up independent monetary and exchange rate policies²².

3.2. The gains

The potential benefits resulting from the use of the euro are traditionally categorised as follows: (i) greater price stability resulting from importing credibility from the ECB; (ii) lower interest rates resulting from elimination of the exchange rate risk premium; (iii) lower transaction costs; (iv) lower exposure to speculative attacks.

3.2.1. Greater price stability due to the importing of monetary policy credibility

Adopting the euro will result in greater price stability. The argument goes as follows: euroising countries will “import” credibility from the ECB, which has a stronger commitment to price stability than domestic central banks of acceding countries.

20. For recent empirical studies, the reader is referred, for instance, to Jagric (2003), Süppel (2003), Fidrmuc and Korhonen (2003).

21. In our view, more than the level of trade, it is the very special nature of exports and imports (i.e. a specialisation along the chain of value added) that explains the high degree of business-cycle synchronisation (see concluding section). See also Jagric (2003), which finds that more synchronization is found in countries where greater internationalization of enterprises and greater product and financial market linkages to EU markets are present.

22. In this Special Issue, the reader is referred to Cazes (2004) for existing labour market rigidities in CEECs, and Creel and Levasseur (2004) for an alternative evaluation of the costs related to the renunciation of exchange rate and monetary policies.

This is not actually a very interesting argument because acceding countries are now in the maturity phase of their transition process. Inflation has been subdued rather successfully through various exchange rate arrangements and monetary policy frameworks²³. The central banks of acceding countries are now independent *de jure* and, more importantly, *de facto*. Deviations of inflation from targets seem to result more from a problem of knowledge of the mechanisms of monetary policy transmission (due to the transitional nature of these economies) or possibly from mal-definition of targets, rather than central banks with inflationary bias²⁴. Currently, the monetary policy framework is evolving in the right direction, with the same operational procedures as in developed countries. So, as regards price stability, we do not see why the ECB should do better than the domestic central banks of acceding countries. This feature is important to mention since a major argument against a regulated introduction of the euro made by some is the insufficient “culture of monetary stability” in the acceding countries.

3.2.2. Lower interest rate due to a declining exchange rate risk premium

Adopting the euro (i.e. fixing the exchange rate against euro) will induce a fall in the interest rate due to the diminishing of the exchange rate risks. Roughly, the sole important exchange rate risk remaining will be relative to the US dollar. A lower risk premium, by bringing about lower interest rates, will foster investment and then economic growth. Moreover, it will reduce the service of external and public debt (Habib, 2001).

Assessing the gains in terms of the lower interest rates resulting from unilateral euroisation is one of the most challenging exercises. Based on past data, the awkwardness of this task arises partly from difficulties of isolating the pure exchange rate risk from default risk, and partly from estimating exchange rate expectations (Borowski, 2003). However, the emerging consensus is that the Czech Republic would gain the least from the introduction of the euro because the exchange

23. For instance, there is no strong evidence that the Baltic economies with their currency board arrangements do better in terms of price stability than other acceding countries under more or less flexible exchange rate regimes.

24. Certainly, the bad experience of Poland in terms of inflation at the end of 90s was due to a misleading definition of the objective. Indeed, at that date, the vagueness of the medium-term objective for inflation (“not above 4 %” for the end of 2003) was unable to have an effective influence on inflationary expectations (OECD, 2001). As a result, interest rates remained high without successfully curbing inflation. Since then, the objective for inflation has been clearly specified (“2% in the medium run”), which gives more transparency and credibility in the conduct of monetary policy. While culminating at its highest levels in the course of 1999, the interest-rate differential relative to the euro area is now decreasing steadily.

rate risk premium has been low for several years (Habib, 2000)²⁵. By contrast, Poland would gain the most from the introduction of the euro, especially if the benchmark period is the one of exchange rate floating (Habib, 2000; Coricelli, 2002)²⁶. Finally, Hungary appears to be an intermediate case²⁷. Interestingly, the low exchange rate risk premium for the Czech Republic (compared to those for other countries) is explained by the high degree of liquidity of its foreign exchange market, which in turn is attributed to an early openness of its capital markets compared to Hungary and Poland (Bulí, 2003; Herrmann and Jochem, 2003). As a result, since full capital liberalisation is a prerequisite for joining the EU, the exchange rate risk premium of other CEECs might also decrease in the next few years.

Finally, it is worth noting that lower interest rates due to euroisation would be achieved only if the decrease in the exchange rate risk premium is not offset by an increase in the (perceived) default risk (Gabrish, 2002; Wójcik, 2000). As we argue in the concluding section, a consensual euroisation (i.e. in accord with EU officials) would surely eliminate the potential for an over-compensated rise in default risk, by reassuring financial market participants.

3.2.3. Lower exposure to speculative attacks

For acceding countries, “*an early adoption of the euro would ward off the danger of currency crises during the approach to EMU*” (Habib, 2002). Indeed, the sustainability of ERM-II might be difficult in the context of a fully liberalised capital account, even if sound economic policies are implemented. In terms of exchange rate arrangements, only the so-called “two corner solutions”, with either irrevocably fixed or independently floating exchange rates, are often viewed as viable options in a world of free capital mobility. In this regard, two country cases are particularly illustrative: Greece and Hungary.

Greece is among the less developed of present EMU members and, in this respect, close to acceding countries. In the two years before membership in EMU, the volatility of its currency increased substan-

25. Note that since mid-2000 the short-term interest rate differential between the Czech Republic and the euro area has been almost nil. And since mid-2002, the differential in long-term interest rates for (comparable) government bonds between the Czech Republic and the euro area has been negative.

26. Note however that the time span for assessing the currency risk premium of Zloty is not a trivial issue. Over the period from May 1997 to October 2000, Wójcik (2000) estimates the average fall in the short-term Polish nominal interest rates due to the elimination of exchange rate premium to be 5.5 percentage points. For the floating exchange rate period of his sample, from April to October 2000, the fall is around 8 percentage points. For another period of floating exchange rates, from January to September 2002, Borowski (2003) evaluates the currency risk premium for Poland at “only” 150 or 200 basis points. See arguments of Borowski (2003) for the most appropriate reference period to gauge the currency risk premium in Poland.

27. The most recent assessment of the currency risk premium for Hungary ranges from 150 to 300 basis points (Magyar Nemzeti Bank, 2002).

tially despite a major improvement in fiscal discipline. More precisely, *“upon entering ERM-II, Greece devalued the drachma by about 13 percent. Such initial depreciation was followed by a quick reversal and a shift towards the lower end of the band. During the two years of ERM-II the drachma was stuck in the lower portion of the band [i.e. appreciated]. As a result, the parity negotiated for the entrance into the euro was revalued”*. (...) *“The decline of domestic [interest] rates was very slow, and accelerated only when the entry into the euro approached. Even then, however, a significant spread with respect to the euro interest rates persisted”* (Coricelli, 2002)²⁸. As underlined by Coricelli (2002), the parity chosen for entry into ERM-II is likely to become a ceiling for actual exchange rate movements, meaning that countries will tend towards the lower (appreciated) part of the band. The line of reasoning is twofold. As the parity cannot be devalued (in the context of ERM-II), expectations of inability to enter the euro would mount, creating a self-fulfilling process of weakening currency. This induces corrective actions by the central bank in order to support the exchange rate, namely high interest rates. The second, and more likely outcome, is that the country anticipates these potential difficulties by using monetary policy to achieve a “strong” currency. Through high interest rates, the exchange rate will be kept in the lower section of the band (i.e. appreciation). At the end of ERM-II, the parity can either be maintained or re-valued. Part of the mechanism goes under the heading of the so-called “convergence play”, whereby foreign investors speculate on the value of the parity that will be chosen at the end of the two years and on the capital gains accruing from the decline in nominal interest rates on fixed income bonds. Coricelli (2002) therefore calls ERM-II a “trap”.

The recent experience of Hungary constitutes another interesting case. Hungary’s present exchange rate arrangement mimics the ERM-II in most of its aspects. The forint is pegged to the euro within fluctuation bands of +/-15% (since May 2001) with no pre-announced devaluation (since October 2001)²⁹. Figure 1 illustrates, as in the case of the drachma, the tendency of the currency to be in the lower (appreciated) part of the band since the beginning of the exchange rate arrangement. After a rather tranquil period, the appreciation of the forint substantially accelerated following the “yes” vote in the Irish referendum on 19 October 2002, which reassured market participants on the future enlargement of the EU. Capital then started to pour into Hungary, attracted by a large interest gap between Hungary and the

28. At the end of August 2000, that is, four months before Greece entered EMU, the spread was still around 200 basis points.

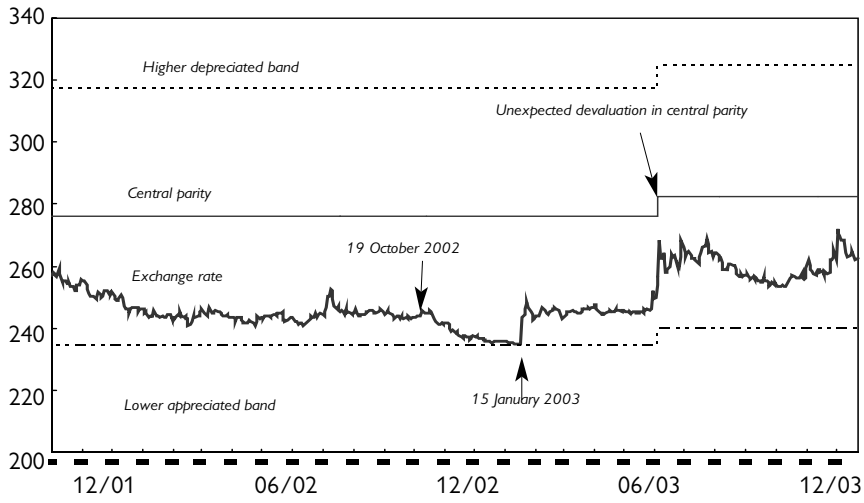
29. The two main differences between the Hungary’s current exchange rate arrangement and ERM-II are as follows. First, in the context of ERM-II, the parity cannot be devalued, while the National Bank of Hungary at present has discretion concerning this option. Second, the ECB currently has no obligation to intervene at the margins as will be the case in ERM-II. The ECB may however decide to suspend interventions if it is deemed that these actions interfere with the primary objective of price stability.

euro area as well as other acceding countries, causing an appreciation of the forint. Neither the interest rate cuts, nor the growing current-account deficit, succeeded in stopping the forint's appreciation. On 15th January 2003, the boundary of its trading band was reached (Figure 1) due to the action of a group of foreign banks. Hungarian monetary authorities then intervened extensively on the exchange-rate market to fight the speculative attack in favour of the appreciation–not depreciation– of the forint³⁰. Moreover, they cut the key two-week deposit rate by 200 basis points, from 8.5% to 6.5% (Figure 2). Thereafter, the forint remained broadly stable until the end of May 2003, when the currency showed the first signs of weakness, in a context of growing twin deficits. In the course of June 2003, the Hungarian central bank first decided an (unexpected) devaluation of the central parity of the forint by 2.2% (Figure 1) and two hikes in its key interest rate bringing the short-term interest rate differential against the euro area to 750 basis points (Figure 2). The latter actions were supported by arguments that, to keep inflation in line with the bank's target, the exchange rate would have to strengthen against the euro. Indeed, Hungary is a small open economy where the exchange rate's channel of monetary policy transmission dominates that of the interest rate. For some time, the high interest-rate differential contributed to a reinforcement of the forint. At the end of November 2003, after several weeks of depreciation in the forint, the Hungarian central bank decided again to increase the key rate by 300 basis points. Its argument was as follows: *"the spending overrun in general government and the household sector can only be financed through the inclusion of external sources of massive funds"* and *"foreign investors are only willing to secure the funds needed (...) at a higher price"*. Moreover, *"the depreciation of the forint's exchange rate offers no solution to the problem of how the current account deficit should be reduced. Such a depreciation would only increase inflation which in turn would (...) cause several years delay in the adoption of the euro in Hungary"* (Press Releases of HNB, 28 November 2003).

Certainly, while the monetary authorities recognised that the devaluation of June was a mistake, the Hungarian experience constitutes a good illustration of how a mechanism like ERM-II can be difficult to manage for a catching-up economy, which in addition must fulfil other– and somewhat contradictory– targets. The interest rate is intensely manipulated and, especially, kept high in order to obtain an appreciation in the currency, which in turn allows disinflation to be imported. In this respect, euroisation would make it possible to obtain lower interest rates and to avoid other traps in the Maastricht criteria.

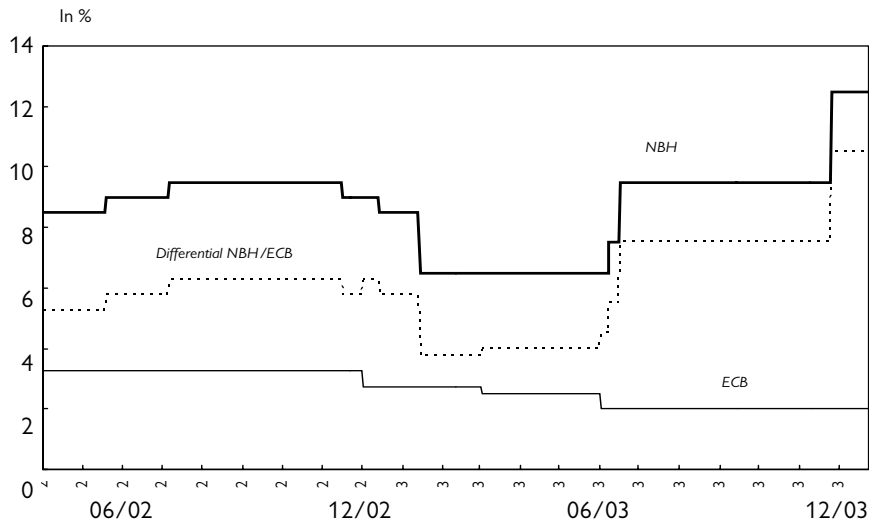
30. On 15th January, the Hungarian central bank had to sell a total of HUF 213 billion (for EUR 908 million) to defend the band (Magyar Nemzeti Bank, 2003).

1. Exchange rate forint/euro
(since the +/-15% fluctuation bands without pre-announced devaluations)



Source: NBH, web site.

2. Interest rates (ECB, National Bank of Hungary)



ECB : Minimum bid rate on main refinancing operations.

NBH : Two-week deposit rate.

Sources: ECB and NBH, web sites.

Moreover, the Hungarian experience clearly illustrates how a mechanism like ERM-II— a fixed but adjustable exchange rate mechanism— can be difficult to sustain in a context of fully liberalised capital movements, leading market participants to test the boundaries independently of fundamentals, as already exhibited by the ERM crisis of 1992/1993, which led to a widening of fluctuation band from +/-2.5% to +/-15%³¹. Note that the Hungarian experience is pointed to by the Czech National Bank to justify a presence in ERM-II for the minimal time period of two years. The argument goes as follows. Staying in the ERM-II for longer is not deemed desirable or beneficial to macroeconomic stability, because “*participation in the ERM-II alone— unlike the irrevocable fixing of the exchange rate within the monetary union— does not in itself eliminate the risk of currency turbulences*” (CNB 2003).

Capital flows could certainly become a source of concern for acceding countries (Begg *et al.*, 2003). Membership in EU implies full liberalisation of the capital account, which is expected to have a significant impact on portfolio and short-term capital flows because these capital flows have so far remained relatively restricted³². And there is empirical evidence that short-term capital flows are the most volatile type of capital investment (Buch and Lusinyan, 2002). Stability of the exchange rate might then be put at risk, with rising short-term capital inflows and, as a corollary, with outflows resulting from a shift in market sentiment.

To sum up, an acceding country experiencing much turbulence under the ERM-II arrangement would benefit from euroisation, by suppressing macroeconomic instability not based on fundamentals and, in a related manner, by gaining from lower interest rates.

3.2.4. Lower transaction costs due to the use of a common currency

Lower transaction costs due to the use of a common currency arise mainly from the elimination of exchange rate risk. Such benefits are both direct and indirect. The direct benefit is that real resources that would have been devoted to managing this risk can now be channelled to other productive uses. The indirect benefit is that trade between countries using the same currency increases. Indeed, there is some empirical evidence that trade expands between members of a currency

31. The position of the Hungarian monetary authorities concerning the speculative attack on the forint on 15th January 2003 is clear: “*The speculation against the forint’s band was unjustified and irrational. (...) Buy orders for large amounts on forint on the day in question had been placed by eight major foreign banks, many of which have subsidiaries in Hungary. Thus the speculative attack was mounted by these foreign banks, or rather the clients they represent*” (Magyar Nemzeti Bank, 2003).

32. See, for instance, Buch and Lusinyan (2002) or Begg *et al.* (2003) for a description of capital account liberalisation in CEECs.

union (Frankel and Rose, 2002; Glick and Rose, 2002) and we take it as axiomatic that trade enhances wealth. Note however that the increase in trade resulting from currency union has been probably over-estimated, as demonstrated by very recent empirical work. More than the adoption of euro, membership of the EU, by suppressing all tariff and non-tariff barriers, is proved to expand trade between members (Box 2).

The use of a single unit of account definitely makes prices more transparent, which in turn increases cross-country competition. But, similarly, such benefits are probably exaggerated in economic discussion (Coricelli, 2002).

2. What is the “true” effect of a currency union on trade?

The issue of selection bias

Many studies analysing the potential benefits for candidate countries of adopting the euro assume a sharp increase in trade with EU, due to the use of the single currency unit (Borowski, 2003, for instance). To a very large extent, such an assumption is based on the empirical findings of Rose (2000), Frankel and Rose (2000), Glick and Rose (2002): countries using the same currency trade up to three times more with each other than similar countries using different currencies. Moreover, such an increase in trade is conducive to higher growth.

However, such an increase in trade (and the subsequent positive effect on growth) is probably greatly over-estimated. Indeed, other recent studies argue in this direction. For instance, the original Rose data set has been re-analysed by Persson (2002), who shows that the magnitude of a currency union effect is sensitive to selection bias; by Nitsch (2001), who claims that countries adopting the US dollar enjoy no increase in trade and that “*the estimates of the trade-enhancing effect of establishing a currency union are, at best, unreliable*”; by Thom and Walsh (2002), who again find in favour of a selection bias. Certainly, the use of a common currency increases trade between countries sharing that currency, but not in the proportions found by Rose (2000), Frankel and Rose (2000), Glick and Rose (2002).

The core explanation of the over-estimation is the “selection bias”, which can be easily understood without resorting to technical and econometrical considerations, by summarising the explanation of Thom and Walsh (2002). They argue that in the Glick and Rose study, (i) the poorest and least stable countries of the world predominate in their list of currency union’ members (over 250 of their 376 unions) and (ii) that all of the unions involving these countries were legacies of an explicit or implicit colonial past. Many of these unions ended as part of a bloody decolonising process, followed by the adoption of Marxist/autarkic policies, bilateral trade deals with the Soviet Union or China, and a descent into economic chaos. In many cases, it is very likely that trade between the former currency union partners would have collapsed regardless of the currency regime in force. The main econometrical problem is then to isolate the currency union effect from these contaminating influences. There is a bias because there are “*very few currency unions between two independent, developed countries that ended under [normal] conditions*” in their data set (Thom

and Walsh, 2002). Then, focusing on a study case (i.e. Anglo/Irish trade) to analyse the broken link between the Irish punt and sterling in 1979 (i.e. a currency union that ended under “normal” conditions), they find no effect of a currency union between these “*independent countries that enjoyed normal economic relations before and after the event*” (Thom and Walsh, 2002). Proximity of countries, combined with EU membership, mostly explains why there is no break in the trade between the two countries following the event. De Nardis and Vicarelli (2003) conclude in the same vein: decades of integration policies in Europe, more than the adoption of the euro, explain the increase of bilateral trade (the effect of the euro’s adoption on bilateral trade is only 9-10 %).

3.3. Balancing costs and benefits from euroisation against a regulated introduction of the euro: summary and challenges ahead

Balancing economic costs and benefits of the two options is a very intricate exercise, as stressed by Backé et Wójcik (2002). However, the following general conclusion can be drawn from an overview of the empirical literature. The loss of seigniorage incomes (especially, the once-and-for-all cost) and the reduction in risk premia are the two main factors in the economic cost-benefit analysis of euroisation. As previously underlined by Habib (2001), “*potential benefits from euroisation—stemming from the reduction of risk premia— could compensate for these costs*”. The difficulty is that, while seigniorage incomes are rather easy to assess, estimating the decrease of risk premia is challenging.

Note that few of the aforementioned empirical studies conclude in favour of unilateral euroisation, or even consensual euroisation, for acceding countries. The sole notable exceptions are Bratkowski and Rostowski (2001), Coricelli (2002) and Sulling (2002, for Estonia). These authors excepted, the general conclusion is that positive net gains resulting from unilateral euroisation are either too small or uncertain for getting involved in this way. To some extent, such a conclusion is currently still relevant *without* the support of EU officials. However, in our view the key issue is not the current economic environment, but the *prospective* one. Therefore, in what follows, we consider which economic factors might impede the observance of the Maastricht criteria in the next few years, at the time of the examination for entering step three of EU³³.

First, the inflation criterion may be difficult to meet, as the Balassa-Samuelson (BS) effect acts as a floor to inflation rates in catching-up

33. The Maastricht criteria are summarised in Box 1. For past evolution of the Maastricht criteria in acceding countries, the reader is referred to Fitoussi and Le Cacheux (2003) in this Special Issue.

economies. Granted, there is some uncertainty as to the exact size of this effect³⁴. However, higher inflation performances in the less developed countries of the euro area (Spain, Ireland, Portugal and Greece) compared to the more advanced ones show clearly that the BS effect is at work in catching-up economies. Moreover, the share of administrated prices is currently still high in some countries³⁵. Sooner or later, because of EU membership, these prices would have to be liberalised. Alongside these two structural factors, strong price increases for foodstuffs and/or petroleum may result in additional difficulties in curbing inflation. Indeed, because of the high share of the agricultural sector and more energy-intensive production technologies, inflation in CEECs exhibits more responsiveness to oil price fluctuations than in euro area members (Backé *et al.*, 2002; Arratibel *et al.*, 2002).

Second, a deterioration in public finances has been observed in the past few years in some acceding countries. While this is partly due to the economic slowdown and to the fact that recovery is not as great or as fast as expected, more structural factors also explain the drift of public finances in most CEECs³⁶. Admittedly, to satisfy the Stability and Growth Pact, countries have planned structural fiscal reforms aimed at reducing public deficits and hence public debt in the future. But difficulties in fulfilling fiscal criteria might be exacerbated by population ageing and spending pressures stemming from the compliance with EU environmental standards and the receipt of EU development funds (as these require domestic co-financing).

Third, long-term interest rates have continued to increase since November 2003 in Poland, and to a lesser extent, in Hungary. Financing public debt is now much more costly than in the past. The convergence process in long-term interest rates between some CEECs and the euro area appears to be marking time, owing to the combined effect of increasing public deficits and insufficient credibility of fiscal reform proposals in a context of sluggish economic growth.

Fourth, the sustainability of ERM-II may be endangered by the B-S effect and capital flows. Importantly, an exchange rate stability criterion based on +/-2.25% bands (i.e. narrower bands than those for the functioning of ERM-II) might be particularly difficult to fulfil. In this respect, at the time of examination for entry into EMU, the interpretation of what constitute “normal conditions” or “tensions” might give

34. In a developing economy, one which is catching up with the income levels in the more advanced countries, productivity in the sectors producing tradeable goods will tend to rise faster than in those producing non-tradeables. Since wage increases tend to be more or less the same in all sectors, inflation will be relatively higher in the non-tradeables sector. This so-called “Balassa-Samuelson” effect will lead to a higher inflation rate in developing country than in developed country but also to a real appreciation of the exchange rate.

35. See J. Creel and S. Levasseur (2004), in this Special Issue.

36. The drift in public finances is documented for the Czech Republic, Poland and Hungary by Creel and Levasseur (2004).

rise to intense discussions between candidates and EU officials. Consider for instance the recent declaration by Mr. Jan Frait, Board Member of the Czech National Bank: “*The position of the candidate countries towards the ERM2 differs from that of the European Commission and the European Central Bank. Personally, I cannot see any value added in using the ERM2 regime. The Czech Republic stabilises inflation by means of inflation targeting, and the ERM2 can hardly be a tool for stabilising the nominal exchange rate. The width of the band (+/-15%) is too large, intra-marginal interventions by the ECB are unlikely, and marginal intervention by the ECB cannot be guaranteed. Under such circumstances the agreed central parity in the narrower range of +/-2.25% would be prone to destabilising testing by the foreign exchange markets*” (Frait, 2003).

More generally, “vagueness” in the definition of Maastricht criteria might result in quarrels over their interpretation, as illustrated at the time of examination for present EMU members. Very recently, the ECB has pointed out again that “*there will be no relaxation of the criteria laid out in the Treaty*” (ECB, 2003a). Then, arguing that at some points of time since EMU membership some euro area members have not fulfilled the Maastricht criteria (e.g. France and Germany for the government deficit criterion; Spain, Ireland, Portugal and the Netherlands for the inflation criterion), political crises might result from too strict an interpretation of criteria by EU officials, increasing the incentives for a failed candidate to euroise unilaterally. To conclude, if there exists some rationality in defending the “institutional path” for the introduction of the euro— which still has to be demonstrated, as will be argued in the next section— the EU officials would be better advised to relax to some extent the nominal convergence criteria and so reduce the risk of unilateral euroisation.

4. The issue of EU threats and costs/benefits for EU

This section is devoted to examining how EU officials can actively discourage acceding countries from adopting the euro without respecting the “institutional path” defined in the EU legislation. Finally, it appears that the credibility of (implicit) sanctions threatened by the EU officials depends crucially on the costs and benefits of euroisation in acceding countries *for present EU members*.

4.1. The legal void: the absence of explicit sanctions

First at all, note that, to our knowledge, there is no explicit mention in the existing EU Treaties of sanctions to be taken against a country euroising unilaterally. Moreover, the draft Constitution for Europe— which will encompass all the previous Treaties— does not specify sanctions that EU could impose on a country that does not respect the “institutional path for adopting the euro”. For instance, the “exit” option is only on the initiative of the Member State itself. Nothing is specified on the possibility that a provision could be activated to force a Member State to withdraw if it does not respect the “institutional path” for adopting the euro stressed by all EU officials. Thus, from a legal viewpoint, there is a void and sanctions can be only implicit or indirect, *via* the activation of other provisions of the Treaties. One consequence is that, due to the intricacy of EU legislation, implicit sanctions may be difficult both to define and to implement, finally losing their credibility. Consider the following example. Given the current openness of world trade— both in goods and in assets— the euro area can hardly prevent its currency from crossing the borders of a potentially euroising country, except by resorting to capital controls. The problem is that, legally speaking, capital controls against one EU Member State (i.e. the potentially euroising country) are contrary to another pillar of EU legislation, namely the free movement of capital. Of course, present members can always refer to some European “court” (e.g. the European Commission), arguing that “euroisation” is contrary to the obligations related to EU membership, but at the risk of a long and unpredictable legal procedure.

And anyway, in that case, the sanctions would intervene *ex post* not *ex ante*. Potentially, *ex post* implicit sanctions might take the form of cuts in EU structural funds, exclusion from all subsequent negotiations related to the functioning of EU current business and so on, arguing legally, for instance, that since the Member State is deviating from obligations related to EU membership, there is no reason that other Member States should respect its rights associated with EU membership. Ultimately, the sanction imposed by other Member States might be a proposal to expel the euroising country from the EU. Indeed, because legislation is continually evolving, one could imagine an amendment to the Constitution stipulating a provision for the expulsion of one member state initiated by other members in certain circumstances. But is this a “credible” threat? Is it sufficient to discourage a country from euroising its monetary system unilaterally when, from the economic and technical viewpoints, such an option does not involve too much risk for the euroising country?

4.2. The lack of credibility of (implicit) sanctions

It is important that the EU should have some sort of credible threat in order to prevent another country from adopting unilaterally the euro and “a credible threat is one which, if carried out, would harm the adopting country but would not hurt the issuing country” (Altig, 2002). To take again the issue of capital controls— but ignoring the legal problems, now assumed to have been solved— it seems to us rather difficult to imagine that EU members would not be hurt by such a decision. Capital controls would necessarily have feedback effects on other sectors of the economy, disrupting trade and then production in both euroising and present EU countries. It can be argued at first sight that, due to the small economic size of acceding countries relative to the present EU, the adverse feedback on existing EU members would be quite limited. Candidate countries as a whole accounted for 16% of total extra-EU exports and for 11.5% of total extra-EU imports in 2000 (latest available homogenous disaggregated data). Four countries (the Czech Republic, Poland, Hungary and Turkey) account individually for at least 20% of EU exports to candidate countries and 15% of EU imports from candidate countries³⁷. Germany accounts for more than 40% of total extra-EU imports and exports. According to these trade data, the “problem” of euroising countries is then restricted to the four aforementioned countries and, among present members, is largely a matter for Germany. Nevertheless, going beyond the trade level, what we need to consider are the characteristics of trade between CEECs and *all* present members. Indeed, owing to the impetus of European Association agreements and a legislation favourable to FDI during the 1990s, the EU multinationals are currently very present in CEECs, especially for operations involving fragmentation of their productive processes³⁸. As a result, EU multinationals account for a large part of both imports and exports in the acceding countries. Cutting EU multinationals off from these trade activities could be costly, if it is FDI in CEECs driven by cost considerations that makes it possible to maintain the whole chain of production, including activities (stages) in the multinational’s home country. More generally, both the private and public sectors of present EU countries have strong interests in CEECs, including financial ones. For instance, a large share of the CEECs’ external debt is purchased by EU investors (ECB, 2003b). In our view, therefore, current high degree of economic and financial integration with acceding countries explains why EU officials have low credibility in their (implicit) sanctions. Since the degree of integration is expected

37. Gros (2002) notes that euroisation of Turkey would not have been worse than the stabilisation programmes recommended by the IMF for that country.

38. International fragmentation describes a productive organisation in which the stages intensive in capital and R&D, remain in the (developed) home country of the multinational while stages intensive in natural resources and labour are realised in the (less developed) host countries.

to increase further with the formal accession to EU, the credibility of sanctions is expected to decrease even further.

As noted by Altig (2002), explicit examples of what active and credible resistance might mean are harder to find. Note that passive acceptance (i.e. neither encouraging nor discouraging currency adoption) would be currently the best description of the United States policy towards dollarisation in Latin America. Altig (2002) explains the United States' attitude by an alignment in the interests of both adopting and issuing countries. *"If dollarisation is beneficial to the adopting country, it is hard to see how it can fail to benefit the issuing country [and] if dollarisation is destabilizing or harmful to the adoption country, it is hard to see how it can be benefit the issuing country"* (Altig, 2002). First, trade integration between the dollarised economies and the United States contributes to a large extent to the alignment in their interests. Second, in the case of unilateral dollarisation, the seigniorage incomes are a pure gain for the United States³⁹. These factors explain the passive acceptance of dollarisation by the United States. Altig (2002) even argues that active encouragement would be not a good option from the viewpoint of the United States. It would mean, for instance, an arrangement for the sharing of seigniorage incomes or the right for adopting country to participate in the conduct of monetary policy. In what follows, we take as axiomatic that "the interests of adopting and issuing countries are aligned".

5. Conclusion: Proposal for consensual euroisation

What response should the EU officials adopt faced with the wish of some countries to euroise? In the absence of credible sanctions, either a passive acceptance (like that of the United States) or a consensual euroisation are the two possible EU attitudes. At first sight, consensual euroisation would be a better option than unilateral euroisation, with advantages for both euroising countries and present members of EU.

Consider the (very vague) economic arguments developed by the EU officials in favour of a regulated introduction of the euro. For instance, *"The decisions regarding the timing of entry and duration of participation in ERM-II should be based on the extent to which participation*

39. For the United States, seigniorage incomes if all South America and Mexico were "dollarised" are put at 0.2-0.8% of US GDP per year (Altig, 2002).

in the mechanism enhances the prospects of achieving a lasting convergence of economic fundamentals. The overall goal of this process should be to foster macroeconomic stability in the new Member States, thereby providing the best possible contribution to sustainable growth and real convergence. New member States should also consider the extent to which the limitation of exchange rate flexibility may help anchor expectations and promote the pursuit of sound macroeconomic and structural policies, thus fostering real and nominal convergence. While participation in ERM-II per se does not ensure supportive and consistent macroeconomic and structural policies, it has the potential to act as a catalyst, enhancing the disciplinary effect of such policies" (ECB, 2003, p. 5, underlining by the author). In summary, nominal criteria are set in order to ensure a sustainable nominal and real convergence with the present EMU members.

Somewhat ironically, a well-guided euroisation would make it easier to attain these goals, especially a consensual euroisation⁴⁰. Indeed, a consensual euroisation (i.e. an euroisation in accord with EU officials) presents some advantages as an alternative to both unilateral euroisation and a regulated introduction of the euro. Consider first the potential advantages, for both parties, of a consensual euroisation with a minimal degree of acceptance by EU officials and then the other proposed refinements in the relevant literature to ensure the success of euroisation.

At minimum, a consensual euroisation should be allowed to fix the conversion rate for the currency in agreement with EU officials, that is, on a multilateral basis, as in the case of a regulated introduction of euro. This is different from unilateral euroisation, since in that case the adopting country has complete freedom to choose the conversion rate for its currency against the euro. For the EU, it would make it possible to avoid the risk of a devaluation at the time of the unilateral adoption of the euro—feared by some—for a temporary gain in competitiveness⁴¹. For the euroising country, it would avoid the trap posed by ERM-II and the criterion of exchange rate stability would be *de facto* fulfilled. The exchange rate risk premium against the euro would disappear, inducing *ceteris paribus* a decrease in interest rates. In this regard, a consensual euroisation would give a better outcome than unilateral euroisation in confining an early introduction of the euro within a controlled and structured process (even if outside the Treaty). Then, by reassuring the financial markets, the probability of changes in

40. This point was previously noted by Bratkowski and Rostowski (2001) for unilateral euroisation. We put more emphasis on the fact that consensual euroisation, even with a minimal degree of acceptance by EU officials, would ensure to a greater extent the fulfilment of the goals.

41. Nevertheless, the fear of a devaluation is probably over-stated. Potentially euroising countries have little room for manoeuvre since it would put at risk other equilibria. A devaluation would initially induce an increase in imported inflation while the gain in competitiveness would be presumably only temporary, because of price flexibility. Then, the real exchange rate of euroising countries would be under-valued for only a short period.

the default risk would be substantially decreased. In turn, both private and public investment would be boosted, putting economic growth on a higher trajectory. The debt service would be reduced, facilitating the fulfilment of both public deficit and debt criteria. If inflationary pressures mainly come from the BS effect, the inflation criteria would in any case benefit neither from euroisation nor from a regulated introduction of the euro. The key issue is then that of non-adequacy (and then relaxation) in the inflation criteria for catching-up economies. Even in the case of a wage-inflation spiral or budgetary expenditures as important sources of inflation, the “catalyst effect” can operate, at first sight, whatever way the euro is introduced. To sum up, euroisation, especially on a consensual basis, would facilitate the fulfilment of Maastricht criteria (except the one relating to inflation), with presumably positive effects on the CEECs’ real growth.

Under this scenario (called “minimal degree of acceptance” by EU officials), euroising countries would not be allowed to join EMU and its institutions nor to participate in ECB monetary policy decisions. One option, proposed by Bratkowski and Rostowski (2001), would consist in admitting euroising countries to EMU once they have demonstrated sustainable nominal convergence with the present members. Thus, the arguments against their insufficient “stability culture” to enter EMU and its institutions are no longer relevant. Bratkowski and Rostowski (2001) even argue that euroisation makes it harder for a country to join EMU with temporarily non-BS inflationary pressures because of the unavailability of nominal appreciation, which is present under ERM-II. Moreover, while the main purpose of the inflation criterion is to demonstrate a country’s commitment to low inflation *before* its admission to the EMU, euroisation provides the same demonstration because, at the time it adopts the euro, a country does not know *when* it will be admitted to EMU, and thus when it will begin to participate in ECB decisions. In that case, euroisation would be consistent with the sequencing and economic rationale for entering EMU highlighted in EU Treaties: a sustainable nominal convergence should be reached prior to entering EMU institutions.

To ensure a more successful euroisation, some authors recommend more international involvement. First, to avoid the risk of bank illiquidity in euroising countries, some propose the creation of a special fund. For instance, a contingency fund consisting of flexible credit lines with foreign banks or monetary authorities could be negotiated, using future tax revenues as collateral (Cohen, 2003). In our view, a liquidity fund would reinforce the aforementioned virtuous circle, based on the need for the abolition of the exchange rate risk premium not to be compensated by an increase in the default risk. It could benefit banks in euroising countries that are not affiliates of foreign parent companies. Second, some others (Gros, 2002; Altig, 2002; Habib, 2001) propose

a seigniorage-sharing agreement with the ECB to compensate for the once-and-for-all cost of replacing a currency (Habib, 2001) or because “*there is no reason that poor countries pay for the rich EU*” (Gros, 2002, in the case of euroisation in the Balkans).

To conclude, in the absence of credible sanctions against euroisation, a consensual euroisation would be mutually advantageous for both parties, including the EU. Moreover, intangible benefits, such as the status and prestige that go with more extensive cross-border use of the euro, would accrue to the EU. In particular, the EU would enjoy even more prestige by accepting a consensual euroisation than by opposing unilateral euroisation without credibility. Granted, it can be argued that it might open the door to massive euroisation. Nevertheless, as euroisation represents a major change of system and a risky experience with especially uncertain benefits, we think that only countries which derive strong net gains from euroisation, independently of the EU officials’ agreement, would undertake an euroisation process. As noted by Sulling (2002), the provisions in the Treaties that define the institutional path for the introduction of the euro were drawn up at a time when the euro did not yet exist. With the creation of EMU, however, countries were offered new opportunities for the choice of exchange rate regime, including the possibility of euroisation, and this then opened the way for a new trade-off. Given the possible optimality of euroisation for some countries, a revision of relevant Treaty provisions might be welcome, stipulating in which cases and under what conditions, EU officials would be prone to engage in a process of consensual euroisation.

References

- Altig, D. (2002). 'Dollarization : "What's in It for the US ?', *Economic Commentary*, Research Department of the Federal Reserve Bank of Cleveland, October 15.
- Arratibel, O., D., Rodriguez-Palenzuela and Thimann, C., (2002). 'Inflation Dynamics and Dual Inflation in Accession Countries: a "New Keynesian" Perspective', *European Central Bank Working Paper Series*, No 132, March.
- Barisitz, S. (2002). 'The Emergence of market-Oriented Banking Systems of Estonia, Latvia and Lithuania', *Focus on Transition*, No. 2, Oesterreichische National Bank.
- Backé, P. and Wójcik, C. (2002). 'Unilateral Euroization : a Suitable Road Towards Joining the Euro Area For Central and Eastern European EU Accession Countries ?' in : *Eest Pank, Alternative Monetary regimes in Entry to EMU*, Tallinn.
- Backé P., J., Fidrmuc, Reininger, T. and Schardax, F. (2002). 'Price Dynamics in Central and Eastern European EU Accession Countries', *Oesterreichische Nationalbank Working Paper*, No. 61, February.
- Begg D., B., Eichengreen, L., Halpern, Von Hagen, J., and Wyplosz C., (2003). Sustainable Regimes of Capital Movements in Accession Countries, *CEPR Paper*, No. 10.
- Borowski, J. (2003). "Potential Benefits of Poland's EMU Accession, *Focus on Transition* 1/2003.
- Bratkowski, A., and Rostowski, J., (2002). 'The EU attitude to unilateral euroization: Misunderstandings, real concerns and sub-optimal admission criteria ?' *The Economics of Transition*, Vol. 10, n° 2, pp. 445-468.
- Buch, C. M., and Lusinyan, L. (2002). 'Short-Term Capital, Economic Transformation, and EU Accession', *Economic Research centre of the Deutsche Bundesbank*, Discussion Paper 02/02, January.
- Buiter, W. and Grafe, C. (2001). 'Central Banking and Choice of Currency Regime in Accession Countries', *SUERF Studies*, No. 11.
- Bulí, A. (2003). Some exchange Rates Are More Stable than Others : Short-Run Evidence from Transition Countries, Czech National Bank Discussion Paper Series, 5/2003, July.
- Calvo, G., and Reinhart, C. (2002). Fear of Floating, *Quarterly Journal of Economics*, 117, pp. 379-408.
- CNB, (2003). 'ERM-II and the Exchange-rate Convergence Criterion', July. Available <http://www.cnb.cz>

- Cohen, B. (2003). 'Monetary Union: The Political Dimension'. Available <http://www.polsci.ucsb.edu/>
- Coricelli, F. (2002). 'Exchange rate policy during transition to the European Monetary Union: the option of euroization', *The Economics of Transition*, Vol. 10, No. 2, pp. 405-417.
- Creel J., and Levasseur, S. (2004). 'How would a fixed-exchange-rate regime fit the transition economies? The cases of the Czech Republic, Hungary and Poland', *Revue de l'OFCE*, Special Issue "Enlargement".
- Deutsche Bundesbank, (2003). 'Financial markets in central and east European countries before accession to the EU', *Monthly Report*, July.
- De Nardis S., and Vicarelli C. (2003). 'Currency Unions and Trade : The Special Case of EMU', *Review of World Economics*, Vol. 139, No. 4, p. 625-649.
- Eesti Pank, (2002). 'Euroisation in Estonia and its impact on the economy', *Kroon and Economy Publications*, No. 1.
- ECB (2003a), 'Policy position of the governing Council of the European Central Bank on exchange rate issues relating to the acceding countries', 18 December. Available [http://: www.ecb.int](http://www.ecb.int)
- ECB (2003b), 'Review of the international role of the euro', *European Central Bank*, December. Available <http://: www.ecb.int>
- Feist, H. (2001). 'The enlargement of the European Union and the Redistribution of Seigniorage Wealth', *KYKLOS*, Vol. 54, Fasc. 4, pp. 533-546.
- Fischer, A. M., Jordan, T. and Lack, C. P. (2001). 'Giving up the Swiss Franc : Some Consideration on Seigniorage Flows under EMU', *CEPR Discussion Paper*, No. 3156, January.
- Fitoussi, J.P., and Le Cacheux, J. (2003). *Rapport sur l'État de l'Union 2004*, Presses de Sciences-Po/Fayard, Paris, October.
- Frait, J. (2003). 'Stability of the Czech Koruna and Convergence towards the Euro', paper presented to the *Investment Forum Ostrava*, October 2.
- Frankel, J.A. and Rose, A.K. (2000). 'Estimating the Effect of Currency Unions on Trade and Output', *NBER Working Paper 7857*.
- Gabrish, H. (2001). The shock of unilateral euroisation on EU candidate countries. Available <http://:www.wiivsv.wsr.ac.at/Countdown>
- Gaulier, G. and Levasseur, S. (2000). 'Types of Trade and Business Cycle Synchronization', paper presented at the conference 'Theories and Methods in Macroeconomics', Paris, May 2000.

- Glick, R. and Rose, A. (2002). 'Does a Currency Union Affect Trade ? The Time-Series Evidence', *European Economic Review*, 46(6), pp. 1125-1151.
- Gros, D. (2002). 'The euro for the Balkans ?', *The Economics of Transition*, Vol. 10, No. 2, pp. 491-511.
- Habib, M.M. (2001). 'Is There a Case for Unilateral ? Evidence for Bulgaria, the Czech Republic, Hungary and Poland', *Centre for New and Emerging Markets*, Discussion Paper Series, 19, London.
- Haas, R. and Levyveld, I. (2003). 'Foreign Bank Penetration and Bank Credit Stability in Central and Eastern Europe : Friends or Foes', *De Nederlandsche Bank Research Series Supervision*, No. 58.
- Herrmann, S. and Jochem, A. (2003). 'The international integration of money markets in the central and east European accession countries : deviations from covered interest parity, capital controls and inefficiencies in the financial sector', *Economic Research Centre of the Deutsche Bundesbank*, Discussion Paper 07/03, March.
- Hochreiter, E. and Rovelli, R. (2002). 'The generation and distribution of central bank seigniorage in the Czech Republic, Hungary and Poland', *Banca Nazionale del Lavoro Quarterly Review*, No. 223, pp. 391-415, December.
- Italianer, A. (2003). 'From accession to adopting the Euro', paper for the Conference 'From accession to adopting the Euro', Warsaw, 21 November.
- Jagric, T. (2003). Business Cycles in Central and east European Countries, *Eastern European Economics*, Vol. 41, No. 5, September-October, pp. 6-23.
- Jeanne, O. (1999). Currency crises: a perspective on recent theoretical developments, Discussion Paper, No. 2170, Centre for Economic Policy Research.
- Kontolemis, Z. G. (2003). 'Exchange rates are a matter of common concern: policies in the run-up to the euro ?', *Economics Papers of The European Commission*, No. 191, September.
- Kostov, I. and Kostova, J. (2002). 'Regarding the Unilateral Euroization of Bulgaria', *Bulgarian National Bank Discussion Papers*, DP/26/2002, November.
- Méró, K. and Valentinyi, M. (2003). 'The Role of Foreign Banks in Five Central and Eastern European Countries', *Magyar Nemzeti Bank Working Paper*, 2003/10, November.
- Magyar Nemzeti Bank (2003). 'Coping with the speculative attack against the forint's band, *MNB Background Studies*, 2003/3', May.

- Magyar Nemzeti Bank (2002). 'Adopting the euro in Hungary : expected Benefits, Costs and Timing', *NBH Occasional Paper* 24.
- Nitsch, V. (2001). 'Honey I just shrunk the currency union effect on trade', Mimeo, Bankgesellschaft, Berlin.
- Nuti, D. Mario (2002). Costs and benefits of unilateral euroisation in central eastern Europe, *The Economics of Transition*, Vol. 10, No. 2, pp. 419-444.
- OECD (2001). *Economic Surveys-Poland*, OECD.
- Patterson, B., A. Jevcak, and M.-C. Grotti (2002). 'Background to the Euro', Working Paper *Economic Affairs Series*, European Parliament, 10-2002,
- Péridy, N. (2003). 'Exchange Rate Volatility, Sectoral Trade, and the Aggregation Bias', *Review of World Economics*, Vol. 139, No. 3, pp. 389-418.
- Persson, T. (2001). 'Currency Unions and Trade: How Large Is the Treatment Effect?' *Economic Policy* 33 (16): 435-448.
- Rose, A.K. (2000). 'One Money, One Market: The Effect of Common Currencies on Trade', *Economic Policy* 30 (15), 7-45.
- Schobert, F. (2001). 'Seigniorage: An Argument for a National Currency?', *CEPS Working Document*, No. 174.
- Sulling, A. (2002). 'Should Estonia euroize ?', *The Economics of Transition*, Vol. 10, No. 2, pp. 469-490.
- Süppel, R. (2003). 'Comparing Economic Dynamics in the EU and CEE Accession Countries', *ECB Working Paper Series*, No. 267, September.
- Thom R., and Walsh, B. (2002). 'The effect of a currency union on trade: Lessons from the Irish experience', *European Economic Review*, vol. 46, N° 6, June.
- Tumpell-Gugerell, G. (2003a). 'The euro in central and eastern Europe', Panel Discussion Euro Finance Week, 27 October, Deutsche Bank, Frankfurt. <http://www.ecb.int/key/03/sp031027.htm>
- Tumpell-Gugerell, G. (2003b). 'Welcoming the new Member States', Speech East-West Conference, 3 November, *Oesterreichische Nationalbank*, Vienna. Available www.ecb.int
- Wójcik, C. 'Seigniorage revenues upon EMU accession- benefits or costs?' Conference 'Poland's Way to the Euro', *Narodowy Bank Polski*, October 22-23.
- Wójcik, C. (2000). A Critical Review of Unilateral Euroization Proposals: The Case of Poland, *Focus on Transition*, 2000/2, OeNB, pp. 48-76.