

THE POLISH WAY TO THE EURO

Conference
22-23 October 2001
Falenty

In 2000 we expanded the formula of the annual scholarly conference organised by the NBP's Research Department by inviting speakers from the central banks of Hungary and the Czech Republic. But this year's NBP conference „Poland's Way to the Euro”, which took place on 22 and 23 October 2001 in Warsaw-Falenty, went fully international and its scientific and organisational standards won recognition of its participants.

This year's conference covered issues connected with Poland's EU monetary integration which in the coming years will be critical to NBP monetary policy, and not only. The first session sought to answer the question about the strategy of Poland's EMU accession which would enable the optimum alignment of the real and nominal convergence processes. The sessions held on the second day of the conference allowed to focus on more detailed issues. The morning discussion tackled accession countries' ability to meet the Maastricht criteria. The discussion included the consequences of the Balassa-Samuelson effect and other sources of inflation divergences in different countries. The afternoon session discussed the benefits and costs of joining the eurozone.

Credit for the high scholarly standards of the conference should first of all be given to the authors of the papers. They included well-known foreign economists such as Ricardo Hausmann, Daniel Gros or Fabrizio Corricelli. Papers were also presented by many leading top economists specialising in various aspects of Poland's EU monetary integration. Very interesting studies were also prepared by experts from the ECB, European national central banks and representatives of the NBP. The conference's success was also possible thanks to the active participation of its remaining actors. The smooth running of a conference with so many papers is also a success of the moderators of its three sessions – Professors Marek Dąbrowski and Dariusz Rosati and Dr. Bogusław Grabowski. The Falenty conference set a record in terms of the number of participants: there were 180 of those from 15 countries. A professional organisation of so big a conference would hardly be possible without the participation of other NBP Departments: The President's Office and Social Communication Department.

This issue presents papers from the Falenty Conference in the order of delivery along with a report on the proceedings. I wish you an interesting reading.

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SESSION I

Strategies of EMU Accession

The Polish road to the Euro: An envious Latin American view

Ricardo Hausmann

It is impossible for a Latin American economist to look at the policy debate in Poland and other Central European accession countries without a deep sense of envy. The possibility of joining the European Union – a very large, deep and broad common market and governance system – has become such an attractive policy option that it has created a national consensus over much of the policy agenda and given orientation to broad areas of reform. The commitment to join the EU gives clear direction, if not a unique path to policies in the area of fiscal, trade, investment, intellectual property rights, financial, labor, competition, and many others. This reduces policy-induced uncertainties and facilitates the process of convergence through faster integration of trade and investment.

Among the policy areas affected by the process of accession are monetary and exchange rate arrangements. Thus, the debate in Poland, Hungary and the Czech Republic is not whether they should make a long-term strategic choice in favor of floating arrangements anchored by inflation targets or instead, going for hard pegs. The long-run choice is to join the Euro. The only relevant policy question is what the precise path to that ultimate system is. Should the accession countries postpone the adoption of the Euro and of the Exchange Rate Mechanism in order to maintain exchange rate flexibility as long as possible or should they instead proceed as fast as possible towards the Euro, maybe even by declaring unilateral Euroization?¹

To a certain extent, the debate brings to the fore the same arguments that have informed the broader debate on exchange arrangements in other parts of the emerging world. In those countries, the choices are much broader and – may I dare to say – less promising. After all, deep economic integration with developed countries offers the best chance of generating income convergence. That is what we have seen in the Club Med countries of Europe; and, controlling for the fact that NAFTA is a much shallower form of integration, the same can be said of Mexico. But most regions of the globe do not have an alternative as attractive as that contemplated by the EU accession countries. No wonder that it is so much harder in these emerging markets to secure domestic policy consensus and commitment to a clear economic strategy.

¹ See for example Rostowski (2001) for a view in favor of rapid unilateral euroization. Begg et al (2001) take the mostly the opposite view. In this paper, I will use with some degree of interchangeability the term euroization or dollarization.

In this paper I will first review the exchange rate debate as it has taken place with reference to emerging markets (Section 2). The debate has expanded beyond concerns over optimal currency area criteria to issues of credibility and – most importantly – financial fragility. This debate has led some authors – including myself – to propose that unilateral dollarization be given serious consideration as a way to avoid financial fragilities. Others have proposed that flexible regimes and inflation targets provide greater protection. The answer to this debate is probably central to the choices made by Poland and other accession countries going forward. I will concentrate this paper on that debate.

Revisiting the exchange rate debate

The original choice between fixing and floating was related to the trade-off between the benefits of having an autonomous monetary policy and the transaction costs that such an option would create in terms of exchange rate uncertainty and other expenses. In some sense, this approach is still valid even though the elements that go into the choice have changed very significantly.

The original idea about optimal currency areas (Mundell, 1961) argued that for country facing real shocks, exchange rate flexibility would facilitate adjustment. However, if two countries are deeply integrated through trade or factor movements, then real shocks are likely to be shared: a boom in one country will spill over to the other. Business cycles will be highly correlated. In this case, if countries adopted their own monetary policy, they would be trying to do very similar things with it anyway. This makes them into an optimal currency area (OCA): they would be better off just sharing a currency, adopting a common monetary policy and enjoying the benefits of a more stable monetary environment to support trade.

This can be rephrased in a different manner. Assume that economies are hit by real shocks, and that the world is such that the use of exchange rate flexibility and control over the interest rate may facilitate the adjustment. This makes monetary autonomy and exchange rate flexibility a better alternative. However, economies are also hit by shocks to the demand of their money, so called nominal shocks. In this case, flexible regimes will cause movements in relative prices which are just inefficient noise that is best avoided. Instead, the central banks should just supply the additional money demanded by the market. But this is precisely what would happen naturally under a fixed exchange regime. Hence, the Frenkel (1980) argument: if shocks are mostly real, then float. If they are mostly nominal, then fix. If countries are part of an optimal currency area, then real shocks are mostly shared so that fixing gets rid of the inefficient impact of nominal shocks on the exchange rate.

How important are the transaction costs associated with multiple currencies? According to Rose (2000), countries that share a currency trade three times more than would be expected given their economic characteristics. Moreover, Frankel and Rose (2000) find large implied effects of currency unions on long-term income through their impact on trade. In addition, they argue that this effect is not caused by trade diversion: they show that countries that belong to a currency union do not trade less with non-members. This literature has been

extended to look at possible spillover effects (Rose and van Wincoop, 2001) caused by trade diversion. The effect has also been estimated using adoption and abandonment of currency unions in order to focus on the time-series, instead of the cross-country effects (Glick and Rose, 2001). This goes to the question of what would be the trade effects of adopting a currency union in a given context. The estimated effect is that it would increase trade by some 90 percent. In general, the results have survived a long list of critiques².

If we add the two strands of literature together, then it becomes obvious that the optimal currency area criteria are not exogenously given, but may in fact become endogenous to the choice of exchange arrangement, among other factors. If countries that share a currency trade more and if more intense trade improves the OCA criteria then countries that initially fail the test may actually meet it ex post as a consequence of the currency union (Frankel and Rose, 1998). Hence, according to this argument, even if the accession countries do not comply today with the common market criteria, they are bound to do so in the future as an endogenous consequence of their choice of economic and monetary policies going forward, of which EMU may be a very important component. What are the costs that a country will have to endure as it shares a currency while it is not yet an optimal currency area is a question that is central to the current debate. That will have to do with the net benefits that it would gain from maintaining monetary autonomy. We will return to this question shortly. But before, we need to bring into discussion some additional theoretical elements.

The credibility dimension

The advent of time-inconsistency and credibility (Kydland and Prescott (1977), Calvo (1978), Barro and Gordon (1983)), made it clear that the flexibility benefits derived from monetary policy have to be weighted against the credibility problems that a monetary authority may encounter vis a vis its inflationary commitments. Flexibility may be able to reduce unnecessary output fluctuations, but it can be abused. Since the market will anticipate this abuse, higher equilibrium inflation will ensue. Countries with low credibility would pay the cost of a higher average inflation if they followed this course of action and should probably opt for renouncing the discretion that flexibility entails. Adopting somebody else's currency is one way out³.

However, this is not the only solution. The alternative is to delegate the discretion to an institution that does not have the incentives to abuse it, such as an autonomous central bank with a clear mandate to target inflation. This may in fact move the flexibility-credibility frontier out and allow the country to enjoy more of both. That is the challenge offered by the new focus on floating exchange rates with inflation targets (IT). It is argued by many that this is just a more efficient option. They would argue that it may take some time to build the

² In particular, Rodrik, (2000), Persson (2000). The debate can be followed in Andy Rose's website <http://haas.berkeley.edu/~arose>.

³ Alesina and Barro (2001) present a model in which the traditional Barro-Gordon framework is mixed with optimal currency area criteria. They show that countries with a bigger credibility problem should adopt the currency of those with more credibility.

credibility of the central bank, but not that much time after all. Look at the single digit inflation rates in Chile, Colombia, Poland and Mexico, four countries with quite a checkered inflationary past. It can be done and it is worth trying.

By all of these logics, the bulk of the emerging market countries should float. Their economies are subject to very large and quite idiosyncratic real shocks and business cycles are not very correlated. They could benefit significantly from the flexibility provided by monetary autonomy and exchange rate adjustments. When hit by an adverse shock, they could let the exchange rate take the hit while they could lower interest rates.

Australia during the East Asian and Russian crises is a good example. As shown in Figure 1, the monetary authority lowered the policy interest rate several times while it allowed the exchange rate to depreciate. Under these circumstances, the export sector was protected from external deflation while the domestic economy benefited from lower interest rates. This is why emerging market countries should float.

Or should they? Let us look at how floating rate Mexico dealt with a similar circumstance. Figure 2 shows the exchange rate and interest rate for the same period. The difference could not be starker. When the crisis hit putting pressure on the exchange rate, the monetary authority reacted with a drastic increase in interest rates from 17 percent to over 50 percent and rates were left above 35 percent for over 5 months! A similar pattern could be observed in other Latin American countries: floaters jacked up interest rates much more than did fixers, contradicting the idea that such regimes can have a more subdued interest rate policy because the exchange rate helps in the adjustment process. This comes as a bit of a surprise. After all, many argued that abandoning pegged exchange rates would also avoid having to increase interest rates too much because the Central Bank would not be forced into such a painful and ultimately unproductive strategy. But look at interest rates today in Brazil and Turkey and ask yourself, why do they set rates at clearly unsustainable levels?

What explains this behavior? In fact, if the foundations of the analysis were the ones presented so far, why have we historically observed so little floating? What explains the “fear of floating” (Calvo and Reinhart 1999) that seems to characterize emerging markets that have adopted *de jure* floating regimes?⁴ In fact, what makes some countries even consider dollarization at all?

Part of the answer is related to the impact of low credibility on interest rates. If credibility is low, inflationary expectations will cause interest rates to be high. If the stock of debt is sufficiently high, the government will find itself with a large fiscal deficit and will have little choice but to accommodate the inflationary expectations (Calvo, 1989). If for some reason, the government could commit to low inflation, or if it dollarized its debt, then the fiscal position would improve and inflation would come down, limiting the need for fiscal adjustment. This is the reason why Italy and Spain greatly benefited from the reduction in interest rates associated with the convergence play. Expectation of lower interest rates has been part of the expected gains from those in favor of dollarization.

So, low credibility and its interaction with domestic currency dollar debts may be a reason to favor a quick move to the Euro. But this is not the whole sto-

⁴ Evidence of lack of floating is discussed in Hausmann, Gavin, Pages-Serra and Stein (1999), Calvo and Reinhart (1999), Hausmann, Stein and Panizza (2001).

ry. At issue has also been how to avoid financial crises, i.e. those catastrophic disruptions of the economic order.

Financial fragility, liability dollarization and “original sin”

The new discussion about exchange rates in emerging markets has not been prompted by concerns over inflation. If anything, inflation has come down across all exchange rate regimes. Nor has it been dominated by concerns over trade and growth. Instead, the focus of attention has been financial crises and the role that exchange arrangements may have in creating the fragilities that eventually erupt in catastrophic economic collapses. Central to these fragilities have been international capital flows. More recently, the attention has been placed on the effects of unhedged dollar liabilities in the balance sheets of governments and corporations.

According to a commonly held view, unhedged dollar liabilities are the consequence of currency pegs (e.g. Burnside, Eichenbaum and Rebelo, 1999). The private sector feels protected by the government’s commitment to keep the peg, or by its willingness to bail out borrowers if it does not. Hence the private sector does not buy insurance against the possibility of devaluations. When these occur, all hell breaks loose. The obvious solution is to let the currency float. Under these circumstances, people will not want to take unhedged loans in foreign currency and this will limit the accumulation of currency mismatches.

The problem with this theory is that there are an awful lot of floating rate countries that do all their external borrowing in foreign currency in an unhedged manner, while there is a very small number of non G-10 countries that borrow internationally in their own currency. The empirical evidence suggests that very few countries are able to borrow internationally in their own currency. The large majority of countries, including essentially all developing countries - governments, banks and non-financial corporations – do not borrow internationally in their own currency.

One approach is to assume that they do not borrow in domestic currency, not because they do not want to, for reasons of moral hazard, but instead because they cannot. The market just does not exist. Not only are they not able to borrow abroad in own currency, they are typically unable to borrow long term in local currency even domestically. Whatever the reasons, the important point for us is that these causes are not directly related or influenced by the choice of exchange rate regime or other areas of feasible macro policy in the relevant time horizon. Why this might be the case is an interesting question in itself, and is generating a growing literature⁵. But as far as macro policy is concerned, it is like the original sin: whatever may have happened in Paradise, there is nothing that the present generation can do about it: it is just a fact of life. Original sin is an assumption of a certain type of market incompleteness and, as such, it has important implications. The central point is that because of original sin, capital importing countries will have large currency mismatches in their balance sheets, because the net foreign debt will be in foreign currency.

⁵ Among others, Aghion, Bacchetta and Banerjee (2001), Chamon (2001), Jeanne (2001).

Original sin, causes all firms to face the so-called Devil's choice (Pou, 1999). Either they borrow in foreign currency and expose their balance sheets to currency mismatches, or they borrow short term in domestic currency and expose themselves to maturity mismatches, which can give rise to liquidity crises caused by the inability to roll over the debt.

This situation complicated matters very significantly for the monetary authority. If hit by an adverse shock, the central bank can let the currency go, thus hurting the companies that have a maturity mismatch, or alternatively they can raise interest rates and contract domestic liquidity, and thus complicate matters for those with maturity mismatches.

This exposes economies to self-fulfilling attacks. Faced with the prospects of a large depreciation, external creditors will fear that foreign currency debtors will be unable to repay, prompting a collapse or a reversal in capital flows which might trigger the depreciation. This is more than a theoretical possibility: Indonesia in 1997-1998 and Ecuador in 1999 are clear cases of this problem. In addition, fear of depreciation or of tight money will prompt depositors to attack banks, which may trigger a liquidity crisis.

The consequences for monetary policy appear to be quite clear and powerful. Floaters with original sin will be less able to use monetary policy in a stabilizing manner than can their more virtuous fellow floaters. They will try to prevent large currency movements because of their negative balance sheet effects and hence on their capacity to borrow and invest. In order to prevent these currency fluctuations, central banks will have to raise interest rates when there is pressure on the currency and will let them come down when the pressure is reduced. They do so more than in economies with hard pegs because the central bank cannot signal to the market its commitment to defend its de facto currency target. This will cause monetary policy to be used pro-cyclically and in a destabilizing manner.

The empirical evidence in Hausmann, Panizza and Stein (2001), indicates that when countries with original sin float, they exhibit what Calvo and Reinhart (2000) have called "fear of floating". In particular, they show little de facto exchange rate flexibility; they hold very large levels of international reserves, often larger than countries with currency boards like Argentina; and they have very unstable and pro-cyclical interest rates.

Dollarization of liabilities at the corporate level may in fact be much larger than the effect caused by the net foreign debt. It is amplified by the dollarization of domestic savings. After all, it does not make that much sense for residents to save only in domestic currency, especially in floating rate countries. This is so for the following reason.

If the expectation is that the domestic currency will be strong in good times and weak in bad times, then it makes little sense for residents – whose income is mainly tied to how well the economy is doing – to save in domestic currency⁶. In bad times, savings will be worth less, when they are most needed. Said differently, the correlation between shocks to national income and movements in the exchange rate cause a *positive* correlation between national income and returns on financial assets, which makes it less attractive to hold domestic assets. But risk-averse households will want to hold assets whose return is negatively correlated

⁶ This argument is made in Hausmann et al (1999) and shown more formally in Aizenman and Hausmann (2000).

with their income. This logic might explain why dollarization of savings is so entrenched in Latin America. While in many countries de facto dollarization accelerated during bouts of high inflation as it did in Poland, in no country was the process reversed after the return to low inflation (McNellis and Rojas-Suarez, 1998). Exchange rate flexibility may provide an added impetus to this logic. If the idea is to stimulate the economy in bad times with a weaker currency and to slow it down in good times with a stronger currency, this will create precisely the incentives for the further dollarization of savings. With foreigners lending only in dollars and residents saving partly in dollars, the supply of loanable funds to corporations will be heavily tilted towards foreign currency. Hence, currency mismatches can be quite significant in a country with open capital accounts and original sin.

This has two major implications for our discussion. First, countries with original sin that float expose themselves to self-fulfilling attacks. If the currency were to suffer a major depreciation, balance-sheet effects would cause defaults. These defaults in themselves would justify the initial attack. If the public debt is in dollars, the depreciation would weaken the fiscal accounts and force the government into monetizing the deficit or defaulting. This again would justify the initial attack. If by contrast, the central bank would valiantly defend the currency through tight money and high interest rates, it would cause losses on those borrowers – public or private – that have their debt in domestic currency and would expose them to heightened roll-over risk. Unilateral euroization, by eliminating the currency mismatch and facilitating the lengthening of debt obligations would reduce this risk.

Second, floating with original sin allows for a monetary policy that is significantly less stabilizing and may even be destabilizing. In general, an unexpected reduction in interest rates should lead to exchange rate depreciation. In the normal industrial country context, this has a double expansionary demand effect: lower interest rates would stimulate borrowing while a weaker currency should promote net exports. This however may not be the case original sin. The depreciation, by weakening balance sheets is contractionary. This effect will limit the expansionary impact of lower interest rates. If it is large enough, it may even reverse it. This would explain why we observe pro-cyclical monetary policy in emerging market floaters. Hence, the trade-off between credibility and flexibility may be even less attractive than imagined. In general, original sin moves the argument in favor of early euroization.

Digression: on the causes of original sin

The causes of original sin are not well understood, and it is not easy to learn from the few countries that have achieved “redemption”. It is too global a phenomenon to be explained by Latin American-style fiscal or macroeconomic peccadilloes. It affects virtuous Chile and prudent East Asia as much as it does the lesser credits. Here are a set of possible explanations.

First, assume a country has a net foreign debt. If it were in domestic currency, the residents would benefit from depreciations. Hence, net creditors would not want to lend in a currency that the borrower can manipulate. Notice that if a country is a net creditor, this logic would not apply, as it would not want to undermine the value of its claims.

Second, political economy considerations may also play a role. For example, in countries where the median voter is a net borrower there will be little political pressure to maintain the real value of local currency assets. Under such conditions, foreigners will not be willing to denominate their claims in that unit.

Third, consider the network effects of money. There may be forces that create economies of agglomeration. The larger the market, the more liquid it is and the greater the incentives for both issuers and investors to use it. Security markets in exotic currencies may just be too illiquid to be efficient. This may explain why a disproportionate amount of debt is issued in G-3 currencies.

Fourth, the gains from portfolio diversification are rapidly decreasing with the number of assets. The gains from diversification may induce global investors to have 10 currencies in their portfolio. But the benefits of diversification may not justify the information and transaction costs associated with holding 30 or 80 currencies.

Finally, if for some reason liabilities are dollarized then default and devaluation risk will be correlated. Under these conditions, investors may not want to denominate their claim in a unit that would lose value in case of bankruptcy, thus making them junior to other creditors. This would justify the initial dollarization of savings.

The point is that any of these five potential causes will not go away with the choice of exchange regime. It is even less likely that it would be significantly affected by the alternative strategies towards the adoption of the euro.

Sudden stops

There is an alternative argument that may explain self fulfilling crises without any reference to currency or maturity mismatches. In fact, the argument need not make any reference to the nature of the monetary regime. This implies that no exchange arrangement can by itself protect against this hazard. This argument is based on the logic of sudden stops (Calvo, 1998).

The argument goes as follows. Most emerging markets run significant current account deficits in normal times. This allows them to maintain a higher level of investment and consumption and lower interest rates than under autarchy. With a greater level of domestic spending, tax revenues are larger while the lower interest rates make the debt service less burdensome. If for some reason, capital flows were to come to a sudden stop, or even reverse direction, a drastic domestic contraction would have to take place. This would cause domestic demand to collapse and dollar interest rates to rise significantly. The contraction is bound to widen the fiscal deficit and weaken corporate solvency while the sudden disappearance of additional finance would force the liquidation of long term investment projects. All of this would reduce a country's creditworthiness justifying the initial sudden stop.

This argument could explain why Argentina and Brazil – two countries with opposite exchange arrangements – are undergoing very similar crises. The collapse in external financing requires such a domestic adjustment as to question the solvency of public and private domestic residents. To bring this story home, imagine a situation where Poland would be tested to financial markets. If it had to suddenly cut its current account deficit of about 5 percent of GDP, this would cause a domestic contraction, a depreciation and an increase in interest rates that

would cause the fiscal deficit to balloon from its current 4 percent of GDP. With an exploding fiscal situation, the original attack would appear justified. This is the nightmare scenario that the process of joining the Euro is required to avoid.

This may sound far-fetched, but it would be nice to understand why. It is true that Poland has been spared from the current turmoil that is affecting emerging markets. As shown in Table 1, the spread on the Emerging Market Bond Index (EMBI+) has gone above 1000 basis points (bps), while Poland has tightened to the mid-200 bps. This outcome occurs in spite of Poland's comparatively large and deteriorating fiscal and current account deficits. In fact, on both fronts, Poland appears more vulnerable than Argentina. And don't blame Argentina's currency board: Brazil with its floating regime and inflation targeting has gone in the same direction with its spread in excess of 1200 bps. True, Poland's current debt to GDP ratio in the mid 30's appears small relative to Brazil, which is in the mid 50's. But let us recall that Brazil's debt to GDP ratio was below 30 percent up until its devaluation in January 1999. If the Zloty were to take a similar dive, this difference would disappear overnight.

It may well be that Poland is spared from financial turmoil by the fact that its future is anchored by the accession process. If this was the story, the previous paragraph can be taken as circumstantial evidence in favor of this view. It would also explain why Greece is having such an easy ride. One potential explanation would be that accession clarifies the nature of future policies and creates the basis for income convergence. This determines a relatively high expected growth rate, which justifies high returns to capital and thus helps sustain the good equilibrium with high capital inflows. Other countries have more uncertain policies and less promising prospects of convergence. The expected growth rate may thus be smaller or less certain. In this environment, jumping to the bad equilibrium may be more likely.

Table 1. Spreads in emerging markets October 5, 2001

Latin Debt Markets								
Spreads to US Treasuries (bps) and Total Returns (percent)								
	Spread	1-day	5-day	1-month	MTD	1 Year	YTD	2000
EMBI+	1075	-0,46	-3,02	-7,27	-3,02	-1,89	-2,96	15,66
Latin America								
Argentina	1868	-1,26	-10,90	-15,85	-10,90	30,24	-31,10	7,69
Brasil	1246	-0,65	-2,93	-10,43	-2,93	-8,86	-10,56	12,91
Columbia	634	0,07	0,20	-1,15	0,20	29,16	23,47	2,17
Equador	1563	-1,76	-2,33	-6,03	-2,33	6,76	10,78	53,91
Mexico	439	0,03	0,20	-2,19	0,20	10,59	7,46	17,87
Panama	508	0,49	-0,88	-6,00	-0,88	9,43	9,54	8,29
Peru 696	-0,64	-1,88	-5,44	-1,88	13,76	11,88	0,21	
Venezuela	1045	-0,18	-1,77	-3,84	-1,77	5,59	7,31	15,00
Non-Latam								
Russia	978	-0,12	-0,80	-5,11	-0,80	26,91	29,81	54,85
Poland	253	-0,04	0,40	1,10	0,40	16,50	9,23	15,93
Turkey	1025	-0,89	-2,15	-3,14	-2,15	-3,57	2,56	-1,67
Bulgaria	714	-0,53	-1,25	-5,11	-1,25	8,83	7,70	5,12
Philippines	694	-0,30	-0,70	-4,25	-0,70	11,17	9,85	-4,45
Korea	177	0,02	0,49	1,82	0,49	18,76	12,93	10,52
Morocco	596	-1,14	-1,35	-6,32	-1,35	1,98	3,75	5,51
Nigeria	2105	-0,74	0,99	-0,70	0,99	19,07	12,14	15,59
Quatar	331	0,40	1,52	-3,16	1,52	b/d	15,91	b/d

Source: UBS-Warburg

Table 2. “Twin deficit” forecasts (% of GDP)

	Current account balance		Government balance	
	2001	2002	2001	2002
Argentina	-2,1	-2,1	-2,1	-0,3
Brazil	-5,2	-4,1	-9,8	-4,6
Czech republic	-6	-6,1	-4,5	-5
Hungary	-3,2	-5	-3,5	-3,5
Mexico	-2,7	-3,1	-0,7	0
Poland	-4,9	-5,2	-4	-5,2
Russia	12,9	7	2,5	2,3
South Africa	-0,9	-1,6	-1,9	-2,3
Turkey	2,0	0,9	-16,3	12,0

Source: J.P Morgan, *Global Data Watch*, Oct.5, 2001.

A balance of the arguments

One way to address the issue of the right path to the euro is to ask two questions:

- What does the choice of path do to the likelihood of a crisis?
- What exchange regime would offer an easier time at managing the crisis?

To make the debate simpler, let us assume that we are comparing a strategy that extends as far as possible the period of floating exchange rates and inflation targets, with one that accelerates the process to the euro by adopting it unilaterally as quickly as possible.

One of the advantages of early adoption of the euro is that it does away with currency mismatches that underpin many of the problems caused by original sin. It eliminates currency mismatches by having a domestic currency that can be used to borrow internationally. It also facilitates the elimination of maturity mismatches. After all, many emerging markets that are able to place 30 year bonds in dollars have trouble issuing 2 year bonds in local currency. These aspects may eliminate the mismatch problems that lead to financial fragility and thus reduce the likelihood of some types of crisis. However, it complicates the provision of a lender-of-last-resort function, and may aggravate the possibility of liquidity crises in the banking system. However, as I shall argue below, this is not as big a problem as critics make it out to be: the central bank can provide equivalent last-resort lending under unilateral euroization. It may also be argued that unilateral euroization would lead to a bigger initial boom, prompted by capital inflows, which would be hard to manage with a rigid exchange rate once these inflows subside. We will also deal below with this issue.

In addition, if Andrew Rose and his co-authors are right, early adoption of the euro may lead to a faster growth of trade among the countries that share the same currency and to more total trade. This would be growth-enhancing for the same expected level of the nominal exchange rate. Moreover, it would accelerate the process by which Poland would become more of a traditional optimal currency area with Euroland.

Another concern is that countries that opt for unilateral euroization might be undercut by other accession countries which might opt for a strategy that in-

volves delayed adoption and competitive depreciations through a lax monetary policy. This in some sense is the problem faced by Argentina due to the weakness of the Brazilian currency. One implication is that coordination among accession countries may be preferred to a purely unilateral approach.

Another implication of unilateral euroization is that countries will not be full member of the governance structure of the monetary system, until they complete the EMU process. In that sense, they would face a situation similar to that of Panama, Ecuador or El Salvador. In spite of this, these countries have opted for unilateral dollarization. Part of the reason is that while they recognize that having some form of political representation is better than being excluded from it, the expected value of that representation may not be so large. European monetary policy pays scant attention to the macroeconomic situation in Ireland when setting interest rates. What may be more important for small peripheral countries that adopt a major currency are issues of seignorage and last resort lending to which we now turn⁷.

Unilateral euroization vs. floating during the initial boom

A quick move to unilateral euroization, if done at an appropriate exchange rate, should bring down local interest rates, increase capital inflows and have an expansionary effect on economic activity. To a large extent, this is part of the convergence process that is already underway, but unilateral euroization could bring it forward in the form of a temporary boom. For some, this prospect makes unilateral dollarization attractive. For others, it creates the concern that the boom – lead by large capital inflows – will require an adjustment further down the road if and when capital flows were to dwindle or even change directions. This eventual adjustment would involve a correction of the current account deficit and a real depreciation at a time when exchange rate flexibility would have already been given up. This would presumably be more costly and may require more assistance by other EU members, who would then want to limit this potential liability.

According to this second view, a transition with a floating regime would be more sustainable (Begg et al 2001). It would allow the country to limit the boom by appreciating the currency, by keeping interest rates higher and by generating greater exchange rate uncertainty, which would limit capital inflows and create incentives for more hedging. This should reduce the likelihood of crisis and limit its severity if it were to occur.

Whether the likelihood of crisis is diminished depends on whether crises are related to the size of the flows or to the composition of the stock. Fernandez-Arias and Hausmann (2001) show that currency crises are related to the stock of debt in developing countries but not in industrial countries. The paper shows that this difference is explained mainly by the fact that original sin is larger in developing countries than in industrial countries. Once this effect is taken

⁷ Beyond the setting of interest rates, there are many new policy issues that will need to be decided over time within a monetary regime, many of them unknown at present. Being excluded from any form of participation represents a source of risk. In this respect, the lack of interest on the side of the United States to create a framework for dollarization has been a major disincentive to move in this direction. Since this is only a transitory problem for accession countries we can disregard it

into account, other factors correlated with being a developing country have a small additional explanatory power. Hence, the same stock of debt under unilateral euroization may be less problematic than under a floating arrangement with original sin.

In addition, during a long transition with a floating regime, it would be prudent for the government to fund its deficit in domestic currency in order to limit the currency mismatch. Ex post interest rates are bound to be higher than dollar rates, not only because this gap represents the option to depreciate, which is bound to be asymmetric, but also because risk-averse domestic savers need to be compensated for the fact that returns on domestic currency assets have the wrong correlation with income, from a portfolio-diversification point of view. This is another reason why a similar primary fiscal surplus would translate into a bigger stock of public debt.

In addition, the floating exchange arrangement would be subject to self-fulfilling attacks if the stock of dollar debt or the stock of short-term local currency debt were sufficiently high. Powell and Sturzenegger (2001) show that in a sample of event studies that default risk and devaluation risks tend to be positively correlated in emerging markets while they are negatively correlated in industrial countries. This means that fears of devaluation can trigger fears of default on the dollar debt, prompting an attack that may become self-fulfilling. Indonesia and Ecuador are good examples. By the same token, fears of depreciation or inflation can become self-fulfilling by causing an interest rates increase, which worsens the fiscal situation and induces the government to adopt a more inflationary stance, as in Calvo (1989).

Moreover, this policy would involve a lower rate of growth through a less competitive exchange rate, smaller current account deficits and higher interest rates associated with by the lower capital inflows. It would also imply that – for the same primary deficit – the stock of debt would be larger, as the interest rates would also be correspondingly higher.

Moreover, the boom generated by unilateral euroization creates a great opportunity to strengthen the financial system and the fiscal accounts. In this period, the government should tighten financial regulations in order to ‘lean against wind’ of credit expansion and ensure that a greater cushion of capital and liquidity is accumulated by banks in order to build the strength needed to face future downturns. In addition, it is in the boom phase that it is actually easier for banks to comply with stricter standards.

Hence, it is not at all clear that extending the period of floating rates actually reduces the likelihood of crises. A coherent argument can be put forward to maintain the position that early euroization, even if done in a unilateral manner, may be growth promoting and actually reduce the risk of a crisis. But unilateral euroization also affects seignorage and the lender of last resort, two issues to which we now turn.

Giving up seignorage

Unilateral euroization involves giving up seignorage income which will then be appropriated by the ECB and ultimately by the other members of the EU. For

the countries of Central America and the Caribbean this loss represents about 1 percent of GDP, a quantity that is significant as a percentage of fiscal revenue in a normal year. For the European accession countries this is only a temporary issue, that will be corrected under EMU. However, even a country that acts unilaterally might not suffer so badly. To begin with, many central banks loose money on their sterilization operations. They tend to issue their own liabilities and invest the proceeds in international reserves. This usually implies significant losses that in many countries are comparable or even exceed seignorage revenue. By relinquishing the need to carry out these operations, they can improve the solvency of the central bank. In addition, a dollarized central bank can still gain seignorage revenues on other forms of money. For example, it may impose a non-remunerated reserve requirement on certain deposits. This will generate “seignorage” revenue, as the Central Bank will be able to earn interest on the reserves. In this sense, the portion of seignorage revenue generated by the commercial bank deposits at the Central Bank is not lost. Obviously, such a policy, if abused, will have the effect of driving financial intermediation off shore. The appropriate use of this mechanism should be evaluated in line with taxation and financial policy and applied accordingly.

So far, we have talked in terms of average seignorage income. However, the actual magnitudes tend to vary from year to year depending among other things on the growth of the economy, the inflation rate and the demand for real balances. Often countries use seignorage as a tax of last resort. This tax has tended to be used when other forms of taxation have not been available (during severe recessions or during periods of economic or political turmoil when other taxes have been difficult to collect). There is then an argument that a dollarizing country should put in place mechanisms such that this ‘tax of last resort’ will not be necessary. One way to do this is to put in place mechanisms to assure that funds are available in emergency circumstances. Actual funds or contingent credit lines may help in this respect.

One important aspect of seignorage is that it normally accrues to central banks. This is an asset that does not appear adequately expressed in their current balance sheets. Consequently, central bank balance sheets have often not been a major source of concern. In fact, central banks with negative net worth in their published accounts, such as Costa Rica and the Dominican Republic have been able to operate for decades without major problems. Plainly put, they cover their current accounting losses with seignorage revenue. In reality, if seignorage were adequately factored in, these Central Banks would probably appear as very solvent. However, under unilateral dollarization this negative capital would become a real source of insolvency. Hence, it is important that dollarizing countries develop a strategy to make their Central banks solvent.

The issue of the lender of last resort

For some authors (e.g. Begg et al, 2001) unilateral euroization implies giving up the lender of last resort and since this function is important to avoid liquidity crises, it represents an important reason to opt for an alternative strategy. This view reflects two twin misconceptions about the lender of last resort issue. The

first one consists of the belief that a central bank in a floating regime can avoid liquidity crises and guarantee the stability of the banking system because it can always print enough money to convert deposits into cash, through last-resort lending operations⁸. The second misconception assumes that since central banks in dollarized economies cannot print money, they lose completely this ability. We will argue that there is sufficient space between these two misconceptions to create an adequate solution to the lender of last resort problem under unilateral dollarization or euroization.

First, it is not true that a central bank under a floating regime has an unlimited ability to guarantee the liquidity of the domestic currency deposits. Chang and Velasco (1999) show formally that when sufficient dollar liabilities exist, a central bank may not be able to avoid crises by offering liquidity. If an attack were to happen, the expectation of an increased issuance of money by the central bank would depreciate the currency which would cause the default of those corporations with foreign currency debt. This lowers the quality of bank assets and prompts depositors to attack the banks. Hence a bad self-fulfilling equilibrium exists in this context. Unfortunately, what seems to be true in theory has also been dramatically so in practice. In several recent banking crises, such as those in Venezuela, Indonesia and Ecuador, the commitment of the Central Bank to provide liquidity in the context of a banking crisis led to a full-blown currency crisis which worsened the problems in the banking system⁹.

Hence, the Central Bank must see its ability to provide last-resort lending as limited by its stock of international reserves. In a crisis context, in which the central bank is providing last-resort lending, reserves should be expected to fall, more than one-for-one, for each unit of last-resort lending. This is so, because the central bank should expect the demand for money to go down in such a context. The additional domestic credit will likely be more than compensated with a reduction in international reserves.

So the ability of a central bank to provide last resort lending is limited by its ability to access international reserves. What about a central bank in a dollarized country? Here in principle the problem is the same. The lender of last resort function will be limited by the central bank's ability to mobilize international reserves in order to guarantee the convertibility of deposits into cash. The truth of the matter is that the lender of last resort function requires that the central bank be able to act as a borrower of last resort: in the context of a systemic crisis it must be able to obtain access to international reserves through loans or to find buyers for the securities it needs to issue in order to mop up the liquidity created through last-resort lending.

One concern is that a country that dollarizes unilaterally must use much of its international reserves to buy back the domestic currency and hence subsequently will not have enough reserves to act as lender of last resort. This is a major difference with monetary union, since the latter open up different alternatives to share the seignorage generated by the initial stock of money and by its annual flows. For example, in the context of EMU, the initial stock of money can be exchanged for domestic assets. The future stream of revenues could be

⁸ Here we assume that what is meant by lender of last resort operations is central bank liquidity support, such as rediscounts and repos against good collateral. More generalized bailouts or recapitalizations of financial institutions should be seen as a fiscal responsibility.

⁹ In Ecuador, the government was first compelled to dollarize in order to stabilize the banking system.

used as collateral in order to set up a contingent liquidity facility with international private banks. The size of this facility would be related to the net present value of the seignorage flow.

But what can a central bank that opts for unilateral dollarization do in order to deal with the provision of last resort lending? First, it should note that if the banking system is sufficiently internationalized, as is the case in Poland, the eventualities in which such lending will be necessary becomes much more limited as the foreign banks have access to international liquidity. This has been the experience in Panama, where unilateral dollarization has prospered and supports a very large banking system even though there is no formal lender of last resort. Second, the central bank should adopt an active liquidity policy based on a combination of own international reserves and remunerated liquidity requirements on the banking system in order to generate a domestic source of funding for such operations. Finally, it should contract contingent credit lines with international banks in order to further enhance its access to reserves in the last resort. Such a policy was clearly laid out and adopted by the Argentinean Central Bank, and it has been very successful in the sense that it has been able to assure the stability of the banking system in spite of a very serious macroeconomic crisis.

In synthesis, a sufficient last resort lending function can be created in a country that decides to dollarize unilaterally. This function will be limited, but so is that of a central bank in a floating regime in a country that has significant foreign currency liabilities.

Concluding remarks

Floating exchange rates and inflation targeting is a fashionable monetary arrangement. It has been presented as a safer option to pegged exchange rate. However, the arguments have so far been mostly theoretical, because very few emerging markets were floating. But now, as the sample increases in size, the theory is being tested. The crises that floating with original sin generate in theory, are bound to become more common in practice. Markets are looking at a quite successful case of inflation targeting – Brazil – and do not like what they see. In spite of a large depreciation and a primary fiscal surplus of over 3 per cent, interest rates remain unsustainably high.

It may be that in the long run, as central banks get better at it, and as the markets understand how inflation targeting operates things will get better¹⁰. An addition, it may be that over time, countries are able to find a road to redemption out of original sin, thus restructuring their debt into long-term domestic currency securities. They may even end up floating like Australia and not Mexico. But the pay-off to this learning process is not relevant for the accession countries, since in they are not planning to stay in this regime for long.

Instead, accession countries might benefit from the greater trade and financial integration that early adoption of the euro might offer. True, this may bring forward and accentuate a boom. But if the right fiscal and financial policies are adopted – lower and better structured public debts, stronger and more liquid

¹⁰ However, Hausmann, Panizza and Stein (2001) do not find any effects of experience in the form of floating.

banks – this strategy may in fact leave these economies less vulnerable to capital market crises. The incentives to be prudent in the boom phase may be provided by the additional benefits of EMU – seignorage revenue and a less cumbersome lender of last resort.

What is the likelihood of a major crisis in the transition to EMU, no matter what alternative is taken? This is a good question. My guess is that it should not be too high. Growth prospects are based on the plausibility of a deep convergence process. This keeps returns to capital high and capital inflows coming in. That is probably why Polish debt has traded so well when other emerging markets floundered. In a scenario with no expected crisis, early euroization is better. The possibility of a crisis, although small, is not obviously lower under a slow adoption of the euro than under a faster one. Growth, fiscal solvency and financial fragility may in fact be greater under a policy of early adoption.

Whatever the final choice, prospects are promising. Eastern Europe – for once – has been dealt y good hand. The envy that other regions of the world have good reasons to feel should be tempered by the hope that success in this part of the world will lead to more ambitious integration strategies elsewhere.

Bibliography

1. Aghion, P., Bacchetta, P. and Banerjee, A. 1999. "Capital Markets and the Instability of Open Economies." CEPR Discussion Paper 2083. London, United Kingdom: Centre for Economic Policy Research.
2. Arteta, C. and Eichengreen, B. (2000), "Banking Crisis in Emerging Markets: Presumptions and Evidence". *Center for International and Development Economics Research Working Paper* C00-115.
3. Barro, Robert J. and David B. Gordon. 1983. "A Positive Theory of Monetary Policy in a Natural-Rate Model." NBER Working Paper No. W0807.
4. Barro, Robert J., and David B. Gordon. 1983. "A Positive Theory of Monetary Policy in a Natural-Rate Model." *Journal of Political Economy*, Vol. 91. No. 4, pp. 589-610. *Journal of Economic Literature*, Vol. 22, No. 1, (March 1984).
5. Braun, Matias and Ricardo Hausmann (2001) "Credit crunches in Latin America and the world" Unpublished manuscript.
6. Burnside, Craig; Martin Eichenbaum; Sergio Rebelo. 1999. "Hedging and Financial Fragility in Fixed Exchange Rate Regimes." NBER Working Paper No. W7143.
7. Calvo, G. and C. Reinhart. 2000. "Fear of Floating" Paper presented to the Conference on Currency Unions, Hoover Institution, Stanford University.
8. Calvo, G. and Reinhart, C. 1999. "Capital Flow Reversals, The Exchange Rate Debate, and Dollarization." *Finance and Development*. 36 (3): 13-15.
9. Calvo, Guillermo A. 1978. "On the Time Consistency of Optimal Policy in a Monetary Economy." *Econometrica*, Vol. 46, No. 6., pp. 1411-1428.
10. Calvo, Guillermo A. 1989. "Servicing the Public Debt: The Role of Expectations." *American Economic Review*.
11. Calvo, G. 1998 Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops.

12. Cespedes, Luis Felipe, Robert Chang and Andres Velasco. 2000. "Balance Sheets and Exchange Rate Policy." NBER Working Paper No. W7840.
13. Chamon, Marcos. 2001 "Why Firms in Developing Countries Cannot Borrow in their Own Currency Even When Indexing to Inflation." Mimeo: Harvard University.
14. Chang, Roberto and Andres Velasco. 1999. "Liquidity Crises in Emerging Markets: Theory and Policy." NBER Working Paper No. W7272.
15. Diamond, D. and P. Dybvig. 1983. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy*, 91:401-419.
16. Eichengreen, Barry 1997. *Globalizing capital*, Washington: Institute of International Economics
17. Fernández-Arias, Eduardo and Ricardo Hausmann. 2001. "Is FDI a Safer Form of Financing?" *Emerging Markets Review*, 2 (2001) 34-39.
18. Frankel, Jeffrey A. and David Romer. 1996. "Trade and Growth: An Empirical Investigation." NBER Working Paper No. W5476.
19. Frankel, Jeffrey and Andrew K. Rose , 1998 "The Endogeneity of the Optimum Currency Area Criterion", *Economic Journal*.
20. Frankel, Jeffrey and Andrew K. Rose. 2000. "Estimating the Effect of Currency Unions on Trade and Output." NBER Working Paper No. W7857.
21. Frenkel, J. A. "The Demand for International Reserves under Pegged and Flexible Exchange Rate Regimes." In *The Functioning of Floating Exchange Rates: Theory, Evidence, and Policy Implications*. edited by David Bigman and Teizo Taya, pp. 169-195. Cambridge Press.
22. Friedman, Milton. 1968. *Dollars and deficits: inflation, monetary policy and the balance of payments*. Englewood Cliffs, N.J.: Prentice-Hall.
23. Galindo, Arturo. 2001. "Creditor Rights and the Credit Market: Where Do We Stand?" IADB Working Paper # 448.
24. Glick, Reuven and Andrew K. Rose. 2001. "Does a Currency Union Affect Trade? The Time Series Evidence", NBER Working Paper No. W8396.
25. Hausmann, Ricardo; Carmen Pagés-Serra; Michael Gavin; Ernesto H. Stein. 1999. "Financial Turmoil and Choice of Exchange Rate Regime." IADB Working Paper No. 400.
26. Hausmann, Ricardo; Ernesto H. Stein; Ugo Panniza. 2000. "Why Do Countries Float The Way They Float?" IADB Working Paper 418.
27. Helliwell, John F. and Ross McKittrick. 1998. "Comparing Capital Mobility Across Provincial and National Borders." NBER Working Paper No. 6624.
28. Kydland, Finn E. and Edward C. Prescott. 1977. "Rules Rather than Discretion: The Inconsistency of Optimal Plans", *The Journal of Political Economy*, Vol. 85, No. 3., pp. 473-492.
29. Levi-Yeyati, Eduardo y Federico Sturzenegger, 2001 "To float or to trail" unpublished manuscript. Mundell, Robert. 1961 "Flexible Exchange Rates and Employment Policy." *Canadian Journal of Economics and Political Science*, Vol. 27, No. 4., pp. 509-517.
30. Rojas-Suarez, Liliana and Paul D. McNellis. 1996. "Exchange-Rate Depreciation, Dollarization and Uncertainty: A Comparison of Bolivia and Peru." IADB Working Paper 325.
31. Rose, Andrew K. 1999. "One Money, One Market: Estimating the Effect of Common Currencies on Trade", NBER Working Paper No. W7432.

32. Rose, Andrew K. and Eric van Wincoop. 2001. "National Money as a Barrier to Trade: The Real Case for Currency Union." *American Economic Review* 2001.
33. Rostowski, J. 2001 "The Eastern Enlargement of the EU and the case for Unilateral Euroization" in *Financial Vulnerability and Exchange Rate Regimes: Emerging Market Experience*, eds. Blejer, M. and Skreb, M., MIT Press.
34. Svensson, Lars E.O. 1998. "Inflation Targeting as a Monetary Policy Rule." NBER Working Paper No. W6790.
35. Velasco, Andres. "Balance Sheets and Exchange Rate Policy." 2001. Unpublished Manuscript.

Figure 1 Floating at its best: Australia

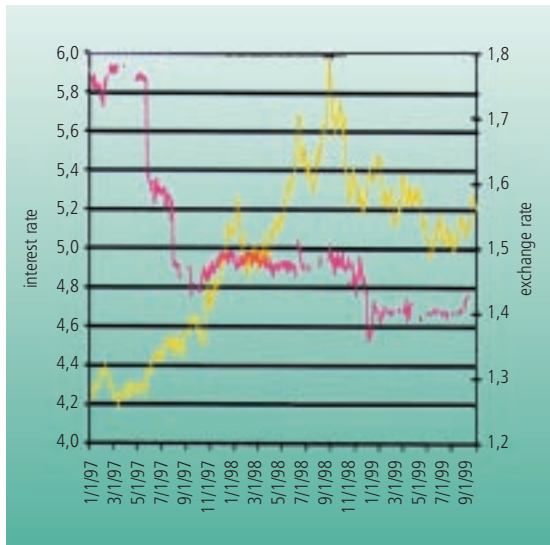


Figure 2 Floating Latin Style: Mexico

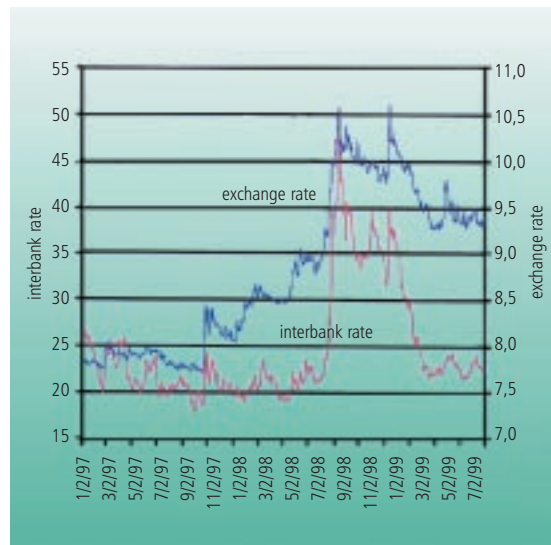


Figure 3 Index of Original Sin

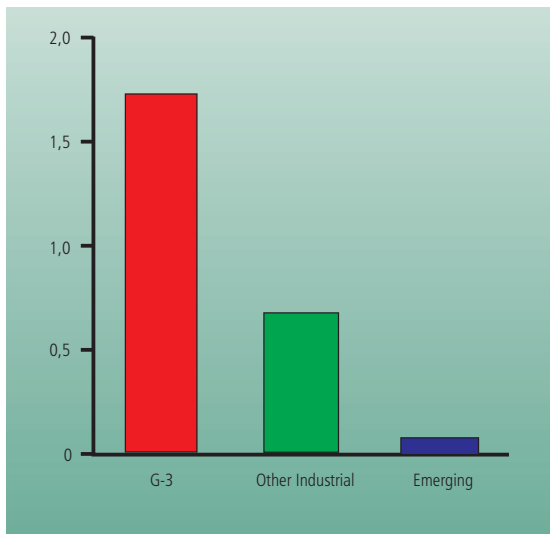


Figure 4 Index 3 of Original Sin

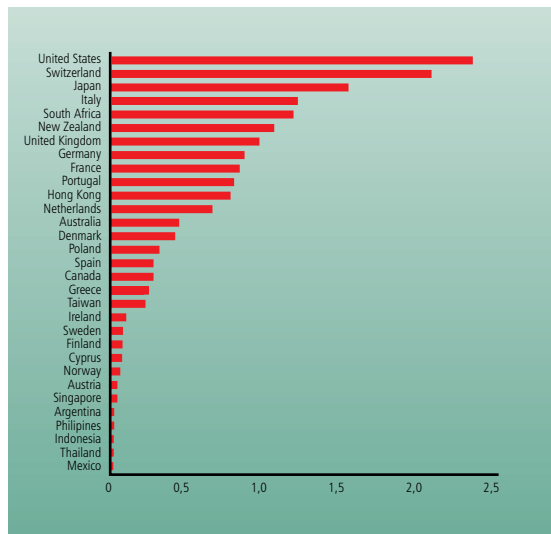


Figure 5 Levels of Reserve

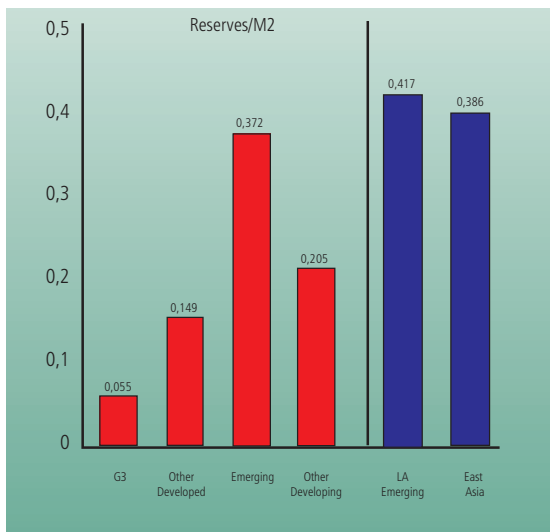


Figure 6 Levels of Reserve

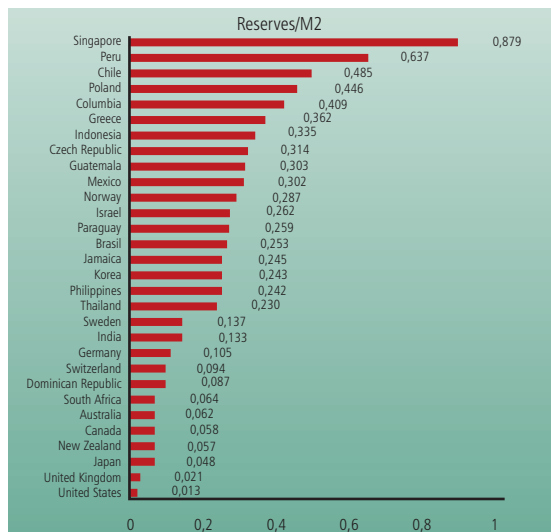


Figure 7 Intervention using reserves

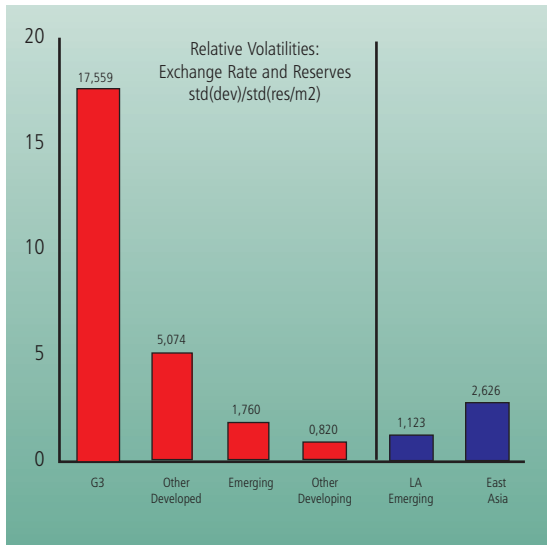


Figure 8 Intervention using reserves

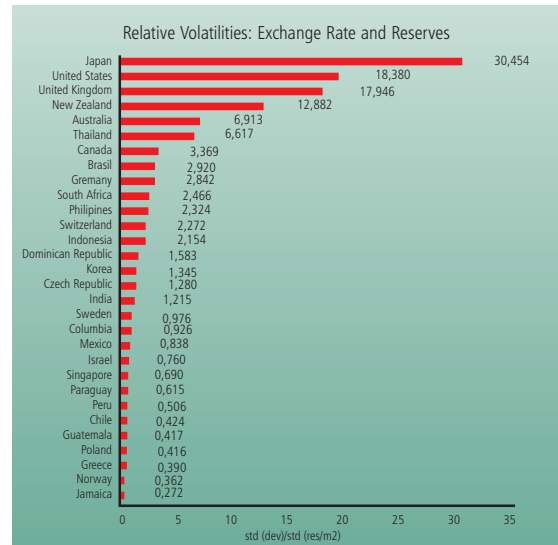


Figure 9 Intervention using rates

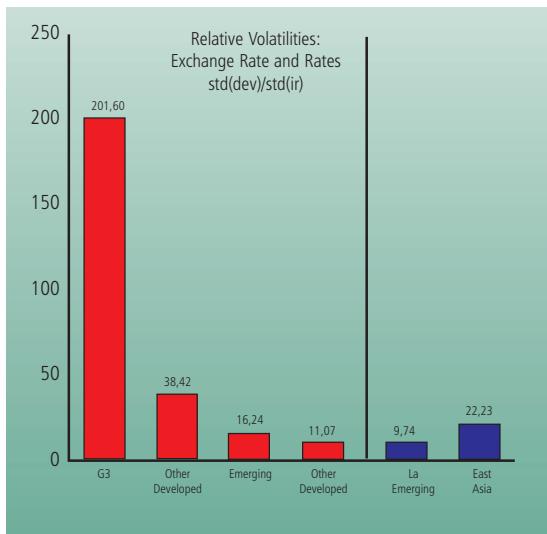
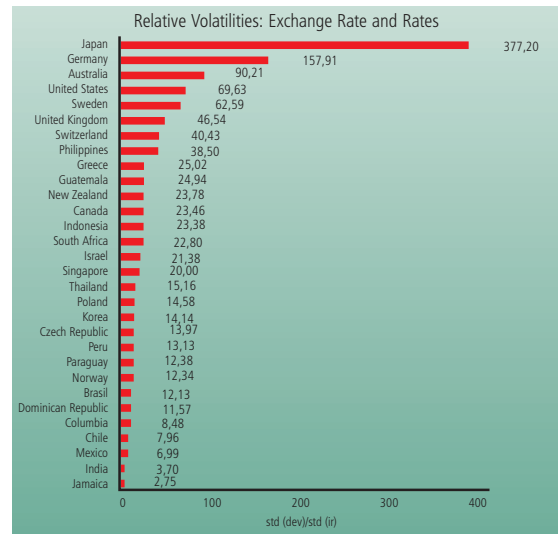


Figure 10 Intervention using rates



The future of the zloty: between the Euro and emerging market status

Daniel Gros

1. Introduction

In Poland, as in most of Central and Eastern Europe, economic policy is motivated by the desire to join the EU, and eventually also the euro area. There can be little doubt today that these goals will be achieved, but it is difficult to predict how long the process will take and whether the convergence will be smooth. This paper focuses on the largest accession candidate, namely Poland, but data for the other CEE-3 (Czech Republic and Hungary) will also be presented for comparison. All these countries are well advanced on the convergence path, but still have some way to go to qualify under the Maastricht criteria. How long will it take them to qualify for EMU membership? The experience of some current euro area members suggests that this could happen sooner, rather than later. It is thus possible that the CEE-3 will have the euro already by 2006 – five years from now. Financial markets are discounting this possibility already to a large extent. But financial markets are fickle. The global environment is deteriorating and emerging markets are watched ever more closely for signs that policy might be slipping. The current uncertainty about public finances should thus be taken very seriously.

However, experience also suggests that the last stretch of convergence can be very difficult. In early 1992, countries such as Spain and Italy seemed within striking distance of full convergence, but in the middle of the year they were suddenly hit by speculative attacks and forced to abandon their peg to the DM. At the climax of a very volatile period, that lasted over three years, the Italian lira had devalued by over 60% against the DM and long-term interest rates had risen to unprecedented levels¹. In the end, the Italian and Spanish governments did take the steps necessary to qualify for EMU, exchange rates appreciated and interest rates converged. This chapter thus had a happy ending, but it should serve as a warning that the final stretch of convergence can be the most perilous. One might argue that the early 1990s were a particularly difficult period because of the recession and the high real interest rates caused by the German response to unification. But it seems that history is repeating itself: just

¹ See Gros and Thygesen (1998) for a detailed analysis. A financial analyst, writing at this point in one Europe's leading newspapers, likened the bonds of Italian toll motorway companies to toilet paper.

as the Central and Eastern European (CEE) Countries are getting ready to converge the international environment darkens again. It will thus be more difficult to repeat the experience of Greece, which had a text-book convergence path: initial one step devaluation followed by smooth convergence.

The two sides of the convergence saga are developed in what follows. Section 2 concentrates on the good news that satisfying the Maastricht criteria should not be a major problem, provided the political will to keep fiscal policy under control persists. Section 3 concentrates on the bad news, namely that experience shows that this is not sufficient to protect against trouble in the presence of large current account deficits and potentially over-valued exchange rates.

2. Prospects of meeting the Maastricht criteria

Within the EU, it is often taken for granted that membership in EMU will come long after accession to the EU because the candidates are supposedly not ready to meet the Maastricht criteria. The reason for this assumption is that most assessments of the prospects of the 10 candidate countries from Central and Eastern Europe to meet the Maastricht criteria start from current and past data and thus conclude inevitably that the candidates are a long way from being able to join the euro area. But this approach is misleading, as can be shown by simply asking what one would have concluded for the prospects of the present Southern member countries of EMU if one had used a similar approach in the early 1990s.

What would be the earliest date by which at least some CEECs could aspire to join the euro area? The starting point has to be full EU membership, and since this requires ratification by all 15 national parliaments, it seems reasonable that this is unlikely to happen before 1 January 2004, even if the negotiations are concluded quickly. The minimum delay between the start of EU membership and joining the euro area is two years of membership in the ERM (as for Greece and Italy). If advanced member countries join the ERMII immediately upon joining the EU, i.e. in early 2004, they could just join EMU by July 2006. The decision to admit CEE candidates to the euro area could then be taken by a European Council meeting in early 2006, based on data for 2005².

A comparison with the start-up of EMU is instructive in this regard. The decision on which countries could form the initial group was taken in 1998 on the basis of 1997 data. Judging the suitability of CEE countries on the basis of 1998 data would thus be similar to having made a prediction about the size of EMU in the early 1990s on the basis of data from 1990 or 1991. How do the candidates measure up on this yardstick?

Table 1 below shows the main variables that are relevant for the Maastricht criteria: interest rates, inflation, fiscal deficit and government debt. The table is organised in two groups of countries: the CEE-3 and the "Club Med". Within the latter group, the data for Greece are from two years later because this country joined EMU about two years after the others.

² A similar procedure was adopted in the case of Greece. A decision taken at a European Council meeting in early 2000 was based on data from 1999, and Greece was then able to join almost immediately.

The bottom row of Table 1 provides an average for the Club Med. A comparison between the data for the CEE-3 and the corresponding data for the Club Med suggests a clear conclusion: Poland (and the other CEE-3) is definitely much closer to meeting the Maastricht criteria than the Club Med countries were at a comparable time before the start of EMU. Inflation, although still high,, is much lower than in the Club Med in the early 1990s. The fiscal deficit is (at least on 2000 data) less than one-half of those of the Club Med then (average 8.6 % of GDP in the early 1990s). The same observation applies to public debt, where the value for Poland is about of that for for the Club Med (80 %) in the early 1990s.

Moreover, in Italy and Spain, the debt to GDP ratio actually increased by over 20 percentage points between the early 1990s and the date of accession to EMU, whereas it has fallen over the last five years in most candidate countries, including Poland.

One might object to the comparison made implicitly in table 1 on the ground that the benchmark today is much stricter. After all, the inflation and the interest criterion are relative to the three best performers in the euro area. Hence one could argue that while in the early 1990s Germany was the benchmark, today it is the euro area, whose performance is better than Germany then, which then had to sustain the cost of unification. This comparison is done in table 1 bis. It gives a similar picture. Except for inflation Poland is still closer to the benchmark today than the Club Med were in the early 1990s.

The data thus suggest clearly that Poland, and the CEE-3 in general, are already much closer to satisfying the Maastricht criteria than the Southern member states of the EU were in the early 1990s. Moreover, experience has repeatedly shown that a short and sharp adjustment is politically and economically less painful than a protracted, and hence supposedly but erroneously soft, one. The case of Greece, which was until recently regarded as a lost cause, provides a further illustration of this phenomenon. The relatively small fiscal adjustment that is still required of the candidates could thus come rather quickly and is likely to be politically easier to implement than the slow adjustment of some established member countries. No “strikes against Maastricht”, as were called in France, are likely to happen in any of the candidate countries.

Table 1. Maastricht-relevant macroeconomic indicators

	L-T Interest Rate (early 2001)	CPI (exp. 2001)	Gen. govt. balance (% of GDP, 2000)	Public Debt (% of GDP, exp. 2001)
Czech republic	6,3	4,7	-4,2	31,0
Hungary	8,3	8,2	-3,5	62,2
Poland	10,2	7,3	-2,4	40,2
1991/1993 data				
Portugal	18,3	12,2	-6,0	66,1
Spain	12,4	6,4	-4,5	43,1
Italy	13,0	7,0	-10,0	100,6
Greece	b/d	14,2	-13,8	110,2
Club Med (average)	15,0	10,2	-8,6	80,2
Germany	8,6	3,9	-3,4	47,1
Eurozone (11)	10,2	3,9	-4,5	66,0
Eurozone (12)	10,2	4,1	-4,6	66,8
EU-15	10,2	4,0	-4,1	64,6

Sources: DB Enlargement Monitor; Gros (2000) and AMECO 2001, Eurostat.

Table 1 bis, Comparison table

	L-T Interest Rate	CPI inflation	Gen. govt. balance	Public Debt
CEEC minus euro area in 2000				
Czech Republic	0,9	0,7	-3,6	-53,6
Hungary	2,9	7,8	-3,8	-11,6
Poland	4,8	6,5	-2,3	-27,1
Average	2,9	5,0	-3,2	-30,7
Club Med minus Germany in 1991/1992				
Portugal	8,6	6,8	-1,4	20,2
Spain	4,0	2,5	-1,2	4,2
Italy	5,1	2,2	-6,8	62,4
Greece	Na	8,6	-8,8	67,3
Average	5,9	5,0	-4,5	38,5

Sources: See table 1.

The relatively good starting position of the candidate countries in a historical perspective does not mean, of course, that there will be absolutely no problems in meeting the Maastricht criteria. But the problems that remain should be manageable, both for the deficit and debt criteria.

Deficits. Achieving a fiscal deficit below 3% is essentially a question of political will. Until 1999/2000 Poland and some other advanced candidates satisfied this norm. But the outlook for 2001 is much less reassuring. This shows once more that current data is not a useful indicator, and that one should rather look for structural problems that would constitute an insurmountable obstacle in the medium run. Are there any longer-term factors that could put unbearable pressure on public finances in Poland and other candidate countries? It is often argued that such pressure might arise from the need to build a modern infrastructure in the CEE-3s, plus the pressure on their underdeveloped social system. However, a look at the data again shows that the problems are not worse in the Central part of Europe.

Infrastructure needs? The public infrastructure of the candidates is certainly less developed than that of current EU members. The candidates have fewer motorways and paved roads per inhabitant and square kilometre, fewer fixed telephone lines, etc., but this does not immediately imply that they therefore need more investment in this area. What they have might actually be adequate for their level of development³. Poland has actually a larger stock of infrastructure than one would expect given its income per capita. It is thus difficult to argue that public infrastructure is the main impediment to growth⁴. Moreover, once Poland joins it will be eligible for support under the regional policy of the EU, which is designed to finance this type of expenditure.

In the EU it is also often argued that Poland, like other candidates, has an underdeveloped social security system. It is true that pension expenditures figure prominently in the current debate over the budget crisis in Poland. But

³ See Gros and Suhrcke (2000), CES/ifo Working Paper No. 627.

⁴ There are more reasons to doubt the need for large public infrastructure spending:

Within the EU one actually does not find any link between public investment and growth in GDP. Ireland, by far the fastest growing economy of the EU over the last decades, has a somewhat below-average ratio of public investment to GDP. Moreover, even if one wanted to give a country of Skoda-drivers the motorways that are appropriate for Mercedes, there is still no need to run large public sector deficits. Given the changes in financial markets that have taken place over the last decade, it is now generally recognised that most infrastructure projects could also be financed and sometimes even operated with substantial private sector involvement. Major projects, such as motorways, are already being undertaken on a mainly private sector basis in the candidates.

the same could be said of most EU countries as well. Indeed, most of the indicators that should signal pressure for spending in the social sphere show little difference between the EU and the CEECs.

For example, there is no significant difference in the age profiles between the EU and the candidates, Poland actually has somewhat less of a greying problem than the EU. In terms of public spending on health and education (as a % of GNP), there is also little difference between the candidates (around 5%) and the EU average (below 6%).

All in all, it thus appears that the pressure on budgets should be manageable over the medium run in Poland, as elsewhere in the CEE-3s, allowing them to achieve the required remaining deficit reductions.

Debt. The debt criterion should not constitute a major additional hurdle. The value for Poland (around 40 % of GDP) is considerably below the euro area average. Debt levels usually change only slowly so that the current data is more informative. But are the data too good to be true? As the Czech case has shown, the process of cleansing the accounts of the banking system can at times lead to large liabilities of the public sector. Debt-to-GDP ratios might thus increase in some candidate countries as they clean-up their banking system. But most of this will be achieved before accession. Non-performing loans as a percentage of GDP (on the basis of EBRD data) are in the low single digit level. Moreover, the Polish banking system is now dominated by foreign banks. Further pressure on public finances from this side should thus be limited⁵.

Moreover, healthy growth combined with low deficits (say around 3%) should lead to rather strong downward pressures on the debt/GDP ratio so that some debt assumption can take place without putting in jeopardy the debt criterion. For example, starting from a value of 40 % the debt/GDP ratio would not increase even if the deficit plus debt assumptions were to reach 4 % of GDP if nominal GDP growth remains at 10 % p.a. (for example 4-5 % growth plus 5-6 % inflation).

3. Pitfalls during the final stretch of convergence?

The CEE-3 should thus be able to qualify for full EMU membership by early 2006, following a decision by the EU that wraps up the process as early as 2005. But this does not imply automatically that convergence will be smooth. Speculative attacks destroyed the European Monetary System in the early 1990s, exactly when the process of convergence seemed to have been successfully completed.

Why did these attacks come about? Markets developed doubts that the countries concerned would be able to actually carry through the required fiscal adjustment and that some currencies were overvalued. Given the much better starting position of the CEE-3 in terms of fiscal policy, the first reservation might be much less of an issue. But there are certainly signs that some of the CEE-3 currencies are overvalued.

In particular some of the CEE-3 share several characteristics of the economies worst hit by speculative attacks in 1992-95. They have large current

⁵ See Pelkmans et al. (2000) for more details.

account deficits, financed by large, supposedly stable FDI inflows and as a corollary an appreciating real exchange rate.

On all three counts, the potential disequilibrium is much larger for countries such as Poland today, than it was for Spain, Portugal or Italy then. It will be useful to document this for the three elements separately.

3.1 Current account deficits

Current account deficits are usually presented as a percentage of GDP, which is useful if one wants to focus on the capacity of a government to service foreign debt. However, if one wants to have an idea of the exchange rate adjustment required to re-establish current account equilibrium, one should relate the deficit to overall export receipts (goods and services). Under certain reasonable conditions, one could actually argue that the deficit as a percent of export receipts gives directly the percent depreciation required to eliminate the deficit without a contraction in domestic demand, i.e. a deficit equivalent to 30% of exports would require a devaluation of about the same magnitude⁶.

On this account, the data are not reassuring. The deficit of Poland amounts now to almost 50% of exports, compared to “only” about 20% for Spain during the early 1990s. (Portugal had only negligible deficits during this period.)

Table 2. Current account deficits (as % of export receipts)

	1998	1999	2000
Poland	-14,1	-28,9	-46,7
	1990	1991	1992
Portugal	-1,1	-2,4	-0,5
Spain	-21,1	-18,0	-17,3

Sources: IMF, IFS and Deutsche Bank.

These data imply that a country such as Poland would require a very large depreciation, almost 50%, should it ever need to achieve a balanced current account quickly. It is usually argued, however, there will be no need for this because the deficit is financed by stable flows of foreign direct investment. This argument was also frequently used prior to 1992 in the case of Spain and Portugal.

3.2 Large FDI inflows

Table 3 below shows that Portugal and Spain also had rather large inflows of FDI, again measured as a percentage of export receipts. For Spain, FDI flows averaged over 10 % of exports during the pre-crisis period, and for Portugal they were only somewhat smaller.

⁶ The conditions are that imports are relatively price in-elastic and that the demand curve for exports has an elasticity of one, which is not far from typical estimates in the empirical literature.

For Poland today, FDI flows are about twice as important. During 2000 they amounted to close to 30 % of exports, financing most of the current account deficit.

Table 3. FDI inflows (as a percent of export receipts)

	1998	1999	2000
Poland	13,9	18,8	29,4
	1990	1991	1992
Portugal	11,4	9,2	5,0
Spain	12,5	9,0	11,1

Sources: IMF, IFS and Deutsche Bank.

The key question is thus for how long can the CEE-3 count on inflows of this magnitude. Over the last years, the CEE-3 have experienced rather stable flows, which have on average increased year after year. But can this go on forever? The experience of Spain and Portugal is again instructive in this respect. FDI flows to Spain halved in the year after the first attack (1993) and then halved again after the second major attack (1995). By 1997, Spain became a net exporter of FDI, and later Portugal as well. With swings in external flows of this size it is not surprising that a large adjustment in the real exchange rate of the peseta was needed.

This leads to the third issue: Are the currencies of the CEE-3 overvalued?

3.3 Real overvaluation?

During the early 1990s, there was a lively discussion whether the Club Med currencies were over-valued. There was no general agreement, because the judgement depended, as usual, on the indicator and the base period used. The two indicators most often used to measure competitiveness are (and were then) the real exchange rate deflated by the CPI and by Unit Labour Costs (ULC). These two usually give different indications. Now, and then.

In the case of Spain, it was argued that there was no need for a large exchange rate adjustment because there was no real overvaluation – but only if one used ULC as the competitiveness indicator and 1980 as the base period. Not surprisingly, this was the position taken by the authorities. A similar argument was used in the case of Italy, where there was also a large discrepancy between the ULC- and the CPI-based measures.

Poland today presents a very similar picture. Depending on the base period and the indicator chosen, the zloty could be seen to be overvalued by any sum between 8 and 64 %. (For Hungary and the Czech Republic, the potential overvaluation is much smaller across most indicators and base periods.)

The argument that the zloty cannot be overvalued because Polish exports keep growing fast was also used in the case of Spain, where exports had actually doubled in dollar terms in the five years prior to the attack of 1992 – an even more impressive performance than Poland's. This is typical of countries that have recently opened to trade, such as the transition countries today, or Spain in 1992, when it dismantled its last tariffs within the, then, EC. In such cases both

Table 4. Appreciating real exchange rates

		Early 2001 relative to	
		1996	1999
Poland	CPI	21,1	18,1
	ULC	64,4	8,6
Club Med		End-1991 relative to	
		1980	1987
Italy	CPI	30,8	10,9
	ULC	-1,0	8,5
Spain	CPI	24,1	25,6
	ULC	1,9	28,0

Sources: Gros and Thygesen (1995) p. 216 for Club Med relative to Germany. For Poland, real effective exchange rates provided by DB London (weight of EU is 93%).

exports and imports tend to grow strongly, whatever the exchange rate, more and more sectors are exposed to international competition⁷.

These data suggest that sooner or later an exchange rate adjustment might be needed. The discussion concentrated on the case of the zloty, where the potential over-valuation is largest because of the recent sharp appreciation. But the other CEE-3 countries might soon face a similar situation. What does this imply for the exchange rate policies pursued by these countries?

Poland and the Czech Republic officially follow a floating exchange rate, accompanied by domestic inflation targets. They are thus in a different situation than Spain and Italy in the early 1990s, which were members of a fixed exchange rate adjustment, the ERM. In theory, an exchange rate adjustment could thus come about gradually and without disruption.

However, experience has shown that large exchange rate adjustments almost always lead to some disruption in financial markets. This was the case even for Spain, which in 1992 had actually a rather large room for manoeuvre under the ERM (Spain had margins of +/- 6%). A sudden large depreciation usually forces the central bank to increase interest rates to limit the domestic inflationary pressures that would otherwise worsen inflation. Moreover, the terms of trade shock (deriving from the depreciation) in combination with higher interest rates might initially lead to a contraction in demand (as in Italy and Spain). This in turn puts pressure on the budget, leading to higher deficits; which then might undermine confidence and thus aggravate the depreciation.

Such a negative spiral does not need to develop. The case of Greece shows that a smooth 'glide path' to EMU is possible. But it would certainly be very dangerous for the CEE-3 countries to enter into an ERM-type arrangement that would tie their currencies to the euro before they have a clearer view of whether the current exchange rate levels are sustainable in the long run. The case of Greece, which engineered successfully a one-step surprise devaluation is instructive in this regard.

4. Concluding remarks

Poland seems to be well placed to enter the euro area rapidly once it has acceded to the EU. But experience has shown that the final stretch of

⁷ For an analysis of the experience of transitions countries see De Broeck and Slok (2001).

convergence can be the most dangerous, especially for countries with a potentially over-valued exchange rate whose level is underpinned by large capital inflows, which cannot be taken granted forever. The experience of some members of the euro zone is instructive in this regard. There are examples of countries that were able to converge rather smoothly, e.g. Greece, and, to a lesser extent, Portugal. In the cases of Spain and Italy, however, EMU membership was preceded by an extremely volatile period during which time exchange rates depreciated heavily and interest shot up. In both cases financial markets worried not only about over-valued exchange rates, but also weak fiscal policy.

The case of Poland today shows a number of similarities with that of Spain ten years ago: the Spanish economy was also rather dynamic, but characterised by high unemployment and large regional differences; exactly as Poland today. Until the early 1990s fiscal policy had been generally under control, resulting in a low debt/GDP ratio. But this seemed at risk during the politically and economically turbulent early 1990s.

Governments that are really determined to get into EMU can usually withstand the pressure from financial markets. In the case of Spain and Italy, markets calmed down eventually and convergence resumed at a rapid pace. There was a happy ending. But the intervening turbulent times were very costly for these countries. The challenge for policy makers in Poland will be to avoid similar turbulence while steering the zloty to its final safe harbour, the euro.

References

1. De Broeck, Mark and Torsten Slek (2001) "INTERPRETING REAL EXCHANGE RATE MOVEMENTS IN TRANSITION COUNTRIES" Bank of Finland, Institute for Economies in Transition (BOFIT), Discussion Paper No. 7.
2. Gros, Daniel and Alfred Steinherr (1995), *Winds of Change, Economic Transition in Central and Eastern Europe*, London: Addison-Wesley Longman.
3. Gros, Daniel and Marc Suhrcke (2000), *Ten Years After: What is special about transition countries?*, CEPS Working Document No. 143, Centre for European Policy Studies, Brussels, May.
4. Gros, Daniel and Niels Thygesen (1998), *European Monetary Integration from EMS to EMU*, London: Addison-Wesley Longman.
5. Pelkmans, Jacques, Daniel Gros and Jorge Núñez Ferrer (2000), *Long-Run Economic Aspects of the European Union's Eastern Enlargement*, WRR Working Document No.109, Scientific Council for Government Policy, The Hague, September.

Exchange rate arrangements in the transition to EMU: Some arguments in favor of an early adoption of the euro

Fabrizio Coricelli

Introduction

Countries of Central-Eastern Europe in the process of accession to the European Union face fundamental challenges for the conduct of macroeconomic policies. They are characterized by growth rates faster than those of EU countries, and attendant large current account deficits. Fast productivity growth in the tradable sectors implies an equilibrium appreciation of the real exchange rate. Large current account deficits imply accumulation of foreign debt. Debt in CEECs is already skewed towards foreign rather than domestic debt. Furthermore, in some cases, namely Poland, there is a large stock of foreign currency deposits. These factors expose countries to adverse effects of exchange rate swings. The experience of emerging markets indicate that exchange rate flexibility ends up being a strait-jacket rather than vehicle for larger degree of freedom in domestic policies, or a shock-absorber. Exchange rate flexibility in a world of free capital movements tends to be associated with high interest rate spreads, high real interest rates and vulnerability of the domestic economy and the financial sector to external shocks.

To respond to these issues proposals for dollarization of emerging markets have been advanced. These proposals seem even more applicable to countries joining the European Union, countries that ultimately will have to adopt the euro. In this paper we add a few elements to the debate on the desirability of an early adoption of the euro, focusing on the drawbacks of the system under ERM2 and the Maastricht criterion on inflation.

Exchange rate arrangements in CEECs

The Czech Republic, Estonia, Hungary, Poland and Slovenia (CEEC5) are the front runners in the process of accession to the European Union. They have achieved remarkable results both in terms of institutional reforms and of macroeconomic

Table 1 Exchange Rate and Monetary Policy Regimes in the CEEC5

Country	Exchange Regime	Official Intervention	Capital Controls	Monetary Goal
Czech Republic	Relatively free float	Occasional intervention to smooth large swings in the exchange rate	Largely liberalized	Announced inflation targets (net of administered prices): 4-5 percent, end 1999, 3.5-5.5 percent, end 2000.
Estonia	Currency board Arrangement		Fully liberalized	Maintain exchange rate fixed to the euro.
Hungary	Crawling peg to The euro with a Wide band of +/- 15 percent.	Intervention at the edges of the band	Long-term controls liberalized. Controls on Short-term capital remain.	Low inflation (2-3 percent above euro zone), and Sustainable external position.
Poland	Relatively free Float.	Occasional Intervention to Smooth large Swings in the Exchange rate	Long-term controls targets liberalized. Some controls on short-term Capital flows.	Announced inflation (headline inflation) 6.7-7.8 percent, end 1999; 5.4-6.8 percent, end 2000; below 4 percent, 2003.
Slovenia	Managed float.	Closely Managed on a Gradually Depreciating Path.	Long-term controls liberalized (Sept. 1999). Short-term Controls Remain.	Announced targets for annual M3 growth. Day-to-day intervention also Guided by desire to reduce interest rate differential with EU and limit Excessive volatility in the Exchange rate.

Source: Corker et al. (2000)

stabilization¹. Despite the similarities in their achievements, CEEC5 are characterized by markedly different exchange rate arrangements (Table 1).

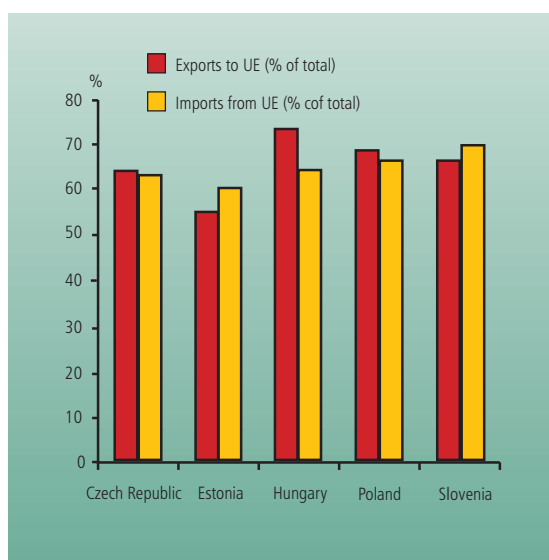
Although different experiences with stabilization programs and structural differences may explain the heterogeneity of exchange rate arrangements in CEECs, such heterogeneity is striking if one considers that all countries are in a process of negotiating entry in the EU and are characterized by a concentration of trade with EU.

Explaining heterogeneity

Among the main structural differences that may explain different exchange rate regimes for CEEC5, the recent literature identified two main features: size, with Poland being much larger than the others, and Estonia the smallest; flexibility of labor markets, with Hungary and Estonia displaying a degree of flexibility higher than Poland and the Czech Republic. However, as stated in a recent IMF study “...it would be wrong to overemphasize differences between the countries. At a broader level, they all share a high degree of openness, similar trade and output structures to the EU and, for the most part, sufficient labor market flexibility to

¹ According to the Ebrd indicators of transition the CEEC5 have almost completed the transition process in terms of institutional building, liberalization and privatization. However, these indicators have to be taken with caution as suggested by Nuti (2000). Indeed, Nuti shows that these indicators depict an overoptimistic picture of the progress of institutional and structural change achieved.

Figure 1 Trade flows of CEEC5 (1998)



justify some degree of alignment of their exchange rates to the euro". (Corker et al. (2000), p. 6)

Even stronger is the view of De Grauwe and Aksoy (1997), who argue that CEECs qualify as members of an optimal currency area with EU countries.

Finally, Boone and Maurel (1999), found a high degree of correlation between the business cycle of CEECs and that of Germany or of the European Union. This implies that in the event of adoption of the euro CEECs would incur only small losses due to asymmetric shocks.

More generally, as stressed by Frankel (1999), ex ante criteria to judge whether a country qualify to join a monetary union neglect the fundamental effects that joining a monetary union has on the characteristics of the countries entering it. In other words, convergence among structures increases with joining the union. Income correlation among countries increases with trade integration, and the latter increases with participation in the EU. Trade integration of CEECs with EU is already very high and is bound to increase further (Figure 1)².

The importance of real or structural factors in evaluating the desirability of adopting the euro is exaggerated, and often leads to misunderstandings. In the European Union, asymmetries among regions are very large and mobility of labor

Table 2 Exchange rate regimes in transition economies*

	Fixed		Limited Flexibility		More Flexible	
	Currency Board Arrangement	Conventional peg	Explicit Narrow Band	Tightly Managed	Broad Band	Relatively Free Float
Czech Republic		•	•	•	•	X
Estonia	X					
Hungary		•	•	•	•	X
Poland		•	•	•	•	X
Slovenia				•		

* An X indicates the current exchange regime, a • denotes a previous regime, and a --> indicates a regime change
Source: Corker et al. (2000)

² Though other authors argue that greater integration increases specialization. In the presence of idiosyncratic shocks the income correlation across countries would decline with greater integration. However, the argument appears unconvincing (see Frankel (1999) for an effective criticism of such view). Needless to say, the question cannot be resolved in theory but it requires empirical investigation. Frankel and Rose (1998) show that income correlations indeed increase with trade integration.

low even within countries, and this is compatible with single currencies within countries and with the euro for the European Union as a whole. Financial factors are much more important than assumed in the standard literature on OCA.

Interestingly, over time more advanced transition countries (CEEC5) have moved towards greater flexibility of exchange rate regimes, at least on paper (Table 2). The behavior observed in Table 2 partly supports the process of polarization that seems to be occurring at the world level, with countries towards extreme arrangements (float or more rigid peg), escaping from intermediate ones (Frankel (1999)).

Are these movements consistent with the objective of accession to the European Union?

Let us first describe how the process of integration in the EMU would work in principle, according to present regulations. After joining the Union there is no set date for EMU entrance. Prior to ERM2 countries are free to choose the exchange rate regime. However, in the long run there is no possibility of staying out of the euro (no opt-out clause). Moreover, there are important steps to be made upon accession to the European Union, such as the liberalization of capital flows.

Entrance in the euro implies participating in ERM2, that implies that for two years exchange rates have to be kept within a 30 percent-wide band (15% up and 15% down) centered around a fixed parity, that can only be revalued. Furthermore, one year before entering the European Monetary Union Maastricht criteria apply, though meeting the Maastricht criteria does not represent a precondition for EU membership.

From a formal point of view, the flexible systems of the Czech Republic, Poland and Slovenia appear compatible even with the ERM2 system. The main difference would be the choice of an explicit parity. The currency board arrangement of Estonia seems also compatible with ERM2.

In sum, even if entry in EMU could be postponed, it is unclear why CEECs should follow that strategy in a context of free capital flows. Even if it is a simplification, we thus concentrate on ERM2 and Maastricht criteria as the relevant benchmark that will be contrasted with the option of the early adoption of the euro.

The rationale of ERM2 for CEECs

Maintaining sufficient exchange rate flexibility and, supposedly, monetary independence in CEECs has two main justifications: (i) The so-called Balassa-Samuelson effect, that implies a trend real appreciation of the exchange rate for countries in which productivity growth is higher than in their trading partners (in addition transition itself, through structural change has an impact on the real exchange rate (Greif and Wyplosz (1999))³. (ii) A period of flexibility would permit to test the equilibrium exchange rate.

(i). The Balassa-Samuelson (B-S) effect arises from the fact that productivity growth tends to be higher in tradable sectors (say industry), than in

³ Jazbec (2000) shows that for advanced CEECs the role of structural change typical of the transition process, became irrelevant after five years into the transition process.

nontradable sectors (say services). Productivity growth is translated into wage growth in tradable sectors, and in turn transmitted to wage growth in nontradables. This latter effect implies an increase in the relative price of nontradables, hence in the real appreciation of the exchange rate, if measured in terms of relative consumer prices. This does not imply loss of external competitiveness, as there is no real exchange rate appreciation if measured in terms of relative unit labor costs. CEECs are characterized by levels of income per capita much lower than EU countries. Thus, if convergence between incomes per capita will occur, rates of growth in CEECs will be much faster than in EU countries. Table 3 provides some estimates of projected growth rates from well-known growth models, and computes the number of years needed to converge to low-income EU countries (Greece, Spain and Portugal). The data indicate that the process of convergence will be rather slow and will take a long period. Thus, the Balassa-Samuelson effect will operate for a long time and cannot be eliminated by maintaining flexibility of nominal exchange rates for just a few years. Differential growth rates implies that CPI-based real exchange rate will appreciate for CEECs.

Table 3. Projected growth rate for CEECs

Country	Growth rate projection (yearly percentage change in real per capita GDP)		Convergence toward lower income EU countries (avg. of Greece, Portugal and Spain) (number of years needed for convergence)	
	Barro	Levine-Renelt	Barro	Levine-Renelt
Czech Republic	5,44	4,40	11	15
Estonia		5,23	4,93	16 17
Hungary		5,28	5,02	20 22
Poland		5,42	4,75	18 23
Slovenia	5,31	4,58	19	24

Source: Fischer et al. (1998)

With flexible prices, such adjustment in the real exchange rate would occur through an increase in the price of non-tradables. Furthermore, as such process represent a predictable long-run change in productivity, it is likely to be anticipated, determining an initial jump in the price of non-tradables, rather than a continuous increase of such prices over time. With price stickiness in the non-tradable goods sector, the Balassa-Samuelson effect would imply an appreciation of the nominal exchange rate, and through it of the real exchange rate. Empirical estimates of the role of the Balassa-Samuelson effect vary across countries, and it ranges between 2 and 4 percent, depending on the studies and the countries (Szapary (2000)). Studies of low income EU countries found that the B-S effect explained a 1 percent additional inflation per year during the period 1960-1996, while the effect was larger, around 2 percent, for Portugal. These countries may be good comparators for the likely effects in CEECs.

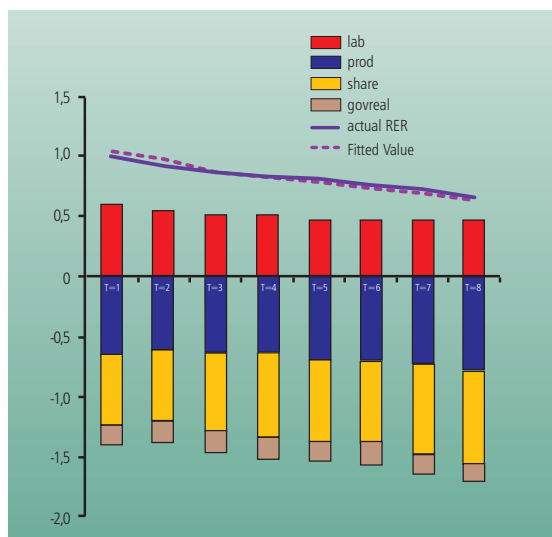
Regarding the real exchange rate, for the 1990s Jazbec (2000) found an elasticity of the real exchange rate with respect to productivity differentials of about 1/2. If we take the typical 2 percent yearly rate of convergence (see Barro and Sala-I-Martin (.)) for CEECs relative to the EU countries, the pressure on

the real exchange rate due to the Balassa-Samuelson effect should be of the order of one percent per year in the medium to long run. However, this is a ceteris paribus effect. Indeed, the equilibrium real exchange rate depends on other factors as well, in particular on government spending (see for instance Obstfeld and Rogoff (1996)). According to Fischer et al. (1998) government consumption for CEECs can reasonably decline by a substantial amount over time (they assume a 10 percentage points of GDP reduction). A reduction of this magnitude may partly offset the Balassa-Samuelson effect. Figure 2 shows the role of different factors in determining the dynamics of the real exchange rate in CEECs.

Justifying maintaining flexibility of the exchange rate because of the need of real appreciation due to the B-S effect appears rather weak.

Inflation differentials associated with the B-S effect reflect an equilibrium phenomenon, without any negative implications. As effectively stated by Rostowski (2000), why should EU countries or the European Central Bank be concerned about the prices of Polish barber shops? Rather than a justification for flexibility of nominal exchange rate, the presence of a strong B-S effect highlights the drawbacks of the Maastricht criterion on inflation for CEECs, or any other country joining the EMU. Szapary (2000) discusses several options for modifying such criterion. The Maastricht criterion for inflation convergence states that a country joining EMU should have an inflation rate no more than 1.5 percent above the average of the three lowest rates of inflation in the EU. Wouldn't be more sensible to impose a constraint that imposes a constraint for

Figure 2 Accounting for Real Exchange Rate in CEE Countries without Bulgaria and Romania



CEECS with reference to the highest rates of inflation in the EU? Ireland, Spain and Portugal will then be the comparator, and it is not by accident that these countries display the highest rates of inflation, as they are the countries with lower income per capita and thus higher underlying growth rates. In fact, at present Ireland would not meet the Maastricht criterion on inflation. More generally, given that a country delegates its monetary policy to the ECB, why should be subject to an additional constraint on the rate of inflation?

(ii). Testing of an equilibrium level appears at best a weak justification. The adoption of a wide band is going to generate volatile capital flows that will determine exchange rate movements unrelated to movements in the fundamentals. As devaluations of the parity chosen are ruled out, the only flexibility allowed is to revalue the parity. In a context of uncertainty, this implies a bias for a depreciated parity, that goes against the considerations of point (i). The experience of Greece has shown that rather than a useful test the

ERM2 gives rise to a convergence play in which short term capital flows are affected by expectations on the final parity chosen.

Summing up, the rationale for maintaining flexibility of exchange rates in CEECs appears weak. It is interesting to note that the debate on the desirability of different exchange rates in the European Union focused on “real” factors, downplaying the importance of financial factors and issues related to credibility of monetary policy. Such neglect of financial aspects is striking, if one takes into account the experiences of emerging markets with currency and financial crises. Indeed, arguments in favor of dollarization for emerging markets, especially in Latin America have emphasized issues related to the vulnerability of emerging markets with respect to sudden shifts in capital flows, the pro-cyclical movement of interest rates (see Calvo (2000), Hausmann et al. (1999)).

The rationale for an early adoption of the euro

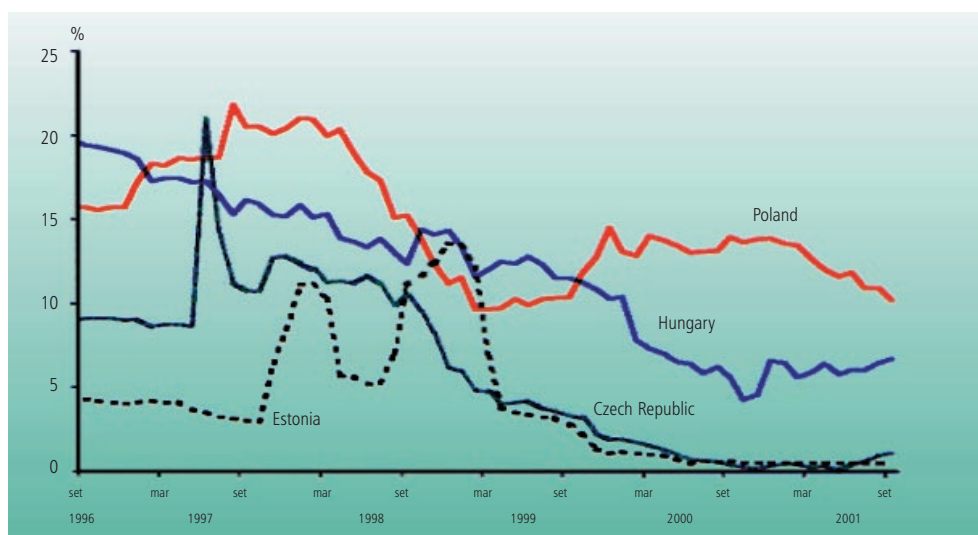
From the perspective of CEECs adoption of the euro would permit an immediate advantage in the elimination of the interest rate premium and, consequently, the reduction of real interest rates. In a context of liberalized capital flows the adoption of the euro would eliminate the vulnerability of the countries to sudden shifts in capital flows, and the attendant disruptive effects on the domestic financial sector.

The underlying trends highlighted in the previous section indicate that CEECs are vulnerable to financial crises. Rapid growth will lead to large current account deficits, thus accumulation of foreign debt. As shown by the experience of emerging markets, management of macroeconomic policies in such a context is rather difficult. With large and volatile capital flows the idea that flexible exchange rates would permit independence in monetary policy and higher degrees of freedom in the conduct of domestic policies appears an illusion. CEECs are characterized by public debt ratios rather low but debt tends to be mainly in foreign currency. Moreover, especially in Poland, there is a sizable stock of foreign currency deposits (about 20 percent of total deposits). Calvo and Reinhart (2000) have illustrated the problems with exchange rate flexibility, denoting such a phenomenon as “fear of floating” in emerging markets. Even when exchange rate regimes are flexible on paper, the need to maintain a stable exchange rate dominates the conduct of domestic policies in emerging markets.

The experience of Poland seems to fit rather well into this framework. Poland has experimented with different exchange rate policies since the start of transition. It has moved from a fixed exchange rate system of the beginning of transition to more flexible arrangements (crawling band) culminating in a floating regime in April 2000.

Figure 3 effectively shows how the interest rate premium for Poland has increased with a shift to higher flexibility in the exchange rate. The adoption of a floating system has not insulated domestic interest rates from external movements. By contrast, higher flexibility has determined a sharp deviation in the behavior of Polish interest rates from those of other CEECs.

Figure 3 Interest rates spread



Increasing exchange rate flexibility has increased exchange rate risk and with it the interest rate spread (see Figure 3). While the premium of interest rates over German (and lately euribor) rates has declined continuously for Hungary, the Czech Republic and Estonia, it has increased after the move to floating in Poland, hovering at around 10 percent. Real interest rates have remained extremely high. In addition, flexibility of the exchange rate has been accompanied by a significant appreciation of the real exchange rate. The Czech Republic has opted for flexible exchange rates and inflation targeting after the 1997 crisis. However, the Czech Republic is characterized by significantly lower stocks of debt. Furthermore, even the apparent success of the Czech Republic in terms of reduction of inflation and of interest rates has to be judged together with the prolonged period of stagnation of economic activity after 1997.

The “trap” of ERM2

The exchange rate arrangement foreseen in the ERM2 has major drawbacks for CEECs. Indeed, the parity chosen is likely to become a ceiling for actual exchange rate movements, meaning that countries will tend to be on the appreciated part of the band. Any movement above the parity generates two effects. First, expectations of inability to enter the euro would mount, creating a self-fulfilling process of weakening of the currency. As the parity cannot be devalued, this induces corrective actions by the Central Bank in order to support the exchange rate, namely high interest rates.

The second, 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 (appreciated). At the end of the ERM2 the parity can either be maintained or re-valued, which is likely because actual exchange rates would tend to be consistently below the old parity. Part of the mechanism goes within

Figure 4 Exchange rate Drachma/Euro

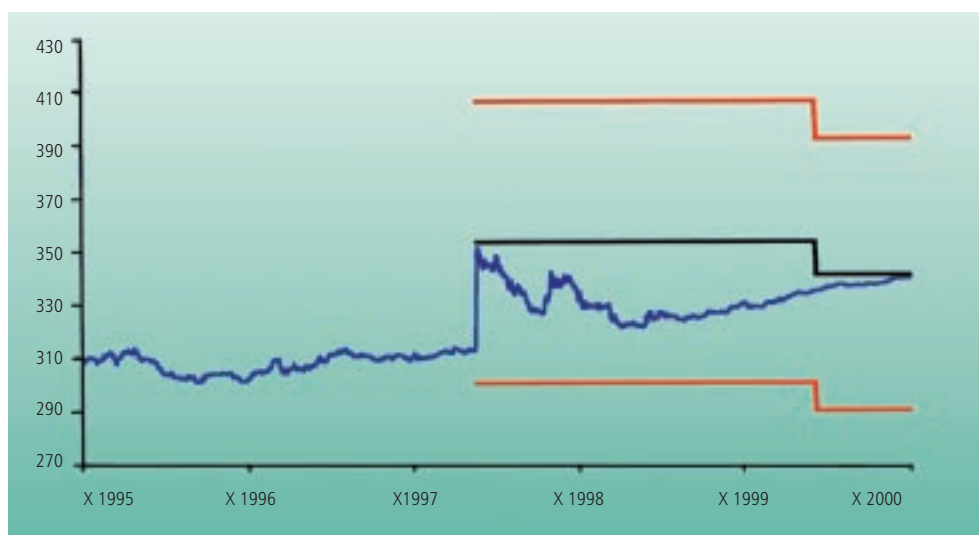
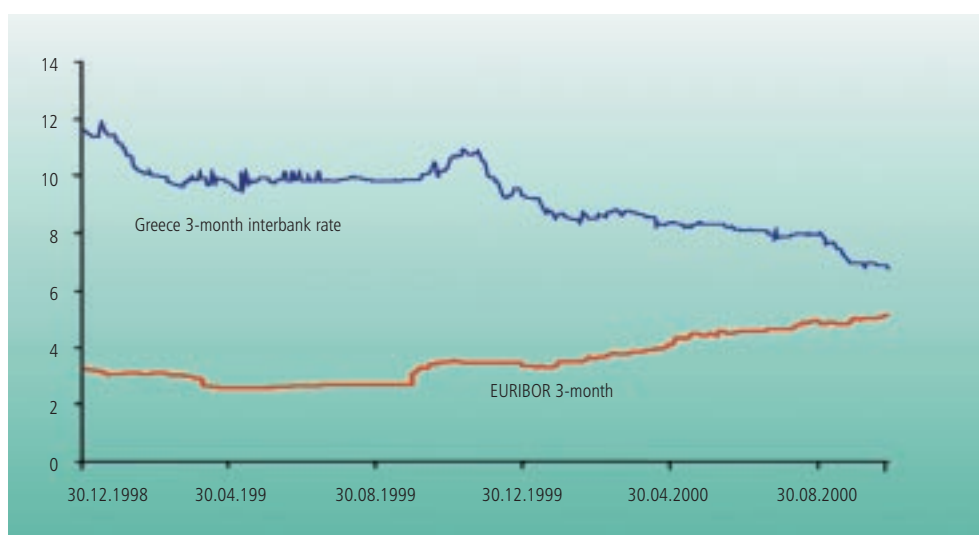


Figure 5 Greece: Short-term interest rates during ERM II



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.

The experience of Greece in the ERM2 is telling (see Figure 4). Upon entering ERM2 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 ERM2 the drachma was stuck in the lower portion of the band. As a result, the parity negotiated for the entrance in the euro was re-valued.

As for interest rates, the decline of domestic rates was very slow, and accelerated only when the entry in the euro approached. Even then, however, a significant spread with respect to the euro interest rates persisted (Figure 5).

Conclusions

In sum, an early move to the adoption of the euro seems desirable for CEECs. The benefits of it may not be the same for every CEECs (see Nuti (2000a)). Furthermore, countries would need enough foreign reserves to switch to the euro. Benefits seem particularly significant for Poland, and for different reasons for Estonia, that with a currency board would need a small jump to move to euroization. The benefits of the adoption of the euro will be greater if all CEECs adopt the euro simultaneously.

For the European Union the process of euroization would bring important benefits in terms of stability of the region. Indeed, the presence of strong Balassa-Samuelson effects would imply that CEECs would bring strength to the euro, as their currencies have an underlying tendency to appreciate. It may also give an important push to the international role of the euro and it will be an important signal of strength of European institutions.

Similarly to proposals of dollarization, there are important open issues concerning the use of seignorage and the role of lender of last resort for the European Central Bank. Recent literature on dollarization makes a strong case on the desirability for emerging markets and for the United States of such an arrangement. Those arguments apply to CEECs. If anything, they are stronger for Europe as there is a stated objective of enlarging the European Union to CEECs.

With this paper we tried to add some small points to the debate, concentrating on the risks that fast growing CEECs will face if they maintain their own currency during a period of large current account deficits and free capital flows.

References

1. Boone L. and M. Maurel, "An optimal currency area perspective of the EU enlargement to the CEECs", CEPR Discussion Paper Series, n. 2119
2. Calvo, G. and C. Reinhart (2000), "Fear of Floating", University of Maryland, mimeo.
- Calvo, G. (2000), "Testimony on Dollarization", Presented before the Subcommittee on domestic and monetary policy committee on banking and financial services, Washington, D.C., June 22, 2000.
3. Corker, R., C. Beaumont, R. van Elkan and D. Iakova, "Exchange Rate Regimes in Selected Advance Transition Economies. Coping with Transition, Capital Inflows, and EU Accession", IMF Policy Discussion Paper, PDP/00/3, Washington D.C., 2000
4. De Grauwe, P. and Y. Aksoy (1997), "Are Central European Countries Part of the European Optimum Currency Area?", mimeo.
5. Frankel, J. (1999), "No Single Currency Regime is Right for All Countries or at All Times", NBER Working Paper Series, n. 7338.
6. Hausmann, R., M. Gavin, C. Page-Serra and E. Stein (1999), "Financial Turmoil and the Choice of Exchange Rate Regime", IADB, Washington DC.
7. Jazbec, B. (2000), "Real Exchange Determination in Transition Economies", University of Ljubljana.

8. Nuti, D.M. (2000a), "The Costs and Benefits of Euro-Isation in Central-Eastern Europe bifore or instead of EMU Membership", University of Rome and London Business School, mimeo.
9. Nuti, D.M. (2000b),"On the Over-Optimistic Bias of EBRD Indicators of Transitino Progress", Seminar Paper, ESRC, 7 June, LBS.
10. Obstfeld, M. and K. Rogoff (1996), "Foundations of International Macroeconomics", MIT Press.
11. Rostowski J. (2000), "The Eastern Enlargement of the EU and the Case for Unilateral Euroization", Central European University, mimeo.
12. Szapáry, G. (2000),"Maastricht and the Choice of Exchange Rte Regime inTransition Countries during the Run-Up to EMU", NBH Working Paper, 2000/7.

Appendix

Figure A1. Industrial Production

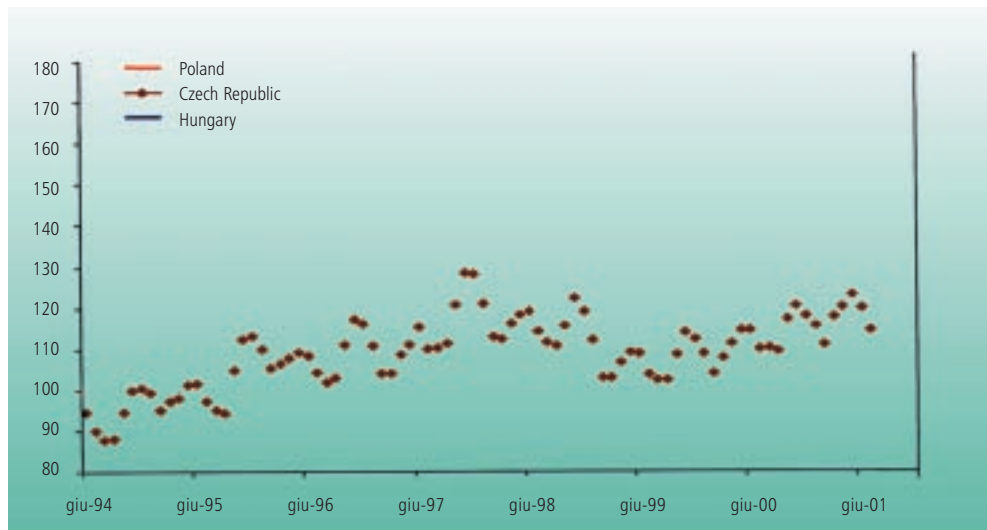


Figure A2. Real Interest Rate

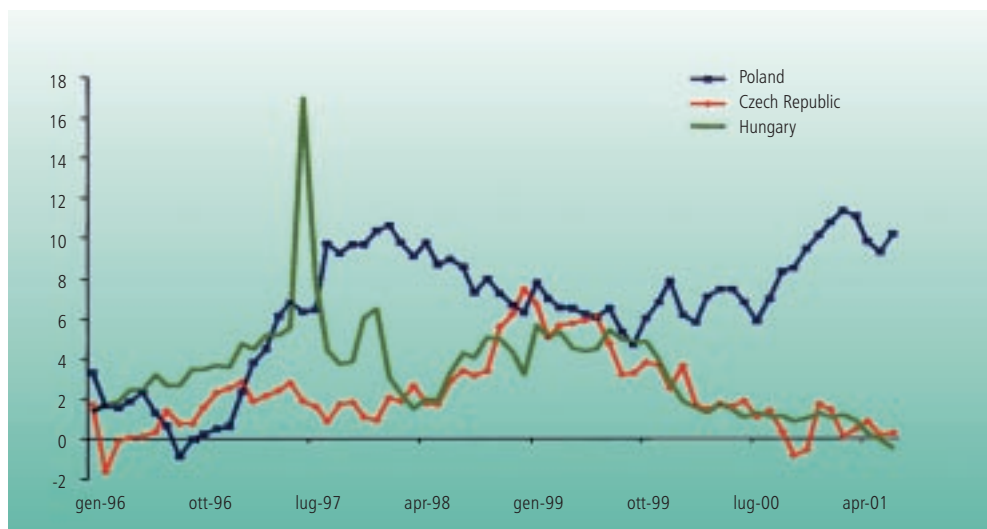
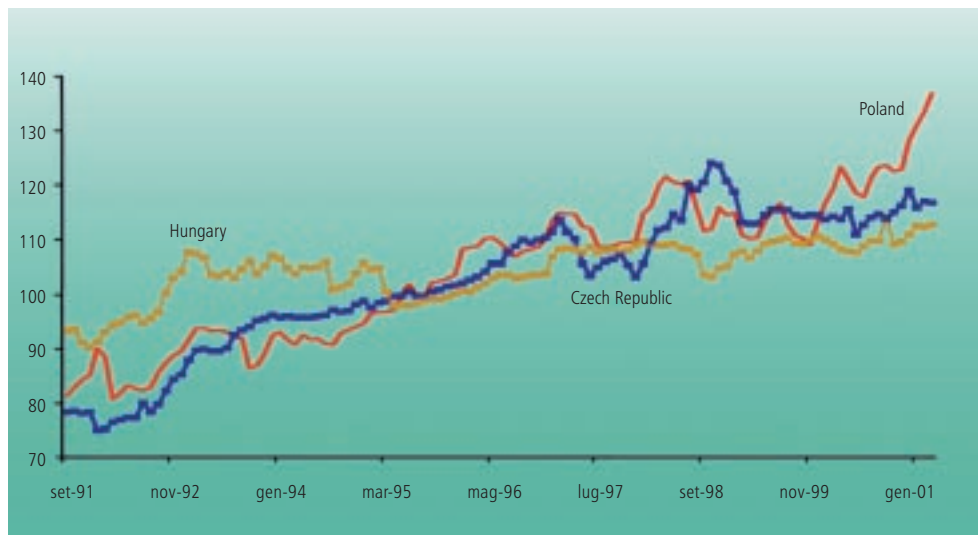


Figure A3. Real Effective Exchange Rate



Poland's Road to Euro: A Review of Options

Stanislaw Gomulka

1. Long-term economic benefits in adopting the euro.

Euroization is an important part of what appears to be a new general tendency in the world economy, one towards fewer but better monies (Dornbusch, 2001).

The main arguments in favour of the European Union (EU) countries' adopting a common currency fall, I think, into three categories: (a) those related to international trade and static efficiency gains, (b) those related to stability, and (c) those related to growth. Although these arguments are well known, I should like to recall them briefly, in order to make the point that while (a) applies to all countries, (b) and (c) apply mainly to the least developed members and candidates of the EU.

Trade and efficiency: The elimination of an exchange rate risk within a common currency area (CCA) reduces the transaction cost in international trade and therefore stimulates the integration of national markets for traded goods. This in turn creates opportunities to reduce costs through economies of scale and increased competition. The efficiency gains of this kind should be enjoyed by all CCA countries, but especially those which trade a great deal with other EU countries.

Stability: The arguments in this category note that the countries whose record of stability was poor in the past stand to improve significantly the credibility of their macroeconomic policies. Credibility gains in those countries would result in lowering inflation expectations, which in turn would lower both current interest rates and the cost of keeping the inflation rate at a low level. Further implications would be a lower cost of servicing public debt and smaller speculative and destabilising capital inflows. Benefits of this kind have been already enjoyed by some countries of the EMU, notably Italy, Spain, Portugal and Greece. However, credibility gains would be particularly strong for new EMU members belonging to the group of emerging market economies (EMEs), such as Poland or Turkey. For the credibility of macroeconomic policies in all EMEs is low, the group having suffered from the macroeconomic instabilities which in the past were concentrated in those economies.

Growth: Some EMEs, including that of Poland, also suffer from low domestic savings. In China and South-East Asian countries, the prospect of rapid growth has in the past tended to stimulate domestic savings. During the years

1960-2000, the savings rates in those countries increased from about 15-20% of GDP to levels in the range of 30-50% of GDP. But in those countries public expenditures, and hence tax burdens, have been very low by European standards. The non-state (usually private) sector was then in a position to respond to investment opportunities by increasing its own savings. In Poland, parallel tendencies were likewise observed during the 1990s: a lowering of the tax burden and an increase of the domestic savings rate, produced in both changes of some 5% of GDP. However, the domestic saving rate is still only some 20-22% of GDP. This is much lower than what is needed to support growth at a rate of 6-7%, which I estimate to be the potential rate of growth in the current decade. Judging by the experience of successful EMEs, the investment rate required to support 6-7% GDP growth over a long period of time is about 30 to 35% (Gomulka, 2000).

The Strategy for Poland (Government of Poland, 1999) was designed specifically to close the gap between this required total investment and the supplied domestic savings by increasing the latter by some 8% of GDP and by adopting policies that would maintain the inflow of foreign savings at the present level of some 5% of GDP. However, it appears that the central components of this strategy related to public expenditures (other than public investments) and domestic savings have failed. As a result, public expenditures are unlikely in the medium term to decrease (significantly) in relation to GDP, so that domestic savings are unlikely to show a (significant) increase. This would be no problem whatsoever if Poland were already a member of the EMU. For in that case Polish enterprises would have direct access to the savings pool of the entire euroland at low interest rates and no exchange rate risk. An increase of the savings inflow to Poland by 8% of Poland's GDP would represent only about 0.2% of the euroland's GDP. Such an increase, while large for Poland, would require practically no adjustments in the EU interest rates and the euro/dollar rate.

While the potentially large impact of euroization on the supply of savings is well understood by economists, a point little stressed so far, though of general political interest should be made with respect to the parallel impact on investment. Namely, foreign savings could and probably would be used above all by Polish-owned enterprises to supplement their profits in financing their own investments. Under the present floating exchange rate mechanism this is not the case, for the exchange rate risk associated with borrowing euros is particularly high for enterprises which supply predominantly domestic markets, and these enterprises tend to be Polish owned. Euroization would thus remove this form of credit discrimination. This in turn would mean that the utilisation of foreign savings would no longer be tied to the size of foreign direct investments.

2. What is the impact of higher investment on growth and employment?

The (stylised) facts of international growth support fully the notion that the world economy is characterised by a strong duality, as if it were composed of two totally different parts. In particular, nearly all innovative activity is concentrated in the most developed part, which is populated by only a small fraction (some

15%) of the world population, but accounts for most of the world GDP (some 60% if purchasing power parity exchange rates are used, and some 80% if market exchange rates are used). The classical growth theory, typically associated with the economists Ramsey, Harrod, Swan and Solow (Kalecki in Poland), appears to fit much better the data pertaining to that developed part, which I call the Technology Frontier Area (TFA), than to less developed countries, including EMEs. In particular, the trend rate of growth in the TFA is, as the theory predicts, virtually independent of the rate of investment. However, in the countries trailing behind the Frontier, investments in fixed and human capital are strongly associated with the technology transfer from the TFA and are therefore capable of influencing the trend rate of productivity growth, hence also the growth rate of output. The key difference between the TFA and the countries behind the Frontier is essentially that between leader and follower, or between innovator and imitator.

In order to assess the impact of euroization on growth and unemployment, let us assume that the relationship between fixed capital (K), labour (L), technology (T) and output (Y) takes the Cobb-Douglas form:

$$Y = F(K, TL) = AK^a(TL)^{1-a} \quad (1)$$

where A is a constant and $0 < a < 1$. The (neo) classical assumption that technology T is common to all countries is refuted by evidence. Indeed, T must be assumed to vary strongly between countries.

In the TFA, changes in T are determined largely by those countries' own inventive activity. This activity depends on past research, hence technological change is subject to a great deal of inertia. In the countries behind the Frontier, such as Poland, new technology is largely imported. The level of technology across countries is empirically known to be related to the K/L ratio. Hence, the technology function for Poland can be assumed to have the form:

$$T = a \frac{K}{L} + be^{at} \quad a, b > 0 \quad (2)$$

where the term be^{at} reflects the cumulative technology inflow which has not required any physical capital. From (2) we obtain the growth rate of T , denoted below by g_T ,

$$g_T = \lambda (g_K - g_L) + (1 - \lambda) \alpha \quad (3)$$

where λ is the share in total technology stock of the technology whose transfers has required physical capital investment. The growth rate of capital g_K is determined by the investment rate s ,

$$g_k = \frac{\Delta K}{K} = \frac{sY - \delta K}{K} = s/v - \delta \quad (4)$$

where δ is the depreciation rate and v is the capital/output ratio. Technology transfer implies that, in the long-run, v cannot differ greatly from the v prevailing in the TFA, which we shall denote by v^* . In the medium term, v may differ from v^* , and, if the difference is large, it would be converging towards v^* .

From (1), the growth rate of output g_Y is as follows:

$$g_y = a\left(\frac{s}{v} - \delta\right) + (1-a)\left[\lambda\left(\frac{s}{v} - \delta\right) - \lambda g_L + (1-\lambda)\alpha + g_L\right] \quad (5)$$

Taking into account (3) and (4), equation (5) for g_Y becomes:

Rearranging we have,

$$g_Y = \beta s + \gamma g_L + c \quad (6)$$

where, $\beta = \frac{1}{v}[a + \lambda(1-a)]$, $\gamma = (1-\lambda)(1-a)$ and $c = (1-a)(1-\lambda)\alpha - \delta$.

In the short run both v and λ can be taken as given, though neither is necessarily constant. The growth equation (6) indicates that the investment rate and the growth rate of employment may be regarded as two independent growth determinants.

In a long-run growth equilibrium we should expect that $v = v^*$, the latter being the world common K/Y ratio, assumed constant. This, together with equation (5), implies that

$$g_Y = g_K = g_T + g_L \quad (7)$$

The two equations, (7) and (4), and (3) determine the growth rates g_K , g_Y , g_T and g_L as functions of the investment rate s .

$$g_T = \lambda\alpha \quad (8)$$

$$g_Y = g_K = s/v^* - \delta \quad (9)$$

$$g_L = s/v^* - \delta - \alpha \quad (10)$$

According to this solution, the investment rate determines not only the growth of output, but also the growth of employment.

One could, however, raise the objection that the decade 2001-2010 cannot be described as long-term, since during that period g_T may differ from $\lambda\alpha$, and the K/Y ratio may differ from v^* . In order to adapt the model to the 'medium term' with a view to derive policy implications, let us make certain assumptions about its coefficients. Let us assume that $\lambda = 1/2$, $a = 1/3$, $\alpha = 0.05$, $\delta = 0.03$, $v = 3$. Hence $\beta = 2/9$, $\gamma = 1/3$ and $c = -4/3\%$. In this numerical example the growth equations are as follows:

$$g_y = \frac{2}{9}s + \frac{1}{3}g_L - 1\frac{1}{3}, \quad \text{by (6)} \quad (11)$$

$$g_K = \frac{1}{3}s - 3, \quad \text{by (4)} \quad (12)$$

$$g_T = \frac{1}{2}(g_K - g_L + 5), \quad \text{by (3)} \quad (13)$$

Thus, an increase in the investment rate by one percentage point would increase g_Y by $2/9\%$, g_K by $1/3\%$ and g_T by $1/6\%$. An increase in the employment rate by one percentage point would increase g_Y by $1/3\%$ and reduce g_T by $1/2\%$. These numbers indicate that the sizeable increase in the inflow of

foreign savings which would result from euroization, could have a considerable impact on the growth rates of output, capital and technology, much lesser on the growth rate of employment.

The conclusion stated above applies to both the short term and the long term in the special case in which all technological change requires fixed capital investment ($b=0$ in (2), so $\lambda = I$ in (3)). In this case, $Y = AK$, so that $g_Y = g_K = As - \delta$, and $g_T = g_K - g_L = A_s - g_L - \delta$. Hence an increase in the growth rate of employment, given the investment rate s , would have no impact on the growth rate of output, as the growth rate of labour productivity would be reduced by the same magnitude. In this so-called AK-model, an increase in the investment rate is required in order to increase both growth rates, of output and employment.

3. Medium-term concerns in selecting a eurostrategy.

While the long term gains of euroization are large enough to favour the choice of a fast lane approach, in the medium term the potential risks and net costs vary substantially among the different possible strategies. Of particular concern is the impact of any chosen strategy on developments in the three areas: (1) the rate of disinflation – and hence the risk to meeting the Maastricht criteria on inflation and interest rates, (2) the current account deficit and (3) the size of foreign debt, the risk being that both the CA and the debt can become excessive. Other causes of concern are supply-side and demand-side negative shocks – that they may be excessive if changes in the zloty exchange rate are too fast and too large. I shall discuss these concerns in general terms in this section and in a somewhat greater detail in the following two sections.

3.1. *Inflation and interest rates*

While Poland's failure to date to reform public finances has increased the attractiveness of an early euroization strategy, it has also increased the risk that Poland will not be able to meet in the near future the Maastricht criteria regarding inflation and interest rates. There are essentially three possible policy responses to these conflicting implications:

(A) One response is to adopt a unilateral euroization as early as feasible on purely internal practical grounds, e.g. soon after joining the EU (probably January 2004).

(B) The second response is to adopt policies explicitly aimed at meeting the Maastricht criteria by about 2007-2008, which is probably the earliest feasible date for Poland's joining the EMU.

(C) The third response is to delay the entry to the EMU on the grounds that the costs of meeting the entry requirements are so large that they must be spread over a longer period, e.g. 10 years.

Strategy (A) offers the benefits of an early entry, in particular - much lower interest rates, while finessing the cost obstacle by shifting the question of

meeting the Maastricht criteria on inflation to a later date. I shall discuss the risks associated with this option in the next section.

Strategies (B) and (C) are variants of what I call the standard approach, one which presupposes full cooperation with the European Central Bank (ECB) and the EU authorities.

3.2. Current account and foreign debt

A high growth strategy in the circumstances of low domestic savings presupposes the acceptance of a high current account deficit. In order to lift the investment rate to a level of about 30% of GDP, the deficit would have to increase from the present level of about 5 to 7% of GDP, to a level possibly in the range of 9 to 11% of GDP. Foreign direct investment and transfers from the EU may amount to 5-6% of GDP. Therefore foreign borrowing by banks and enterprises would have to amount to some 4-6% of GDP. Given the currently low level of the country's foreign debt, an annual increase in it by about 5% would be acceptable for the several years of the transition period. If the prospect of Poland joining the EMU in about 6 years were credible, Poland's total foreign borrowing could yet increase substantially without any significant risk to macroeconomic stability. If the official international reserves of the NBP are kept comfortably above the short term debt, augmented by portfolio capital and annual debt amortisation, then the maximum safe level of total foreign debt could be some 70% of GDP, which is the double of its present level of about 35% of GDP. An additional debt of 35% of GDP would be sufficient to finance an additional CA deficit of some 5% of GDP for 7 years. The debt constraint may therefore be binding for strategy (C), but need not be binding for strategy (B).

3.3. Supply and demand side shocks

The euroization of the Polish economy would deprive it of the ability to respond flexibly to external shocks through a suitable change of the zloty exchange rate. The associated cost is however known, or at any rate believed to be relatively small. A much greater potential problem for the real economy is that, during transition to the euro, the zloty exchange rate may become highly volatile, causing significant supply-side shocks for importers, demand-side shocks for exporters, and cash flow shocks for holders of foreign debt. This exchange rate volatility would be particularly high when the CA deficit is larger than at present. Moreover, an increasing CA deficit under strategies B and C presupposes some persistent real appreciation of the zloty. Such appreciation should be also expected to inflict costs on the supply side. In theory, the cost of high volatility of the exchange rate shocks could be curbed by the ERM-2 arrangement. In practice, the $\pm 15\%$ band can be shifted under strong market pressure.

4. The unilateral euroization strategy

The idea of adopting unilaterally a major world currency, such as the US dollar, the euro or the yen, as a national currency has been proposed or revisited for several countries. This idea has been typically presented as an improvement over currency board arrangement, and as an even bigger improvement over the standard fixed peg exchange rate policy.

Bratkowski and Rostowski have modified this idea for Poland (and some other EU applicant countries, see Rostowski, 2001a,b). The modification stipulates that unilateral euroization (UE) is just a transitory policy to be followed by full membership of the EMU.

4.1. Key advantages

The UE strategy offers two closely related advantages: access to large foreign savings and substantially lower interest rates. These advantages are therefore tailor-made for a country, such as Poland, where domestic savings are, and are likely to remain, low for reasons of culture and politics, while the pool of highly profitable investment projects is large due to earlier reforms and the availability of entrepreneurial capital.

4.2. Key risks

Unfortunately, the risks associated with this strategy are also formidable. The primary risk is that, due to the impact of the Harrod-Balassa-Samuelson effect, Poland will be unable to meet the Maastricht criterion on inflation for a very long time. Sinn and Reutter (2001) calculated that this effect would be much greater in Poland than in Germany with the result that, under fixed exchange rates, inflation in Poland would be 4.2% higher. This calculation is based on the empirically supported assumption that the labour productivity growth in Poland is 10.3% in the traded sector and 3.9% in the non-traded sector. It is also assumed that nominal wages grow at the same rate in both sectors.

It is conceivable that the EU countries may be persuaded to modify the Maastricht criterion on inflation for those countries which adopt the euro unilaterally. But the risk that they will keep the criterion in place is considerable. This risk would be priced in by money markets, and this pricing would be reflected in higher interest rates on Poland's foreign debt. If that risk is high, the potential advantages of a unilateral euroization (EU) would be much diminished, or even wiped out altogether.

Another risk is that adoption of this strategy would lower pressure on fiscal and other reforms. That risk would also be priced in by money markets, reducing further any potential advantages of the UE strategy.

Finally, until Poland joins the EMU, there would be the standard risk associated with a fixed exchange rate, namely that foreign borrowing by corporates could explode, as it did in the Czech Republic in 1995 (Dedek, 2001).

5. The standard strategy: a fast lane variant

5.1. A broad outline and timetable

This option is, I believe, still the current official strategy. Its central theme states that: *“In view of large benefits which an early entry to the EMU would bring about, Poland will offer to submit its exchange rate policy to the rigours of the ERM2 soon after joining the EU”* (Government of Poland, 1999,p.26). If Poland were to join the UE on 1 January 2004, this statement proposes to join the ERM-2 sometime during 2004, perhaps on 1 January 2005, and to join the EMU two years later or soon afterwards.

This broad timetable already more or less defines a very particular disinflation path necessary to meet the Maastricht criterion. Namely, the path would begin with the inflation target adopted for 2001, 6 to 8%, and would end with the inflation rate of about 2% (required by the Maastricht Treaty for entry to the EMU), in 2006 or 2007. Assuming a gradual and smooth dis-inflation, the intermediate targets would need to be as follows: 5 to 7% in 2002, 4 to 6% in 2003, 3 to 5% in 2004, 2 to 4% in 2005 and 1 to 3% in 2006. This path departs somewhat, but not substantially, from the one proposed in 1997 by the Government and the NBP, and embraced later by the NBP's RPP, which envisaged an inflation rate in 2003 of below 4%.

5.2. Initial conditions and macroeconomic policies

The initial conditions of transition to the EMU are to be carefully noted, since they will have a large impact on the economic policies, the macrofinancial risks and the growth performance during the transition period. The standard euroization strategy will be helped by the currently low stock of foreign debt and the high rate of unemployment. As I noted earlier, the low stock provides room for a sizeable increase of the CA deficit from the present 5-6% of GDP. Such an increase would serve two purposes. It would provide room for some real appreciation of the zloty and a high rate of economic growth. The high unemployment rate will keep the growth of nominal wages low, and this should support disinflation. Declining inflation would permit the NBP to keep interest rates on a declining trend. This latter is needed to meet the Maastricht criterion on interest rates. Lower rates would also stimulate bank borrowing by companies. Bank credits would be funded to a greater extent than at present by foreign borrowing. This borrowing would be encouraged by the expectation that, during the transition, the zloty will rather appreciate than depreciate. But any appreciation should be moderate. Kawalec and Krzak (2001) warn that the current policy of pure floating may cause excessive appreciation, which could stifle economic growth. They advocate a policy of 'controlled appreciation'. I accept their suggestion that a rapid appreciation should be avoided. However, this aim can and must be achieved while keeping the economy on the targeted disinflation path. Hence, the balanced policies proposed in this paper: a moderate pace of disinflation, much lower real interest rates, higher CA deficit, labour market liberalisation, official reserves kept above short-term debt, the long-term debt of corporates allowed to increase more sharply.

It is interesting, though perhaps not surprising, that the current theoretical debate on exchange rate policies has revealed sharp disagreements between fixers and floaters (Reinhart 2000, Obstfeld and Rogoff, 2000), prompting Williamson (2000) to argue against any 'corner solutions'. In fact monetary authorities and governments in most countries have tended to practice the Williamson doctrine (Calvo and Reinhart, 2000). The intended adoption of the ERM-2 by Poland would mean embracing this doctrine for a while with respect to the euro. Following the entry to the EMU, Poland will have a fixed peg for transactions within the euroland and fully floating rates for transactions outside the area. This arrangement, though a combination of two corner solutions, will be a kind of intermediate solution.

An important feature of the initial conditions in Poland is a severe 'reform deficit' in the areas of public finance and the labour market. Large and increasing unemployment should help to induce a substantial, indeed radical, liberalisation of the labour code, and this in turn could help to keep low both the growth of nominal wages and the natural rate of unemployment. A reform of public finances is needed to release resources for investment and growth. This redistribution of resources requires restructuring of public expenditures away from social transfers. If such a restructuring does not take place, which is a possible development during the transition period, the rate of unemployment will continue to be very high. Although this outcome could increase social tension, it should also help to keep the economy on the targeted disinflation path. The only necessary fiscal requirement is the Maastricht criterion of keeping the deficit below 3% of GDP. But this entry requirement can probably be met without any substantial fiscal reforms. The Maastricht stability and growth pact would require Poland to have, after joining the EMU, a balanced budget on average and a budget surplus in years of rapid growth. However, meeting this post-entry requirement would be eased by lower debt servicing costs, EU net transfer to the budget and some 6-7 years of GDP growth between now and the entry date.

5.3. Macroeconomic risks

There will be considerable risks associated with this fast lane variant of the standard euroization strategy. These risks have five ultimate causes: excessive and poorly structured public finances, low domestic savings, a well reformed economy capable of a fast productivity growth and high returns to investments, a high growth of the labour supply, and a large pool of the poorly educated labour force. The first two causes are interrelated (see section 2 of this paper). Attempts to remove these two causes have so far been largely unsuccessful. But if domestic savings continue to be low, then in view of the high growth potential, we have a range of possibilities between the following two extreme scenarios.

One such scenario is that which we have already begun to observe in the years 2000-2001: a moderate CA deficit, a low increase in foreign debt, extremely high real interest rates and, as a result, a costly recession in industry and construction, and a very high and still increasing unemployment. Under this scenario, the risk of a macroeconomic instability is indeed close to nil. However, the rate of unemployment could reach a socially unsustainable level, affecting

very seriously some parts of the country and some segments of the population. This experience of rapid and prolonged poverty growth rather than economic growth is bound to put into the question the underlying policies, in particular the judgement of NBP decision-makers with regard to the choice of a disinflation path and the optimal level of macroeconomic risk.

The other extreme scenario is the one that I outlined above: a high CA deficit, a moderately rapid increase in foreign debt of corporates, much lower real and nominal interest rates, a rapid growth of GDP, and a stable or declining unemployment. Under such a policy, the zloty may appreciate moderately in real terms, and this appreciation along with high unemployment and labour market reforms, would help to meet the Maastricht criteria on inflation and interest rates. The risk of a macroeconomic instability would be clearly higher than at present, might well become significant, rising together with the size of the foreign debt in relation to GDP. However, as I argued earlier in this paper, this risk need not be excessive if the projected entry date to the EMU, the years 2006-2007 is really credible. The conditions required to keep this risk acceptable are that the debt increase is smooth and takes place at a moderate rate, the debt's maturity composition is heavily skewed in favour of post-entry dates, and official reserves are kept comfortably above short-term payment obligations. The main intellectual and policy innovation of the moderately fast growth variant of this standard euroization strategy lie in the acceptance of high CA deficits already during the transition to the EMU.

Intermediate cases are those which lie between the two extreme strategies. There is little to be gained from discussing them in this paper.

6. The standard strategy: a slow lane variant

The losses associated with a delayed entry to the EMU are self-evident. But are there any substantial gains? Can the costs and the risks associated with a fast lane variant of the standard strategy be reduced significantly by postponing the entry for several years?

Let us recall that the costs and the risks of that strategy are inter-related. The former are associated first and foremost with the expected real appreciation of the zloty, while the latter are associated with a projected high CA deficit and an increasing level of foreign debt. Given the large size of the HBS effect, some real appreciation may be needed to support a dis-inflation policy, while in view of the low level of domestic savings, the CA deficit will be required to support a high growth policy.

These costs and risks can be lowered if strong reforms are undertaken to increase both domestic savings and the flexibility and competitiveness of domestic markets, especially the labour market. It may be argued that although the Buzek-Balcerowicz attempted reforms of this kind have failed, in the new circumstances of a very high unemployment, the need for such reforms could become more evident to political leaders and the general public. Moreover, it may be said that the implementation of such reforms requires more time for preparation and more time for implementation than the Buzek-Balcerowicz government had or was prepared to give.

However, one cannot rule out the scenario that the much needed fiscal reforms will not be undertaken during this current decade. In the medium term there might, indeed, be some regress in this area of public finances, beginning with the adverse fiscal developments in 2001. On the other hand, substantial reforms of the labour market may be embraced. Other structural reforms, including those which are socially sensitive but whose implementation is inexpensive for public finances, can also be undertaken. Does this mixed reform scenario provide any case for adopting a slow lane variant of the standard euroization strategy?

The answer depends on the magnitude of risk which it would be sensible to accept. If regress in public finances were to be considerable, then the risk of macro-economic instability associated with an attempt to implement the fast-lane variant would increase sharply, making it at some point a sub-optimal strategy.

7. Concluding remarks

The unilateral euroization strategy, if adopted, would bring forward the substantial benefits which Poland stands to gain by adopting the euro as its national currency. However, the strategy involves a risk that the date of official entry to the EMU will be highly uncertain, possibly much delayed. Therefore this strategy could and should become a serious candidate for consideration only if the Maastricht criterion on inflation and interest rates can be renegotiated. As things stand now, the choice is, effectively, between different variants of what I call the standard strategy. The costs and risks associated with a fast lane variant of this strategy are considerable. However, the initial conditions and potential net gains are such that, I suggest, Poland should attempt to implement that variant.

References

1. Calvo, Guillermo A. and Reinhart, Carmen M. (2000), "Fear of Floating", WP no. 7993, NBER, November.
2. Calvo, Guillermo A., (2000), "Capital Markets and the Exchange Rate: With Special Reference to the Dollarization Debate in Latin America", forthcoming in *Journal of Money, Credit and Banking*.
3. Dedek, Oldrich (2001), "Currency Shake-up '97: A Case Study of the Czech Economy", mimeo.
4. Dibooglu, Selahattins and Kutan, Ali M., (2001), "Sources of Real Exchange Rate Fluctuations in Transition Economies": The Case of Poland and Hungary", *Journal of Comparative Economics*, 29 (2): 257-275, June.
5. Dornbusch, Rudi (2001), "Fewer monies, better monies" NBER, Cambridge MA, <http://www.nber.org/papers/w8144>.
6. Friedman, Benjamin M. (2000), "Monetary Policy", NBERWP No. 8057, December, mimeo.
7. Gomulka, Stanislaw, (2000), "Macroeconomic Policies and Achievements in Transition Economies, 1989-1999" *Economic Survey of Europe*, UN, Economic Commission for Europe, Geneva and New York, No.2/3, pp.69-83.

8. Gomulka, Stanislaw, (2001), "Macroeconomic performance of the main Central European candidates for joining the European Union", *Ekonomia*, no.2., Warsaw University.
9. Government of Poland (1999), "The Strategy for Public Finances and Economic Development, Poland 2000-2010" June, Warsaw.
10. Halpern, Laszlo and Wyplosz, Charles, (1997), "Equilibrium Exchange Rates in Transition Economies", *IMF Staff Papers*, Vol.44, No.4, pp.430-460.
11. Kawalec, Stefan and Krzak, Maciej (2001), "Polityka kursowa i wzrost gospodarczy", <http://www.gazeta.pl/alfa/arttykul>
12. Kopits, George (1999), "Implications of EMU for Exchange Rate Policy In Central and Eastern Europe", IMF WP no. 99/9, Washington D.C. January.
13. Mishkin, Frederic S. (2001), "Financial Policies and the Prevention of Financial Crises in Emerging Market Countries", NBER WP No.8087, January, mimeo (<http://www.nber.org/papers/w8087>).
14. Obstfeld, Maurice and Rogoff, Kenneth (2000), "The Mirage of Fixed Exchange Rates", *Journal of American Perspectives*, Fall, 9, 73-96.
15. Reinhart, Carmen M., (2000), "The Mirage of Floating Exchange Rates", *American Economic Review*, vol. 90, May.
16. Rostowski, Jacek (2001a), "Why unilateral euroization makes sense for (some) applicant countries, with particular reference to Poland", *Focus on Transition*, Oesterrichisches Nationalbank, Vienna, forthcoming.
17. Rostowski, Jacek (2001b), "The eastern enlargement of the EU and the case for unilateral euroization", in *Financial Vulnerability and Exchange Rate Regime Emerging Markets Experience*, eds. M. Blejer and M.Skreb, MIT Press, Cambridge, Mass.
18. Sinn, Hans-Werner and Reutter, Michael (2001), "The minimum inflation rate for euroland", NBER, WP No.8085, mimeo.
19. Williamson, John (2000), "Exchange Rate Regimes for Emerging Markets: Reviving the Intermediate Option", Institute for International Economics, Washington D.C., September.

Why Unilateral Euroization Makes Sense for (some) Applicant Countries – a response, with particular reference to Poland

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1. Key elements of the unilateral euroization proposal

We first presented our proposal for unilateral euroization (UE) two and a half years ago. Comments by some economists indicate that the details of our proposal have not always been clearly understood. This is why we wish to begin by restating the main elements of the proposal.

We propose that in Poland the złoty should be replaced as quickly as is practicable by the euro¹. This means that złoty cash in circulation and in bank vaults would be replaced by euro notes and coins, which would be bought using Poland's large international reserves. At the same time all złoty-denominated bank deposits, private contracts, wages and tax obligations would be redenominated into euro at the "conversion rate" chosen by the Government of Poland. Whether the euro would become Poland's "national currency" or whether there would cease to be a national currency in Poland after the abolition of the złoty is a legal question which we leave to the lawyers. From an economic point of view it is a secondary matter. In any event, we wish to make it absolutely clear that we are **not** proposing, and never have proposed, the introduction of a "Polish euro" – i.e. of a new currency which would be different from that created by the European Central Bank (ECB).

We believe that it would be most beneficial for Poland if unilateral euroization were implemented with the acceptance of the European Union. Thus, by "unilateral euroization" we mean that euroization is implemented by buying the necessary euros using Poland's international reserves and before Poland becomes a member of the Economic and Monetary Union (indeed, possibly before it becomes a member of the European Union). We do not mean that UE should be implemented without prior discussions with the EU, and without attempting to obtain EU acceptance. At present the EU is opposed to unilateral euroization. We believe that this EU opposition is not well grounded in EU law

¹ The technical preparations would probably take about one and a half to two years.

or in the interests of current EMU member states. It should therefore be possible to convince the EU as to the merits of unilateral euroization for both sides, and to agree terms which would obviate any well founded concerns which the EU or the ECB might have. Poland should therefore start talks aimed at convincing the EU to change its stance, while at the same time preparing the legal and institutional basis for the change². Failure in these negotiations would not mean that Poland would have to give up the idea of UE (it could still proceed with “unilateral unilateral euroization”). However, it might be better under such circumstances to adopt a currency board arrangement instead. Such a system is very similar to UE, but would be slightly less beneficial to Poland [Rostowski, 2001a].

There is also considerable confusion regarding the implications of UE for Poland’s ability to fulfill the Maastricht Inflation criterion (MIC). Fast growing countries such as the Transition Applicant Countries (TACs) usually exhibit the Harrod-Balssa-Samualson (H-B-S) effect, with the prices of non-tradeables rising faster than the prices of tradeables, and the rate of increase in the relative prices of non-tradeables being faster than in slower growing countries³. This means that if tradeables price inflation in Poland were the same as in the EMU (as would be the case under UE), then overall inflation would be higher – possibly sufficiently higher to make it impossible for Poland to fulfill the MIC. With a flexible exchange rate inflation can be lowered to the required level (at present 1.5% above the average inflation rate in the three best performing countries of the EMU) by allowing the domestic currency to appreciate. This would put downward pressure on domestic tradeable goods prices (which well might need to *fall* in nominal terms)⁴, as well as reducing domestic non-tradeable goods inflation. Since this option would not be available under UE or a currency board, their opponents claim that either of these systems would make satisfying the MIC and therefore joining the EMU impossible for many years (maybe for as long as two decades) [Gomułka 2001].

We disagree strongly with this view. In the first place all that will have to be done under UE is to reduce domestic demand sufficiently for non-tradeables’ price inflation to fall sufficiently for average inflation to satisfy the present reference value of the MIC. The present reference value is 1.5% above the average rate of inflation in the three best performing countries of the EMU. In the case of Poland non-tradeables for which prices are market determined account for about 30-40% of the CPI basket. If inflation in the three best performers in EMU were to be 1.5% (see fn.4), then the reference value would be 3%, and if tradeables’ and non-tradeables’ inflation were the same in the EMU then the maximum acceptable level of non-tradeable goods’ inflation in Poland would be 5.25-6.5%. This does not seem to be an unimaginably low level to achieve. Should traded goods’ inflation in the EMU (and Poland) be lower,

² For instance, setting up the Banking Sector Liquidity Fund which we discuss below.

³ This is a result of faster growth of labour productivity in their tradeables sector than in: (1) their non-tradeables sector; and (2) the tradeables sector of slow growing countries such as the EU.

⁴ They would certainly need to rise less than in the three best performing EMU member states. Given that the ECB target for average inflation in the EMU is 2%, that in the 3 best performers is likely to be 1.5%. Even in the EMU tradeable goods inflation will, if anything be lower than average inflation, leaving practically no room for stable tradeable goods prices in Poland. The key question is: how large a tradeable goods recession would Poland need to bring about a modest fall in domestic nominal tradeable goods prices?

then the allowable level of non-traded goods' inflation in Poland would be even higher.

As discussed, with a floating exchange rate a temporary tightening of monetary policy will result in nominal appreciation of the currency and downward pressure on both traded and non-traded goods' inflation. In the traded goods sector this may require domestic nominal price *reductions* and a significant growth in manufacturing unemployment. Under UE the non-traded (services and construction) sector would bear more of the costs of the temporary reduction in inflation below trend which the MIC requires. This could be achieved by a temporary "social pact" restraining wages in the non-traded sector and limiting the growth of administratively set prices or by a temporary tightening of fiscal policy, or by a combination of all three. It is important to stress that in both cases (a floating exchange rate and UE) the restrictions will be quite short-term (one to two years) since the reference value of the MIC needs to be satisfied for less than one year. It therefore seems to us that this problem has been blown up out of all proportion.

Furthermore, we recommend that after accession to the EU Poland (and other new members) should argue for an adjustment of the MIC. The criterion itself merely requires "lasting and sustainable convergence of inflation rates" as defined by the reference value. However, the reference value itself can be changed by the European Council⁵, and does not require changing the Treaty. Given that most new members will be affected by the H-B-S effect, and that some will have currency boards⁶, a strong lobby will exist for adjusting the MIC so that it applies only to tradeable goods inflation. This will be all the more persuasive since the MIC calls for "sustainable convergence". Yet because of the H-B-S effect, fast growing countries such as Ireland have only been able to satisfy the MIC for a short time before entry into EMU, after which they have exceeded it by considerable margins. Like fast-growing EMU members, countries which have unilaterally euroized can have inflation in excess of the present MIC reference value only as a result of the H-B-S effect, since the prices of their tradeable goods will be the same as in the EMU⁷. Therefore, a country which has euroized, has its fiscal accounts under control and is growing fast (showing that it retains competitiveness in its traded goods sector) can be said to have satisfied the spirit of the MIC, even if it cannot satisfy the present reference value. Thus not only is there likely to be a significant lobby in favour of changing the MIC after 2004, but there are also strong objective reasons for doing so in the case of countries which have unilaterally euroized.

Of course, UE only makes sense for those TACs which are capable of maintaining basic fiscal discipline. This is (correctly!) a requirement for EMU membership. UE will reduce the costs of servicing public debt. It is our assumption that this relief would be used to reduce the fiscal deficit rather than to increase public expenditures while maintaining the deficit at its present unacceptably high level. We see UE as a better (less painful) route to EMU than the traditional one. We do not see it as way of avoiding the need for EMU

⁵ Although only then current EMU members will be able to vote.

⁶ At the least Estonia and Bulgaria (which is expected to join after 2008).

⁷ They could also have high demand driven inflation in the non-tradeables sector if they had a large increase in their budget deficit. But this would likely put them in breach of the Maastricht deficit criterion, barring entry into EMU for that reason.

membership with all its constraints. Poland's current fiscal problems cast doubt both on her ability to achieve EMU (and even EU) membership and to benefit from unilateral euroization. UE can help put Poland's fiscal house in order, but it cannot, and should not, be a substitute for fiscal discipline or rapid EMU membership.

Finally, our proposal for UE is a response to the acute "problems of success" which face advanced transition economies as they approach EU membership. Successful market reforms in the transition applicant countries (TACs) and the perspective of EU accession lead to expectations of rapid growth. This in turn means that domestic residents wish to save less so as to smooth consumption, while foreign investors are willing to provide the financing needed to bridge the gap between savings and investment. The result is high capital account surpluses and their corollary high current account deficits, which makes the TACs very susceptible to capital inflow "stops" (reversals are not necessary) leading to currency crises. In the case of Poland the current account deficit has been around 5-8% GDP over the last three years, which is usually considered well within the "danger zone" in which a currency "stop" may threaten due to fears of un-sustainability by investors.

Neither monetary nor fiscal policies can be *counted on* to keep these developments in check. Under a floating exchange rate regime, contractionary monetary policy will cause the domestic currency to appreciate, increasing the CA deficit even further. Expansionary monetary policy will lead to faster inflation and will make the achievement of the Maastricht criteria impossible. Under a fixed exchange rate, monetary policy is not available as an instrument. Fiscal policy (which can be used with either floating or fixed exchange rate regimes) may also prove ineffective in improving the CA, as a tightening of the fiscal stance may simply make foreign lenders more willing to lend to domestic private sector borrowers (we know that foreign investors do nowadays look at the overall indebtedness of a country's residents, both public and private). Expansionary fiscal policy would, in the traditional way, increase aggregate demand and thus tend to increase the CA deficit.

Given the difficulty of reducing high CA deficits, many TACs are very exposed to the risk of a sharp depreciation of their currency, commonly called a currency crisis. In countries with high levels of "liability euroization" [Calvo, 1998] such crises will lead to increases in the real debt burden and to depression (Indonesia is a recent example). Poland does not have a very high level of liability euroization, but even in Poland the need to offset the inflationary effect of a sharp depreciation through higher interest rates would lead to a strongly recessionary effect. Our proposal is, therefore, for those TACs which have sufficiently large international reserves to avoid this risk by unilaterally exchanging all of their domestic coins and notes for euros and re-denominating all of their domestic currency bank deposits into euros as soon as is practicable (the technical preparations would probably take one to two years).

In the rest of the paper we shall not repeat our arguments in favour of unilateral euroization *in extenso*. Those who are interested are referred to our previous papers [Bratkowski and Rostowski, 2001 and Rostowski [2001b]. Instead we shall only deal with the points which have been raised by Wójcik [2000]. This is because his paper is the most comprehensive and thorough attack on the UE proposal to date, and also because it contains a number of key

errors of fact and analysis which need to be set right. Sections 2 to 5 deal with monetary, fiscal and exchange rate *policy* considerations (including some consideration of which TACs already constitute an optimum currency area with the EMU countries). Sections 6 to 8 deal with the fiscal and financial costs and benefits of UE.

2. The Effectiveness of Monetary and Fiscal Policy in the Absence of UE in the run-up to EU and EMU membership.

Wójcik argues that fiscal policy *may* be effective in limiting CA deficits: “fiscal restraint will not necessarily, by making a country more attractive to foreign investors, induce capital inflows...such a move is likely to lead to lower interest rates... which should reduce the upward pressure on the exchange rate. The question is which of these two effects will then dominate.” Exactly. The existence of the countervailing effect we describe, however, means that a given fiscal tightening will have that much smaller an impact on the CA. Thus the shift of the US to a fiscal surplus during the 1990s did not prevent its CA deficit from growing. We suspect that a very large fiscal tightening would be needed in Poland to reduce the CA deficit to a supposedly safe level of about 5% of GDP, and we are convinced that such a tightening (of say 4% points of GDP) is not politically feasible (the fiscal deficit has declined only slightly from 3.3% to 2% of GDP over the past 3 years, and this year will probably rise to 4.5% of GDP). This does not mean that we are not in favour of fiscal tightening, we are. But we wish to see it for its own sake, in order to free resources for private sector development, and not to achieve a doubtful improvement in the CA. In the meantime, CA improvement cannot wait.

Wójcik does not dispute our point that monetary policy is hard to use to improve the current account. In fact recent events in Poland suggest both he and we were too pessimistic. Very high real interest rates (in excess of 13 percent when deflated by the CPI and of 16 percent when deflated by the PPI) have limited aggregate demand sufficiently to reduce the CA deficit to about 5.5% of GDP, in spite of a large nominal – and massive real – appreciation of the zloty against the euro during the last year. However, the cost has been considerable, with real GDP growth decelerating from over 6% in 1997 to about 2%-3% in 2001⁸. Thus, the traditional path to EU and EMU accession either exposes fast growing applicant countries to a high risk of currency crisis, or forces them to grow far more slowly than they could with unilateral euroization. Since real convergence is one of the purposes of EU accession for the TACs, the orthodox path is at variance with the ultimate goal, something which cannot be desirable. This is the crux of our argument.

⁸ Given the size of the real appreciation of the zloty, even this lower CA deficit may turn out not to be adequate protection against a currency crisis.

3. Optimum Currency Area Considerations.

Wójcik stresses at length the output risks which could affect Poland after UE as a result of asymmetric shocks. These can be avoided, he argues, by judicious combinations of exchange rate and monetary policies, instruments which would of course not be available after UE. Asymmetric risks are a danger if a country and the monetary union it proposes joining are not part of an optimum currency area (OCA). Wójcik has to admit that formal studies do *not* show that the TACs are *not* part of an OCA with the EMU countries. He is therefore limited to arguing that *if* they were not part of an OCA, then asymmetric shocks *would* matter, and that Poland is *less* likely to be part of an OCA with EMU than other TACs.

Our view is that many TACs (including Poland) are very close to satisfying OCA conditions *to the same degree as present members of EMU*, and since the TACs are committed by their acceptance of the *acquis communautaire* to joining the EMU at some stage, what is good enough for the EMU's current members should be good enough for the TACs. Even if some of the TACs satisfy OCA conditions a little less than current EMU members, this merely exposes them to slightly higher risks from idiosyncratic shocks than current EMU members are exposed to. In making a choice on UE, these slightly higher risks must be set against the very high costs described above of keeping one's national currency in the pre-accession period.

The main reason we think that many TACs are close to satisfying OCA requirements to a similar degree as current EMU members is their very high level of trade integration with EMU countries. Trade with other members of a currency area as a share of GDP is a good indication of the extent to which idiosyncratic shocks to a country's economy are likely to be amortized by its trade with the rest of the currency area. Trade with other members of a currency area as a share of total trade is a good indication of the extent to which a country would be exposed to movements in the exchange rate of the common currency against the currencies of "third countries". Thus Table 1 shows that in 1999 Poland traded:

1. a higher share of its GDP with EMU countries than did the weighted average of EMU members in the year preceding the launching of the euro;
2. a higher share of its GDP with EMU countries than six of the current 12 EMU members (including the four largest Germany, France, Italy and Spain);
3. a higher share of its total trade with EMU countries than all but two EMU members.

We can see from Table 1 that, because Poland is the largest applicant country, almost *every* other applicant trades an even higher proportion of its GDP with the EMU than Poland does, and five trade a higher proportion of their GDP than *any* EMU country excepting the Benelux. On the other hand, most applicant countries are somewhat more exposed to trade with non-EMU countries than Poland is. Nevertheless, at least seven applicant countries have a larger proportion of their trade going to EMU countries than three EMU members. Thus, if these ratios were the only criteria for satisfying OCA requirements, we could already conclude that Poland and many other TACs satisfy them.

It is argued [e.g. Fidrmuc and Schardax, 2000] that a higher share of intra-industry (II) trade within a currency area will lead to more synchronous business cycles, because industry specific supply or demand shocks are then more likely to be symmetric across countries. We therefore measure intra-industry trade with EMU/GDP for EMU members and applicant countries (Table 2), and find that Poland's share of II trade with EMU/GDP is much higher than Greece's and about the same as Finland and Italy's. The Czech Republic, Estonia, Hungary, Slovakia and Slovenia score even higher, while Bulgaria scores about the same. So even on this rather restrictive measure, seven TACs including Poland score sufficiently to satisfy OCA requirements as well as at least three EMU members.

Table 1 Degree of trade integration of TACs with EMU compared to that of EMU countries

	EMU trade/GDP	Intra-industry EMU trade/GDP(estimated)*	EMU trade/total trade
Belgium, Luxemburg	81,4	59	56,8
Hungary	73,2	43	68,7
Czech Republic	65,1	43	61,7
Estonia	62,0	24	45,1
Slovenia	61,8	37	67,1
Slovakia	58,9	29	56,8
Netherlands	48,8	38	47,9
Ireland	44,2	22	33,2
Bulgaria	39,3	13	54,2
Portugal	38,5	19	67,1
Austria	37,6	26	63,2
Romania	34,7	10	66,4
Latvia	30,9	7	46,8
Poland	27,6	12	58,5
Lithuania	26,5	6	36,0
Spain	25,5	17	58,3
France	21,7	18	51,9
Germany	20,8	17	43,8
Finland	20,7	10	34,0
Italy	19,5	12	49,3
Greece	17,4	5	53,4

Source: Eurostat. Data is 1999 for accession countries and 1998 for EMU countries.

* The shares of intra-industry (II) trade with EMU countries in GDP were estimated by taking the 1997 shares of II trade with the EU in Fidrmuc and Schardax [2000] and applying them to columns 2 and 4.

However, it needs to be remembered that inter-industry trade also contributes to the convergence of business cycles in a currency area. Although it need not protect a country from an asymmetry of industry-specific shocks with the rest of the area, it will nevertheless reduce the asymmetry of aggregate shocks. Thus, an increase in aggregate demand in EMU will spill over to TACs through increased demand for their exports, whatever the nature of these, and an asymmetric increase in aggregate costs (for instance as a result of increased energy prices which affects the TACs more than EMU) will be partly cushioned by the smaller fall in EMU output and therefore demand.

Thus, it is hardly surprising that studies show that business cycles are more correlated between the advanced TACs and Germany than between important EMU members. Boone and Maurel [1999], using de-trended unemployment, show that between 55% (Poland) and 86% (Hungary) of the advanced TACs' cycles are explained by German cycles, whereas only 43% of Spanish and 18%

of Italian cycles can be explained in this way. Fidrmuc and Schardax [2000] find that Poland's industrial production is as closely correlated with Germany's as is Austria's, and more so than those of Switzerland or Italy. Hungary and Slovenia's industrial output are more closely correlated with Germany's than is that of Italy, although those of the Czech Republic and Slovakia are far less correlated.

It should be noted, however, that synchronicity of business cycles is not in itself a requirement for a small country to adhere to a much larger currency area. Thus, *ex ante*, if shocks are mainly demand-generated, a small country whose autonomous aggregate demand is negatively correlated with that of a large currency area may benefit from acceding to it. Downturns in domestic demand will be offset by increases in demand in the rest of the area, reducing overall output variability. Joining the currency area will increase trade with it, and may therefore increase the smoothing effect by more than the elimination of the exchange rate effect reduces it⁹. *Ex post* this will result in fluctuations becoming more correlated.

4. Inflation and Exchange Rate Misalignment after Currency Conversion.

Wójcik worries about exchange rate misalignment as a result of inflationary inertia after the domestic currency is converted into euro. Our solution is a simple up front devaluation at the moment of euroization [Rostowski, 2001]. Wójcik claims this will make inflation "harder to control". This is clearly only the case if the "pass-through" effects of a devaluation are large¹⁰. But if they are then devaluation will not affect the real exchange rate much, freedom to devalue is worth little, and one may as well euroize. Also, one is unlikely to have high "pass-through" and high inflation inertia at the same time¹¹.

Furthermore, our recommendation is based on the existence of high rates of labour productivity growth in the TACs. On the one hand this generates the problem in the first place, because rapid expected GDP growth is what causes residents to wish to be large net borrowers, and foreigners to be willing to be large net lenders to (or investors in) the country. On the other hand, rapid labour productivity growth means that a mistake in initially setting the conversion rate for the domestic economy, such that a margin of output becomes uncompetitive, is likely to be made up quickly¹². Of course, this suggests that TACs with slow labour productivity growth, such as the Czech Republic, may have less to gain and more to lose if they adopt UE.

The argument made by some Polish opponents of UE, that the rate of labour productivity growth is irrelevant, because trade unions will force real wages to rise by more than productivity gains, so that unit labour costs increase whatever

⁹ The "exchange rate smoothing effect" is due to the fall in the value of the currency of the country in which demand falls relative to that of the country in which demand rises.

¹⁰ There will, clearly, be some inflationary effect of the up-front devaluation, but we do not expect it to be very large.

¹¹ In the first case inflation depends mainly on the exchange rate, in the latter on past values of inflation. It cannot depend mainly on both!

¹² We are grateful to Eduardo Borensztajn for this point.

the rate of productivity growth is not a convincing argument for exchange rate flexibility. Unions which are strong and clever enough to appropriate more than the full amount of labour productivity growth are likely to be strong and clever enough to enforce wage increases which will compensate their members for any real depreciation.

Finally, we see no reason why the credibility of the regime should be dramatically undermined, as suggested by Wójcik, just because the euroization is *unilateral*. While we fully expect UE to be somewhat less credible than full EMU membership, we expect it to be somewhat *more* credible than a currency board arrangement, such as exists in Estonia or Bulgaria. And currency boards have proved very credible, far more so than soft-pegs of the ERM variety. We expect UE to be more credible than a traditional currency board in a non-applicant country for two reasons:

Although a domestic currency could be re-created to enable depreciation, the technical preparations would be long and complicated and impossible to keep secret, giving speculators a large amount of warning. This would in itself reduce the benefits to a government contemplating such a move, and therefore speculators' expectations of such an event. In currency boards the domestic currency already exists, so all that needs to be changed are the constitutional provisions which set up the CB arrangement. Thus, with euroization the "poison pill" defense against speculation is even stronger than in the (strong) case of a currency board.

UE would be expected to last only a relatively short time (say five years) before the TAC concerned would join EMU as a fully-fledged member¹³. Also, it would be absurd for a country whose strategic goal is EU and EMU membership (within about 4 and 6 years respectively) to reintroduce a national currency.

Generally, the credibility of the UE regime would be reflected in the interest rates which would obtain under it. We return to this absolutely central matter in Section 6.

5. Real Exchange Rate Developments before and after UE

We do not consider the presence or otherwise of the Harrod-Balassa-Samuelson effect to be central to our argument in favour of UE. Rather, it is an argument against the relevance for TACs (and other fast growing economies such as Ireland) of the current reference value of the Maastricht inflation criterion. If the H-B-S effect is strong, then meeting the inflation criterion may require a strongish nominal appreciation for a year or two so as to meet it. This will unnecessarily hit the competitiveness of the tradeables sector of the TAC concerned. We say unnecessarily, because as soon as the country joins the EMU any H-B-S induced inflation differential will return [Bratkowski and Rostowski 2001].

¹³ This factor does not make UE more credible than a currency board in an advanced TAC expected to shortly join the EU and EMU.¹³ This factor does not make UE more credible than a currency board in an advanced TAC expected to shortly join the EU and EMU.

Indeed, if the H-B-S effect does not operate strongly in TACs, as Wójcik suggests, this removes a difficulty faced by UE: how to temporarily satisfy the inflation criterion without the possibility of engineering a nominal appreciation? We have dealt with this issue at length in Section 1.-

Wójcik quotes Gotz-Kozerkiewicz [2000] as arguing that cost recovery requires remaining administrative prices to be freed, and that this may cause the real exchange rate to appreciate beyond its equilibrium level. First, in an economy with rapid labour productivity growth (see above) this should not be a problem. Second, most remaining administered prices are for non-tradeable services rather than goods, so their removal will have a small effect on competitiveness, mainly hitting households. Finally, for a given budget deficit, removing price controls removes the need for subsidies to their producers, reducing taxes on other firms and thus increasing the competitiveness of those firms¹⁴.

6. Will interest rates fall under unilateral euroization?

One of the most striking points in Wójcik's paper is his claim that unilateral euroization need not lead to a reduction in medium and long term interest rates in Poland. The claim is based on three arguments:

The abolition of the domestic currency, although it leads to the abolition of currency risk in lending to borrowers in Poland, may increase their default risk. This could happen because devaluation is no longer available as a tool to increase the competitiveness of Polish producers. Interest rates on loans to Polish businesses might therefore actually rise on balance, as might rates on loans to the Polish government (whose tax revenue depends on the profitability of Polish business).

The inability of the National Bank of Poland to print euros means that it could not act in an unlimited way as lender of last resort (LOLR) to the banking system. This might lead to increased premia on foreign loans to Polish banks, or to the need by these banks to increase their interest rate spreads¹⁵, increasing loan rates to borrowers.

If the Polish government borrowed recklessly, interest rates on its bonds would rise.

Argument (1) is illustrated using the case of Argentina. Wójcik points out that real interest rates are similar in Argentina and Poland, implying that Polish rates need not fall after euroization, since Argentina has a currency board arrangement "hard-pegged" to the dollar with many similarities to unilateral euroization. Wójcik admits that "The case of Argentina is, to some extent, a combination of exceptional factors," and goes on to say in a footnote: "...one of the most important factors is the substantial appreciation of the US dollar...and the simultaneous drastic devaluation of the country's main trading partner, Brazil". But Wójcik does not say just *how* exceptional the situation of

¹⁴ If the taxes to finance price controls are paid for by consumers, then their removal changes nothing. The real exchange will deteriorate only if consumers paid the taxes to finance the price controls, while firms will pay the higher free prices.

¹⁵ So as compensate for the higher reserve requirements which Wójcik suggests would be needed to improve the liquidity of the banks.

Argentina is. The country exchanges only 16% of its trade and 2.7% of its GDP with the United States¹⁶. This contrasts with 58.7% and 27.6% respectively in the case of Poland's trade with EMU countries. In fact, Argentina is one of the countries in the whole world which *least* satisfies conventional OCA criteria for establishing a currency union with the United States¹⁷. It is this which has exposed it to the problems described by Wójcik. However, we have seen (Table 1), that Poland and many other TACs satisfy the OCA requirements at least as well as about half of the existing EMU members. Thus, the Argentine example, while polemically useful is in practice irrelevant, unless one wishes to argue – as many US economists have – that the present EU itself is far from being an OCA.

We have addressed argument (2) at length in Bratkowski and Rostowski [2000], where we made the following points:

Pure LOLR activity is aimed at preventing the illiquidity of *solvent* banks. In Poland 53% of bank assets were held by banks with over 50% foreign ownership in 1999 [EBRD 2000]¹⁸. The foreign owners should know the financial condition of these banks sufficiently well to provide them with liquidity when they are illiquid but solvent. The situation is similar in a number of other TACs and potential TACs (though not in all):

Table 2. Foreign Bank Ownership by Assets

Albania	20.0	Hungary	56.6
Bulgaria	12.4	Lithuania	59.8
Croatia	83.2	Poland	70.0
Czech Republic	70.0	Romania	52.6
Estonia	97.0	Slovakia	50.0

Sources: IMF World Economic and Financial Surveys and EBRD Investment Profiles (2001).

For the remaining, Polish controlled, banks we have suggested the creation of a “Banking Sector Liquidity Fund” (BSLF), into which the international reserves of the National Bank of Poland (NBP) remaining after euroization would be placed. Wójcik is aware of this proposal, but considerably understates the likely size of the BSLF by comparing the international reserves available to M1 and M2. He thus gets ratios of 56% and 20% respectively. In fact the remaining reserves *should* be compared only to the sight deposits and the total deposits of banks. M1 and M2 include the domestic cash in circulation in the country, which will be converted into euro notes and coins, so that no reserves need to be held against the cash part of M1 and M2. After allowing for a modest 10% up front devaluation of the złoty at the time of conversion, the correct approach gives “coverage” by the BSLF of 100% of sight deposits and 25% of total deposits. What is more, in a crisis the BSLF would only need to supply liquidity to Polish controlled banks. Even at today's share of foreign ownership in Polish banks, this more than *doubles* the BSLF's “coverage” of deposits to some 270% of relevant

¹⁶ Argentina even trades 60% more with the EU than with the US!

¹⁷ There are other, non-conventional, non-trade criteria, which Argentina may satisfy better, see Mundell [1973].

¹⁸ Wójcik notes that 56% of the capital in Polish banks was foreign owned in 1999, but suggests – wrongly – that in many cases foreigners do not hold a controlling interest.

sight deposits and almost 70% of relevant total deposits^{19, 20}. Finally, we should note that the share of deposits at foreign controlled banks in Poland is growing fast due to the purchase of Polish banks by foreigners. When the share reaches 100% there will be no need for a BSLF at all.

As for solvency (rather than liquidity) crises, these require recapitalisation rather than LOLR support. They therefore depend on the *solvency* of the government of a country (as “borrower of last resort”) rather than on the *liquidity* of the central bank. Poland and many (though not all) TACs are borrowers in good standing.

Argument (3) is evidently true. Euroization cannot compensate for fiscal imprudence, prevent banking crises or cure the common cold. We are constantly reminded by the opponents of euroization that it is not a panacea, and all we can do is humbly agree. Nor have we ever claimed, though others have, that euroization will necessarily be a catalyst for structural reforms.

Different TACs have different histories as far as fiscal responsibility is concerned. Over the past half decade, Poland has been able to ensure a steady decline of about 2-3 percentage points of GDP each year in its already modest public debt/GDP ratio of about 55%. Even the current sharp increase in the budget deficit will not undermine the public debt position, as long as it is merely temporary. Measures for fiscal consolidation are clearly needed at present in Poland. However, the large fall in interest rates which we expect to occur as a result of euroization, would help further improve the fiscal position. Hungary has also been reducing its public debt/GDP ratio in spite of a higher fiscal deficit. The Czech Republic on the other hand has embarked on an adventurist fiscal policy of rapidly growing and massive deficits, albeit starting from modest public debt/GDP levels.

7. Guesstimating the interest rate benefits of euroization

What reduction in interest rates can we expect in Poland as a result of euroization? In spite of his suggestion that rates might actually rise, in the paper Wójcik estimates a reduction in short-term (3 month money market) rates of 5-6 percentage points. He does this by calculating what he calls the average “risk premium” on these rates, by subtracting the pre-announced rate of depreciation of the central parity of the zloty from zloty three month money market rates²¹. To get the expected reduction in Polish interest rates Wójcik then subtracts the average premium on Polish government dollar denominated eurobonds over comparable US Treasuries (1.4 p.p.), which he takes as a proxy for the “default premium” on loans to Polish high quality borrowers.

Unfortunately, this approach is seriously flawed. To obtain the “total currency risk” implicit in Polish interest rates, one should compare actual short-

¹⁹ Incidentally, this disposes of Wójcik’s worry that the absence of a national LOLR would give foreign owned banks a competitive advantage.

²⁰ The existence of a funded deposit insurance scheme further reduces the danger of illiquidity at solvent Polish banks (whoever they may be owned by) – as well as reducing the likely need to recapitalise insolvent ones.

²¹ Average nominal 3 month zloty rates were 14% during the period May 1997 – October 2000 which Wójcik covers. The average rate of “crawl” of the central parity of the zloty was 7.1% per annum.

term złoty interest rates during a given period with the rates which *would obtain under euroization*. The difference would consist of two parts: (1) an expected “depreciation premium” which is a compensation for the expected depreciation of the złoty against the euro during the life of a loan; and (2) a “pure currency risk premium” which is compensation only for the *variability* of the złoty exchange rate. Wójcik only estimates the latter “pure currency risk premium” (this is what he estimates at 5-6 percentage points), and completely ignores the “depreciation premium”, which *would of course also disappear upon euroization*. When we take the “total currency risk” premium (i.e. add back the “expected depreciation” of 7.1% per annum which Wójcik subtracts) we get a reduction of short-term interest rates of 12-13%.

Another way of grasping the problem is to note that Wójcik assumes that between May 1997 and October 2000 the expected rate of depreciation of the złoty was given by the pre-announced rate of depreciation of the “central parity” of the złoty’s “fluctuation band”²². In fact, for this period the złoty depreciated against the euro (which is what interests us) by only 2.3% per annum on average, instead of the 7.1% rate of pre-announced depreciation which Wójcik uses²³. Moreover, since floatation the złoty has appreciated by 15% nominally²⁴. Thus, for the period May 1997-May 2001 we have a slight average nominal appreciation against the euro of about 1% per annum. Are we to assume that expectations were so wrong? What if we make the simpler assumption that expectations were correct, so that what actually happened was what had been expected by the market? In this case there is no “depreciation premium”, but on the contrary an “appreciation discount”. This gives us a “pure currency risk premium” *a la Wójcik* of 13-14% between May 1997 and May 2001, instead of 5-6%²⁵.

Using either of the above “guesstimates” of the fall in short-term interest rates to adjust Wójcik’s own estimate of the impact of lower interest rates after euroization on Poland’s fiscal position, we get an annual reduction in fiscal expenditures of 2.6-2.8% of GDP. As Wójcik points out, the whole of this improvement would not be achieved immediately, as some 20% of Polish domestic government debt is in fixed rate bonds with remaining maturities of over five years. Of course, the Polish government would benefit from the same (or even a slightly greater) reduction in interest rates upon entering EMU by the traditional route. The difference is that euroization delivers these advantages now, rather than in five to seven years time.

Guesstimating the effect of euroization (*via* the effect on interest rates) on the rate of growth is even less certain than what we have done above. However, if we accept that:

²² “for the floating rate regime...the crawl rate in effect before floatation was retained...”.

²³ This rate was against a basket of currencies, in which the euro constituted 60%.

²⁴ While average interest rates have remained unchanged.

²⁵ In a personal communication Stanislaw Gomulka has pointed out that short term nominal interest rates can be expected to fall in the near future in Poland, so that the gain from UE will be the difference between future lower złoty rates and even lower euro rates in Poland. We accept that given low growth, low inflation and a reduced current account deficit short term rates will continue to fall. Nevertheless, we see the main pressure for high rates coming from the dangerously high current account deficit which Poland experiences in periods of rapid economic growth. With the return of rapid growth the current account deficit will once again grow to dangerous proportions, and interest rates will once again have to be raised to very high levels (though these may indeed be somewhat lower than during the last peak in 2000).

1) the relatively slow growth rates that Poland has achieved this year and last (on average about 3.5% per annum) are the result of the inordinately high interest rates needed to reduce the dangerously high current account deficit,

2) Poland's underlying growth rate remains at about 6% per annum (as it was in the latter 1990s),

then euroization should allow the country to close this "growth gap". If euroization were instituted in January 2003, then by 2006 Poland would have a GDP which would be 10% higher than it would otherwise have been, and the cumulative gain over the four years of euroization would be 25% of this year's GDP.

8. The Seignorage costs of euroization

Wójcik calculates both a "flow" and a "stock" seignorage cost of euroization. He defines the "flow seignorage cost" as the annual loss of seignorage to the government *via* the central bank. This is equal to the annual increase in the money base (Mo) that would have occurred in the absence of euroization. Wójcik states that the average growth of Mo amounted to 1.5% of GDP each year during the period 1995-9. He admits that the costs of sterilizing foreign exchange interventions, which amounted to 0.8-0.9% of GDP for 1997-8, needs to be deducted from this. Nevertheless, this deduction will not be necessary in the future, Wójcik claims, since the NBP has stopped intervening in the forex market. We are thus left with the impression that the "flow seignorage cost" of euroization will be in the region of 1.5% of GDP per annum for Poland.

Our approach is more straightforward. We calculate DMo/GDP for April 1998 (when the National Bank of Poland ceased its forex interventions) and December 2000 (the latest available data). The figure we get is 0.43% of GDP on average. We accept that this amount needs to be deducted from the 2.6-2.8% of GDP reduction in fiscal expenditures which we got as a result of reduced interest payments on government debt in the last section. Nevertheless, this still gives us a possible net improvement in the fiscal balance as a result of euroization *ceteris paribus* of 2.2-2.4% of GDP.

Wójcik also claims that there will be a "stock seignorage cost" of euroization "...associated with the withdrawal of domestic currency from circulation and its exchange for the newly adopted foreign currency, utilizing foreign exchange reserves." For the case of Poland, Wójcik estimates this cost at 8.8% of one year's GDP, a very large cost²⁶. In fact no such cost exists for countries which will later join EMU, as I have explained in detail in Rostowski [2001]. The reason is that, upon joining EMU a country's National Central Bank (NCB) will be obliged to transfer to the ECB all of the income from assets which correspond to (or "back") its monetary liabilities. This revenue from all the NCBs which are members of the European System of Central Banks (ESCB) will then be redistributed to NCBs on the basis of their share in ECB capital²⁷. Each NCB's

²⁶ Wójcik uses the ratio of Mo to GDP in 1999. Even this is mistaken, as only zloty notes and coins have to be exchanged for euros. The remaining part of Mo (commercial bank deposits with the central bank) only have to be re-denominated into euros, not actually exchanged for them. In 1999, this latter part of Mo amounted to 14.7bn zlotys, or 2.4% of GDP

²⁷ After deduction of ECB expenditures.

share in the capital of the ECB depends in equal proportions on the population and GDP of its country, and is *completely independent of the NCB's monetary liabilities*²⁸. A TAC which has previously euroized unilaterally, and has bought in all of its monetary liabilities in exchange for euro notes and coins²⁹, will thus enter EMU *without any monetary liabilities*. As a result, it will not need to transfer *any* income to the ECB, yet it will receive the same income from its share in ECB capital as it would had it not euroized first.

This system for the redistribution of seignorage revenue is equivalent to the NCBs having to transfer to the ECB assets corresponding to their monetary base. Put even more simply, it is equivalent to the NCBs having to *buy* the euros used to replace their monetary base from the ECB³⁰. A unilaterally euroizing country merely completes this transaction before joining EMU, rather than at the moment of joining. This is why no “stock seignorage cost” of euroization exists for such countries.

9. Summary

For Poland a reasonable guesstimate of the “flow seignorage cost” of euroization is about one third of what Wójcik has suggested, and about one fifth to one sixth of the reduction in fiscal expenditures which we expect to result from euroization. Furthermore, there will be no “stock seignorage cost” for unilaterally euroizing applicant countries. The reduction in short-term interest rates in Poland should be considerably higher than Wójcik has calculated (a reduction of 12-14 percentage points would have been achieved during 1997-2000 had UE been in place at the time). As a result the savings in government expenditures should also be much greater (2.6-2.8% of GDP for the 1997-2000 period). Guessing at the “growth effect” of euroization is very hard, but it may be more than 2 percentage points of growth a year.

The suggestion that short-term interest rates may not fall as a result of euroization is weakly grounded. The example of Argentina is not apposite, as that country clearly does not form an optimal currency area with the US to which its currency is “hard-pegged”. Most TACs, including Poland, do belong to an OCA with EMU countries to the same extent as a number of current EMU members. On some criteria they do so to a greater extent than most current EMU members. The absence of an unlimited LOLR capability after euroization should not increase the risk to the banking system significantly in those countries in which there is a large share of foreign ownership of banks (as in Poland and a number of other TACs). For domestically owned banks there is the possibility of establishing a banking sector liquidity fund³¹. Wójcik's calculations of the size of both these phenomena are shown to be underestimates.

²⁸ After the expiry of a transitional period. This period is due to end before any TAC joins EMU, be it by the traditional route or after a period of unilateral euroization.

²⁹ Which it buys with its international reserves.

³⁰ Since a monetary union occurs after this transaction, the base can be bought from the ECB for any good quality assets including domestic ones. International reserves need not be used.

³¹ As well as the existence of deposit insurance schemes.

Any initial exchange rate misalignment at the time of conversion should be avoided by an “up-front” devaluation and will be in any case to be eroded over time if there is faster productivity growth in TACs than in the present euro zone. As Wójcik states, monetary and fiscal policy *may* be effective as a means of limiting dangerously large current account deficits. The question is whether it *will* be *reliably* effective. We believe that we have shown that we cannot count on that. As a result, without euroization TACs are at severe risk from “capital inflow stops” and currency crises.

References

1. Boone, L. and M. Maurel [1999] *An Optimal Currency Area Perspective of the EU Enlargement to the CEECs*, Discussion Paper 2118, Centre for Economic Policy Research, London.
2. Bratkowski, A. and J. Rostowski [2001] “The EU Attitude to Unilateral Euroization: Misunderstandings, Real Concerns and ill-designed Admission Criteria” in *A Liberating Economic Journey: Post-communist Transition, Essays in Honour of Ljubo Sirc* eds. A. Brzeski and J. Winiecki, CRCE London, pp379.
3. Calvo, G. [1999] *On Dollarization* available online at: <http://www.bsos.umd.edu/econ/ciecpn5.pdf>
4. EBRD [2000] *Transition Report* European Bank for Reconstruction and Development, London.
5. EBRD [2001] *Investment Profiles* European Bank for Reconstruction and Development, London.
6. Fidrmuc, J. and F. Schardax [2000] “More ‘Pre-Ins’ Ante Portas? Euro Area Enlargement, Optimum Currency Area, and Nominal Convergence”, *Transition*, 2000:2, pp28-47, Oesterreichisches Nationalbank, Vienna.
7. Gomułka, S. [2001] “Polska droga do euro: przegląd opcji” *maszynopis powielany*
8. Gotz-Kozerkiewicz, D. [2000] Exchange Rate Policy in Transition Economies: Controversial View on the REER Developments, *mimeo*.
9. IMF [2000, 2001] *World Economic Outlook*, International Monetary Fund, Washington, D.C.
10. Mundell, R. [1973] “Uncommon Arguments for Common Currencies” in *The Economics of Common Currencies* eds. H.G. Johnson and A.K. Swoboda, Allen and Unwin, pp.114-32.
11. Rostowski, J. [2001a] “Do euro na skrÚty, przez *currency board* i dwu walutowo??”, *Polityka*, September.
12. Rostowski, J. [2001b] “The Eastern Enlargement of the EU and the Case for Unilateral Euroization” in *Financial Vulnerability and Exchange Rate Regimes. Emerging Markets Experience* eds. M. Blejer and M. Skreb, MIT Press, Cambridge, Mass.
13. Wójcik, C. [2000] “A Critical Review of Unilateral Euroization Proposals: the Case of Poland”, *Transition*, 2000:2, pp48-76, Oesterreichisches Nationalbank, Vienna.

Globalization and Dilemmas of Monetary Policy

In Search of an Optimum Strategy for Poland in the pre-Accession Phase

Karol Lutkowski

1. Introductory Remarks

Two important innovations, determining the framework for the operation of monetary policy in Poland over the past three years, consisted in 1/ the formal adoption of the “**Direct inflation targeting**” (DIT) strategy, decided in mid-1998 and implemented since the beginning of 1999 and 2/ the switch to **floating** in April 2000, partly in response to pressures emanating from the globalized capital market (to which Poland is ever more vulnerable) and partly in order to put the DIT strategy on a firmer footing. The latter move terminated a prolonged phase of (what, in J. Williamson’s terminology, can be called) the “BBC” rate-of-exchange policy¹, pursued by the Polish central bank since late 1991.

The switch to DIT followed two short-lived (and not quite successful) experiments in keeping inflation under control. First, by means of targeting a quantitative, monetary goal for a year (1997) and then, equally briefly, by focusing upon controlling money-market interest rate (1998). Such a concentration of changes in monetary strategy within a brief period, witnessed relatively recently against the background of destabilized financial environment, is liable to discourage any attempt at overall assessment of the record of the new strategy now being implemented. However, an obvious need to address some still unanswered questions, imposed by strains of adjustment of the Polish economy to challenges of openness, makes it useful to take up some controversial aspects of the experiment in monetary control now unfolding. The reason is that they have not received, as yet, the degree of attention, which they deserve.

Although the lack of sufficient perspective makes it extremely difficult, at this moment, to substantiate opinions on the subject with any firm evidence, it can nevertheless be argued, that both changes (i.e. both the switch to DIT as well as the decision to float the zloty) were appropriate, and that they have

¹ “BBC” standing for: “Basket, Band, Crawl”.

J. Williamson – “The Exchange Rate Regimes for Emerging Markets -Reviving the Intermediate Option”
Institute for International Economics, Washington D.C., 2000, str. 7.

made important contributions to reducing inflation to the present annual rate of 5,2 %. That allows us, realistically, to expect the attainment of the rate of less than 4% by 2003, as envisaged in the official Medium-Term Strategy of the Polish central bank (barring unexpected disruptions, esp. by strains in the sector of public finances). However – as pointed out further below – certain modifications of the anti-inflationary strategy as well as of the exchange rate policy seem now desirable, even necessary. The modifications in question can be carried out, as I shall argue, without risky systemic revolutions and without excessive peril of making those two segments of the overall strategy incompatible with each other. Quite to the contrary, it looks like they can be made mutually supportive.

2. General Background to the Implementation of the DIT Strategy in Poland

It is understandable that the DIT strategy commended itself to the attention of the Polish monetary authorities by some clear advantages in the context of challenges posed by the present phase of transformation. That phase is marked, on the one hand, by a substantial reduction of the initially very high inflation rate. On the other hand, however, it is characterized by rapid institutional change and violent external shocks. That makes it illusory to expect of the country's economy the degree of parametric stability, which would be required to successfully pursue alternative strategies, like e.g. targeting intermediate, quantitative monetary targets. DIT offers advantages of forward-looking readiness to take account of inevitable time lags, inherent in the nature of monetary policy. It is distinguished by the ability to accommodate the demands of changing circumstances, by the capacity to absorb shocks and by flexibility in implementation, which it allows. Those features contrast favourably in the context of an emerging economy with the relative rigidity of the alternative strategies, provided – of course – that the authorities stick to the leading tenets of the overarching strategy of transition.

DIT tends to diminish the risks of repeated failures in meeting the proclaimed inflation goals (thanks to relatively distant time horizons, typical of most DIT strategies, in comparison to e.g. monetary-target strategies). It facilitates better contacts of the central bank with the society and allows the bank to convey to it its intentions more credibly. Thus, monetary policy stands the chance of being generally better understood across all strata of the population. The central bank's words can resonate better with the people, because nobody must fear to be left in the dark about the development of the monetary situation in the future (provided, of course, that truthfulness and determination to stand up to commitments is being maintained by the authorities). That is crucially important in view of the fact, that the essential precondition of success in implementing any monetary strategy consists, after all, precisely in influencing expectations of the community in a way, which would be conducive to lowering social costs of attaining stability. Briefly, in comparison to the alternative lines of action, DIT tends to be more effective in most important respects – which, on the whole, seems to be confirmed by recent empirical

findings across the world². Nevertheless, it is clear that DIT is in danger of “diluting” and weakening its power to shape expectations (and thereby to diminish the social costs of stabilization) if the time horizon is too distant, if the target range is defined too broadly and if the advantages of flexibility are being abused in whatever regard, generally speaking.

It must be noted, however – as emphasized by most researchers on the subject – that in order to be effective, DIT must have an environment meeting certain conditions, which Mishkin and Schmidt-Hebbel enumerate in the following order: 1/ absence of other nominal anchors (like: fixed rate of exchange or stable level of employment), 2/ institutional commitment to price stability, 3/ absence of fiscal dominance (over concerns of the central bank with its overriding aim of reducing inflation), 4/ policy instrument independence of the central bank and 5/ transparency of the policy as well as accountability of the bank³.

Judging the situation in Poland in the light of the foregoing criteria, it is fair to assert, I think, that the National Bank of Poland (NBP) is now unequivocally committed to pursue price level stability as its overriding goal. It enjoys the required degree of instrument autonomy and is formally not hindered in the pursuit, at this moment, by any alternative nominal anchor. By publishing periodic, steadily improved “Inflation Reports” and other content-rich documents, as well as by public pronouncements of its representatives, the NBP has made impressive strides in strengthening its credibility and upgrading its image of an institution displaying a sense of responsibility for the outcome of its mission, as defined by the Constitution and the banking law (which does not preclude sharp criticism, leveled by some political circles, at the way its mission is defined by the legislation in force, of course). The biggest single impediment to smooth implementation of the stabilization policy in Poland consists undoubtedly in the well-known, strained situation of the public finance sector, although the state of the current account is also an important and steadily recurring source of concern. Extensive treatment of the subject of public finance falls outside the scope of the present paper. In contrast, the concern about the state of current account and about possible conflicts between the inflation-oriented monetary policy and the rate-of-exchange policy, lies very much at the heart of our interest here. Therefore, a general statement of the central thesis of this paper, which refers to the nature of their mutual relationship, seems appropriate at this juncture.

The precondition stating that the effectiveness of the DIT strategy critically depends upon freedom of the monetary policy from the constraints flowing from other considerations than the pursuit of the inflationary target, as I understand it, implies – above all – freedom of the central bank from the commitment to defend a rigid rate of exchange or a rigid margin of its permitted movements. The potential for a conflict is obviously present in such a case. However, there is no reason to assume in advance, that the same reservation applies to more flexible methods of steering the rate along a track, which would roughly trace the path determined – in the central bank’s best judgement – by fundamental

² See for instance: F.S. Mishkin, K. Schmidt-Hebbel – “One Decade of Inflation Targeting in the World – What Do We Know and What Do We Need to Know?”, NBER Working Paper nr 8397, lipiec 2001.

³ Op.cit. s. 3.

factors, without coercing the rate to remain permanently and under all circumstances within the range, which it would otherwise leave. Besides, the time dimension is important – over the long run, the central bank would have to stand up to its commitment of treating the inflation target as its exclusively binding goal, while allowing the fundamental market forces to take the upper hand in determining the trend of the exchange rate evolution. The need for complementing an effective (though somewhat more flexible than now) DIT strategy with a flexible, but more active and far-sighted exchange rate policy, aimed at preserving the competitive position of the country in the face of pressures emanating from the global capital market, should emerge more clearly from the following review of the situation in that area and of the challenges inherent in it.

Floating of the zloty in April 2000 implied abolishment of the central rate (expressed in terms of the basket composed of the euro and the US dollar) and abandonment of the commitment to keep the market rate within the “tunnel” observed till then, which thereby ceased to exist. The external value of a unit of Polish currency has come to be determined by the interplay of the market forces, although the central bank retains the right to intervene in the market by way of purchases and sales of currency reserves, whenever it deems it appropriate. That is tantamount to saying that the float is – formally – of the “managed” type, as distinguished from the so-called “clean” float.

Let it be said at the outset, that the rate-of-exchange mechanism currently in operation is, undoubtedly, clearly distinct from the textbook paradigm of freely operating forces of demand and supply. The existence of the so-called “special foreign currency” account, held by the government, may be taken as a reminder of the authorities’ readiness to intervene in the market. The problem is rather that, apart from isolated ad-hoc actions, nobody made a convincing case for regulating the Polish foreign exchange market in a consistent, far-sighted manner and no blueprint for a transparent, systematic strategy in that regard has been devised. The very suggestion of such a line of action, the underlying rationale of it, may raise objections in view of a possible conflict with DIT. Nevertheless, it is not true that the conflict is inevitable. The idea deserves serious consideration and is not foredoomed to failure – for reasons, which (hopefully) will become clearer further below.

The “special” account serves the purpose of preserving a part of the proceeds from privatization sales of the state-owned assets. The means kept in it are primarily destined to serve debt redemption purposes (which is, certainly, a worthy aim in itself). Obviously, the account in question may also be an important factor, capable of exerting a desirable, equilibrating influence upon the market rate of exchange (the initial design behind its idea was precisely to relieve and thereby neutralize destabilizing pressures upon the foreign exchange market, originating in large-scale privatization deals). Nevertheless, in actual practice, the “special” account does not function as an instrument of any consistent, pre-conceived rate-of-exchange policy, which would be conducted with a long-term aim in view. It is under pressure of the budgetary policy, representing a case of “fiscal dominance” in the Mishkin-Schmidt-Hebbel”’s sense, mentioned above, and – so far as one can judge – no change of policy in that regard is being contemplated by the policy making bodies, as of today. Official currency market interventions, if any, under the arrangements currently

in force, clearly, bear ad hoc character. They do not seem to be guided by any overarching strategy (as occasional ad-hoc tinkering with the rate must not be confused with purposeful steering).

With the benefit of hindsight, floating of the zloty more than a year ago might have been justified by the necessity to effect a smooth exit out of the crawl at that stage. It is hard to see how that delicate and risky operation could have been accomplished otherwise. It can be accepted as understandable that the currency should have been left free to float after that for a time. However, important reasons may now be adduced in support of the view that such a passive policy is not sustainable any more (and, actually, should have been forsaken many months ago).

3. Why “free” float of the zloty should be discontinued

The floating rates of exchange have been in widespread use across the world for almost thirty years now, in countries large and small, highly advanced and less developed. Generally speaking, they are judged by economists in many respects superior to the type of mechanism, which they supplanted (i.e. better than the adjustable-peg system). In particular, they came to be regarded as virtually unavoidable under present conditions of the global capital market, with its enormous pool of highly mobile resources, ready to flow from one corner of the globe to another on a scale vastly surpassing resources of all central banks and international financial institutions combined. Sober assessment of the functioning of the floating rates in the light of actual experience, however, led many monetary specialists to downgrade the record of their performance in comparison to what had initially been expected of them. Floating, put to actual test in practice, revealed some disturbing flaws, which make it far less effective, as an adjustment mechanism, than originally hoped for, esp. when applied in a small, open economy (which is one of the important reasons explaining the trend toward monetary integration in some regions of the world). Much of the criticism voiced by the experts in this context remains valid with reference to transition countries, including Poland, as evidenced by sharp swings of the zloty since it has been floating.

As is well known, by now, among the most troubling flaws of the floating-rate mechanism one must cite, first of all, its marked propensity to overshoot the equilibrium level of the rate and to stay misaligned for prolonged periods, with grave structural consequences to the economy affected by the distortions thereby produced. Misalignment in the form of persistent undervaluation represents a threat to domestic monetary stability, being a potential source of stubborn inflationary impulses and of balance sheet strains in the corporate and banking sector as well as in the sphere of public finance (esp. in a highly indebted country). The behaviour of the rate may thus collide with the general thrust of the monetary policy aimed at reducing the rate of inflation or keeping it within a prescribed limit. Trying to check inflationary pressure generated by a declining exchange rate (as required by the antinflationary policy) by raising the rate of interest may lead to deepening of recession, which often confronts the authorities with difficult policy choices.

On the other hand, a rising exchange rate and its persistent overvaluation may damage competitiveness and cause the economy to turn inward by retreating unnecessarily from some lines of production, which the country would, perhaps, be well advised to foster over the long term. It can also enhance the domestic pressure to impose trade restrictions on imports. However, trying to bring the rate of exchange down by lowering the rate of interest may fuel inflation, esp. if the banking sector has been liquid.

As is well known, one of the most troublesome problems nowadays resides in the fact that emerging economies, opening themselves to free interaction with the forces of international markets, are increasingly threatened by disruptive capital inflows. The flows are, typically, driven by short-sighted speculative considerations. That distinguishes them from desirable inflows of foreign direct investment, generally more stable in nature, which however tend to stay away from the regions vulnerable to the risk of potential instability thereby created. By a cruel twist of historical irony, those countries, which have been grappling with the problem of high inflation but are now in the process of successfully reducing it by means of restrictive monetary policies, including the use of unavoidably high rates of interest, find themselves particularly exposed to the danger. As the countries in question, typically, attempt to strengthen their financial credibility in the eyes of creditors and potential investors by making efforts to keep the rates of exchange of their currencies stable, the owners of speculative funds try to take advantage of the opportunity of fast, safe, exceptionally high profits, by first moving in on a huge scale (and driving the currency rates of exchange up in the process) and subsequently – after having plunged the country deeper into trade deficit and debt – moving out again. That causes irreparable damage in the form of distorted productive structure, weakened competitive position, undermined banking sector and deteriorated external financial situation of the state. These considerations are particularly relevant to Poland at the stage of its adaptations to the impending membership of the EU, when the country is approaching the critical moment of (virtually) complete opening of the domestic economy to the global capital market. There is a danger that the pre-accession period may be marked by particular rate-of-exchange instability in the wake of intensified capital inflows, followed – with lags of varying lengths – by outflows. Such instability has already begun to emerge as the price of one US dollar in terms of zloty swang between 4, 65 PLN in the fall of 2000 to 3, 55 PLN in the spring of 2001 and back to more than 4,30 PLN again some time later. If continued unchecked, that process might be destructive of the country's credibility. It could definitely discourage the "serious" investors, undermine competitive position of the Polish producers by paralyzing the processes of pro-export restructuring and become a source of constantly renewed, potentially powerful inflationary pushes.

A more optimistic scenario assumes that prospective EU membership and successful implementation of the programme of institutional adjustments will be enough to sustain investors' confidence. Continued free float would, nonetheless, be bound to confront the country with a thorny dilemma at the end of the day, even in such a case. According to the terms of Poland's prospective EU accession, as spelled out in the official documents of the Union on the subject, Poland – like other candidate countries – is expected to join the European Monetary System in its present (modified) version, some time after

becoming an EU member. That implies the commitment of adopting a central rate of the zloty again, expressed in terms of the euro, and of introducing the market rate of our currency into a band of permitted fluctuations, which may initially be as broad as the band once applied by the NBP (plus-minus 15%). Although fixing the central rate will not be final yet (as the purpose of the membership in the exchange-rate mechanism consists precisely in testing the ability of the economy to function smoothly under the constraint of a rigid rate), any future rate-of-exchange adjustment will nevertheless carry costs, at least “moral” costs in terms of credibility. Par value modifications will be treated as something to be avoided, as far as possible. The decision determining the new par value at the outset will therefore be highly significant, in more than one sense of the term. It will have to be made with all due care, as any future modification of it will be politically awkward and economically costly.

The problem is that it is highly unlikely that the rate of exchange of the zloty, at the moment when the decision will have to be made, will be precisely at the level, which would warrant fixing it for an indefinite future. Quite to the contrary, it is highly probable that powerful market forces will be at play in the meantime, which will drive the rate away from the level congruent with the country’s long-term external equilibrium either excessively downward or excessively upward.

The reasons for such developments are easy to guess. On the one hand, there will be an upward pressure upon the zloty on the part of those investors, who will foresee an impending improvement in long-term economic prospect of the country about to become a new member of a large and probably vibrant economic grouping. On the other hand, there will be downward pressure upon the zloty, originating in some speculators’ conviction that the zloty will be devalued before the momentous decision of fixing its central rate in relation to the euro. It is hard to guess in advance which tendency has better chances of taking the upper hand in the contest. Leaving the matter at that stage of enhanced uncertainty to completely spontaneous, unguided forces of the market, without giving them any clue as to the approximate level, the rate of exchange is expected to settle at, would be a perilous tactic, to my mind. It might finally place the Polish authorities in front of an uneasy choice between having to fix the rate at an excessively high level or allowing the stabilization programme to unravel in consequence of an inflationary shock produced by devaluation (or a downward slide of the rate in the market). That would mean floundering on the very threshold of integration and being pushed back again or getting admitted in a sorry state of being burdened by a “hunch” of renewed instability. To avoid that pitfall, an early embarkation upon a policy of managing the rate is required.

4. Is Some Sort of “Hard Peg” an Appropriate Solution for Poland?

Much international attention has recently been focused upon the experiences of some emerging economies of Europe and Latin America, which have adopted an alternative version of the “corner” solutions – namely: hard peg – either in the

form of “Currency Board” (CB) or in the (even harder) form of outright substitution of a stable, foreign currency in place of the national currency through “dollarization”. That strategic option, in one form or another, is now being recommended by some independent experts to the Central European countries, preparing their economies to integration with the EU (which implies obligation of striving next to join the EMU at some future date). Following that vogue, similar schemes have been put forward in Poland as an allegedly appropriate response to the risks and challenges facing the country at this stage (despite negative attitude toward the idea displayed on many occasions by representatives of the EU organs).

On the face of it, the scheme of “euroization” offers many enticing advantages. It eliminates radically most immediate dangers related to floating. This may be particularly important in a small, open economy, which is especially sensitive to swings of the rate. Even in the case of a medium-sized country, like Poland, some of the important virtues of euroization should be admitted. They seem to commend the blueprint as relevant to the country’s needs. For instance, credible stability of the exchange rate, which it would guarantee, would remove all motives for currency speculation, while also dispelling traders’ and investors’ uncertainty on this particular account (as distinguished from some other types of risk, which may intensify! – one should be warned). Above all, it would place the monetary system of the country on a sound footing, apparently – once for all, banishing forever the danger of high inflation. At first glance, it might seem as if that would also create the conditions for bringing interest rates permanently down, as Poland would effectively become a *de facto* member of the homogenous, European monetary area (even though without formal representation within the governing bodies of the ECB), with all barriers to financial flows abolished, including some informal impediments to capital transfers, like the afore-mentioned currency risks .

However, freezing the rate permanently (at the moment of instituting “currency board” system or at switching unilaterally to the euro) actually means giving up forever any possibility of adjusting the relationship between the domestic and the world price levels by means of devaluation or revaluation. A related feature of the arrangement is also that the magnitude of “monetary basis” (in simplified terms – the volume of cash) becomes exclusively dependent upon the evolution of the balance of payments and is henceforward no longer under control of the national authorities.

The more radical version of the solution, namely: replacing the national currency with a foreign one (“euroization”) boils down essentially to the same thing, supplemented merely with an act of “burning the bridges” to preclude any temptation of possible retreat to national control over the volume of the means of payment (performed for the sake of greater credibility of intent). In the case of Poland, i.e. of a medium-sized country in transition, stuck in the unfinished process of structural change, which – for this very reason – is still far away from the degree of real convergence needed to safely become an integral part of a more broadly conceived “optimum currency area”, such a sacrifice may rightly be considered a price too high to pay at this stage. After all, what we would be faced with, would not be just the challenge of a once-off effort to sustain the transitional costs of adjusting to a completely new competitive environment in all markets and in all lines of production. The chief problems would probably

consist in sustaining the challenge of living and functioning within that environment ever after.

In particular, serious doubts were raised in the economic literature during the past several years with reference to the ability of adjusting smoothly to the consequences of the so-called “asymmetric shocks” (bound to happen in the future) under monetary union. Such shocks are likely to happen even in those countries, which were able to meet the demands of the Maastricht criteria and have formally become members of the European Monetary Union. In spite of the hope-inspiring insights of the literature on “endogeneity” of the requirements, to be fulfilled by a country, if it is to function efficiently within that sort of grouping, it must be admitted that final verdict on the adequacy of the approach is still out, even in the case of those countries. And it must be born in mind that most present EMU members had had decades, in which to converge in the all-important, “real” sense of the term, before they tackled the challenge of financial convergence in the sense of the Maastricht treaty. As far as transition countries – like Poland – are concerned, where the process of adjusting to openness through restructuring is still at an early stage and sometimes remains simply stalled, the risk of relinquishing such an important instrument of real adjustment as the rate of exchange is, I think, extremely high. That might turn the country into a permanently underdeveloped periphery, plagued by unemployment, as Polish trade unions are strong enough to block declines of nominal wages, while movement of the people to other countries, where jobs could be more plentiful, is almost certain to encounter strong barriers for many years to come.

It is possible – as some advocates of the “euroization” scheme maintain – that certain specific structural features of a transition country may lead at the outset in a country like Poland to the paradoxical result of abundance of liquid funds available at a sharply reduced rate of interest. It is imaginable that such a situation could indeed develop for a brief period. It is even very likely to happen immediately after unilateral introduction of the hard European currency on our territory under such a scheme. However, it is doubtful whether the abundance of the “euro-liquidity” would remain a permanent feature of our banking scene. It is even less probable that it would be transformed into the increment of the productive capacity and become a basis for a sustained process of real growth of the economy. It is far more likely that it would simply fuel a speculative boom, which will be followed by outflows of funds, “bleeding” the country out of money and a would eventually bring about the crash of its financial system.

5. What would happen if we “euroize” unilaterally?

To be more specific, assuming that the “euroization” has indeed been carried out in Poland, I would imagine that the situation would evolve, more or less, as follows:

due to differences in the rate of growth of productivity in the traded- and non-traded-goods sectors, typical of economically less advanced countries, and because of the well known phenomenon of wage leadership of the most dynamic

branches, it is to be expected that inflation would remain higher in Poland than in the core area of the euro bloc (as many economists foresee, in accord with the phenomenon known as the Harrod-Balassa-Samuelson effect, or H-B-S). That would not necessarily act, right from the beginning, as a factor undermining the competitive position of the country, because prices of the traded goods would stay unchanged, for a time at least. Nevertheless, erosion of the productive basis would soon invisibly start below the surface, then break into the open to become fully visible a little later. It would inflict serious damage upon the economy, weaken the dynamics of growth of the country and discourage further inflows of direct investments.

Pushing the general price level upward, the H-B-S effect would exert upward pressure upon the rate of interest as well, attracting liquid funds from other areas of the monetary union, at least for a time (so that the nominal, short-term rate of interest might remain almost unchanged as a result of inflows). Abundant liquidity and artificially low, short-term, real rate of interest, much lower than in the past, but also lower here than in the core area of the EMU on account of higher inflation (coupled with possible demonstration effect and understandable desire to catch up with the more affluent part of the euro bloc), would probably fuel a short-lived expansion of expenditures. In all likelihood, the boom would soon progressively turn into a mainly consumer boom, characterized above all by steady worsening of the balance of trade, and – probably – into an “asset bubble”. Domestic producers’ prospects would soon begin to worsen. Growing inflow of goods from abroad and rising domestic input costs would impose increasing strain upon the trade balance, while driving the financial sector of the country and the corporate sector, as well as households, ever deeper into debt.

Having relinquished instruments of control over those processes (as neither the rate of exchange nor the rate of interest would be available anymore) the authorities would be virtually unable to reverse the slide of the country into recession and into an ever deeper morass of debt, after the straw fire of initial expansion has come to a halt. Far from implementing the process of pro-export structural change, which is the precondition of real convergence, necessary for a country to prosper over the long term as part of an integrated bloc, the country’s productive structure – unable to withstand the pressure of competition – would progressively acquire an ever more inward-oriented character and turn into a permanently depressed, peripheral area. Needless to say, the flow of direct investment – even if promising at the start – would soon peter out in the face of such developments.

One should bear in mind in this context, that a uniform level of interest rates throughout the euro bloc (in the broad sense of the term) may reasonably be expected to hold solely with respect to short-term rates, which represent the price of “liquidity” as distinguished from long-term rates, which might be termed “the price of capital”. In contrast to short-term rates, longer-term rates of interest on financial instruments of differing quality and maturity, which – in addition to reflecting inflationary expectations – also take account of general risk assessment of the placement in question, vary widely among countries. Divergences in longer-term rates are substantial even among member countries of the core euro area (EMU), i.e. even among countries which had passed through a lengthy process of mutual adjustment and have fulfilled the required

convergence requirements of the Maastricht treaty. It is only logical to expect, that in the case of Poland – which has not yet met the conditions in question – the levels of long-term rates as well as the patterns of their movement over time, would diverge even more strongly away from the general trend within the core euro area after substitution of the euro in place of the zloty, i. e. more than in the case of today's peripheral, but regular members of the grouping. This might be an incentive to “on-again, off-again” inflows of funds into the Polish capital market, which would divert investible funds away from the productive sector. The result could be a cycle of asset booms and busts, which would annihilate the hopes of feeding long-term growth of the economy with imported savings in a stable fashion.

To sum up, unilateral adoption of the euro by Poland under the existing circumstances, accompanied by the removal of all remaining barriers to financial transfers in both directions, is likely to generate powerful motives to drive the Polish corporate and financial sectors, as well as cosummers, into serious balance-sheet problems. It would foster speculation in Polish securities, driving the stock-exchange quotations to exorbitant heights and plunging them deep down in turn, thereby destabilizing the country's economy and crippling its growth potential. The problem is, thus, that abolishing exchange-rate risk through unilateral “euroization” might simply shift the center of the speculative activity from one segment of the financial sector to another (from the currency market to the securities' market) rather than banish it altogether.

The bottom line is that “hard-peg” solutions, including its most radical version in the form of unilateral “euroization”, do not appear to offer workable, alternative strategies to help solve Poland's problems of the pre-accession stage. Economic arguments alone are enough to tip the balance in favour of rejecting the scheme of “euroization”, quite apart from the political costs of unnecessary frictions, which would result, if we tried to force the gate into the euro bloc in the face of determined opposition of the leading EU organs. Retaining the zloty and the power to influence its rate of exchange for a number of years to come seems a safer and in many respects preferable solution to risky experimenting with strategies concocted in disregard of the Polish economy's specific strengths and weaknesses.

6. What Type of Rate-of-Exchange Policy Should We Follow Now?

Having critically reviewed the two corner solutions to the problem of an optimum exchange-rate policy, and having found them unsuitable to satisfy the needs of the Polish economy at the present stage, we are left with the option of an intermediate-type system of exchange rate (of one kind or another) – that is, with the alternative persuasively defended by J. Williamson in the aforementioned paper. The truth is, however, that the idea of an intermediate rate-of-exchange mechanism has acquired a highly unfavourable reputation among economists all over the world. The reason is that it has come to be identified either with the array of solutions grouped under the heading of “adjustable peg”, or with the type of “managed” float, highly defective with respect to

transparency, which is currently in operation in Poland. That mechanism is plagued by chronic volatility and is very likely to be a stumbling bloc further down the road, esp. at the country's entry into the EU, as pointed out above. It inflicts damage to the credibility of inflation target and undermines the reputation of the central bank itself since it evokes – over and over again – the danger of a currency crisis with all its attendant consequences, inflicting excessive squeezes or inflationary shocks, in turn, upon the economy.

On the other hand, the alternative solution of “hard peg”, as an answer to the challenges posed by openness does not seem suitable to Poland's current needs, either. Poland is unlikely to derive any real benefit, at present, from anchoring the zloty by means of a hard peg to the euro within a currency-board type of arrangements or by unilaterally adopting the euro as the legal tender on its territory. As has become clear in the light of recent experience, any thought of return to a traditional sort of adjustable peg should be, all the more, rejected. Some peculiar features of the adjustable, pegged exchange-rate system in general made it disturbingly vulnerable to destabilizing speculation and therefore liable to collapse under strain. That assessment became generalized and came to be interpreted as valid even in the case of more flexible versions of the system, like crawling pegs and crawling bands of varying breadth. After all, that was precisely the reason why the “corner solutions” became so fashionable internationally in recent time. The fresh recollection of the series of shake-ups in 1997-98 seems to corroborate that insight.

Nevertheless, as I shall try to point out further below, that negative assessment must not be extended to intermediate-type solution of the type advocated by Williamson's ideas. His criticism of the old-type intermediate arrangements seems quite convincing. The crucial cause of weakness characteristic of the solutions applied in the past consisted precisely in the “hard” character of the margins, with which the fluctuation bands were usually endowed (in the case of the adjustable-peg) and in a general lack of transparency as to the intention of the monetary authorities in the case of the managed float, as practiced by some countries nowadays, including Poland. However, exclusive identification of the intermediate solutions with those types of mechanism is not warranted.

While judging the persuasiveness of the Williamson's analysis in general and its relevance to Poland's present concerns, it is necessary to remember, that any new mechanism to be applied in practice must be adapted to take account of the country's specific situation, past experiences and present aspirations (in our case, e.g. the aspiration to join the EU relatively soon). One can imagine a range of workable, intermediate types of exchange rate mechanisms, which – by being transparent and credible – offer a chance of serving the country's needs well. Merely a couple of loose suggestions may be formulated here in the hope that they may be helpful in devising an appropriate strategy.

The Polish rate-of-exchange policy, under the situation of increasing openness to the ever more globalized world capital market should try to keep the rate of exchange simultaneously **flexible** (of necessity) and relatively more **stable** (because it is desirable for a number of reasons) by making it less vulnerable to speculative pressures. That goal can be attained by the NBP, I think, if the long-run trend of the rate of exchange can be made **discernible to the market in a credible way**. That implies a high degree of transparency of

the longer-term monetary strategy overall (present volatility of the rate is, in my judgement, largely due precisely to the lack of transparency as to the goal and means of the authorities in that regard). Simultaneously, the path in time of the nominal rate (made foreseeable to the market, as far as possible on the basis of forecasts corrected by sound judgement) should be guided by the need to preserve the competitive position of the country in trade. That implies keeping the **real rate** over time at a level necessary to maintain sustainable balance of payment position (which may be expressed, in Williamson's terminology as: keeping the real rate at the "fundamental effective equilibrium rate" level – FEER) by appropriately steering the nominal rate.

Steering the nominal rate, to keep the real rate at an appropriate level over the long term, could be implemented by a number of instruments, combined or in isolation: currency market interventions, rate of interest policy, actions in the sphere of fiscal policy and others (like market-congruent short-term capital controls). On the face of it, one may have the impression that possibilities of steering the rate of exchange in the face of market pressures are extremely limited, if available at all, under today's conditions of openness to free cross-border capital flows. That may seem particularly true under DIT strategy, which – in principle – does not allow the monetary policy to be diverted to aims other than the goal of internal monetary stability. Such a conclusion, however, is excessively simplified and can be misleading.

The pessimistic thesis of an allegedly complete inability of the central bank to control the movements of the exchange rate under stability-oriented monetary policy, similarly like allegations concerning ineffectiveness of efforts to influence the exchange rate in a durable fashion by means of sterilized interventions under full openness to the globalized capital market (epitomized in the theory of the so-called "impossible triangle") depend upon assumptions, which are – fortunately – unlikely to be fully relevant to Poland's present situation (like the assumption of perfect substitutability of domestic and foreign assets, not to mention the assumption of fully free capital flows, which does not obviously correspond to reality, at least, as yet). The thesis will, certainly, be much more plausible in the future than now. However, the strategy under discussion is intended to serve as a guide to action only within a limited period. At a later date, it is to be supplanted by Poland's adherence to the set of rules, which members of the European Monetary System have to comply with.

The important point to bear in mind in this context is as follows: steering the rate of exchange, under the general approach suggested here, is not tantamount to blocking the rate at (or pushing it forcibly to) an arbitrary level. That should be enough to defuse much of the criticism on that count. The rate is exposed to free market forces and remains flexible, although it tends to be pretty stable in practice. Ultimately, it is the market, which would have the upper hand at determining the exchange rate. The central bank only tries to foresee, as correctly as possible, what will be the ultimate effect of the operation of market forces over the long term (which is, what the term "fundamental equilibrium" actually implies, after all) and shares that knowledge with the market agents.

At all times, however the rate would have a broad band (or target range), within which to move unchecked. It may even temporarily cross that border – as envisaged in Williamson's paradigm of "soft bands" (or "monitoring bands").

The margins of the band would not rigidly oblige the central bank to intervention. Nonetheless, under the scheme, the bank is expected to credibly convey to the market an intuitive sense of “presumption” that it would act to make the rate return to the band after allowing it, under pressure, to stray for a time outside the margins of the band. Actually, the idea boils down to an attempt to mobilize forces of rational speculation to serve as a stabilizing force. The trick consists in allowing them to foresee the future better, to induce them to help the bank instead of obstructing it (as it often happens under “hard margins”), by assisting them in their efforts to correctly anticipate both the long-term equilibrium path of the rate as well as action of the bank in support of the equilibrium path of the rate .

Adapting that scheme to specific conditions of the Polish economy would probably require dividing the road ahead into phases, e.g. according to a pattern, which could be as follows:

first, an informal “monitoring band” delineating an indicative “target range” of the rate could be adopted. The aim would be to permit the market to discover for itself, that the bank is active on the market, although no specific commitment to stabilize the rate has been undertaken. Soon after that, the bank should start to “educate” the market by informally explaining its intentions, the aims, which it intends to pursue and the means, which it will use for the purpose. Then, a formal announcement of the principles of exchange-rate policy may be made, with the central rate determined in terms of the euro and with the breadth of the target range made public, while stressing its non-obligatory, “indicative” character.

Joining the EMS at some later date (some time after Poland has gained membership of the EU) would mean, of course, official hardening of the margins of the band, preferably – of maximum breadth permitted under the EMS rules (plus-minus 15%). That move would mark embarking upon the formal process of financial convergence, as made obligatory by the Maastricht treaty to all prospective candidates to the membership of the EMU.

7. Is “Soft Band” Solution Consistent with the DIT Strategy?

That is the question of central importance, of course, upon which the applicability or non-applicability of the approach under consideration depends. It would be fatuous to deny that some legitimate doubts may be raised in this context as to whether the idea is well founded. The issue certainly deserves further critical analysis and discussion. After all, absence of any monetary-policy goals potentially competing with the inflation target, like controlling movements of the exchange rate, or securing high employment, is universally understood to be one of the indispensable preconditions of effectiveness of the DIT. It is obvious how easy it can be to undermine (even if inadvertently) the DIT strategy by attempts to influence the exchange-rate through interventions in the forex market (no matter – unsterilized or sterilized) under openness to the global financial flows.. And it may appear, at first look, as if any attempt at combining the two strands of action into a single, internally consistent strategy

were doomed to failure for that reason, right from the start. Nevertheless, such pessimism may be exaggerated. A case can be made for the view that the policy can be successful, that the preconditions for it may, generally speaking, be present in the Polish economy, which gives the issue more than just theoretical significance.

Nevertheless, to avoid misunderstanding, the following important points should be born in mind in this context:

1/stabilizing influence of the central bank upon the rate of interest may be exerted not only by direct interventions through purchases and sales of currencies, but also by other channels. One can (and should) resort primarily to more subtle means of shaping expectations concerning future evolution of the exchange-rate. The DIT strategy gives central importance to conveying as much credible information to the market as possible, in order to allow it to form well-founded inflationary expectations. Such a stand seems well positioned to effectively communicate also with the participants of the forex market and to provide them with credible guidance as to future trends, which the authorities are better equipped to foresee than private market agents.

2/ Other means of economic policy, outside the sphere of monetary policy, may sometimes be usable for the purpose, at least to a certain extent, without prejudicing other aims of economic policy, which those instruments are designed to serve in the first place.

3/ contrary to what the proponents of the “impossible triangle” maintain, there is also a sizable scope for an effective sterilized intervention in an emerging economy, both because of remnants of currency restrictions, which remain and are likely to remain in force for the foreseeable future, but also because of the imperfect substitutability of financial assets, offered by the emerging markets to foreign investors.

4/ longer-term horizons of inflation targeting and ranges of inflationary targets of a certain width offer a scope of flexibility within the short-term horizon, which may be used by rate-of-exchange policy for its own purposes, either through occasional direct interventions of non-sterilized kind or by manipulating the rate of interest with the same goal in view, without seriously damaging the integrity and credibility of the longer-term inflation target.

5/ Last not least, one should steadily keep in mind that under the strategy envisaged here the nominal rate of exchange itself would remain flexible, not rigidly bound, as the aim of the policy would be to facilitate the long-term evolution of that rate along the path determined by fundamentals and not by arbitrary whims of any political or economic authority.

When will the euro supersede the zloty?

Edmund Pietrzak

The NBP's conference "Poland's Road to the Euro" is taking place at a rather peculiar stage of our country's efforts to join the EU and the eurozone. **As early as mid-2001 it became clear that Poland had dropped out of the group of 12 leading EU accession countries¹.** At the time of completing this presentation (mid-August 2001) this unfavourable trend in our country's competitive position was even more evident. At present, the top favorites to win the EU accession race are Cyprus, Hungary, Estonia, Slovenia, Malta and the Czech Republic.

Consequently, what seemed inconceivable even two years ago has now happened in 2001: Poland may not be included in the first group of states to join the EU in 2004, or 2005 or 2006. I happen to agree with "RZECZPOSPOLITA"'s commentator², who writes that should this really happen, it would be a great shame on Poland carrying major political and economic consequences, external and internal alike.

One of the most momentous economic consequences of the big failure would be a considerable delay in Poland's eventual eurozone membership. Let us recall that eurozone accession is not possible without prior EU membership.

This author may not be (and in fact is not – please read on) an advocate of promptly substituting the euro for the zloty, but Poland's exclusion from the first group of candidate states to become EU members some time between 2004 and 2006 postpones our country's eurozone membership until some unspecified, distant future. And that would hardly be welcome news for Poland.

However, it is not only the actual timing of the discussion on Poland's joining the Euro in the context of our country's EU membership efforts which is peculiar. **What is also peculiar is the manner and nature of discussion on both issues (EU and euro), which has been conducted in Poland for some years now.**

Now, while the prospect of the zloty's becoming replaced by the euro has spawned a whole host of different ideas (more or less realistic) on how this is to be done and generated lively discussion, as reflected among others by this year's NPB conference, the timing and conditions

¹ These being in the alphabetic order: Bulgaria, Cyprus, Czech, Estonia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, Hungary.

² See J. Majcherek *Negocjacje z Unią Europejską są paraliżowane przez fobie i mity* (EU Negotiations Paralysed by Phobias and Myths. No End to Deadlock). RZECZPOSPOLITA no 184, of 8 August 2001

of Poland's EU accession seem an internal concern of a group of Poland's EU negotiators and a handful of their political supervisors. You do not hear of any substantial political discussion, as if there was nothing to discuss about, as the group of negotiators knows all and knows better. But take a closer look at their negotiation position and you can see that it is not exactly compatible with Poland's interest, but rather reflects unhelpful to Poland phobias and myths of some political circles and the negotiators themselves³ Let me elaborate on this issue later in the paper.

This paper contains two key propositions.

The first one is that 2007 is, in my opinion, the earliest possible date for the zloty euro changeover. But this date is hardly realistic. The euro will become Poland's legal tender a little later: most likely in 2008 or 2009.

The second proposition is my view that although Poland's eurozone participation is in its strategic interest, haste as regards the zloty's joining the area is not desirable, in contrast to EU membership. On the contrary, it will be good for our country to actually postpone zloty replacement for two or three years, for the simple reason that we will be better prepared to embark on this historical project.

1. Poland's EU Membership vs. Eurozone Participation

It is in Poland's strategic interest to join the EU. If our country chose not to strive for membership in this organisation, that would probably mean to throw away an opportunity for Poland's fast civilisation advancement and would also reduce our country's security. For these reasons Poland's EU accession enjoys support from a definite majority of Polish society as well as all political groups that matter.

The process of Poland's EU integration⁴ is very much advanced, which unfortunately does not mean advanced enough. The process began with the government's decision of July 1990 to start negotiations on the Treaty of Europe⁵, which was signed on 16 December 1991, and entered into force as of 1 February 1994.

The first governmental document which comprehensively referred to Poland's aims and modality of EU integration was *The National Integration Strategy* prepared by the European Integration Committee in January 1997.⁶

This was followed by *The National Programme of Preparations for EU Membership*⁷ prepared in April 1998 also by the European Integration Committee. The document confirmed and supplemented the assumptions of the 1997 document.

³ *ibid.*

⁴ For more see K. Kołodziejczyk, *Geneza wspólnotowej waluty euro (Origin of the Community Euro Currency)*, WYDAWNICTWO NAUKOWE SCHOLAR, Warszawa 2000, chapter 5

⁵ Treaty of Europe establishing an Association between Poland, on the one hand, and the European Communities and their Member States, on the other. Dz. U. of 1994 no 11, item 38

⁶ *Narodowa strategia integracyjna*. URZĄD KOMITETU INTEGRACJI EUROPEJSKIEJ, Warszawa, January 1997

⁷ *Narodowy program przygotowania do członkostwa w UE*. URZĄD KOMITETU INTEGRACJI EUROPEJSKIEJ, Warszawa, April 1998

The most recent governmental document pertaining to Poland's EU integration is *The Public Finance and Economic Development Strategy, Poland 2000-2010*⁸.

This document differs from the previous ones mainly in two points. The first difference consists in postponing the date of Poland's EU membership from 1 January 2002 until 1 January 2003. The second difference, on the other hand, consists in extensive elaboration on issues of financial integration into the EU, including the question of our country's eurozone participation. This is discussed, in some more detail, a little later in the paper.

In 1990 the authorities of Poland thought that process of Poland's joining the European Union would take about 10 years. But in the above-mentioned governmental documents of 1997 and 1998 the year of 2002 was discussed, while 1999 saw the expected accession date moved to 2003.

Today (mid-August 2001) it is almost evident that all the earlier estimates suffered from excessive optimism and the earliest possible date of Poland's joining the European Union is the year 2004, while, in my opinion, 2005 or 2006 is more realistic. But even a later accession date cannot be ruled out, if in the coming few months the deadlock in Poland's EU negotiations is not resolved.

Poland's EU membership is not benefits alone, it comes at a cost. But there is no need for persuasion that in the long and (possibly) medium run benefits definitely prevail, if only because Poland's adjustment to EU standards will secure it a place in the group of states with well-developed economic, social as well as political structures.

EU accession requires a number of economic and political criteria to be met. They were formulated at the Copenhagen Summit of the European Council in June 1993. They can be reduced to three groups:

first, it is necessary to have in place stable institutions to safe-guard democracy, rule of law, human rights' observance and respect for and protection of minorities;

second, it is necessary to have a functioning market economy and capacity to withstand competition and EU market forces;

third, it is necessary to become fit to take on and adhere to the obligations relating to membership, including the sharing of the objectives of political, economic and currency union.

The first group of conditions has already been met by our country. Adjustment to the conditions of the second and third group is now largely advanced, but the full adjustment to such conditions still calls for much more reform effort on the part of Poland.

Other EU candidate states have done a better job in recent years in adjusting to group two and group three conditions. As a result, Poland dropped out⁹ in 2001, as we have already noted, of the group of top candidate states best prepared for EU membership. **At the same time the concept of**

⁸ *Strategia finansów publicznych i rozwoju gospodarczego. Polska 2000-2010.* RADA MINISTRÓW. MINISTERSTWO FINANSÓW, Warszawa, June 1999

⁹ See J.Bielecki, P. Apanowicz, *Poszerzenie Unii Europejskiej. Estonia, Słowenia i Cypr liderami wśród kandydatów. Przełom, ale nie ma nas.* (EU Enlargement. Estonia, Slovenia and Cyprus Leaders among Candidates. Breakthrough, not for us though) RZECZYPOSPOLITA no 75 of 29 March 2001

“small” EU expansion was proposed, i.e. such expansion which would not cover Poland nor one to three out of the six most advanced candidate states. In mid-2001 Estonia, Slovenia, Cyprus and Hungary were tipped for “small” expansion.

This adverse development from the Polish point of view was caused mainly by mistakes made by the Polish negotiators in talks with the European Union in approximately last 2 years. Those were mistakes big enough to give rise to an impression that possibly not mistakes were to blame, but something more serious, namely change in the concept of Poland’s integration into the European Union and mode of perception of the integration itself.

For it seems that the Polish side is keener on a slower and looser integration rather than speedy and deep one, although it is in Poland’s strategic interest to be embedded in West European integration structures and mechanisms as soon as possible. This is evidenced among others by the Polish negotiators’ insistence on the unrealistic proposal of an 18 year-long derogation on the purchase of land by EU nationals in Poland and simultaneous insistence on full freedom for Polish nationals to seek employment within EU territory. This is also evidenced by many Polish politicians supporting French politicians in their concept of looser integration rather than the German idea of deeper integration.

A remarkable proof of the fact that the Polish side is keener on the concept of looser and shallower integration is the issue (which may not be as controversial as EU nationals’ purchase of land or jobs for Polish nationals in the EU) of scrapping controls over short-term capital transactions between Poland and the outside world. As this issue is important also for Poland’s future eurozone participation, let us present it in some detail.

Despite impressive strides in liberalisation towards the meeting of OECD and EU requirements, Polish foreign exchange legislation is still (August 2001) too restrictive (notwithstanding the most recent liberal act in force since 12 January 1999).

In accordance with the agreement with the OECD of July 1996 the zloty was to become fully convertible in relations with OECD countries as from 1 January 2000. This has failed to materialise yet.

On 11 January 2000 the government of Poland applied to the OECD for an extension of the deadline for Poland to meet its obligations relating to FX liberalisation of short-term capital transactions.

A precondition for the transformation of the zloty into a fully¹⁰ convertible currency in relations with the OECD is first of all the scrapping of controls over the following short-term capital transactions. There are seven of groups of such transactions:

First, non-residents, including ones from OECD states, must not hold without a foreign exchange permit zloty deposits with Polish banks for maturities shorter than three months and amounts in excess of PLN 500 000,

¹⁰ In practice this will not be full but nearly full convertibility. The problem is that the zloty’s full convertibility does not depend merely on the foreign exchange law, but also on laws pertaining to other areas of the economy, e.g. on the Selling Land to Foreigners Act, Companies with Foreign Shareholding Act or Real Estate Management Act

Second, non-residents, including ones from OECD states, must not buy in Poland without a foreign exchange permit short-term securities and derivatives whose purchase is still subject to such controls, both on regulated markets and outside them. Let us note that the above presented restriction does not pertain to non-residents' purchase of T-securities and derivatives offered on the exchanges enumerated in the act (GPW, CeTO, PGF) and licensed wholesale "exchanges" (markets). Neither does it pertain to the purchase by non-residents of short-term securities and derivatives offered by authorised banks. The banks in such circumstances are constrained solely by prudential regulations,

Third, a foreign exchange permit is required for extending and drawing short-term loans and advances with maturities below one year – in foreign transactions, also with nonresidents from OECD countries,

Fourth, residents must not keep, without a foreign exchange permit, foreign bank accounts, including in OECD countries. However, this restriction does not pertain to bank accounts opened by residents during their stay abroad or in connection with their making of direct and portfolio investments abroad,

Fifth, residents must not issue and introduce into foreign circulation, including in OECD countries, short-term securities and derivatives, on regulated markets and outside them,

Sixth, residents must not buy abroad, including in OECD countries, without a foreign exchange permit, short-term securities (by which the act means securities whose original maturity is below one year) and derivatives, on regulated markets and outside them. However, the restriction does not hold for authorised banks which are subject merely to prudential regulations, when they purchase from non-residents zloty denominated short-term securities and derivatives,

Seventh, non-residents including ones from OECD countries must not, without a foreign exchange permit, introduce into circulation in Poland short-term securities and derivatives on regulated markets and outside them.

In early 2001 the Minister of Finance announced that the above-mentioned controls would be lifted by the end of Q1 2001¹¹ This was not to happen. The controls have not been scrapped to date (14 August 2001) and the odds are that they will not be lifted by year-end 2001. If so, this proves that the government has adopted a policy of making adjustments to OECD and EU requirements in terms of FX liberalization only when it can longer be avoided, the final deadline being the day of Poland's joining the EU.

At the same time we note that Hungary lifted similar currency controls over short-term capital transactions as of 15 June 2001, as a result of which the forint became, in principle, a fully convertible currency¹². Slovenia and Lithuania have made pre-announcements of similar moves by year-end 2001.

Poland's eurozone membership is predicated upon its EU membership, as only a European Union member can participate in the eurozone or, to use a more technical term, in the third stage of European and Monetary Union, because the Treaty of Maastricht signed on 7 February

¹¹ E. Pietrzak *Kiedy złoty stanie się walutą wymienną? Bardzo bliski siódmy, ostatni krok (When will the Zloty Become Convertible? Last, Seventh Step just Around the Corner)* RZECZPOSPOLITA no 17 of 20-21 January 2001

¹²See note 10 and 26

1992 and in force since 1 November 1993, which created the European Union, solemnly declared that the final objective of a gradual and irrevocable process of creating an Economic and Monetary Union was the prospect of establishing a joint currency by no later than 1 January 1999. At the same time the Treaty of Maastricht introduced a time-table for EMU formation pertaining mainly to the terms and deadlines of its second, and particularly third stage.

EMU's first stage started on 1 July 1990 and envisaged the achievement of two main objectives: full capital account liberalisation and tightening the cooperation of member states in economic, fiscal, monetary and foreign exchange policy.

EMU's second stage started, in accordance with the Treaty of Maastricht, on 1 January 1994 and was conceived as a preparatory stage for the future introduction of a common currency. One of the most important means to achieve this objective was to create the European Monetary Institute, which was seen as a prototype (embryo) of the later European Central Bank. At the same time the member states were obliged to achieve more economic convergence, avoid excessive budget deficits and start working towards achieving independence by their national central banks.

A precondition to participate in the third stage of EMU, consisting in substituting the euro for national currencies, which was to start on 1 January 1999 at the latest (when indeed it started) has been to meet five quantitative convergence criteria. Let us recall them briefly.

The first one can be called the inflation criterion. The rate of inflation must not exceed by more than 1.5 percentage point the average of the three best performing EU states in this regard.

The second one can be called the interest rate criterion. The long-term nominal interest rate must not exceed by more than 2 percentage points the average of the three best performing EU states in this regard.

Criterion three and four are fiscal criteria.

The maximum acceptable budget deficit to GDP ratio is 3%. However, the Treaty of Maastricht accepts the possibility of exceeding the ceiling. This will be allowed when its size is small or when it is temporary. Such exceeding is acceptable even when it is over a long time on condition that a trend towards reducing the deficit to GDP ratio is visible.

The maximum acceptable public debt to GDP ratio is 60%. Also in this case its exceeding is allowed by the Treaty of Maastricht on condition it is not a substantial one and a sliding trend is visible.

The fifth criterion can be called the exchange rate criterion. The currency of the state concerned must have participated in the Exchange Rate Mechanism and been maintained without any serious tensions inside the standard fluctuation band (at present +/- 15%) for at least two years prior to candidates being reviewed for EMU's 3rd stage. Moreover, no bilateral rates of the currency in question must be devalued on the initiative of the monetary authorities of its state for the same period of time.

Currently, Poland meets the two fiscal criteria, but the inflation and interest rate criteria seem to be out of our country's reach for the coming few years.

From the formal and substantive (technically economic) point of view it is very important that EU member states do not need to participate in EMU's third

stage. The substitution of the euro for their national currencies is their right rather than obligation. The UK, Sweden and Denmark, from 1 January 1999 to date (August 2001) have certainly benefited from this Treaty of Maastricht proviso.

Poland has always declared that it is interested in not merely EU membership, but also in the membership of the monetary union the concept of which was finally embodied in EMU's third stage, i.e. the eurozone.

The first governmental document, which expressed such position of Poland, was "*Program Euro-2006*", presented in January 1997 by the then Minister of Finance. The programme assumed that Poland would become EMU member in 2006 on condition of our country's achieving EU membership in 2002. The document grew out of the earlier mentioned *National Integration Strategy* of 1997.

Also, the already mentioned *National Programme of Preparations for EU Membership* of 1998 recognised Poland's EMU membership as a long-term objective, although the document specified no dates.

The years 2005-2006 as a possible date for launching the euro in Poland are mentioned by the document *Medium-Term Social and Economic Policy Priorities in Poland for the Years 1999-2002*¹³, jointly prepared by the Government of Poland and the European Commission in 1998. It also included detailed suggestions of activities which would allow Poland to meet the Treaty of Maastricht's convergence criteria.

The governmental document which is most detailed in its reference to Poland's eurozone participation is the already mentioned *Public Finance and Economic Development Strategy, Poland 2000-2010* of June 1999. The document includes the very important assumptions that Poland may achieve EU membership in 2003 and the zloty may join ERM2 in 2004 and then be substituted by the euro in 2006

What we know today (mid-August 2001) is that none of the dates is realistic.

2. Which way to the Euro?

Currency Board? Euroisation? ERM2

Theoretically, Poland could follow either of the three ways to get to the euro. All three of them, to a varying extent though, feature in discussions on this subject as practical ways for the zloty to join the eurozone, the classic way, consisting in the zloty's future two year participation in ERM2, having the most followers. It comes in two variants: one under which the zloty would be included in the system as soon as possible seems to be the more popular one. The second variant, on the other hand, with less support, is the inclusion of the zloty in ERM2 as late as possible.

The remaining two roads for Poland to get to the eurozone have rather few supporters, but have attracted a lot of publicity, possibly because they are

¹³ See *Średniookresowe priorytety polityki społeczno-gospodarczej Polski na lata 1999-2002* URZ?D KOMITETU INTEGRACJI EUROPEJSKIEJ, Warszawa 1998

alleged to be the least costly short-cuts to our country's achieving the objective. Or maybe the reason for so much interest in the ideas of Poland's euroisation or currency boarding is those ideas' intellectual provocation, more or less based on a joke.

Let us start with the currency board system, which would be the worst and most costly way of Poland's joining the eurozone.

Although the idea of introducing a currency board regime in Poland was probably motivated by internal considerations (as an alternative to the existing exchange rate regime and monetary and exchange rate policies), rather than external considerations (the zloty's joining the eurozone in a different manner than via ERM2), in practice, if implemented, it would be of fundamental importance for Poland's transition to the eurozone. Let us also add that in the years 2000-2001 the concept under discussion was added some feasibility by those among the former socialist states which had had currency board systems for many years (Estonia since 1992, Lithuania since 1994) or for several years (Bulgaria since 1998 and Bosnia & Herzegovina since 1999), but which are also thinking of EU membership and Euroland participation. The richest and most developed of them, Estonia, is meant here in particular. In January 2000 its Prime Minister, Mart Laar, asked¹⁴ the European Union to discuss the possibility of the country's adopting the euro prior to EU membership. As might have been expected, nothing came out of that (nor will come), for reasons to be discussed below. But this has done nothing to dampen the enthusiasm of some experts from former socialist countries (including Poland) about taking the short-cut to Euroland, i.e. prior to achieving EU membership and prior to the meeting of all Maastricht Treaty criteria.

Given that the currency board system has not been much discussed in Polish-language literature¹⁵, it is worth while to take a closer look at it, precisely to consider its possible application in Poland and in the context of the zloty's inclusion in the eurozone.

Let its Polish name be the starting point. In fact, it is difficult to find one, but the most frequent term used in Poland – **zarząd walutą** (currency management) is one of its least adequate renderings, but may nevertheless stick, just because it is a word for word translation, though linguistically and economically defective. A currency board, in fact, has little do with management and, come to think of it, with currency. Proponents of the verbatim translation have overlooked that one of the meanings of "currency" is money, while a board can be not only a management board, but also an authority or chamber, or even an office. I think that a good way to render the concept of "currency board" in Polish, both in terms of linguistics and economics, is **urząd emisji pieniądza**, the Polish equivalent of the term: "Money Issuing Authority"¹⁶.

The essence of the currency board system consists in a very strict anchoring, in statutory terms, of the issue of national currency with official reserves and gold held by the monetary authorities. The principle of 1 : 1 is most

¹⁴ *Estonia. Gotowi w 2001. Najpierw euro, potem unia (Estonia. Ready in 2001. Euro First, Union Next)*. RZECZPOSPOLITA no 18 of 22-23 January 2000, p B2

¹⁵ The first and so far the most comprehensive discussion in the Polish language is contained in E. Pietrzak, *Wymienialność złotego (Convertibility of the Zloty)*, BIBLIOTEKA MENEDŻERA I BANKOWCA, Warszawa 1996

¹⁶ *Ibid.* p. 165-167

common, which means that money supply is 100 per cent covered by the country's official reserves.

Secondly, a currency board consists in pegging (often by a statute) the domestic currency to a selected international currency. In the period when the gold-standard system was fully in operation (1870-1914) sterling used to provide the anchor, but nowadays it is the US dollar and, to some extent, the D-mark or the euro¹⁷.

Thirdly, money supply under the currency board system is determined almost automatically, as in the gold currency system, by changes in the level of the central bank's official reserves and there is no way the bank itself can impact the amount of money in the economy. In practical terms, under a currency board the central bank does not even need to have an issuing department.

The key purpose of introducing a currency board regime is to provide statutory safeguards of monetary policy's sufficient toughness through depriving the government of its ability to fund budget deficits by printing money and through eliminating discretionality from monetary policy.

In theory and practice two currency board variants are distinguished: the orthodox and the modern one. The main difference between them is that under the modern variant the monetary authorities do retain some influence over money supply, which in individual circumstances of specific countries may prove much bigger than it would follow from any currency board model assumptions.

The first most apparent and painful effect of the hypothetical introduction of a currency board in Poland would be to deprive the Monetary Policy Council and the National Bank of Poland of their influence on exchange rate and monetary policy. By the same token the Monetary Policy Council would become redundant, likewise part of the central bank. Possibly, that would make the numerous critics of both institutions happy. But that is not to say that the Polish economy would actually do better without rather than with the MPC and part of the NBP (the issuing department).

If a currency board regime was introduced in Poland, say, from October 2001, then the zloty rate versus the euro (it would almost certainly be the euro) would be locked at the most likely rate of 4 zloties buying one euro, or similar. You do not have to be a rocket scientist to imagine the effects of such fixing, if some currency turmoil in an emerging country (like the Czech Republic in 1997, Russia in August 1998 or Turkey in February 2001) or some political turmoil in Poland, which in fact is very likely, led to a considerable short-term capital outflow from Poland, which would seriously denude its official reserves.

To recapitulate, one can say that currency turmoil in various countries, from the Mexican crisis at the end of 1994 to the Turkish one in early 2001, have proven beyond reasonable doubt that the managed float policy is the best way to adjust an economy to external as well internal economic and political shocks.

Admittedly, Poland has conducted a clean float policy similar to the one described only since 12 April 2000, nevertheless Poland's exchange rate policy has been increasingly flexible since October 1991. A turning

¹⁷ As of mid-August 2001 D-mark is the anchor in Bosnia and Herzegovina, while the euro in Lithuania and Bulgaria

point in the policy was the partial floatation of the zloty in May 1995 and then the elimination of the transaction fixing in June 1999.

On numerous occasions I have been on record to say and I still maintain that Poland's exchange rate policy in the years 1990-2001 has been better than in any other former socialist country. It has done a great job in supporting macroeconomic policy and to a significant extent has been helpful in avoiding currency turmoil. Which does not mean it was an ideal policy. Unfortunately, it was not as good as that. Poland's exchange rate policy, 1990-2001, can be criticised first of all for taking good decisions too late and, more recently, for not carrying out currency interventions in order to weaken the zloty vis a vis foreign currencies, the zloty having become extremely strong from December 2000 till June 2001.

At the same time it has to be borne in mind that serious mistakes of the Czech Republic's and, to some extent, of Hungarian exchange rate policy seriously contributed to the eruption of currency crises in those countries.

I think it would be most unfortunate for Poland's economy, if so effective and refined an anticrisis and antishock mechanism as a clean or managed float were replaced by the extremely rigid regime which features in the currency board system. Let us add that the rigidity of the currency board system is much bigger than the rigidity of the classical fixed exchange rate regime, like the one Poland's exchange rate policy used to employ from January 1990 to October 1991.

Secondly, a hypothetical employment of a currency board in Poland would slow down the pace of growth already weaker in 2000-2001. This is evidenced among others by the experience of Estonia a few years after the introduction of its currency board system, and also by that of Mexico versus Argentina of the last about 7-8 years. Namely, Mexico did not introduce a currency board after the currency turmoil of 1994-1995, while Argentina had done it a little beforehand. Mexico's growth rate has since been faster than that of Argentina.

Thirdly, although the currency board is conducive to tight fiscal policy, it does not automatically guarantee lower inflation.

Fourthly, the currency board system could in no way be helpful in solving key problems of Poland's economy, namely the restructuring and privatisation of its obsolete sectors.

Fifthly, the introduction of a currency board would increase the risk of a banking crisis.

In perceiving the currency board as a nineteenth century primitive way of handling monetary and exchange rate policy and organising the currency and monetary system we conclude that its application this day and age makes sense only, if an economy or state is in an emergency. Emergencies may include: situation just after the country's becoming independent; after the end of a war; after a revolution; total chaos in public finances and also lack of capacity to run monetary policy on one's own.

Each of the countries which employed a currency board system in the 1990s were in at least one of those critical situations. This is particularly true of Estonia, Lithuania and Bosnia & Herzegovina.

No matter how critical you are of the deteriorated public finances in 2001 or MPC mistakes in 2000-2001 and its problems in combating inflation in 1998-2001 the currency board system is completely maladjusted to the economic, political and social realities of Poland in 2001-2002.

In post-communist Poland there was only one time in which the currency board system might have been considered. That was in 1989-90, when the development of a market economy had only just started in Poland and the so-called shock therapy was unleashed. Theoretically, the currency board system could have been an alternative to the shock therapy. Poland was fortunate that the system was neither introduced, nor even considered. As regards the so-called shock therapy, despite it having been a painful solution for most of society and also despite having suffered – as it turned out in practice – from a few major errors, it was nevertheless, all things considered, an effective idea. Against that backdrop, the currency board system comes out much worse and is more expensive.

To advise our country the introduction of a currency board system in the twelfth year of one of the most successful transitions in a former socialist country is simply irresponsible and shows ignorance. All the more that it is Poland which can claim to have had in 1990-2001 the most solid macroeconomic fundamentals out of those countries.

Although the rejection of the currency board system for Poland-internal reasons sufficiently proves the point, the rejection of the idea can easily be justified by external considerations too, i.e. from the point of view of Poland's efforts to join the EU and eurozone.

The hypothetical introduction of a currency board in Poland would be seen abroad as a fiasco of our country's macroeconomic policy and to a certain extent even as failure of its transformation policy. This would be one of the poorest recommendations for our EU and eurozone bid.

And, to conclude this part, a most practical conclusion. As exemplified by the case of Estonia, joining the euro by taking a currency board short cut is not going to happen, if only because the EU will not support such action. Naturally, the EU will not protest against the introduction of a currency board in any candidate state. But it can rather be relied upon to oppose such country's direct transition from a currency board to the eurozone prior to its EU membership and meeting of the Maastricht convergence criteria.

The proposal of Poland's euroisation is certainly intellectually more challenging than the currency board system¹⁸. Also on its merits it is a much better idea for Poland than the currency board system. **But just as the currency board system, euroisation would not be good for Poland as a way of joining the eurozone.** Admittedly, if at all implementable, it would be less costly than the currency board system. However, the biggest weakness of Poland's euroisation concept is that, in contrast to the currency board system, it is not feasible.

The euroisation concept consisting in the substitution of the euro for the zloty even prior to Poland's EU accession comes in two versions¹⁹. The first one could be described as naively romantic, the second as a conciliatory one.

¹⁸ authored by A.S. Bratkowski and J. Rostowski. For the first version of the concept see *Zlikwidować złotego (Scrap the Zloty)*, RZECZPOSPOLITA no 55 of 6 March 1966

¹⁹ Version two was also authored by A.S. Bratkowski and J. Rostowski. See *Polska-Unia Europejska Warto się przygotować do jednostronnego zastąpienia złotego przez euro, a decyzje o tym, jaką drogą do EMU ostatecznie wybrać, uzależnić od wyników negocjacji z Unią. Albo kryzys walutowy, albo recesja (Poland – European Union One should Prepare for a Unilateral Substitution of the Euro for the Zloty, while the Final Decision on the Road to EMU Ought to Depend on EU Negotiations. Either Currency Crisis or Recession.)* RZECZPOSPOLITA no 35 of 10-11 February 2001

Given the fact that the idea to euroise Poland has been frequently presented in Poland's business press, below we are going to present only its most important tenets.

In the original and the revised versions, they are as follows.

First and foremost, on appointed D-day the euro will be substituted for the currency being current legal tender in Poland. In consequence, all prices, receivables and obligations which were zloty denominated until D-day would be converted to euros at a uniform rate. Notes and coins would stay in circulation until naturally retired by the NBP, just as it was the case under the zloty denomination of 1 January 1995.

Secondly, the zloty/euro conversion described in the previous paragraph would make Poland a country of currency stability: the zloty would no longer be exposed to currency crises, because there would be nothing to speculate against. This can be assumed to be the most important benefit of Poland's euroisation.

Thirdly, Poland's euroisation would lead to a fast reduction of inflation in Poland to EU averages. It would also lead to radical interest rate cuts – from the current level of almost 20% to 5%, which prevails in the EU.

The basic difference between the two versions of the euroisation concept is that in the former one the authors are completely uninterested if it might not be worth while to ask the other side, i.e. the EU, for consent. Not only don't they ask for such consent, they do not care if the EU is actually happy with the idea or not, they are not even interested in any comment on the EU's part. The starting point for the euroisation concept can be compared to a hypothetical unilateral initiative of, say, Albania or Tadjikistan to substitute the zloty for the Albanian lek or Tadjik rouble without any consultations or, indeed, talks with the monetary authorities of the relevant states with the Polish government or the National Bank of Poland.

The revised version which was proposed two years later no longer contains the elementary mistake. The advocates of euroisation have meanwhile noticed the other side and now they propose to the European Union negotiations with Poland on a unilateral substitution of the euro for the zloty. They may have been encouraged by the already mentioned example of Estonia in early 2000 and Montenegro²⁰ in early 2001, both countries having applied to the EU for consultations in this matter.

What they still fail to realise is that there is no other way for candidate countries to reach the eurozone than the one which the 12 countries have taken, for the simple reason that such other way would be inconsistent with the European Treaties and the principle of equal treatment of EMU current and new members. Precisely such interpretation was presented in June 2000 by the European Commission and the European Council. Hence, the European Union cannot and will not enter into any discussion on short-cuts to the euro. Or, at the most, the discussion could be purely academic.

A novel element of the revised euroisation version in connection with the fact that the other side has finally been noticed is the subject matter of the proposed negotiations, namely in exchange for the EU's consent to Poland's

²⁰ Czarnogóra. *Euro poza eurolandem.* (Montenegro. *Euro outside Euroland*) GAZETA WYBORCZA no 44 of 21 February 2001, p. 22

speedy euroisation our country would offer a two year delay in EMU accession and consent to revising the Maastricht criteria. As far as the latter is concerned the idea would be mainly to soften the inflation criterion (which would facilitate our country to meet the Maastricht criterion which is most difficult to meet by Poland's economy) while making the fiscal criterion more stringent.

If we give the reins to our imagination and assume that the EU, despite its cherished principles, consents to Poland's unilateral euroisation, it is certainly not going to happen on the above terms, for they are unilaterally to Poland's advantage and unilaterally to the EU's disadvantage. Should they be nevertheless accepted by the latter, this would be the worst trade agreement the EU has signed in its history.

Back to reality then! The proposed EU Poland euroisation contract includes two fallacious assumptions.

The first one is that new EU members may be able to join the eurozone according to different criteria than the ones formulated in the Treaty of Maastricht. This is not going to happen. In January 2001 the Deputy President of the European Central Bank, Christian Noyer, confirmed as much²¹.

The second assumption is that there is some magical date from which one can start to count down a "delay in joining EMU by two years". There is no such date. Maybe the authors mean the end of the two year ERM2 membership period, which theoretically should commence on becoming EU member by a candidate. Maybe they mean the beginning of that period. As exemplified by the case of Finland, such fixed date simply does not exist. Finland became EU member in January 1995. But the Finnish markka did not join ERM1 in January 1995, but almost two years later, in October 1996. This issue is discussed in detail later on.

In addition to its unfeasibility, the concept of Poland's euroisation has a number of technical flaws. They are so important, that even if euroisation was practically feasible, one should not go ahead with it.

From this point of view a key euroisation shortcoming is its gross inadequacy to the present macroeconomic, political and social situation of Poland. This is similar to the earlier discussed currency board concept. Just as the introduction of a currency board would not fit in the economic, social and political realities of Poland in 2001-2002, it would also be inappropriate in such realities to substitute the euro for the national currency, important international currency as it is, which, more to the point, sooner or later would become legal tender in Poland anyway.

The thing is that a voluntary and unilateral relinquishing of the national currency for an international one would make sense – just like the hypothetical launching of a currency board system – if the economy or the state was in an emergency. As we have already stressed, such situations may include: situation just after the country's becoming independent; after the end of a war; after a revolution; total chaos in public finances and also lack of capacity to run monetary policy on one's own. No such situation has occurred in Poland in recent years and nothing points to its possible occurrence in the foreseeable future.

²¹ "We will apply the Maastricht criteria with respect to states newly entering the eurozone the same way we used them with respect to the previous [entrant] states", See THE FINANCIAL TIMES of 18 January of 2001, p. 2

We can thus reiterate the conclusion formulated earlier on when considering the possibility of introducing a currency board system in Poland: no matter how critical you are of the deteriorated public finances in 2001 or MPC mistakes in 2000-2001 and its problems in combating inflation in 1998-2001, the unilateral replacement of the zloty by the euro is completely maladjusted to the economic, political and social realities of Poland in 2001-2002.

In post-communist Poland there has only been one time in which the substitution of an international currency for the zloty could be seriously considered. Those were the years 1989-1990, when the development of a market economy had only just started and the so-called shock therapy was unleashed. Theoretically, the dollarisation of Poland could have provided an alternative to shock therapy or be its key component. In Poland dollarisation was practically pretty much advanced in the 1970s and 1980s. The only missing component of full dollarisation was the actual introduction of the US dollar as legal tender in our country alongside the zloty or instead of it. Such full dollarisation has been the case in Panama and Liberia for years. The first non-communist government in Poland after the Second World War knew better than and had enough imagination not to follow Panama's or Liberia's example. It would have been a solution much worse than the application of shock therapy with the zloty as the national currency leading the way. Moreover, Poland's full dollarisation – like a currency board – was not even seriously considered then.

Let us also note that a mere suggestion that Poland might go ahead with unilateral euroisation or else that such eventuality was considered by it could be unfavorably received abroad: first of all as a fiasco of our country's macroeconomic policy and symptom of the Polish monetary authorities' inability to run autonomous monetary policy and lack of skills to stay in control of public finances. To a certain extent the euroisation idea could be construed as a failure of the transformation policy. If so, that would probably be one of the poorest recommendations for our EU and eurozone bid.

Fortunately, the euroisation idea has probably caused no damage of that kind, as it has not been given the slightest support by Polish monetary authorities. The National Bank of Poland quickly and laconically distanced itself from the proposal of unilateral zloty replacement and the government did not have to do even that, as euroisation is by definition inconsistent with the government's plan of Poland's joining the eurozone which is contained in the earlier presented document *Public Finance and Economic Development Strategy Poland 2000-2010* accepted in June 1999 by the Council of Ministers.

That's why the concept of Poland's euroisation has not gained interest abroad. All the more that even in Poland it has been received from the beginning as an unorthodox, provocative, expert-type idea, slightly humorous, without political or institutional legitimacy.

A very important shortcoming of the euroisation project is the early abandonment of the zloty float in return for a fixed peg and also lack of precision in determining the rate at which the zloty should be locked to the euro, and then replaced by the European unit.

As demonstrated above, the floating regime is a fantastic monetary policy tool which adequately facilitates adjustment to external shocks and definitely helps avoid a currency crisis. An instrument like this can only be scrapped if the

benefits from its phasing out outweigh the loss. Certainly, unilateral euroisation is no such benefit.

Moreover, the authors of the idea of Poland's euroisation would like to see the zloty rate quickly fixed. Both in the romantically naive and in the conciliatory version an about 1.5 yearly period of preparation is mentioned. Put differently, for about 1.5 year the zloty/euro rate would be allowed to evolve, after which the euro would be substituted for the zloty.

The quick fixing of the zloty rate would not be good for Poland, because it would have to take place under a real and nominal overvaluation of the Polish currency. Even if this overvaluation, second highest among the 42 emerging states²², was taken into account and the decision was taken to devalue the rate of the zloty on D-day (substitution of the euro for the zloty), then the zloty would still be converted at a rate overvalued compared to the one it would have in some years from now, say in 2005-2007, when the Polish currency is most likely included in the ERM2 system.

The substitution of the euro for the zloty at an overvalued rate is in my opinion particularly dangerous, as it would put under threat Poland's economic interest. As shown by the experience of the 1990 currency union between West and East Germany the overvalued rate of the disappearing currency (the Ostmark in that case) to the takeover currency (Westmark in that case) may lead to a prolonged recession in the former currency's country.

Let us be even-handed and point out that the early locking of the zloty rate to the euro is not a shortcoming of the euroisation idea alone. The same criticism can be made of the idea of introducing the currency board system and also Poland's premature embarking on the traditional path to the eurozone, i.e. through meeting the Maastricht convergence criteria and allowing the zloty to join the ERM2. This issue is discussed in some more detail a little later.

Another shortcoming of the euroisation project is that it completely fails to mention the direct costs of substituting the euro for the zloty. These would be an expense of USD 12-13 billion for the purchase of the cash from the European Central Bank and forfeiture of a budget income of USD 1 billion in increased domestic currency supply.

There is also a question mark over the concept's credibility due to its political packaging. The authors wrote: "*Euroisation should thus be attractive to those in power. This is a one-time only opportunity. Should future governments be allowed to benefit from it?*"

I think that Poland's EU accession and Euroland accession after that should – just like the NATO accession efforts crowned by the 1999 success – be treated as an issue of general state-level concern, rather than some party-political or this or other government's business. Just as it was in the case of Poland's NATO bid, Poland's strategic interest calls for close cooperation between the government and the opposition concerning the modalities and date of Poland's joining the EU and the eurozone, irrespective of the parties which make up the government and opposition of the day. And any undermining of this principle, by politicians or experts alike is simply bad for Poland.

²² See JP Morgan quarterly reports entitled "J.P. Morgan Real Effective Exchange Rate Indices", MORGAN GUARANTY TRUST COMPANY, New York

The authors of the unilateral euroisation concept in its romantically naive version (of March 1999) assumed that the substitution of the euro for the zloty could take place as early as 2001. When I am writing these words, it is less than 5 months left to the end of 2001 and the odds in favour of the euro becoming legal tender in Poland by then are very short indeed.

In the conciliatory version (of February 2001) the authors of Poland's unilateral euroisation mention 2003 as the date of launching the euro to Poland. This date is as unrealistic as the previous one and, for that matter, any other date of Poland's unilateral euroisation. The concept simply stands no chance of being implemented.

The currency board system and Poland's unilateral euroisation being non-starters, the only remaining way of our country's joining the eurozone is the traditional way, i.e. first EU membership, then two year long ERM2 membership, meeting the Treaty of Maastricht convergence criteria and, ultimately, joining EMU.

3. Fast or Slow Lane to the Eurozone?

While I think Poland's strategic interest implies its joining Euroland and the concomitant substitution of the euro for the zloty, I am nevertheless of the opinion that the best policy for the country is the latest possible rather than earliest possible joining the eurozone. The difference between the "later" and the "earlier" participation in the zone comes to 2-3 years. The detailed calculation is as follows. No matter if Poland joins the EU in 2004, 2005, 2006 or even later (2005 or 2006 being the most likely dates), the inclusion of the zloty in ERM2 and, thus, locking its rate to the euro may occur on the date of EU accession or later. The former is tantamount to the "earlier" eurozone accession variant, while the latter – to the "later" one.

If Poland thus became an EU member on 1 January 2005 (which is the most likely date) and decided to quickly go ahead with joining the eurozone, then the zloty would be included in the ERM2 already on 1 January 2005 and after two obligatory years (as required by the Treaty of Maastricht), i.e. on 1 January 2007, it would be replaced by the euro and Poland would become part of Euroland.

If Poland, on the other hand, decided to join the eurozone later, the zloty would be included in the ERM2 not on 1 January 2005, but 2 – 3 years later. As already mentioned, Finland did it with an almost two year delay. I think that Poland's delay could be slightly longer than that, say: two or even three years. This would mean that Poland's currency would be included in ERM2 on 1 January 2007 or even as late as 1 January 2008. If so, our country would become part of Euroland after two more years, namely on 1 January 2009 or 1 January 2010.

It might seem that 2-3 years sooner or later should not make that much of a difference with respect to a move as strategically advantageous for us as UE membership, or perhaps: the earlier the better. Not true!

The two or three more years are required for our country to better prepare for eurozone membership. After all, the twelve year long experience of Poland's transformation has proved that two (and if not two than certainly three) years

are enough for the economy to clearly change for the better in terms of its level of development, potential and structure.

There are three basic reasons which justify Poland's later rather than earlier Euroland accession. All three are of key importance to the success of Poland's economy over the coming years.

The first one is that, as we demonstrated above, a quick fixing of the zloty rate would not be good for Poland, if only because it would need to happen with the Polish currency overvalued both in real and nominal terms. This, in turn, would constitute a recessionary factor for many years to come.

The already mentioned Finland's experience of 1995-1996 connected with delaying that country's ERM participation and, by the same token, EMU participation is very important for Poland. Finland did not let the markka join the ERM on becoming an EU member on 1 January 1995, but only on 24 October 1996, because it did not want the markka fixed at a level overvalued for Finland. Finland's monetary authorities knew all too well that the markka's rate of the months directly preceding the country's EU accession had been considerably overvalued: its value clearly overestimated Finland's economic potential, reflecting instead the artificial demand for the Finnish markka caused by investors' enthusiasm about Finland's EU membership. Finland's monetary authorities realised all too well at the same time that the first two years of EU membership should see the markka's exchange rate go down. And so it happened. In the autumn of 1996 the exchange rate was much lower than in early 1995. I think that by taking the decision to go ahead with the markka joining the ERM on 24 October 1996 Finland's monetary authorities chose one of the best moments, if not the best moment, for carrying out the operation.

Secondly and as importantly, or even more importantly, the meeting of the Maastricht inflation criterion is practically unfeasible in Poland in the short run. Theoretically one could try to stifle inflation to the levels required by the Treaty, but the price would have to be paid in a dramatically reduced growth rate and an equally dramatic rise in unemployment. The medium-term inflation target adopted by the MPC – of 4% in 2003 (December-on-December) – whose achievement would not even constitute the meeting of the Maastricht inflation criterion, is considered unrealistic by some economists²³. They are right in saying that efforts to take inflation down to 4% by year end 2003 would clearly translate into a lower rate of economic growth and rising unemployment rate in Poland. Some of them²⁴ are also right in adding that Poland would pose much bigger problem to the European Union with an unemployment rate in excess of 20% than if it reduced its inflation rate more slowly than specified under the Maastricht Treaty requirements.

Thirdly, as demonstrated above when discussing the currency board system and the euroisation concept, the managed float is a superb macroeconomic policy tool not to be dumped before its time.

Most Polish experts in international finances and international currency seem to favour Poland's early joining the eurozone. Some of them, not too many though, would almost like to have a blitz on it like the proponents of the short-

²³ who include Karol Lutkowski, Witold Orłowski and Andrzej Wojtyna

²⁴ the view expressed among others in July 2001 by Marek Belka, head of economic advisors to the President of the Republic of Poland

cuts: introduction of a currency board or Poland's unilateral euroisation. The remaining members of this group advocate Poland's speedy Euroland accession along the traditional path, i.e. through ERM2.

But as demonstrated by many countries' political and economic experience, the majority is not always right. The odds are that this case is no different.

The author of this study is not the only economist in Poland who makes up a minority in favour of Poland's joining the eurozone at a later date. The most consistent seems to be a former Minister of Finance²⁵ who chooses the following words to warn against premature eurozone accession [A "horse treatment" (i.e. heroic, back-breaking treatment) of the country's financial system consisting in a speedy introduction in an unprepared economy of a currency as hard as the euro could have disastrous consequences. This kind of therapy is used mostly in places where monetary issues are so "muddled", that there is no hope for their putting in order by methods less shocking (and Poland has fortunately not been in such a situation in a long time)].

Some substantive and, to a point, moral support for Poland's joining the eurozone later rather than sooner is lent by the position of some EU member countries and two main candidate states to join the group. In addition to Finland's abstention, already presented in detail, let us recall that three EU member countries: the UK, Sweden and Denmark, although they meet the Maastricht Treaty convergence criteria perfectly well, still remain outside the eurozone of their own choice.

On the other hand, Hungary and the Czech Republic, leaders, alongside Estonia and Slovenia, among the former socialist countries in the EU membership race, whose determination to join the organisation as soon as possible has recently been reconfirmed²⁶. by the all-important decisions of June 2001 – consistently adhere to the position expressed some years ago, that as far as Euroland is concerned, they would not be in a hurry.

Let me conclude this part of the study ("*Slow or fast lane to the eurozone*") and of the whole study with two key and also very practical conclusions.

First, if Poland became an EU member on 1 January 2005, the zloty should not be included in ERM2 at the same time, but two or three years later, i.e. between 1 January 2007 and 1 January 2008. That would mean that Poland would be included in the eurozone and the zloty replaced by the euro between 1 January 2009 and 1 January 2010.

²⁵ See Karol Lutkowski *Od złotego do euro (Złoty to Euro)* PRAWO I GOSPODARKA, MAGAZYN FINANSOWY no 1 of 3 January 2000. See also his: Unifikacja walutowa Europy a przyszłość złotego (Europe's Currency Unification and the Future of the Zloty). "BANK I KREDYT" No 7-8 of 1999

²⁶ What is meant here is first of all the Hungarian government's decision on scrapping as of 15 June 2001 all currency controls existing until then over short-term capital transactions between Hungary and the outside world. Thanks to that move the forint has in principle become a fully convertible currency. The caveat "in principle" is required here, because the Hungarians still employ controls over the purchase of real estate by non-residents (real estate transactions between non-residents and residents are considered by the OECD, IMF and EU as an important component of the capital account). Nevertheless, as from 15 June 2001 Hungary, with Armenia, are those former socialist countries which employ the fewest foreign exchange controls. Secondly, I mean the preannouncements by the Hungarian and Czech Republic Governments, also of June 2001, that they are ready to accept the EU's request that restrictions on the purchase of real estate by non-residents should last no longer than seven years from those countries joining the EU (to remind, Poland demands a 18 year long derogation).

But if Poland joined the EU a year later, i.e. on 1 January 2006, the zloty ought to be replaced by the euro also a year later, i.e. between 1 January 2010 and 1 January 2011.

Secondly, although Poland's strategic interest implies both EU and eurozone membership, it is not good for us to focus on any speedy euro launching in Poland, no matter if it takes the forms proposed by experts or any other form, instead of striving for fast European Union membership. All the more that Poland's Euroland membership and substitution of the euro for the zloty is predicated on the latter.

Moreover, from the perspective of Poland's strategic interest our country's fast joining the European Union is not the only important thing. The way and character of European integration under this organisation matter too. To some extent Poland may influence both the way and character of EU integration. Precisely this year 2001 has witnessed big differences in the understanding by the EU's key two states of what the European Union should be like.

I agree with "RZECZPOSPOLITA"'s commentator who writes²⁷ that it is in Poland's interest to support the German concept of closer European integration rather than the French concept of a looser one which is sometimes called "Europe of the Nations". In the former case Poland would be embedded in a great Europe, in the latter it could always be plucked out.

²⁷ see J. Majcherek, op. cit...

The Gradual Process of the Adoption of the Euro in Poland

Konrad Szeląg¹

Introduction

At the Copenhagen Summit of the European Council (June 1993) it was decided that the EU accession of the Central and Eastern European countries (CEECs) would take place promptly upon their embracing of the membership obligations, by way of meeting the economic and political conditions. In accordance with the Copenhagen criteria the achievement of the EU membership requires:

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

A few months after the Copenhagen Summit, on 1 November 1993, the Treaty on European Union (the so-called Maastricht Treaty) took effect laying down more criteria to be met by EU Member States (and, indirectly, by candidate countries too). The criteria then pertained to the next stage of integration, i.e. participation in Economic and Monetary Union. The criteria, referred to as economic convergence criteria, cover price stability, long-term interest rates, exchange rate, budget deficit, public debt and, moreover, the independence of the central bank.

I. Stages of Euro Adoption by EU Member States

The idea of establishing economic and monetary union was first put forward in the late 1960s (at the 1969 Hague Summit). A detailed blueprint in this regard was presented in 1970 in the so-called Werner plan (or report). The **Werner plan** envisaged the setting up of economic and monetary union within a decade, i.e. by the end of 1980. The plan assumed that it would be effected **in three stages** (albeit without mapping out in detail any specific steps to be taken by

¹ The author wishes to thank Ms Renata Żak, Deputy Head of European Integration Division, International Department (National Bank of Poland) for her collaboration in drafting some parts of this paper.

the Member States at particular stages (except the first one: 1971-73)). Ultimately, the Werner plan misfired, due to many reasons such as world monetary and economic crises (the collapse of the Bretton Woods system and the first oil shock), lack of appropriate legal foundations (treaty provisions on economic and monetary union), lack of economic convergence among the EEC states, etc.

In the late 1980s and early 1990s the concept of monetary union and common currency was revisited. The so-called **Delors Committee Report** played an important role in defining the way of working towards EMU. The report proposed that the process of transition towards a single currency would be divided into **three stages**, without setting any specific starting dates for them. They were to be set later: the starting date for the first stage – at the EU Madrid summit in June 1989, while the dates for commencing the second and the third stage – at the Maastricht Summit of the European Council in December 1991, when the Treaty on European Union was adopted.

The first stage started on 1 July 1990 and ended on 31 December 1993. The creation of a **single market** in Europe was the most important objective at that stage. The market was to be based on the four freedoms (free movement of people, goods, services and capital within the EU). A particular emphasis was placed especially on the abolition of all the existing barriers to the movement of capital – both within the Community and in relations with third countries.

The second stage started on 1 January 1994 and ended on 31 December 1998. The meeting by the Member States of the EMU membership **economic convergence criteria**, establishing the European Monetary Institute as a prototype of the European Central Bank and securing the full **independence of the central banks**, including the harmonisation of their statutes with the Treaty and the Statute of the ECB and ESCB, were the most important tasks at that stage.

The third stage started on 1 January 1999. This is the final stage of EMU implementation, at which the **single European currency** was introduced to substitute for the national currencies. At the outset of the third stage the **European Central Bank (ECB)** and the **European System of Central Banks (ESCB)** commenced their operations and, consequently, the national central banks had to surrender their earlier autonomous monetary policy-making prerogatives to the ECB and its **single monetary policy**.

The above described general division of EMU transition into stages can be made more specific, by subdividing them into shorter periods. This is particularly true for the most advanced stages, i.e. the second and the third one, which can be segmented into three distinctive periods leading to the introduction of the euro in cash form:

- **preparatory period** (from 1 May 1998 to 31 December 1998) – establishing the composition of the euro-zone, irrevocably fixing the exchange rates and also the setting up of the ECB;
- **transitional period** (from 1 January 1999 to 31 December 2001) – the introduction of the euro in non-cash form and commencing operations by the ECB and ESCB;

• **final period** (from 1 January 2002 to 28 February 2002)² – period of dual circulation of EMU national currencies and the euro upon the completion of which the national currencies will cease to be legal tender and will be withdrawn from circulation, while euro notes and coins to substitute for them will remain the only legal tender³.

II. Stages of Poland's Accession to the Euro

The candidate countries, including Poland, are on their road to gradual EU integration, in accordance with the Community's enlargement strategy. This is confirmed by last year's EU document entitled "*Enlargement Strategy Paper*" published alongside with the "*Regular Report from the Commission on Poland's Progress Towards Accession*", in early November 2000. This document breaks down the integration of candidate countries into three stages:

- 1) pre-accession stage,
- 2) EU membership stage,
- 3). EMU participation stage (adoption of the euro).

Pre-accession stage

Poland's first major step on its road to the EU are the **accession negotiations** started in 1998 ("Economic and Monetary Union" is one of the 29 negotiation areas). A preliminary stage of the negotiations was the *screening* process of Polish law for its compatibility with the *acquis communautaire*. The *screening* process in the area "Economic and Monetary Union" took place in December 1998, while December 1999 saw a provisional closure of negotiations in this chapter.

The Polish *Position Paper* in the area "Economic and Monetary Union" pertains to the co-ordination of economic, fiscal, monetary and exchange rate policy and the ultimate stage of adopting the single currency. The position includes a declaration on Poland's readiness to implement the *acquis communautaire* in this area by 31 December 2002. **Poland** has not raised any issues, which require any negotiations to be conducted in the area, and **has not applied for the establishment of any transitional periods**. Moreover, a commitment has been made to taking whatever adjustment steps are required for future EMU membership in recognition that the meeting of the Maastricht convergence criteria is treated as a long-term economic policy objective. Also, the achievement of readiness to participate in ERM2 has been declared, to be followed by the adoption of the single currency.

² The final period was originally scheduled for six months (until 30 June 2002) with the parallel assumption that its completion could be brought forward by particular EU Member State legislation. Most euro-zone states decided to cut down the period to two months (28 February 2002), while some of them truncated it even more radically – France (until 17 February 2002), Ireland (until 9 February 2002), Holland (until 27 February 2002).

³ Germany will be a special case. Despite the D-mark retaining its legal tender status only until 31 December 2001, it will still be possible – in accordance with the declaration of professional associations of 22 October 1998 – to use D-mark denominated notes and coins until 28 February 2002 in retail to the extent specified in the above declaration. More on this in: K.Szeląg, M.Glibowska, S.Jakubiec, B.Pawelczyk, *Analysis on the Preparations of EU Member States and Candidate Countries for the Euro Changeover* (Polish version only), Materiały i Studia NBP, Paper no. 122, May 2001.

The *screening* process has shown that mainly legal adjustments, as required, are necessary. The harmonisation efforts must be accompanied, however, by other adjustment activities, e.g. institutional or macroeconomic ones.

Regarding legal adjustments, the European Commission stated in its last year's *"Regular Report – Poland 2000"* that by the end of the pre-accession period, at the latest, candidate states would have to implement the *acquis* in the area "Economic and Monetary Union" (especially the provisions of *Title VII of the Treaty – Economic and Monetary Policy*). The Commission found that Poland had already adopted a large part of the *acquis*, while the legal provisions remaining to be harmonised pertained to the independence of the central bank. In the Commission's opinion, notwithstanding the already high degree of Poland's central bank independence, it is necessary to amend the NBP Act, in particular the existing regulations on the participation of the government's representative in Monetary Policy Council sessions, on the NBP's financial management and the independent external audit of the NBP. In accordance with the Polish *Position Paper* the amendments shall be implemented by 31 December 2002, at the latest (a suitable draft-amending act was prepared by the NBP in August 2000).

Moreover, in accordance with the declarations made during the negotiations Poland has implemented the legal regulations resulting from its third country status *vis a vis* the single currency by way of passing on 25 May 2001 the **Act on the consequences arising from the introduction of the euro in some EU Member States**. The adoption of the act was also clearly awaited by the Polish banking sector⁴. The act, just like certain EU regulations (1103/97, 974/98, 2866/98) clarifies a number of key euro-related issues (continuity of contracts, irrevocably fixed euro exchange rates, dual circulation period, etc.)⁵. Its basic objectives are: to secure a smooth introduction of the euro, withdrawal of EMU national currencies and also safety and soundness of business transactions. The provisions of the act will enter into force on **1 January 2002**.

The European Commission insisted that the achievement of the *acquis* compatibility in the EMU area depended on the completion of the process of capital movement liberalisation⁶.

As far as macroeconomic adjustments are concerned, in accordance with the Polish *Position Paper* "Economic and Monetary Union" and also with *the National Programme of the Acquis Adoption* (NPAA 2000 and NPAA 2001), the meeting of the Maastricht convergence criteria is the Polish economic policy priority. Moreover, in its *Position Paper* Poland also declared its readiness to **co-ordinate its economic policy** with EU policy, as exemplified by the document *Joint Assessment of Medium-Term Economic Priorities*, which was accepted jointly by the Government of the Republic of Poland and the European

⁴ See: K.Szeląg, R.Żak, S.Jakubiec, M.Glibowska, *Analysis on the Impact of Euro Introduction on the Polish Banking System* (Polish version only), Materiały i Studia NBP, Paper no. 107, August 2000. See also: K.Szeląg, R.Żak, M.Glibowska, B.Pawelczyk, *Analysis on the Impact of Euro Introduction on the Polish Banking System (second edition)* (Polish version only), Materiały i Studia NBP, Paper no. 128, July 2001.

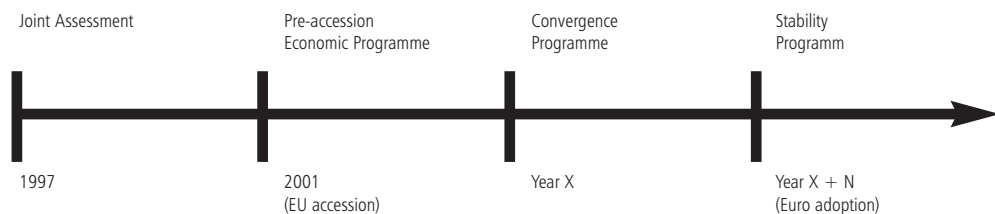
⁵ More on this in: A.Jakubiak, K.Jakubiszyn, K.Szeląg, *The Act on the Consequences Arising from the Introduction of the Euro* (Polish version only), Prawo Bankowe no. 7-8/2001.

⁶ More on this in: R.Żak, K.Szeląg, *Free Movement of Capital in the Process of Setting up Economic and Monetary Union. The EU and Poland's Perspective* (Polish version only), Prawo Bankowe no. 1/2001 (special supplement "On the Road to the EU").

Commission in February 2000. Moreover, in accordance with the most recent European Commission initiative, from 2001 onwards candidate countries will prepare and present the so-called *Pre-accession Economic Programme*. The purpose of this initiative is for the candidate countries to prepare for EU membership and also develop their institutional and analytical capacity necessary for EMU participation. All candidate countries were to present their programmes by May 2001 (group A) or October 2001 (group B, which includes Poland)⁷. At the moment Poland has prepared the draft version of its medium-term programme (until 2004), which comprised sections on the country's macroeconomic situation, public finances and structural reforms.

The next issue – **monetary policy** – requires, in principle, no adjustment at the first (pre-accession) stage, as the NBP will be covered by single monetary policy only at the third stage (EMU accession). Yet the NPAA 2000 and NPAA 2001 include a priority stating that the NBP – being aware of the above – considers it desirable to adjust, even in the pre-accession period, its monetary policy tools to Eurosystem standards. This pertains first and foremost to the

Scheme 1 Economic programmes for candidate countries leading to the adoption of the euro



Source: European Commission, Directorate General Economic and Financial Affairs.

introduction of standing deposit facilities, adjusting types and maturities of open market operations, introduction of intra-day credit, adjusting the level of the minimum reserve ratio, manner of reserve accounting and duration, remunerating obligatory reserve accounts kept by the banks and expanding the list of collateral types used in non-Treasury security operations with banks⁸. The speed at which particular instruments get changed should nevertheless pertain to specific status of the domestic market, and not just to the need for achieving technical convergence.

Both monetary and economic policies at the pre-accession stage should lead to Poland's gradual fulfilment of the convergence criteria. And it should be noted, with respect to **price stability**, that the central bank's consistent adherence to its anti-inflationary monetary policy made it possible to suppress the late 1980s and early 1990s' hyperinflation down to one-digit inflation in the late 1990s. The National Bank of Poland is the guarantor of continued anti-inflationary policy, as it is committed by the Constitution of the Republic of Poland to protect the value of the Polish currency and its basic objective is,

⁷ The division into groups A i B is an alphabetical one. Group A includes Bulgaria, Cyprus, Czech Republic, Estonia, Hungary and Latvia, while group B – Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, and Turkey.

⁸ More on this in: O.Szczepańska, *Adjustment of the NBP's Monetary Policy Instruments as a Condition of the Participation in the ESCB* (Polish version only), Bank i Kredyt no. 7-8/2000.

under the NBP Act, to maintain price stability. The most important issue in the coming years will be to reduce inflation from medium to low level (current data and forecasts are the following: 10.1% in 2000, 6.0% in 2001 and 5.1% in 2002 – yearly average). And in accordance with the “*Medium-Term Monetary Policy Strategy for 1999-2003*” prepared by the Monetary Policy Council inflation level in 2003 is to slide below 4%.

The exchange rate convergence criterion requires, among others, that the zloty join the Exchange Rate Mechanism 2. The “*Medium-Term Monetary Policy Strategy for 1999-2003*” has recognised that this will be preceded by a period of freely floating to allow to bring the market rate of the zloty closer to its equilibrium exchange rate, prior to its fixing within ERM2. The floating exchange rate of the zloty was introduced on 12 April 2000 following a period of (1) gradual expansion of the permitted fluctuation band margins (2) gradual reduction of crawling (monthly) devaluation. As regards the basket of currencies, it was initially a dollar dominated one. After the euro was introduced, it changed to a euro/dollar double currency basket. But upon introduction of the floating exchange rate regime the basket of currencies was abolished.

As regards the fiscal criteria, recent years’ public debt and budget deficit have been relatively low. Currently, the **public debt** to GDP ratio is slightly above 40% (44.4% in 1999 and 40.9% in 2000) and does not exceed the limit set forth in the Constitution of the Republic of Poland or the early warning threshold, as laid down in the Public Finances Act (50%), which is actually more stringent than the community requirements. The **budget deficit** level in recent years was slightly above 3% of GDP (3.2% in 1999 and 3,1% in 2000). But it should be noted that it was mainly because of financing of the 1999 Polish reforms. In accordance with the assumptions of the governmental “*Public Finance and Economic Development Strategy, Poland 2000-2010*” public finances ought to be balanced in 2003. The current budgetary situation may, however, considerably affect the achievement of that aim within the adopted schedule.

EU Membership Stage

In bidding for EU accession Poland is aware that in accordance with the Copenhagen criteria such accession also means EMU membership. On EU accession new Member States (including Poland) will gain the status of a **Member State with a derogation** within the meaning of Article 122 of the Treaty, i.e. they will participate in EMU’s third stage to a limited extent implying, among others, the use of their national currencies. Also, it should clearly be noted that the situation of new Member States will differ considerably from the situation of the current Member States subject to the opt-out clause, i.e. the UK and Denmark, which have benefited from special arrangements created for them in separate Treaty protocols according to which even after having fulfilled the convergence criteria they do not automatically have to accede to EMU, but may decide on their own if and when they elect to accede to the monetary union (*opt-out clause*). New Member States, Poland included, will have no such options, as they will not be subject to an “absolute opt-out”,

but merely to a “temporary” exemption, until the convergence criteria have been met in a sustainable way.

On the day of achieving membership **the NBP will join the ESCB** and the President of the NBP will become member of the ECB’s General Council. Due to its limited scope of powers the ECB’s General Council participation does not allow one to exert much influence on ECB activities and, in particular, on its monetary policy. But this is understandable. As a Member State with a derogation Poland will not yet be fully involved in the implementation of the ECB’s single monetary policy. On the other hand, it will be obliged to consult any draft regulation relating to monetary policy instruments and principles of financial system operation. By this stage the NBP’s monetary policy instruments should be largely adjusted to the ECB’s instruments.

ESCB participation will also entail the NBP’s obligation to subscribe its due share to the **ECB’s capital** (standing at EUR 5 billion) and also the ECB’s **foreign reserves** (EUR 50 billion) – according to a predetermined subscription key. In view of the current criteria and assuming that the ECB’s capital is not increased, the expected NBP share in the ECB’s capital would at that stage (prior to the adoption of the euro) stand at about EUR 13.2 million, i.e. 5% of its total contribution, as this is the amount of contribution non-EMU countries are obliged to make. But as regards the NBP’s share in the ECB’s reserves it is still very difficult to guesstimate the proportion of its contribution at the stage of the run-up to the adoption of the euro as in accordance with the Statute of the ESCB and ECB foreign reserve contributions can be rescheduled for later dates (art. 30).

At the membership stage Poland will be committed not merely to co-ordinate its monetary policy under the ESCB but also to **co-ordinate its economic policy** in accordance with the provisions of the Treaty. In virtue of being an EU Member State Poland will be obliged to adhere to the so-called *broad guidelines of economic policies*. The implementation of the economic guidelines will each time (every year) be subject to a multilateral review and, subsequently, evaluation.

Moreover, in accordance with the already mentioned EU initiative Poland will be obliged to prepare and present the so-called *Convergence Programme* envisaged for new Member States which, as mentioned, will initially be covered by a single currency derogation. The objective will be to prepare such states for the achievement of the medium-term objective, namely the **meeting of the convergence criteria in a sustainable way**, including a balanced budget or possibly a budget surplus. It is estimated that at the EU membership stage Poland will have already made much headway in this regard.

As has already been mentioned, the “*Medium-Term Monetary Policy Strategy for 1999-2003*” stipulates as its medium-term objective to cut **inflation** below 4% by 2003. But this is not the ultimate target, as according to the ECB’s official position the concept of “price stability” is within the 0 to 2% range.

At the EU membership stage **the zloty will join the ERM2 system**. In the document “*Public Finance and Economic Development Strategy, Poland 2000-2010*” the government assumes that the economic policy to be pursued is to secure Poland’s readiness to participate in ERM2 by 2004. After the introduction of the floating exchange rate regime at the pre-accession stage and after its market rate converges as near as possible to its equilibrium rate, during the EU membership stage the zloty rate will be fixed against the euro. In ERM2 the

zloty will be anchored to the euro at fixed parity and its exchange rate will be allowed to fluctuate around such parity (central rate) within certain margins. The ERM2 mechanism permits the maximum fluctuation band of +/- 15% around central parity, although +/- 2.25% is the desirable band⁹. The zloty will also be permitted to use a narrower band than +/- 15%, which in practice is considered a floating rate approximator. The zloty is scheduled to be included in ERM2 for at least two years, as the European Commission expects. But it is worth noting that the Commission may also take into account a potential stability of the zloty rate prior to its ERM2 inclusion.

Having become a Member State Poland will have to closely observe **public finance discipline**. Its observance is subject to the Council surveillance (supported by the European Commission) along with recommendations and set of sanctions whose applicability is specified in the *Stability and Growth Pact* (excessive debt procedure), should a Member State's government deficit exceed 3% of GDP.

EMU Participation Stage (Adoption of the Euro)

The joining of the euro-zone and adoption of the single currency is predicated upon the meeting of the economic convergence criteria. It should be emphasised at this juncture that the criteria have given rise to certain controversies. The criticism of the criteria pertains both to their economic rationality, prescribed levels and the very principle of adopting a uniform set of conditions for all countries irrespective of their level of development and structural differences ("*one size fits all*" principle)¹⁰. In connection with the planned EU Eastern enlargement, various, often mutually inconsistent ideas have been put forward to modify the convergence criteria. Candidate countries propose their softening to some extent (particularly with respect to the inflation level), but the Member States would rather have them more stringent (by introducing additional criteria for new candidates).

As has already been mentioned, new Member States will embrace the single currency promptly upon the meeting of the Maastricht convergence criteria, provided the Council has recognised it as sustainable fulfilment (in accordance with Article 121 of the Treaty). Put differently, Poland will by then need to show **a high degree of sustainable convergence**, which means that its basic macroeconomic indicators will need to correspond to their Treaty reference values. Some reference values are unchangeable, like the acceptable budget deficit and public debt level, which are 3% and 60% of GDP respectively. Other reference values, clearly formulated as they also are, can nevertheless change, like the level of inflation and long-term interest rates, which in 1997-1999 stood at, respectively, 2.7%, 2.2% and 2.1% (inflation) and 8.0%, 6.6% and 6.8% (long-term interest rates). Once Poland has joined EMU, the above indicators will become the determinants of Poland's economy long-term growth.

An opinion of the European Commission should be quoted, in the above context, which was presented in the "*Composite Paper*" (predecessor of the

⁹ This was confirmed by the previous composition of ERM 2, which included Denmark and, until the end of 2000, Greece; the Greek drachma had the fluctuation band of +/- 15%, but the Danish krone +/- 2.25%.

¹⁰ More on this in: D. Rosati, *Poland's Membership in EMU. When and Why?* (Polish version only), Wyższa Szkoła Zarządzania i Administracji w Zamościu, June 2001; P. de Grauwe, *The Economics of Monetary Integration*, Oxford University Press, Oxford 1994.

earlier-quoted “*Enlargement Strategy Paper*”) published together with the “*Regular Report – Poland 1999*”. The European Commission finds in this document that a high degree of sustainable convergence could not be judged before the economies of the candidate countries have demonstrated their capacity to successfully operate within the single market and liberalised capital movements, as was the case with existing Member States.

Having met the convergence criteria and adopted the single euro currency, Poland (and other new Member States) will prepare and present to the European Commission the so-called *Stability Programme*, whose purpose will be to prepare new euro-zone states to **maintaining their high degree of sustainable convergence** and, in particular, to maintaining sound public finances – which mean a balanced budget or a budget surplus.

The fulfilment by Poland of the convergence criteria will be tantamount to its joining the euro-zone and, by the same token, to **the substitution of the zloty by the euro**. It should be noted that this is going to happen at least a few years after the completion of the transitional and final periods in the EU. A number of steps will need to be taken in terms of preparations for the euro changeover, among others the following types of steps¹¹:

legislative – domestic regulations, with the force of law, ought to be issued pertaining to the introduction and functioning of the euro in Poland; such regulations, just like in some EMU countries (e.g. Germany) – would have much broader scope and would complement general EU euro-regulations (directly binding for Poland already at that stage);

institutional – a special body should be appointed (a euro-committee) at the interministerial level (the central bank should play the leading role). The task of this body would be to manage, supervise and monitor the euro changeover process in Poland;

planning – a detailed scenario should be developed for Poland’s euro changeover (the so-called national euro changeover plan) which would contain among others a time framework for the whole process, division of tasks, powers and responsibilities among particular institutions, cost forecasts, etc. The above plan should also envisage certain alternative and/or contingency solutions;

information – a broad public information campaign ought to be conducted to make Polish society and businesses aware of the essentials of the whole process (monetary union), to promote the single currency and to contribute to the euro’s acceptance as the new Polish currency, to make people familiar with the designs of euro notes and coins and to provide whatever practical information is required on the money changeover, etc.;

logistic – manufacturing of an appropriate number of euro notes and coins, frontloading and sub-frontloading of appropriate sectors and society with euro notes and coins, withdrawal and recycling of notes and coins denominated in zloty.

In Poland, the substitution of the euro for the zloty should be effected gradually and mirror the analogous stages which are currently implemented in the EMU countries, namely:¹²

¹¹ See: K.Szeląg, *The Euro – Introduction of Notes and Coins into Circulation* (Polish version only), Biblioteka Menedżera i Bankowca, Warsaw 2001.

¹² Ibidem.

preparatory period – i.e. the period of the euro functioning in non-cash form, in which the exchange rate of the zloty would be irrevocably fixed against the euro, while prices and other monetary amounts would be displayed both in zlotys and euros. At this stage, euro notes and coins would start to be manufactured in Poland. By now businesses and society at large ought to be supplied with euro-cash. Also, cashpoints (ATM machines) should be adjusted.

dual circulation period – i.e. the period of gradual withdrawal of the zloty from circulation and substituting the euro for it. At this stage both the zloty and the euro would be legal tender in Poland. The NBP's decision as to the duration of the dual euro/zloty circulation period should take into account the experience of other countries whose potential is similar to the Polish one (e.g. Spain). It seems that this period should not exceed 2 months.

final period – i.e. the period in which the zloty will cease to be legal tender and the euro will be sole legal tender in Poland. Notes and coins denominated in zloty will still be exchanged by commercial banks (but not longer than for a few months) and, subsequently, only by the NBP (coins for at least a few years and notes for a dozen or so years, although it is possible for coins and notes to be exchanged on an indefinite time basis).

At the stage of Poland's joining the euro-zone the NBP, already part of the ESCB, will become part and parcel of the so-called of ESCB hard core, or the **Eurosystem**. By the same token it will be covered by **single monetary policy**, which will make it necessary for the NBP to hand over the hitherto existing national monetary policy decision-making powers to the ECB and to comply with the guidelines of its supranational monetary policy. But joining the euro-zone will enable the NBP to participate in ECB decisions and, by the same token, influence its policy, because the President of the NBP – earlier merely member of the General Council with limited powers – will now become member of the Governing Council which takes decisions on the euro-zone's single monetary policy (each of its members has one vote, so he has the same influence as other members).

A consequence of joining the Eurosystem for the NBP will be the requirement to **fully contribute** the part of the **ECB's capital** ascribed to it according to the adopted subscription key (being EUR 5 billion) and also the **ECB's foreign reserve assets** (EUR 50 billion) which at the previous stage (EU membership) were paid up only in part. In view of the above mentioned criteria and supposing that the ECB's capital is not increased, the forecasted total NBP share in the ECB's capital would stand at about EUR 264 million and the total NBP share in the ECB's reserve assets – about EUR 2.6 billion.

III. The Concept of Unilateral Adoption of the Euro

The idea of unilateral adoption of the euro (so-called *euroisation*) has recently gained some currency in certain candidate countries. When discussing its feasibility some past analogies provide a good starting point.

The **Werner plan** of 1970, which envisaged the setting up of EMU by the end of 1980, was based on “**monetarist**” assumptions according to which a single currency should first be introduced to consequently enforce economic

convergence in particular states. Learning from that experience the **Maastricht Treaty** of 1992 adopted the reverse idea based on “**economic**” assumptions according to which economic convergence in particular states should be achieved first, only then to be followed by the introduction of a single currency. The Werner plan failed, but the Treaty of Maastricht proved a success. The proposal of adopting the euro by way of euroisation goes back to the idea included in the Werner Plan.

The **Delors Committee Report** of 1989 (whose conclusions were subsequently used in the Treaty) stressed that EMU would consist of two integral parts, i.e. **economic union** (consisting in achieving a sustainable convergence of the economic situation in particular states) and **monetary union** (consisting in the adoption of a single currency in those states). The proposal to adopt the euro by way of euroisation points merely to one aspect of EMU.

Treaty Provisions on the Adoption of the Euro

Provisions of the Treaty of Maastricht do not directly refer to a hypothetical unilateral introduction of the euro by any non-EMU member. When the Treaty was drafted the Member States did not even recognise such a possibility. The Treaty, however, clearly describes the procedure of adopting the euro by EU Member States along with their transition to EMU’s third stage.

According to the provisions of the Treaty the basis for assessing Member States’ readiness to join EMU is the sustainable fulfilment of the economic convergence criteria which are specified in detail in appropriate protocols annexed to the Treaty. The Treaty enumerates criteria on price stability, long-term interest rates, exchange rate, budget deficit and public debt (Article 121). Member States are moreover obliged to ensure the conformance of their domestic legislation with community legislation, including the statutes of their central banks, with the Treaty and the ESCB’s Statute (Articles 108 and 109)

If a given state does not meet the Treaty criteria, which enable full EMU participation, then it gains the status of a Member State with a derogation within the meaning of the Treaty (Article 122), i.e. it participates in the single market, but cannot adopt the single currency.

Despite that fact that Treaty provisions do not pertain directly to euroisation, it has to be stressed that the procedure for adopting a single currency indicated in the Treaty is the only legally acceptable solution. Any other proposal (presupposing prior euro adoption) will be treated as an infringement of Community law.

Position of the European Commission

Upon the motion of the ECOFIN Council the European Commission prepared for the informal session of the ECOFIN Council of November 2000 a special document entitled “*Exchange Rate Strategies for EU Candidate Countries*”. This report contains the following criticisms of euroisation:

- **incompatibility with Community law.** A unilateral introduction of the euro before EU accession and without prior meeting the Treaty provisions would be an outright violation of the law in force and, moreover, would undermine the principle of equal treatment of the current and future EU members.

- **incompatibility with the rules of the negotiation process.** The basic principle for the negotiation process is the assumption that candidate countries must accept and subsequently implement existing EU law – the *acquis communautaire*. Euroisation infringes the law, so it is not negotiable.

- **incompatibility with the economic rationale of the EU accession process.** First and foremost, the candidate countries should carry out economic reforms and financial market liberalisation in order to be able to operate under the single market. Next, these countries should be capable of achieving and maintaining a high degree of economic convergence and stability. Only then they can adopt the single currency.

- **no possibility of a unilateral adoption of the currency of another currency area.** The credibility of the euro depends on the economic fundamentals of the EMU Member States fully participating in the decision-making process pertaining to monetary policy and economic policy co-ordination. The adoption of the euro by countries, which do not belong to the system, could undermine its credibility.

Consequently, this position was sustained by the Commission in its document “*Macroeconomic and Financial Stability*”, prepared for an informal meeting of the ECOFIN Council and candidate countries which took place in April 2001 in Malmö. The document contains the following statement: “**unilateral adoption of a single currency by means of euroisation is not an option**”.

Position of the European Central Bank

The ECB’s position on the process of preparing accession countries for the EU and EMU was presented in the document “*The Eurosystem and the Accession Process*” of October 1999. More than a year later (in December 2000) an “*Addendum to the Position Paper on the Eurosystem and the Accession Process*” was appended to that document, which presented among others the ECB’s official position on euroisation. This document states among others as follows:

- The ECB acknowledges that the possibility for an accession country to adopt – outside the Treaty framework – the euro as its own *de jure* currency (euroisation) has been evoked as an alternative path to the single currency.

- In the ECB’s view euroisation is a complex subject, deserving thorough study and possibly requiring further consideration at a later stage. It is a kind of monetary arrangement for which limited experience exists, as there is no important precedent, even outside the European sphere. All of this makes a cautious attitude warranted.

- The ECB holds the opinion that accession countries would face specific costs and run several risks if they were to euroise. Given its Treaty mandate and responsibilities, the ECB is not in a position to enter into agreements to support euroising countries. Moreover, without any possibility of refinancing themselves with the issuing authority, they would not be in the position to extend lending of last resort to their own credit institutions.

- Finally, from a more general institutional perspective, euroisation would not be a commendable procedure for a candidate country to adopt the euro. Euroisation by an accession country would invalidate the underlying economic

reasoning of EMU, which foresees the eventual adoption of the euro as the endpoint of a convergence process within a multilateral framework.

Position of the ECOFIN Council and the European Council

Based on the above mentioned Commission and ECB documents, in November 2000 the ECOFIN Council prepared the document “*Report by the ECOFIN Council to the European Council in Nice on the Exchange Rate Aspects of Enlargement*”. The report was officially approved at the Nice Summit of the European Council (7-9 December 2000) – it is annexed to the *Presidency Conclusions*.

The report includes a clear statement that the unilateral adoption of a single currency by any candidate country by way of euroisation might constitute the undermining of the Treaty’s underlying economic tenets, for according to it the euro shall be adopted at the final stage of the integration process in the framework of the single market and under a multilevel nominal economic convergence process. All candidate countries will have to go through successive stages of economic and monetary integration, one stage at a time. **Unilateral euroisation would not be a way to circumvent the stages foreseen by the Treaty for the adoption of the euro.**

Summary and Conclusions

Prior to any considerations upon potential benefits and costs stemming from unilaterally exercising by Poland adoption of the euro, one should answer two main questions now – first, whether euroisation is feasible; and, secondly if it is politically acceptable (see scheme 2). The answer to the first question is positive – it can be done both in terms of technicalities and logistics. For the second question, however, the answer remains negative. At the present moment the concept of euroisation is not politically acceptable. And I have much doubt whether Polish political elite would be persuaded to accept it, too.

The proposal to unilaterally adopt the euro is politically unacceptable because it is incompatible with Community law and also undermines the rationale of the integration process resulting from the provisions of the Treaty. Despite the Treaty having no provisions relating to euroisation, any procedure for adopting the euro not provided for in the Treaty is incompatible with it. Thus the only way leading to the adoption of the euro by candidate countries is a gradual (stage by stage) process, to which euroisation is not regarded as an alternative.

The euroisation concept creates unequal conditions for the treatment of the current and future EMU members. Some countries would first need to achieve and be able to sustain the prescribed degree of convergence and economic stability prior to the adoption of the euro, while others would adopt it with no such kind of economic adjustments. On the other hand, the issue of equal treatment is particularly strongly emphasised by candidate countries themselves – not to introduce any new EMU eligibility criteria.

If the Copenhagen criteria, which require among others that candidate countries adhere to the objectives of political, economic and monetary union,

are not met, the EU membership is out of the question. And the euroisation concept undermines the assumptions and objectives of both economic and monetary union.

The proposal to adopt the euro by way of euroisation is inconsistent with the negotiation declarations of the Government of the Republic of Poland, which have been agreed and approved by the European Union. The Polish *Position Paper* relating to the “Economic and Monetary Union” area (of 29 January 1999) contains the declaration that Poland intends to fulfil the economic Copenhagen criteria in view of its long-term objective of meeting the Maastricht convergence criteria. It has also been declared that readiness will be achieved to participate in the ERM2 system and then to adopt the single currency.

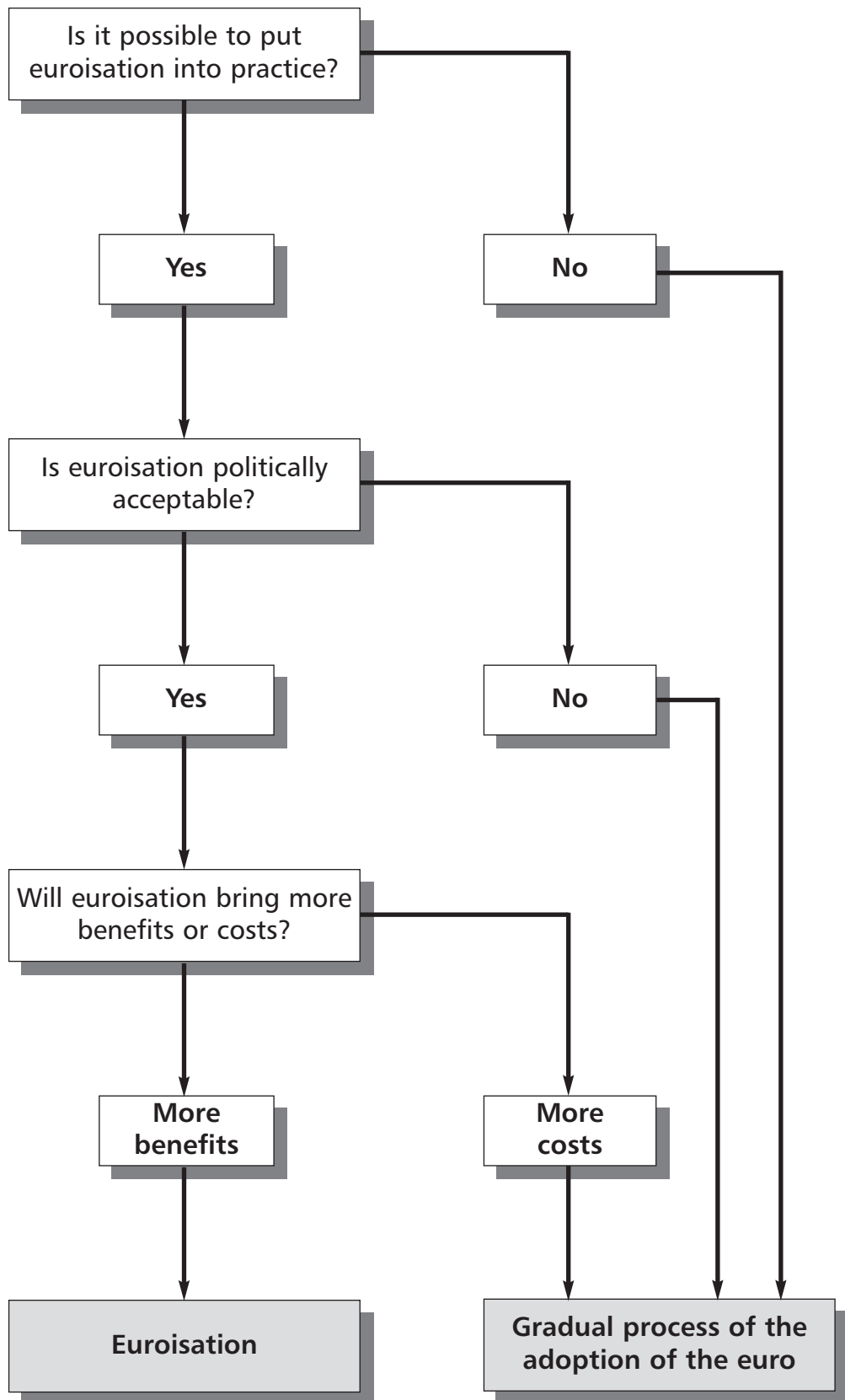
The euroisation proposal is politically unacceptable at the EU level. All EU institutions (European Commission, European Central Bank, ECOFIN Council, European Council), as well as Member States (especially Germany) oppose the euroisation concept and in no way contemplate such option. They are against euroisation as a unilateral process conducted at an arbitrary time, because they understand the adopting of the single currency by candidate countries as a multilateral process to be conducted only upon the fulfilment of certain conditions. This process, being a complex and lengthy one, must be spread over time and segmented into successive stages (phases), each more advanced than the previous one:

- **pre-accession stage** – at this stage candidate countries ought to focus first of all on the meeting of the Copenhagen membership criteria and, in particular, on implementing transformation and economic reforms, liberalisation, adjusting domestic to Community law, institutional strengthening, etc.

- **EU membership stage** – new Member States will gain the status of the so-called Member State with a derogation within the meaning of Article 122 of the Treaty, namely they will participate in EMU’s third stage to a limited extent characterised among others by the use of domestic currency. Despite the optionality of ERM2 participation, new Member States are expected to accede to the exchange rate mechanism under which their currencies’ exchange rates will be fixed against the euro.

- **euro adoption stage** – new Member States will adopt the single currency promptly upon the meeting of the Maastricht convergence criteria, on the condition, however, that the Council (having heard the opinion of the Commission, ECB and the European Parliament) has recognised the fulfilment as sustainable one (under Article 121 of the Treaty). Those states will by then have to display the so-called high degree of sustainable convergence, which means that their basic macroeconomic parameters will have to correspond to the Treaty reference values and be maintained in a sustainable fashion. New Member States should by that stage achieve both the real and nominal economic convergence.

Scheme 2 Algorithm of possibilities and benefits: euroisation vs. gradual process of the adoption of the euro



Source: own elaboration.

Is Unilateral Euroization in Poland an appropriate way to achieving monetary integration with EMU

*Cezary Wójcik*¹

1. Introduction

The severity of recent exchange rate crises, their unpredictability and their tendency to easily spread from one country to another have given a new impetus to the long-standing and always controversial debate on exchange rate policies and regimes. In the course of this debate, there has been growing support for the view that in the increasingly integrated world economy, intermediate exchange rate regimes are intrinsically prone to disruptive speculative attacks and exchange rate crises regardless of the development of economic fundamentals. This being so, the only feasible exchange rate regimes are thought to be the so-called corner solutions, i.e. either free floats or rigidly fixed regimes (currency boards, unilateral adoption of a foreign currency, monetary union)².

Although this stance has remained rather controversial³, it has managed to prompt some countries to reconsider their exchange rate strategies. In Argentina, which operates under a currency board, the government publicly pondered, in early 1999, the idea to officially dollarize the economy. Later on, however, this option was dropped again, at least for the time being. In March 2000, Ecuador officially decided to adopt the U.S. dollar as country's legal tender, after having faced capital flight, a banking crisis and severe recession.

However, the debate has reverberated beyond the confines of Latin America, also reaching a number of transition economies in Central and East

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² See e.g. Mundell (1999) or Dornbusch and Giavazzi (1999). Eichengreen (1994) as well as Obstfeld and Rogoff (1995) are two important precursors proclaiming the demise of intermediate exchange rate regimes.

³ For an opposite view see e.g. Frankel (1999), Mussa et al. (IMF, 2000).

Europe. This fact, along with the successful introduction of the common European currency, has also contributed to the emergence of several voices, in particular from academia, encouraging these countries to unilaterally adopt the euro⁴. At first glance, this idea may be tempting for one or the other accession country of Central and Eastern Europe, in particular if it is (mis)perceived as a feasible and available shortcut to monetary integration with the euro area.

The European Union, in turn, has made it very clear that unilateral euroization does not constitute a viable option for the monetary integration of candidate countries. The firm position of the European Union is that the way to the eventual adoption of the euro for the candidate countries is a sequential one. Integration will proceed in three steps, namely first accession to the European Union, subsequently participation in the exchange rate mechanism of the EU (ERM II) and finally entry into the euro area. Adoption of the euro will be possible after the fulfillment of the Maastricht convergence criteria and the convergence examination procedure laid down in the EC Treaty.

Moreover, on initiative of the European Commission, the ECOFIN Council of the European Union explicitly stated in November 2000 that “any unilateral adoption of the single currency by means of ‘euroization’ would run counter to the underlying economic reasoning of EMU in the [EC] Treaty, which calls for the eventual adoption of the euro as the end of a structured convergence process within a multilateral framework. Therefore, unilateral ‘euroization’ would not be a way to circumvent the stages the Treaty provides for for the adoption of the euro.” The Eurosystem (the ECB and the national central banks participating in the euro area) fully shares this position.

The proponents of unilateral euroization⁵ have argued that successful market-oriented reforms and the perspective of EU accession make candidate countries increasingly attractive to foreign investors. This induces substantial capital inflows, which exerts upward pressure on the nominal exchange rate. The resulting strong appreciation of the real exchange rate impairs the competitive position of domestic companies, and consequently leads to a high current account deficit. This makes the economies of the candidate countries extremely susceptible to potential reversals of capital flows and thus to currency crises. The advocates of euroization argue that neither monetary nor fiscal policies can keep these developments in check. By raising interest rates, monetary policy may cause a further appreciation of the nominal exchange rate and an even more pronounced deterioration of the current account, whereas a reduction of interest rates may fuel inflation. Fiscal policy may also prove to be ineffective, since a tightening of the budgetary position designed to eliminate or contain external instabilities may make a country even more attractive to foreign investors, thus further inducing capital flows. Fiscal expansion may, in turn, stimulate aggregate domestic demand, making the current account even worse, and increase the probability of capital outflows, with all their negative consequences. Finally, imposing capital controls to contain financial inflows may

⁴ In the Central and Eastern European EU accession countries, most of the discussion has taken place in Poland and Estonia. Moreover, the issue has been discussed for the Western Balkans, and the Deutsche mark was introduced in Kosovo as a de facto legal tender in the fall of 1999 and in Montenegro as a parallel legal tender in December 1999.

⁵ See e.g. Rostowski (1999).

be impossible, since the free movement of capital is one of the main prerequisites to enter the EU.

The second main argument of the advocates of unilateral euroization is that the accession countries would experience high growth rates driven by very dynamic productivity advances. Under such circumstances, the accession countries would find it very hard to reduce inflation to low levels, as required by the EC Treaty for the (eventual) entry into the euro area. Reining in inflation would require sizeable nominal appreciation, which would, in the presence of some nominal rigidities, harm the competitive position of these countries. Unilateral euroization, maintain its proponents, would help to avoid this supposed trap.

While the issue of unilateral euroization has induced quite a bit of intellectual ferment in the past one-and-a-half years, its economic implications have not been fully explored yet. In particular, there is a need to draw a realistic picture about the economic implications a unilateral euroization move would have and to confront the widely contended advantages with the often underrated risks, drawbacks and dangers of such a policy move. The analysis will therefore complement those lines of argumentation which are mainly based on institutional and EC Treaty-related considerations.

In this paper, the primary focus is on Poland, and this is so for a number of reasons. First, Poland is the biggest accession country, and thus its policy moves may well have tangible repercussions in and for the whole of Central and Eastern Europe. Second, Poland has experienced a high current account deficit in recent years. Even if there appears to be no immediate risk of currency turmoil⁶, this external imbalance constitutes a major challenge for policymakers. Third, the discussion about unilateral euroization has been more vigorous in this country than in most other accession countries⁷. At the same time, like elsewhere in Central and Eastern European accession countries, the proponents of unilateral euroization have not garnered substantial official or public support for their propositions. In fact, Poland moved from a wide-band crawling peg exchange rate regime to a float in April 2000, while continuing to rely on the direct inflation targeting strategy that it had followed since the beginning of 1999.

It should not go unnoted that the analysis of the economic effects of a hypothetical unilateral euroization move poses considerable conceptual problems. Costs and benefits cannot easily be offset against each other, as they are partly of a macroeconomic and partly of a microeconomic nature and as, moreover, both short-term and longer-term factors will be at work. Moreover, they are interrelated and can only partly be quantified with some degree of certainty or plausibility. The aim of this study is modest in the sense that it tries to gauge orders of magnitudes of particular effects, while neglecting, in most instances, the interplay between these individual effects. While the study is careful about “adding up” different types of effects, it nevertheless aims at

⁶ While current account deficits in the present order cannot be sustained in the longer run, the standard indicators typically employed to assess short-term vulnerability such as (M2/official reserve ratio, official reserve/short-term foreign debt ratio) are quite solid. Poland's sovereign ratings have been stable, and Standard & Poor's even raised its sovereign rating for long-term foreign obligations of Poland from BBB to BBB+ in mid-May 2000.

⁷ See Rostowski and Bratkowski (1999 and 2000); Orłowski, Rybinski (1999); Rosati (1999); Wójcik (1999); Wójcik (2000); Lutkowski (2000); Kowalewski (2000); Gomulka (2000).

arriving at an overall assessment of how suitable the unilateral euroization proposals are.

The paper consists of four sections and is structured as follows. Section 2 concentrates on the potential benefits unilateral euroization might have for Poland, while section 3 reviews the drawbacks of such a policy move. In doing so, outright costs and potential risks will be discussed. The final part contains a short summary and the main conclusions of the study.

Before exploring these issues further, the technical feasibility of a hypothetical unilateral euroization move has to be touched upon briefly. The main technical precondition for euroization is that official international reserves cover the monetary base (currency in circulation including vault cash and commercial bank reserves at the central bank), which would have to be exchanged for euro⁸. In the case of Poland, foreign exchange reserves are quite substantial and, from a purely technical point of view, unilateral euroization would thus seem possible⁹. At the end of 1999 gross official reserves amounted to USD 25.5 billion, twice the size of the monetary base (M0)¹⁰. Even after such a hypothetical unilateral euroization move, the Polish authorities would still retain half of their foreign exchange reserves¹¹.

2. The Potential Benefits

The main benefits that are claimed to be associated with unilateral euroization are lower interest rates, higher monetary stability in terms of low inflation and a reduction of transaction costs and of exchange rate volatility, which could positively influence foreign trade, and finally a potentially catalytic role of euroization on structural reforms. This section goes through these issues in turn.

2.1 *Reduction of Interest Rates*

According to the proponents of euroization, the most “tangible” advantage of unilateral euroization would be a rapid and substantial reduction of Polish interest rates. The argument goes as follows: The risk premium in domestic interest rates is usually assumed to consist of two components, the currency risk and the default risk. Euroization would effectively reduce currency risk

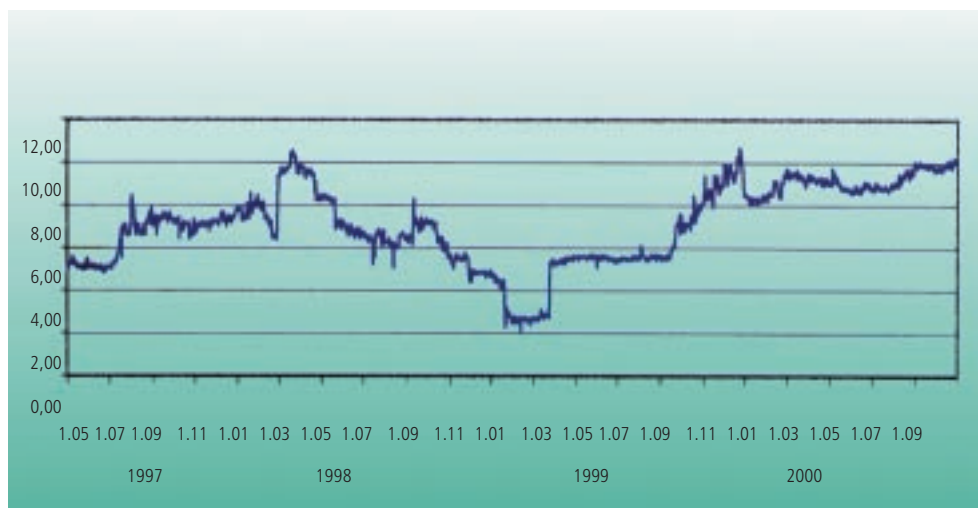
⁸ Obviously, this could only be done after euro banknotes and coins are officially introduced in the euro area.

⁹ However, it is not obvious whether having official reserves covering only M0 and not wider monetary aggregates will be enough. In such a case a central bank which announces to the public that it intends to switch to the euro could run into a severe credibility gap. Because it has to declare that all deposits in domestic currency are converted with the market exchange rate. If the public realizes that official reserves will not suffice to cover all deposits a banking and a currency crisis may develop- exactly the opposite of the intention the advocates of unilateral euroisation have.

¹⁰ Compared to broader monetary aggregates, official foreign exchange reserves slightly exceeded narrow money (M1) and amounted to 40% of broad money (M2). All these ratios did not change tangibly during the first nine months of the year 2000.

¹¹ It is worth noting that the presented ratios have been calculated at an actual exchange rate at the end of the year. Obviously, authorities could chose another conversion rate, which could change the final results. However, the room for maneuver would be limited by the need to preserve equilibrium in the economy.

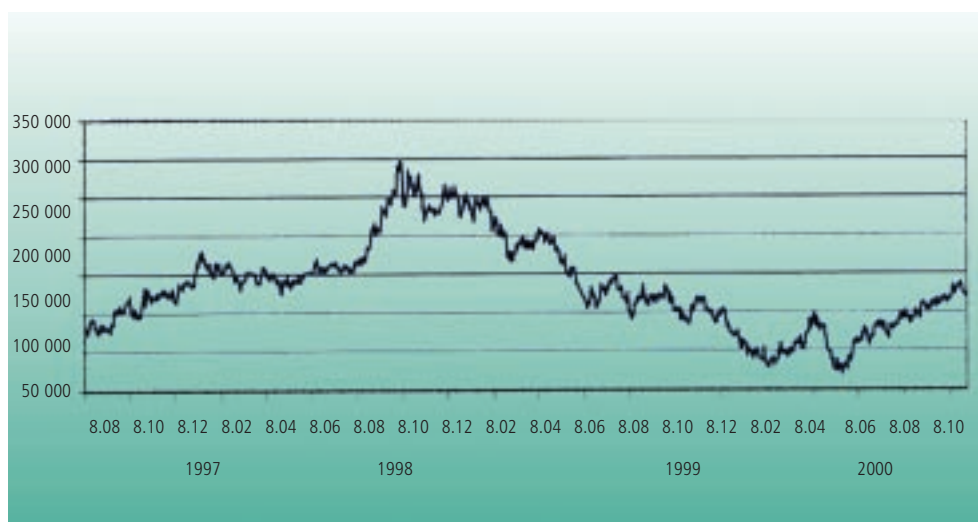
Figure 1. Risk Premia of Polish Domestic Interest Rates from May 1997 to October 2000.



Note: The risk premia have been calculated on the basis of three-month money market interest rates less the expected depreciation of the currency less the three-month foreign interest rate. The preannounced depreciation rate under the crawling peg was taken as a proxy for expected depreciation, while for the floating-regime period which began in April 2000, the crawl rate in effect before floatation was retained unchanged. The foreign interest rate is a weighted average of anchor currency interest rates; for the period of floating, the weights of the foreign currencies were retained unchanged from the preceding period. Clearly, this measure is only a rough quantitative approximation, in particular with regard to capturing expectations, both under the wide-band crawling peg and even more so under the float thereafter (for an in-depth discussion of this issue see Darvas and Szapáry, 1999).

Source: National Bank of Poland, own calculations.

Figure 2. Spread of Poland's Dollar-Denominated Eurobonds over the Comparable U.S. Treasury



Source: Bloomberg.

almost to zero, and hence, *ceteris paribus*, the overall risk premium in domestic interest rates could substantially diminish. The risk premium would be reduced only to the extent that it is not related to nondevaluation default risk, which would clearly continue to exist. Based on this line of reasoning, one may quantify the potential fall in interest rates and its potential influence on both economic growth and fiscal position.

Between 1997 and 2000, the risk premium in Polish domestic interest rates has varied substantially and on average stood at 7.1%, as figure 1 shows.

A rough approximation of the default risk may be presented as the spread of Poland's dollar-denominated eurobond over the comparable U.S. Treasury bond¹². The development of the default risk is depicted in figure 2, which shows that on average it stood at about 1.4%.

Bond from August 1997 to October 2000.

At first glance, the average values for the overall interest rate premium and for the default risk in the period May 1997 to October 2000 seem to imply that, *ceteris paribus*, the fall in the domestic interest rates resulting from euroization could amount to approximately 5 to 6 percentage points. This would represent a considerable reduction in nominal and also in real terms.

However, several qualifications have to be added to these very simple and mechanistic calculations based on *ceteris paribus* assumptions.

First, the calculated impact refers to short-term interest rates. The impact on long-term interest rates does not have to be the same. A characteristic feature of transition economies, or more broadly, countries undergoing a credible disinflation process, is the inversed slope of the yield curves, which is opposite to the circumstances normally prevailing in euro area countries. Thus, in as much as euroization would produce a reduction of inflation (see below), the yield curve would not only shift downward, but it would also change its slope. This implies that, in a scenario of falling inflation, the reduction of medium- and long-term interest rates would be lower than that of short-term interest rates.

Second, default risk and exchange rate risk are interrelated in several ways. For instance, if the external debt of a given country and/or banking system liabilities are to a large extent denominated in a foreign currency (which is not the case in Poland)¹³, a substantial devaluation could impose a heavy financial burden on the fiscal deficit. In such a case relinquishing the possibility of devaluation could help to reduce sovereign risk. On the other hand, a devaluation may also prove beneficial for the domestic economy, spurring growth and improving the fiscal position, which could also lead to the reduction of sovereign risk¹⁴.

Effects on GDP. By how much would the calculated fall in the interest rates spur Polish GDP? One way to approach this issue in a preliminary manner is to look at calculations of interest rates elasticities of investments and the possible effect of interest rates changes on GDP. Such calculations¹⁵ suggest that a reduction of interest rates by 5 to 6 percentage points could increase Polish GDP by about 1.8% to 2.2%. It should be noted, however, that these results are based on a static model, so that the presented impact on GDP is of a one-time character. To estimate long-run effects, a dynamic approach would yield more suitable results. Moreover, euroization would presumably change the overall

¹² This represents the default risk on Polish foreign currency-denominated securities, which is taken as a proxy here for the risk of default on local currency-denominated debt.

¹³ As of the end of 1999, the total external debt of the Polish banking system amounted to only 7.9 % of total banking liabilities, and the share of foreign currency deposits of the nonfinancial sector in total banking deposits to about 7.2% of total banking liabilities. At the same time Poland' total external debt amounted to about 41% of the GDP, within which short-term external debt stood at 7% of GDP.

¹⁴ See Berg and Borensztein (2000).

¹⁵ See Fidrmuc and Fidrmuc (1999), and Backé and Fidrmuc (2000).

operational framework in the economy, and to a large extent affect economic agents' behavior, which could considerably influence the ultimate outcome.

Fiscal position. Lower interest rates would also have a positive impact on Poland's fiscal position, as the costs of servicing the domestic public debt would decrease. At the end of June 2000, the domestic debt of the state budget amounted to about PLN 143.7 billion, which represented about 20% of Polish GDP in 1999. If the average interest rate on the domestic public debt fell by 5 to 6 percentage points, fiscal expenditures would decrease by around 1.0% to 1.2% of GDP. These potential expenditure reductions would, however, not be achieved immediately. A large part of Polish domestic debt consists of fixed rate bonds, of which many are long and medium term. Besides, a portion of the domestic public debt is not fully market determined¹⁶.

Would interest rates be poised to fall? The question remains whether unilateral euroization would really represent a quasi "automatic" mechanism leading to a significant lowering of interest rates.

One way to approach this question is to consider again that the calculated fall in interest rates was done under a strict *ceteris paribus* assumption. However, unilateral euroization may well invalidate this strong assumption, as it would bring about a complete regime change in the functioning of the economy. Unilateral euroization would "fix" short-term interest rates, which would be determined by the monetary policymaking process in the euro area. Second, it would fix the price of foreign exchange, i.e. the exchange rate. This would mean that if a disequilibrium between aggregate demand and aggregate supply built up in the economy, the entire adjustment would have to proceed through wages and prices, which often display downward nominal rigidities. At the same time, it should be underlined that unilateral adoption of the euro would not fix long-term interest rates, which would still be determined mainly by real factors, such as the propensity to save and the marginal productivity of investments as well as various risks, default risk probably being the most prominent of them. The crucial point here is that unilateral euroization, by raising questions about the smooth functioning of the adjustment mechanism when the effects of exchange rate misalignments and/or asymmetric real shocks persist, may add to the default risk, and thus to nominal and real interest rates. If external imbalances build up over time and if the adjustment mechanism indeed does not work properly, the risk premium will increase over time, since no country can accumulate foreign liabilities indefinitely without consequences in the form of higher borrowing costs. In other words, the fall in the exchange rate risk which clearly results from unilateral euroization may be partly or even fully offset (in an extreme case even overcompensated) by a rise in the default risk at subsequent stages.

The issue of the interlinkages between default risk, exchange rate misalignment and external imbalances will be taken up again in section 3.2.2 and later in the study. Now, it is important to add that beyond the concrete developments in the real economy that may contribute to the increase in default risks, there are several factors which would cause a "structural" upward bias in the interest rates on credits advanced in a unilaterally euroized Polish economy. The most important reasons why this would be the case are the following.

¹⁶ At the end of 1999, the share of "nonmarketable" debt was 11 percent of overall domestic public debt.

First, a denomination of prices and wages in euro would still mean that international investors may perceive an economy as a separate and therefore probably less credible area. This is likely to make investors much more sensitive to the financial position of the country, especially if the fiscal position is not fully consolidated and transparent, as is the case in Poland. This would also add to the premium in interest rates.

Second, the lack of an effective lender of last resort (see below) may also add to financial fragility and, relatedly, to higher interest rates.

Third, it is not possible to completely rule out the devaluation risk, as a euroized country could, at least theoretically, always reintroduce its currency. A non-zero probability of such an exit option would probably be discounted by investors and reflected in domestic interest rates.

Moreover, the assessment of country risk would also be affected by the degree of political and general public support the unilateral euroization move would be able to garner. Poland has achieved a considerable level of macroeconomic stability and has been the most successful transition economy in Central and Eastern Europe in terms of GDP growth performance. Therefore, it is unlikely that society would be willing to accept any kind of extraordinary policy experiments involving the the risk of derailing the dynamic catching-up process. The lack of a broad consensus both within society and the political elite could undermine the credibility of a hypothetical regime change towards a unilaterally euroized economy. This would add considerable uncertainty, which would have to manifest itself in a higher risk premium.

2.2 Reduction of Transaction Cost and Elimination of Exchange Rate Risk Volatility

A second supposed advantage of unilateral euroization relates to the claim that the elimination of exchange rate fluctuations as well as the reduction of transaction costs could provide a more favorable environment for international trade and thus for growth.

Reducing foreign exchange transaction costs. Foreign exchange transaction costs generally consist of two components: financial costs (bid-ask spread, commission fees, and other administrative costs) and “in-house” costs – resources tied up in accounting and treasury departments to deal with foreign exchange management, payment delays and the like. The potential effects of unilateral euroization on financial foreign exchange transaction costs may be

approximately measured as: $T = p \frac{Y}{GDP}$, where T denotes transaction costs

(as percentages of GDP), p denotes the average charges for EUR/PLN conversion (expressed in percentages), and Y denotes the volume of EUR/ PLN transactions¹⁷.

The volume of EUR/PLN transactions may be estimated as a sum of Poland’s gross flows of the current, capital and financial accounts of the balance

¹⁷ See Anthony and Hallet, 2000.

of payments. As data on the currency structure of capital and financial transactions are lacking, the volume of EUR/PLN transactions is estimated here as the sum of Polish foreign trade of good and services (exports and imports) with the euro area countries. If the average charges for EUR/PLN conversion are assumed to be 0.35% (which is the upper level of the European Commission's estimations of average conversion costs of current account transactions within the EU¹⁸), the foreign exchange conversion costs (their financial component) could amount to about 0.1 percentage point of Polish GDP annually¹⁹.

Eliminating exchange rate volatility. It is much more difficult to calculate the impact of a reduction of exchange rate volatility on international trade than to calculate the reduction of foreign exchange transaction costs. Most of the literature states that the potential effect, if any, is not large, and that the reduction of currency fluctuations may have only small trade gains. However, in a recent paper, Rose (2000) finds that trade between common-currency countries is almost three times higher than between countries with different currencies. Furthermore, he finds that a common currency is not equivalent, as regards trade, to reducing exchange rate volatility to zero, which has a considerably smaller effect on trade creation than a common currency does. Lowering the standard deviation of the exchange rate around its mean by 1 would increase trade by close to 1.8%.

One may take Rose's (2000) findings as the upper limit of the potential trade gains. In doing so, unilateral euroization should be treated as a reduction of exchange rate volatility to zero, not, however, as corresponding to Rose's common currency variant, for the simple reason that unilateral euroization does not constitute a currency union and, moreover, that there is not even a common market between the euro area and Poland in the preaccession period.

In the period January 1997 to October 2000, the standard deviation of the PLN/EUR exchange rate around its mean amounted to 5.9. Based on Rose's findings, a reduction of exchange rate volatility to zero would imply an increase in Poland's trade with the euro area countries by about 10.5%. At the end of 1999, the GDP share of Polish trade (exports and imports) with euro area countries stood at about 27%. Thus, a calculated 10.5% increase in trade would raise the Polish openness ratio by about 2.7 percentage points.

How would this increase in openness add to the growth of Polish GDP? There is no consensus in the literature about the relationship between openness and growth. Some authors emphasize that this relationship is strongly nonlinear (e.g. Baldwin and Sbergami, 1999), which makes potential estimates very difficult and uncertain. On the other hand, Frankel and Romer (1999) find that growth is positively related to openness (as measured by the share of imports and exports in GDP), and that this relationship is relatively strong: They estimate that increasing the ratio of foreign trade to GDP by 1 percentage point raises income per capita by between 0.5% and 2%. Frankel and Romer's results, which again can be taken as an upper level, would indicate that – all else being equal – the calculated 2.7 percentage point increase in the openness ratio

¹⁸Taking the upper bound of average costs appears justified, since the Polish banking system and financial institutions are relatively less efficient than their counterparts in the EU, and may therefore charge higher conversion costs.

¹⁹The figure estimated by the EU Commission (1990) for the average European country is 0.4%.

resulting from the elimination of exchange rate volatility could lead to a one-time rise of Polish GDP by between 1.4% and 5.4%.

Once more, it has to be added that the size of this effect is highly uncertain, as both the link between exchange rate stability and openness and the relationship between openness and growth are doubtful and contested in the literature. Therefore, this very uncertain effect should not enter any serious cost-benefit balance of unilateral euroization.

2.3 Low Inflation

In a certain sense, unilateral euroization can conceptually be treated as an anti-inflationary strategy akin to a fixed exchange rate. By adopting the euro, the domestic component of money supply would be eliminated by definition. At the same time, money supply growth would decelerate substantially, even though the rate of monetary expansion may typically remain above the euro area average due to capital inflows associated with the catching-up process. This slowdown in the growth rate of money supply would result in lower inflation. If inflation is inertial (as will be argued below), real money supply will be dampened further, with (temporary) negative effects on domestic demand and thus on growth and employment. On the other hand, greater monetary stability could improve business conditions in the domestic economy, making a country more attractive to foreign investors and leading to higher foreign investment.

2.4 Euroization as a Catalyst for Macroeconomic Discipline and Reform?

Finally, unilateral euroization, by imposing a straitjacket on the economy, could also play a catalytic role for fiscal prudence and structural reforms in transition countries.

However, these are only *potential* effects, and cannot be taken for granted. As Lebaron and McCulloch (2000) recapitulate Panama's experience, "...[the] dollar can indeed provide a stable monetary base for a country, giving it a low inflation anchor, but it cannot assure model policies to promote growth and development." As for the fiscal policy, Tornell and Valesco (1995) argue that dollarization (in general terms, adopting foreign currency as a legal tender) differs from flexible exchange rates not in preventing lax fiscal behavior but in shifting its costs to the future. As a result an impatient government would, in fact, be more disciplined with flexible exchange rate, which imposes immediate costs on lax fiscal behavior (in the form of higher interest rate), than in a dollarized regime, which postpones the time of reckoning. Moreover, Chang (2000) shows that Panama's annual fiscal deficit averaged 3.8% of GDP between 1970 and 1998, considerably higher than the deficits of Chile, Costa Rica and Peru, where exchange rates were more flexible. Edward's (2001) empirical investigation shows that dollarized countries have had a similar fiscal record compared to non-dollarized economies.

Furthermore, it seems that in the case of Poland (but also of other advanced applicant countries), the prospective integration into the EU already represents a very important stimulus for institutional and structural reforms as well as for macroeconomic prudence. It is highly indeterminate whether changes in the exchange rate regime and, in particular, euroization would add to the already existing powerful incentives for reform and sound macroeconomic policies.

3. The Drawbacks

3.1 *The Costs*

This section reviews the outright costs of euroization. These include forgoing seigniorage revenues and relinquishing the lender-of-last-resort function. Moreover, stabilization costs arise if unilateral euroization occurs in an inflationary environment.

3.1.1 *The Loss of Seigniorage*

One of the most apparent quantifiable cost that goes along with the demise of a currency is the loss of seigniorage revenues accruing from the issue of legal tender. While euro area countries which have introduced the euro according to the procedures foreseen in the EC Treaty participate in sharing seigniorage revenues that derive from issuing the euro, this clearly does not apply in the hypothetical case of unilateral euroization.

There are many definitions of seigniorage. In this study, seigniorage revenues are calculated as the annual change in the monetary base, which simply represents the actual wealth transfer the private sector has to make in order to receive base money from the central bank²⁰.

Analytically, one can distinguish between stock and flow seigniorage revenues. The stock cost of seigniorage relates to the cost that is associated with the withdrawal of domestic currency from circulation and its exchange for the newly adopted foreign currency, utilizing official foreign exchange reserves. Thereby, the authorities would return to the public the seigniorage that had accrued over time.

The loss of stock seigniorage resulting from a hypothetical euroization of the Polish economy may be represented as a share of the monetary base in GDP. Between 1995 and 1999 the monetary base (M0) amounted to about 8.5% of GDP in Poland; at the end of 1999 it stood at 8.8% of GDP. This figure may be assumed as an approximation of the cost of the loss of stock seigniorage.

The flow cost, in turn, would be associated with the forfeiture of future seigniorage revenues. The loss of flow seigniorage can be calculated as the annual change in the monetary base as a share of GDP. In the period between

²⁰ Berg and Borensztein (2000) show that the increase in the volume of the monetary base is equivalent to the resulting central bank profits in present-discounted-value terms.

1995 and 1999 the average change of M0 as a proportion of GDP in Poland amounted to 1.5%.

For the sake of precision, some observations should be added on the calculation of the figures presented. First, the formula used to calculate flow seigniorage revenues presupposes that there are no remunerated legal reserve requirements. If commercial banks, however, do earn interest on their obligatory reserves held at the central bank, the magnitude of seigniorage revenues is reduced by the amount of the remuneration. Up to now obligatory reserves in Poland have not been remunerated. However, this may change in the future, resulting in a change in seigniorage revenues²¹.

Second, the figures for seigniorage revenues presented above do not take into account the costs of money production. However, the costs of money production in Poland are very low, so they make no perceptible difference²².

Third, the calculations do not take into account the operational costs of the central bank, as supposed unilateral euroization would not reduce them substantially. Moreover, as Poland will become a member of the ESCB when acceding to the European Union and, later on, after meeting the Maastricht convergence criteria and passing the convergence examination laid out in the EC Treaty, a member of the euro area and the Eurosystem, the country could not simply liquidate its central bank, as some dollarized countries have in which the central bank is virtually nonexistent.

To estimate this value for future periods, one has to make various assumptions about the time path of the monetary base, nominal GDP and the ratio of the monetary base to GDP²³. This, however, would go beyond the scope of this study. An alternative approach is to take past magnitudes as an indication of future flow seigniorage revenues, at least for a time horizon of the next few years.

First, past revenues have been fairly stable in relation to GDP. Second, these figures are broadly in line with what empirical work on other countries would suggest. Several studies estimate seigniorage revenues in advanced economies to range between 0.5% and 1.5% of GDP. Cukrowski and Janecki (1998) find that, for the period 1993 to 1997, total gains from money creation in Poland amounted to around 2% of GDP annually.

Furthermore, it should be mentioned that the NBP has been steadily conducting open market operations since the mid-1990s, with the aim to limit the excess liquidity of the domestic banking system, stemming from the strong capital inflows and the simultaneous central bank interventions on the foreign exchange market to avoid an appreciation of the domestic currency. The costs of these operations have considerably reduced the amount of seigniorage revenues in the past years. The costs of open market operations have varied over time; in the period 1997 to 1999, they ranged roughly between 0.5% and almost 1% of GDP (see Wójcik, 2000).

²¹ Up until September 1999, the following reserve ratios were in force: zloty demand deposits 20%, zloty time deposits 11%, all foreign currency deposits 5%. However, in September 1999 reserve ratios were lowered to 5% for all eligible deposits. The funds released due to the lowering of reserve requirements were used by 67 banks to purchase 6-, 7-, 8-, 9- and 10-year bonds issued by the NBP.

²² In 1997 (most recent data available), these costs constituted less than 2% of total expenditure of the National Bank of Poland, and about 0.001% of the flow seigniorage accrued in that year.

²³ See Anthony and Hallet (2000).

The NBP has largely succeeded by now in eliminating the excess liquidity and, under the current floating exchange rate regime, there is much less scope for endogenous money creation through the foreign exchange market²⁴. Thus there will be less need to conduct sterilization operations in the future. This is important for gauging future seigniorage revenues. While falling inflation will presumably have a dampening effect on flow seigniorage revenues in the medium run, the phasing out of sterilization operations will, *ceteris paribus*, exert an upward effect on these revenues. In an overall perspective, this may produce fairly steady flow seigniorage revenues over the upcoming years.

3.1.2 The Lender of Last Resort

In a unilaterally euroized country, the monetary authorities cannot act as a lender of last resort, i.e. banks cannot ask the central bank for any rescue loans to avoid a crisis in the banking system. Such an arrangement can severely limit the room for maneuver for dealing with banking sector crises. This tends to be particularly problematic if the banking system, or some of its segments, are not yet fully strong and sound.

Poland is one of the few transition countries which has not experienced a banking system crisis during the transformation process. The country has made substantial headway in reforming its banking system, and a number of weaknesses in the sector have been removed or mitigated over the past ten years. However, although a lot has been achieved, the Polish banking system is still not fully developed and exhibits several inefficiencies. More concretely, the level of financial intermediation in Poland is still relatively low. Regulation of the sector is advanced, but enforcement is not yet fully ensured despite considerable progress. Bank privatization has proceeded far, but the sale of the last two remaining fully state-owned banks, Poland's largest retail banks, PKO BP and BGZ Bank, which are burdened by large amounts of nonperforming loans, is still at an early stage.

Some propositions are usually made on how to deal with not having a lender of last resort.

First, this problem could be resolved by having the domestic banking system owned by foreign institutions. Foreign subsidiaries would generally be indifferent to whether euro transactions are made abroad or in the domestic economy, since their budget constraints would not be related to foreign exchange considerations, but to their overall balances²⁵. Hence, the foreign headquarters of international banks could provide funds to finance local operations if there is any shortage of resources.

Although the share of foreign ownership is significant in the Polish banking system (see table 2), the integration of the Polish banking sector with its Western counterparts is not yet complete, in particular because in a number of important cases foreign investors still do not possess majority shares in the

²⁴ The zloty was floated in April 2000, and there have been no central bank interventions on the foreign exchange market since. Indeed, the NBP had not intervened on the foreign exchange market in the two years before the flotation either while operating a wide-band crawling peg regime.

²⁵ This is essentially the case in Panama, one of the few long-standing instances of dollarized economies (see Moreno-Villalaz, 1999).

banks and thus do not exert full control. It is therefore far from obvious that, at present, a foreign institution could effectively replace the central bank in exercising the lender-of-last-resort function. The IMF (2000b) finds that minority shareholders are viewed as less likely to make capital injection during periods of financial stress. Moreover, it also shows that a potential injection of additional capital is conditional upon the commitment of foreign banks to reinforce their medium-term position in a respective country; foreign banks will likely examine whether or not to inject capital on a case-by-case basis, trading off future value against costs.

A second possibility, as put forward by Rostowski and Bratkowski (2000), could be the use of the remaining international reserves to create a special fund to be tapped if individual banks experience serious liquidity problems or during a systemic crisis.

As presented above, the foreign exchange reserves of the NBP are quite high in terms of balance of payments considerations, but at the same time, they are limited when one compares the amount of foreign exchange reserves that would remain at the disposal of the monetary authorities in the case of a hypothetical unilateral euroization, to deposits in the Polish banking system. These remaining foreign exchange reserves would cover 56% of sight deposits (M1) and only about 20% of all deposits (M2) in the Polish banking system. Whether this would be sufficient to cope with a crisis depends on the nature and the scope of such turbulences. Of course, the reserve fund could be supplemented by opening euro-denominated credit lines at foreign private commercial banks. While this may of course enhance the system's efficiency and credibility, it would be at a cost, a cost which should be also taken into account when drawing an overall cost-benefit balance of a hypothetical unilateral euroization²⁶.

A third option would be to introduce high liquidity requirements with a view to reducing the banks' vulnerability to adverse changes in liquidity and profitability, thereby reducing the need for lender-of-last-resort mechanisms. This option, too, comes at a cost. The costs of financial intermediation would rise and thus have negative effects on investment and growth. While it is next to impossible to quantify these costs, they must not be neglected in an inclusive analysis.

In general terms, enhancing the effectiveness of the banking sector, improving its supervision and bringing regulation in line with international standards is of crucial importance. However, measures to this end should constitute a fundamental part of any policy package irrespective of the choice of exchange rate regime.

²⁶ How much could such an option to borrow cost Poland? At the end of 2000, Poland's M2 amounted to USD 62.943 billion. Since foreign exchange reserves that would remain at the disposal of monetary authorities in the case of euroization would amount to about USD 16.338 billion, the banking system's net liquid liabilities would amount to USD 62.943 billion (M2)-USD 16.338 billion = USD 44.604 billion- the amount that might be needed in the pessimistic scenario (withdrawal of all banking deposits) when the lender of last resort disappears. At 0.3% (the interest rate which Argentina paid for setting up private lines of credit) a year, a line of credit large enough to cover that amount would cost approximately USD 140 million a year. Moreover, there is also a question if the foreign banks involved will be reliable enough to deliver on their contractual obligations in a time of crisis instead of defaulting. Both, issues should be also taken into account when drawing an overall cost-benefit balance of a hypothetical unilateral euroization.

3.1.3 The Cost of Initial Monetary Stabilization

As argued above, unilateral euroization may have a dampening effect on inflation. While this would, in principle, be a welcome development, the associated (temporary) costs in terms of output and employment should not be overlooked.

In an economy which has experienced persistent inflation, inflation expectations are higher and more deeply entrenched than in countries with a low-inflation record. The presence of formal or informal indexation mechanisms, which are pervasive in the Polish economy, provides solid evidence of the existence of strong and presumably cemented inflation expectations. In fact, inflation in Poland has exhibited a great deal of inertia over the past years. Under such circumstances, a move to an extremely tight pegged exchange rate regime may have highly contractionary effects.

The magnitude of this cost would primarily hinge upon how fast economic agents' expectations adjust, while other factors, e.g. structural characteristics, would also play a role. The speed of expectation adjustment, in turn, would depend on the credibility of the regime change. While it is difficult to assess the credibility of a hypothetical adoption of the euro, two points seem to be obvious. First, the unilateral nature of such a move can make it difficult to build up the necessary credibility very quickly. Second, the degree of credibility would depend closely on the accompanying measures that would be taken, in particular in the areas of fiscal policy as well as structural and institutional reform.

Against this backdrop, it is not very likely that expectations would change immediately, that inflationary inertia would disappear over night and that low inflation would come at no cost. Moreover, there is ample general evidence that reducing moderate inflation takes time, and even if fiscal policies are sound, inflation developments respond only gradually to a tight nominal anchor like a fully fixed nominal exchange rate²⁷.

All this suggests that unilateral euroization does not constitute a miracle (costless) cure for an inflationary bias. The adjustment costs could still be substantial.

3.2 Risks

3.2.1 Real Exchange Rate Developments in the Process towards Eventual Nominal Convergence

One of the arguments Rostowski and Bratkowski (2000) put forward in favor of euroization in Poland and other accession countries states that in the framework of a flexible exchange rate it will be very difficult for these countries to reduce inflation to low levels, as required by the EC Treaty for the eventual entry into the euro area. Rostowski and Bratkowski suppose that Poland will experience high growth rates driven by very dynamic productivity advances before and beyond EU accession. Consequently, meeting the Maastricht inflation criterion would require a rapid appreciation of the nominal

²⁷ See Sahay and Végh (1995), Krzak (1996).

exchange rate, which is said to be detrimental to an economy's competitiveness, as nominal rigidities would slow or limit the needed fall in the price of tradables and/or in the unit-factor costs of these goods. Under the Treaty provisions, a major adjustment recession would be needed to fulfill the inflation criterion and thus qualify for participation in the euro area. Along this line of argument, unilateral euroization would allow a country to avoid such a negative development.

However, this reasoning is not convincing. There is no persuasive evidence that real appreciation will continue at the high speed witnessed during the past stages of the transformation process. If this basic presumption is relaxed, the situation turns out to be much less dramatic than suggested.

The phenomenon of real exchange rate appreciation has usually been explained by the Balassa-Samuelson effect²⁸. Undoubtedly, productivity developments can explain a good deal of the observed pervasive appreciation of real exchange rates in Central and Eastern Europe. However, this is not the whole story and it is far from obvious that real appreciation will continue at the same high speed in the next few years. Two considerations in this respect are important.

First, productivity developments at the beginning of the transformation process have been influenced, to some extent, by specific factors that have made for one-off productivity growth. The main such factor is a better allocation of existing resources under the new economic system²⁹.

Second, not all of the real appreciation has been due to the Balassa-Samuelson effect. At the same time, real appreciation has, to a significant extent, also been attributable to sizable devaluation and thus undervaluation at the onset of stabilization programs, which created a room for a corrective appreciation later on³⁰. Moreover, a fair share of the relative price changes resulted from the adjustment of the administrative prices of many utility services, such as energy, heating, rent and public transportation, which have been raised more progressively than nonregulated prices³¹.

As these effects are likely to gradually fade, the trend appreciation of the real exchange rate will probably slow down substantially in the years to come. As a result, Poland may well be able to achieve inflation convergence without experiencing detrimental nominal appreciation, just like the catching-up economies of the European Union that have successfully managed to qualify for participation in the euro area without major turbulences.

²⁸ This effect results from differential productivity developments between tradables and nontradables, while wages develop uniformly across sectors and wage increases are driven by the productivity increases in the tradables sector. Consequently, nontradables inflation is higher than tradables inflation, leading to a trend appreciation of the (equilibrium) real exchange rate. However, the applicability of this concept to Central and Eastern Europe has been contested by some authors. Grafe and Wyplosz (1997) formulated the hypothesis of the Balassa-Samuelson effect in reverse, where an increase in labor productivity is a consequence of real appreciation, and not the driving force behind it.

²⁹ See Gotz-Kozierkiewicz (1999). This phenomenon is known as the so-called "simple reserves." Productivity growth is achieved through better allocation of resources under the new economic system and not necessarily through upgrading of obsolete technologies. A closely related concept is the X-efficiency improvement concept, which refers to the difference between the actual production level and the maximum level of production, with a given stock of resources. For the application of this theory to the analysis of the transformation process, see e.g. Rosati (1998).

³⁰ Grafe and Wyplosz (1997).

³¹ See Gotz-Kozierkiewicz (1999). This argument is closely related to the so-called cost-recovery hypothesis (see e.g. Koen and De Masi, 1997).

3.2.2 The Monetary and Exchange Rate Policy Instrument

Another risk associated with euroization is the complete removal of monetary and exchange rate policy as tools of macroeconomic policymaking. At the same time, the monetary policy of the euro area will not take into account, not even at the margin, the economic situation in Poland.

Whether monetary policy can be used as an instrument to smooth cyclical fluctuations or not is controversial. A devaluation of the nominal exchange rate usually has only temporary effects on the real exchange rate and on international competitiveness. Moreover, a frequent use of the exchange rate instrument will influence inflationary expectations and therefore be even less effective in achieving even temporary changes in the real exchange rate and in economic activity. Furthermore, long and mostly uncertain lags of monetary transmission and their impact on the exchange rate, output and employment make the usefulness of this instrument even more questionable. The notion of the autonomy of monetary policy is also arguable. In the era of globalization, capital mobility increases substantially, and money becomes more and more endogenous. As a result, domestic interest rates are increasingly determined by external factors, and the room for maneuver of national monetary authorities is becoming ever narrower³².

However, even in the contemporary globalized world, monetary and exchange rate policy, provided they are generally credible, may still act as shock absorbers. Large, idiosyncratic real shocks require adjustments in the real exchange rate. If the nominal exchange rate is fixed, a large negative shock will require wages and prices to fall during the adjustment process. If wages and prices do not adjust instantaneously, the economy will experience a recession or at least a slowdown in growth. Unilateral euroization (and rigidly fixed exchange rates in general) may produce swings in countries' growth performance. In a comprehensive analysis, euroization should thus be presented in the context of the potential tradeoff between monetary stability and real variability.

The standard approach that is applied to analyze the feasibility of unilaterally adopting a foreign currency (and, more generally, a fixed peg) is the Theory of Optimal Currency Areas (OCA theory). The OCA theory considers the adoption of a foreign currency beneficial and sustainable for countries exposed to the same shocks as the foreign country or currency area which has mechanisms for the adjustment to asymmetric shocks. According to the OCA theory, wage and price flexibility, factor mobility and/or fiscal transfers are some such mechanisms³³. The smaller the exposure to asymmetric shocks, the less need there is to resort to such adjustment mechanisms. In order to lower the probability of asymmetric shocks, it is crucial that a country's foreign trade be highly integrated with the foreign country or currency area and that its exports be well diversified in terms of the structure of exported goods and services, which in turn will help foster business cycle synchronization.

At first glance, Poland does not seem to fulfill the OCA criteria sufficiently yet, although it has clearly made substantial progress over the past decade. The structure of the Polish economy still differs, in several ways, from that of the

³² See e.g. Buiters (2000).

³³ It is an open issue whether a high degree of cross-border labor mobility is also an important condition for the smooth functioning of a common currency area. It can be argued that the cross-border mobility of labor is less important, if regional and intersectoral mobility of labor is coupled with sufficient wage flexibility.

euro area and its members. Industry still accounts for a comparatively large share of GDP, whereas services are underrepresented; in terms of employment, agriculture takes a very high share. Unlike the other Central and Eastern European EU candidate countries, Poland is not a very open economy. In 1999, its exports amounted to only 17.6% of GDP, while overall trade stood at 47.5% of GDP; 56.8% of total trade is directed to euro area countries. The goods structure of exports has changed, as Poland has moved upwards in the international division of labor, but it is still fairly distinct from that of the euro area countries: Exports are still dominated by unprocessed goods, and the degree of diversification is still rather low.

Several studies have applied the OCA theory to Poland and other EU applicant countries from Central and Eastern Europe within a more formal analytical framework³⁴. While these studies do not come to fully the same conclusions, Poland's economy does tend to be less in line, in overall terms, with the OCA criteria than some other advanced transition economies.

The inconclusiveness of these empirical studies calls for some caution and is indicative of the risks a premature unilateral adoption of the euro would involve for Poland. Against the backdrop of structural differences, the existence and smooth functioning of adjustment mechanisms to asymmetric shocks is very important. However, the Polish labor market is fairly inflexible³⁵, which means that the major domestic adjustment mechanism is not fully functional. Cross-border movement of labor between Poland and the euro area does not exist either as an adjustment mechanism. Preaccession transfers from the EU budget will help foster structural convergence, which, in turn, will make asymmetric shocks less likely over time, but only gradually. Under these conditions, it could turn out to be very costly to relinquish the monetary and exchange rate instrument altogether ahead of time and without any genuine fallback or exit option.

3.2.3 Exchange Rate Misalignment

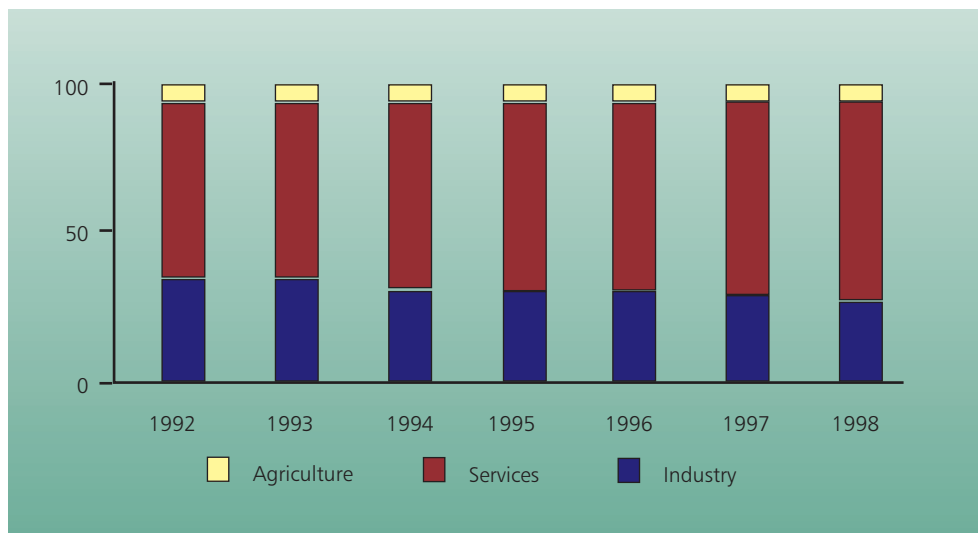
Unilateral euroization, like any rigidly fixed exchange rate regime, involves the risk of exchange rate misalignment. In the case of unilateral euroization, this risk is aggravated by the lack of a standard exit strategy. Any lasting deviation of the real exchange rate from its equilibrium level will therefore very likely be costly in terms of interest rates, output and employment. This section examines three aspects which could lead to an appreciation of the exchange rate beyond its equilibrium level, namely an inertial appreciation of the exchange rate, demand-side factors and cost factors.

Inertial appreciation of the exchange rate. As mentioned above, euroization may cause inflation to fall. However, the disinflation process would, in all likelihood, not be accomplished immediately, as has been argued above. In the intermediate time period, an inertial upward shift in the price level and thus a real appreciation of the exchange rate would occur. Rostowski and Bratkowski (2000) argue that this problem could be resolved by an upfront devaluation of the

³⁴ See e.g. Boone and Maurel (1999), Frankel and Schmidt (1999), Cincibuch and Vavra (2000), Fidrmuc and Schardax (2000). For a comprehensive study applying OCE criteria to the Polish economy see: Borowski (2000).

³⁵ See e.g. Pujol and Griffiths (1996) and, more recently, ING Barings (2000).

Figure 3. Share of Industry, Services and Agriculture in GDP.



Source: OECD, own calculations.

domestic currency at the moment of conversion. However, fixing the exchange rate at a devalued level is not a convincing solution, as wage and price inflation would probably be more stubborn and difficult to contain.

Demand-side factors. Looking at past developments, one can observe that in Poland industrial output (industry can be taken as a proxy for tradables sector) has declined as a share of GDP while the GDP share of services (a proxy for the nontradables sector) has increased continuously (see figure 3). This phenomenon has also been observed in other advanced transition countries (with the notable exception of Hungary), which suggests that supply-side factors and, in particular, the Balassa-Samuelson effect, have not been at work alone. Had this been the case, the share of the tradables sector in total output would have steadily risen, as higher productivity growth in the tradables sector would have had induced labor and capital to move out of the nontradables sector, reducing the supply of nontradables and increasing the supply of tradables (IMF, 2000).

In light of this evidence, it seems that the analysis should also take into account possible demand-side effects which can be important for exchange rate developments and the competitiveness of the economy.

In Poland and in many other transition countries, services, which account for the greater part of the nontradables sector, were underdeveloped and also underconsumed during the pretransformation period, even taking into account the lower income level in these countries. As transition began, consumption began to converge towards western patterns of higher shares of services in consumption. This fact is reflected in relatively high income elasticities of demand for services in Poland as well as majority of other transition countries, as compared to western countries (see Podkaminer, 19998)

Thus, increasing income levels in transition countries induce a shift in expenditure towards the nontradables sector and services in particular. These changing demand patterns then translate into a changing structure of the economy, and the share of services in overall output starts to increase.

This process is also very important for real exchange rate movements and the competitiveness of the tradables sector over time.

Increasing income levels in transition countries induce a shift in expenditure towards the nontradables sector and services in particular. As demand for services surges, the price of services rises (in absolute and relative terms). This attracts new investment, which augments capacities in the sector³⁶. In a two-sector economy, capital flows to the nontradables sector. If capital is scarce it may happen partly at the expense of the tradables sector, so that competitiveness of this sector may suffer. Under ceteris paribus conditions, this may then be reflected in a „shrinking“ tradable sector and a relatively weaker current account.

The demand-side effect may simultaneously go through the labor market as well. Rising demand and prices in the nontradables sector boost this sector's business perspectives. As turnover and profits rise, wages in nontradables may increase to attract new labor. Assuming that the law of one price holds on the labor market, it may cause additional wage pressures in the tradables sector and as such influence its unit-labor costs and/or profit margins, and thus its competitive position. As a further consequence, the lower return on capital in the tradables sector may stimulate a shift of investment out of this sector and towards the nontradables sector, which typically tends to be exposed to less intense competition and, in addition, sees swiftly rising demand.

Unilateral euroization may strengthen these demand-side effects further, as it would effectively eliminate exchange rate fluctuations (risk) and presumably facilitate access to foreign capital. Obviously, easier access to capital should be seen as an advantage, but there is a substantial risk that it could also lead to loose lending practices and a credit boom financing excess consumption activity. In fact, euroization in a catching-up economy may cause a risk of a too expansionary monetary policy under a fixed exchange rate regime. Short-term interest rates set by the ECB according to monetary developments and the inflationary outlook in the euro area may prove to be too low compared to the higher price dynamics in a euroized country, causing consumption to explode and leading to a boost-bust cycle, where the initial boom would be followed by a crisis.

Cost factors. Other factors that may cause exchange rate overvaluation relate to cost-push inflation arguments.

First, there is still a need to free the administered prices of many goods and services or adjust them to cost-recovery levels. In many transition economies, these goods and services still constitute a large part of the consumer baskets that are used to calculate CPI indexes. The resulting inflation may lead to a real appreciation of the currency beyond the equilibrium exchange rate (Gotz-Koziarkiewicz, 2000).

Second, some goods from the nontradables sector may constitute inputs for the production costs of tradables. Thus, the rising price of such intermediate

³⁶ As capacities become larger, the relative price of services falls again. Besides, if supply is very flexible, firms may anticipate increases in demand and may make necessary investments in line with their expectations in advance. Thus, when demand materializes, the necessary capacity may already be there to meet consumers' needs. In this case, the impact of the shift in demand on actual prices is less visible in the behavior of relative prices (i.e. it does not have long-term implications on nontradables prices). A number of econometric studies (e.g. IMF, 2000) confirm this.

goods will, *ceteris paribus*, adversely affect the tradables sector by reducing profit margins, and hence the competitiveness of the economy.

Third, it can not be excluded that wage developments in the tradables sector exceed productivity developments. Again, such rises in production costs will, *ceteris paribus*, adversely affect the tradables sector by reducing profit margins and hence will affect the competitiveness of the economy³⁷. In Poland, wage inflation led to a loss of competitiveness in the period 1992 to 1998, as Fidrmuc and Schardax (2000) show. The system of wage bargaining appears to be an important explanatory determinant for wage developments. Poland has an unorthodox mix of centralized and enterprise-level wage bargaining, which may facilitate wage inflation. On the other hand, wage dynamics have become much more moderate in 1999 and 2000. It remains to be seen whether this is evidence of a structural change in wage determination or only a temporary phenomenon.

The demand-side and cost factors depicted above call for retaining some flexibility in the exchange rate policy, at least for some time to come. This flexibility may allow Poland to mitigate output and employment losses resulting from a potential deviation of the real exchange rate from its equilibrium level.

3.2.3 Balance of Payments Concerns and Interest Rates

It is important to understand that- in opposite to what is often claimed by its proponents- unilateral euroization does not eliminate concern about current account deficits. A permanently unbalanced trade position does not lose its economic significance and may cause a structural deficit of aggregate demand, turning an economy into a constantly depressed region. In an extreme situation, a kind of hysteresis effect may even arise. Persistent deviation of actual output from capacity output may also reduce the latter, thus further weakening a country's position on international markets and its attractiveness for foreign investment. Argentina, operating under a currency board, constitutes a good example: an overvalued real exchange rate makes the country's production uncompetitive, while nominal rigidities forebode a lengthy and painful adjustment process. All this has a negative impact on Argentina's attractiveness as an investment target and forces whole industrial branches to leave the country.

The case of Argentina is, to some extent, a combination of exceptional factors³⁸. Such an extreme situation does not have to occur in a euroized Poland. However, in the case of Poland, a slowdown in economic activity may deliver some other threats: it could incite problems in the banking system and in the fiscal realm, which is already under strain. Such a combination of a current account deficit and the resulting fiscal problems would imply the necessity to accumulate foreign liabilities. This, in turn, may make the country more vulnerable to potential shifts in market sentiment.

Admittedly, unilateral euroization could stimulate deeper integration with international financial markets and promote easier access to foreign financial resources, which would probably facilitate the financing of potential external

³⁷ See Cincibuch and Vavra (2000), and Fidrmuc and Schardax (2000).

³⁸ In the case of Argentina, one of the most important factors is the substantial appreciation of the U.S. dollar, to which peso is nominally pegged, and the simultaneous drastic devaluation of the currency of the country's main trading partner, Brazil.

imbalances, making the problem less imminent. Authorities would be granted more room for maneuver and more time for corrective action. However, no country can accumulate foreign liabilities indefinitely without running into a debt trap. At some point, international investors will demand a higher premium, as the default risk rises. At this stage, the potential benefit of euroization from lower interest rates would be reduced or completely eliminated.

3.2.4 The Risk of Crisis

This issue is directly related to the problem of external crisis. The proponents of unilateral euroization argue that the unilateral adoption of the single currency would effectively insulate Poland from any speculative attack, as there would be nothing to speculate against. This is too good to be true. It is plausible that unilateral euroization would to a large extent protect an economy against currency crises which are driven by contagion unrelated to a change in underlying fundamentals. But it would not guard an economy against other crises, like recessions or banking crises, nor would it make an economy immune to swings in market sentiment and external crises in the form of sharp capital outflows. An unsustainable fiscal deficit or a weakening position of the private sector in general and the financial system in particular may still provoke investors to escape the country by selling off government securities or other domestic assets³⁹.

Capital outflows need not be induced only by foreign investors. Even stronger pressure may come from domestic residents, who may choose to invest their savings in international capital markets and in foreign banks abroad instead of at home. As recent cases of external crisis in many emerging economies have shown, such capital flight may be an important source of total capital outflows. This has also been evidenced by the cases of currency turmoil the Czech Republic and Slovakia experienced in 1997 and 1998 respectively. In a crisis situation, nothing can prevent the public from transferring all its liquid assets from domestic banks to foreign banks abroad (or to hoard cash in cookie jars)⁴⁰.

Another argument often advanced by the proponents of unilateral eurization is the ineffectiveness of macroeconomic policies, which would inevitably lead to a crisis situation in a non-euroized accession country. While the role of monetary and exchange rate policy issues has been dealt with at length in earlier sections of the paper, it is worthwhile mentioning that this line of argument is not persuasive with respect to fiscal policies either. This is especially true of fiscal tightening. Fiscal restraint will not necessarily, by making a country more attractive to foreign investors, induce capital inflows, by contrast to what Rostowski (1999) states. In fact, such a move is likely to lead to lower interest rates and thus to less attractive yields for foreign capital, which should reduce the upward pressure on the exchange rate. The question is which of these two effects will then dominate.

³⁹ See Berg and Borensztein (2000).

⁴⁰ In the case of euroization, economic agents would be able to transfer their money holdings to foreign banks abroad without any conversion costs. Unlike in any other regime, there would be virtually no opportunity costs of keeping money abroad. This may, in turn, add to the variability of capital flows.

4. Conclusions

Unilateral euroization has been proposed by some academics as a solution to the alleged ineffectiveness of macroeconomic policies in the run-up to European Union accession and, furthermore, as a device to bypass the fulfillment of the Maastricht inflation criterion. The European Union, in turn, has made it very clear that unilateral euroization does not constitute a viable option for the monetary integration of candidate countries and that it would run counter to the underlying economic reasoning of EMU in the [EC] Treaty.

This study has attempted to shed some light on the economic issues involved and thus to contribute to the discussion, focusing on the case of Poland. The following main conclusions emerge from this study.

The often cited benefits of unilateral euroization are much less clear-cut than they would appear to be at first glance, while the costs and risk are considerable indeed. The most tangible effect of unilateral euroization would be a perceptible reduction of interest rates, perhaps on the order of 5 to 6 percentage points. While this effect may have a positive effect on growth and also on the fiscal balance, its magnitude would remain uncertain, both in the short run but even more so in the longer term. While unilateral euroization would reduce exchange rate risk substantially, an increase in other types of risk, in particular default risk, would probably mitigate these gains from the outset and, if imbalances built up over time and the adjustment mechanism did not function properly because nominal rigidities persisted, risk premia would increase and could wipe out the initial benefits. Likewise, gains from lower interest rates in terms of GDP growth and the budget balance could well prove to be temporary.

Unilateral euroization would reduce conversion costs, but the gains are relatively minor. Whether the reduction of exchange rate volatility accompanying unilateral euroization would have positive effects on trade and whether trade gains, if they materialized, would feed into added growth remains a largely open question.

Whether inflation would be sustainably reduced is another unresolved issue. On the one hand, the slowing growth of money supply in the initial phase would dampen inflation. However, if there is inflation inertia, this would also inflict temporary costs on growth and employment. On the other hand, after the initial stabilization period is completed, inflation may accelerate above the average in the euro area, and may prove to be difficult to contain unless very tight fiscal policy is pursued.

Some analysts mention that unilateral euroization could act as a catalyst for macroeconomic discipline and reform. However, the perspective of EU accession already represents a very important stimulus for macroeconomic prudence as well as for structural and institutional change.

The clearcut costs of unilateral euroization are the loss of seigniorage (one-off stock cost: about 8.5%; flow cost: up to 2% of GDP annually) and the elimination of the monetary authorities' lender-of-last-resort function, which could have adverse consequences, as the Polish banking system, despite having made remarkable progress in the past decade, is not yet fully transformed and developed.

Exchange rate misalignment is another potentially grave risk that would be associated with unilateral euroization. Poland does not yet fulfill the OCA criteria

sufficiently to do without a certain degree of nominal exchange rate flexibility. Inertial appreciation of the exchange rate, demand-side factors and cost factors may cause the exchange rate to deviate from its equilibrium level, a circumstance which might not be easy to correct under a hypothetical unilateral euroization. Moreover, unilateral euroization would effectively eliminate exchange rate risk and presumably facilitate access to foreign capital, which may be an advantage, but which also harbors the substantial danger of loose lending practices and a credit boom that would, in turn, finance excess consumption.

The risk of exchange rate misalignment appears to be particularly momentous against the backdrop of the already large current account deficit. Unilateral euroization would not constitute a miracle cure for the external imbalances of the Polish economy. In fact, it may facilitate the evolution of a structural deficit of aggregate demand, which would turn the country into a depressed region for a long time, just because of the minimal flexibility it leaves for corrective policy action.

A unilateral adoption of the euro is clearly premature for Poland both on institutional and economic grounds. At present, too early a unilateral adoption of the euro may prove to be a fairly crisis-prone arrangement, even if does provide a certain protection against currency crises that are not related to changes in underlying fundamentals.

Finally, the main arguments advanced by the proponents of unilateral euroization are not convincing. Macroeconomic policies can be effective tools to cope with the policy challenges of preaccession. This is particularly true of fiscal policy. Furthermore, there are good reasons to believe that real appreciation will tend to lose speed as the catching-up process advances, so that the eventual meeting of the inflation criterion for participation in the euro area may turn out to be much less problematic than is sometimes argued.

In the final analysis, hypothetical unilateral euroization would be a risky venture for Poland, with no viable exit option in a crisis situation. This may delay the real convergence of the Polish economy, which in turn would rather slow than accelerate accession to the European Union and eventually preparation for full participation in Economic and Monetary Union.

The conclusions of the study seem to be supported by a recent paper of Edwards (2001) whose empirical findings are worth noting in this place. Basing on historical record of countries that have lived under a dollarized monetary system Edwards finds that, when compared to other countries, dollarized nations have (a) have had significantly lower inflation; (b) grown at a significantly lower rate; (c) have had a similar fiscal record; (d) have not been spared from major current account reversals. Additionally, his analysis of Panama's case suggests that external shocks result in greater costs- in terms of lower investment and growth- in dollarized than in non-dollarized countries.

References

1. Anthony L. Myrvin and Hallet Andrew Hughes. 2000. Should Argentina Adopt the US Dollar. Center for Economic Policy Research Discussion Papers no. 2412, March, London.

2. Backé, Peter and Jarko Fidrmuc. 2000. The Impact of the Russian Crisis on Selected Central and Eastern European Countries. In *Russian Crisis and its Effects*, ed. Tuomas Komulainen and Likka Korhonen, Kikumora Publications, Helsinki.
3. Baldwin, Richard and Federica Sbergami. 1999. *Non-Linearity in Openness and Growth Links. Theory and Evidence*. Graduate Institute of International Studies, Geneva.
4. Berg, Andrew and Eduardo Borensztein. 2000. The Pros and Cons of Full Dollarization. IMF Working Papers. WP/00/50. (March) Washington D.C.
5. Borowski Jakub. 2000. Poland and the EMU. An Optimal Currency Area?. Freidrich Ebert Foundation (FES) Working Paper (December).
6. Buiters, Willem H. 2000. Optimal Currency Areas: Why Does the Exchange Rate Regime Matter? Center for Economic Policy Research Discussion Paper no. 2366. (January). London.
7. Bratkowski, Andrzej and Jacek Rostowski. 1999. Zlikwidowac zlotego. In *Rzeczpospolita*. (March). Warsaw.
8. ———. 2000. Unilateral Adoption of the Euro by UE Applicant Countries: the Macroeconomic Aspects. Paper presented to the Sixth Dubrovnik Economic Conference. (June) Dubrovnik.
9. Cincibuch, Martin and David Vavra. 2000. Towards the EMU: A Need for Exchange Rate Flexibility? Czech National Bank. Mimeo.
10. Council of the European Union. 2000. Conclusions of the Council of Economics and Finance Ministers meeting on November 7, 2000. Section on exchange rate strategies for accession countries. <http://ue.eu.int/newsroom/main.cfm?LANG=1>
11. Cukrowski, Jacek and Jaroslaw Janecki. 1998. Financing Budget Deficits by Seigniorage Revenues: the Case of Poland 1990–1997. Center for Economic and Social Research Studies and Analysis. Warsaw.
12. Darvas, Zsolt and György Szapáry. 1999. Financial Contagion Under Different Exchange Rate Regimes. NBH Working Paper 1999/10. Budapest.
13. Dornbusch, Rudi and Francesco Giavazzi. 1999. Hard currency and sound credit: A financial agenda for Central Europe. Mimeo.
14. Edwards Sebastian. 2001. Dollarization and Economic Performance: An Empirical Investigation, NBER Working Paper 8274 (May).
15. Eichengreen, Barry. 1994. *International Monetary Arrangements for the 21st Century*. Brookings Institution. Washington D.C.
16. European Commission. 1990. *One Market, One Money*. European Economy.
17. ———. 2000. Enlargement Strategy Paper. Report on progress towards accession by each of the candidate countries. Brussels. November 8.
18. Frankel, Jeffrey A. 1999. No Single Currency Regime is Right for All Countries or at All Times. NBER Working Paper 7338 (September).
19. Frankel, Jeffrey A. and David Romer. 1999. Does Trade Cause Growth? In *American-Economic-Review*, 89 (3). (June).
20. Fidrmuc, Jarko and Jan Fidrmuc. 2000. Macroeconomic Development in the Czech Republic and the European Union Accession. *Prague Economic Papers*(3).
21. Fidrmuc, Jarko and Franz Schardax. 2000. The Pre-Ins Ante Portas – EMU Enlargement, Optimum Currency Area, and Nominal Convergence. In *Focus on Transition* (2). Oesterreichische Nationalbank.

22. Gomulka, Stanislaw. 2000. Czy program oficjalny nie jest optymalny? In *Magazyn Finansowy*. (January). Warsaw.
23. Gotz-Kozierekiewicz, Danuta. 2000. Exchange Rate Policy in Transition Economies: Controversial View on the REER Developments. Mimeo.
24. ——. 1999. Kurs walutowy a parytet sily nabywczej w gospodarce transformowanej. Mimeo.
25. Halpern, Laszlo and Charles Wyplosz. 1998. Equilibrium Exchange Rates in Transition Economies: Further Results. Center for Economic Policy Research. (November).
26. IMF. 2000. The Impact of Productivity Differentials on Inflation and the Real Exchange Rate: An Estimation of the Balassa-Samuelson Effect in Slovenia. In *Republic of Slovenia – Selected Issues*. (February). Washington D.C.
27. ——. 2000b. International Capital Markets: Developments, Prospects and Key Policy Issues, International Monetary Fund (September), Washington D.C.
28. ING Barings. 2000. Polish Economics – Capital and Money Markets Report. Warsaw. (June).
29. Koen, Vincent and Paul Masi. 1997. Prices in the Transition: Ten Stylized Facts. IMF Working Papers, WP/97/158, Washington D.C.
30. Kowalewski, Pawel. 2000. Nie ma drogi na skroty. In *Magazyn Finansowy PG*. (January). Warsaw.
31. Maciej Krzak. 1996. Persistent Moderate Inflation in Poland and Hungary. In *Focus on Transition* (Oesterreichische Nationalbank), 2/1996, Vienna.
32. Liargovas Panagiotis. 1999. An Assesment of Real Exchange Rate Movements in the Transition Economies of Central and Eastern Europe. In *Post-Communist Economies*, Vol. 11, No. 3.
33. Lutkowski, Karol. 2000. Od zlotego do euro. In *Magazyn Finansowy PG*. (January). Warsaw.
34. Moreno-Villalaz, Juan Luis. 1999. Lessons from the Monetary Experience of Panama: A Dollar Economy with Financial Integration. In *Cato Journal*. vol. 18 (3).
35. Mundell. 1999. The Prorities for Completing the Transition and the Model for the Future. Paper prepared for the 5th Dubrovinc Conference on Transition Economies, June 23-25, Dubrovnic, Croatia.
36. Mussa, Michael, Paul Masson, Alexander Swoboda, Esteban Jadresic, Paolo Mauro and Andy Berg. 2000. Exchange Rate Regimes in an Icreasingly Integrated World Economy. IMF. (April). Washington D.C.
37. Nuti, Mario D. 2000. The Cost and Benefits of Euroisation in Central-Eastern Europe Before or Instead of EMU Membership. Paper presented to the sixth Dubrovnik Economic Conference. (June). Dubrovnik.
38. Obstfeld, Maurice and Kenneth Rogoff. 1995. The Mirage of Fixed Exchange Rates. NBER Working Paper 5191. (July).
39. Orlowski, Witold and Krzysztof Rybinski. 1999. Recepta na kryzys walutowy. In *Rzeczpospolita*. (May) Warsaw.
40. Podkaminer, Leon. 1998. Income Elasticities of Demand for Consumer Goods in Transition Countries. In *WIIW Monthly Report* 7.
41. Pujol, Thierry and Mark Griffiths. 1996. Moderate Inflation in Poland: A Real Story. IMF Working Paper WP/96/57. Washington D.C.
42. Rosati, Dariusz. 1998. Polska droga do rynku. PWE. Warsaw.

- . 1999. Jeszcze nie czas na likwidację złotego. In *Rzeczpospolita*. (May).
Warszawa.
43. Rose, Andrew K. 2000. One Money, One Market: The Effect of Common Currencies on Trade. In *Economic Policy: A European Forum*. Center for Economic Policy Research. (April). London.
44. Rostowski, Jacek. 1999. Adopting the euro. In *Financial Times* (August).
45. Szapary, György, Maastricht and the Choice of Exchange Rate Regime in Transition Countries During the Run-Up to EMU. NBH Working Papers (October).
46. Wójcik, Cezary. 1999. Zbyt wczesnie na wprowadzenie euro. In *Prawo i Gospodarka*. (June). Warsaw.
47. ———. 2000. Spiesz się powoli. In *Magazyn Finansowy PG*. (March), Warsaw.

SESSION II

Appropriateness of the Monetary Convergence Criteria for the Accession Countries

Sources of Inflation Divergences across Euro Area Countries

*Gabriel Fagan**

1. Introduction

The single monetary policy is directed at maintaining price stability in the Euro Area as a whole. The move to the single currency and the adoption of the euro was based on the successful completion of a convergence process towards low inflation rates in all participating countries. However, the monetary union per se does not necessarily imply that, at each point in time, all of the participating countries will experience exactly the same rate of inflation.

In fact, as in existing monetary unions, it is inevitable that there will be some dispersion of inflation rates across regions and sectors. At present, notable differences in the rate of change of the HICP across Euro Area countries can be observed although, by historical standards, they remain relatively low.

The present paper reviews the available evidence regarding the factors underlying inflation differentials in the Euro Area. It is structured as follows. Section 2 reviews the experience of inflation differentials across Euro Area countries since the start of the monetary union. In order to provide a benchmark for comparison purposes, the experience of regional inflation differentials within a number of existing monetary unions – the US, Italy, Spain and Germany – is examined in Section 3. The following sections examine the

Table 1. Year-on-Year percentage change in the HICP

	BE	DE	ES	FR	IE	IT	LX	NL	AT	PT	FI	EA	Range	Std.
1998	0,9	0,6	1,8	0,7	2,1	2,0	1,0	1,8	0,8	2,2	1,4	1,2	1,6	0,61
1999	1,1	0,6	2,2	0,6	2,5	1,7	1,0	2,0	0,5	2,2	1,3	1,1	2,0	0,73
2000	2,7	2,1	3,5	1,8	5,3	2,6	3,8	2,3	2,0	2,8	3,0	2,4	3,5	1,0
2001														
czerwiec3,0	3,1	4,2	2,2	4,3	2,9	2,7	5,0	2,6	4,6	3,0	3,0	2,8		0,93

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role of factors which have been put forward to explain the occurrence of inflation differentials within a monetary union. These include: idiosyncratic factors, such as cross-country differences in the composition of consumption baskets, the impact of price level convergence and market integration, the impact of convergence of living standards ('Balassa Samuelson' effect) and cyclical divergence. The final sections present a summary of the evidence and the overall conclusions.

2. The experience so far

The move to monetary union was based on a process of successful nominal convergence – in line with the criteria set out the Treaty of European Union. This process led to a situation in which inflation differentials between participating countries had reached levels which – by historical standards – were remarkably low. Thus, in the year prior to the start of EMU, the gap between the highest and lowest country inflation rate amounted to 1.6 percent (see Table 1). As inflation in the Euro Area began to increase from the low levels recorded in mid-1999, measures of cross-country dispersion – such as the cross-country standard deviation and the range – pointed to some widening in the dispersion of inflation rates. Nonetheless, it should not be forgotten that even these somewhat higher levels were substantially below the levels recorded in the previous 30 years. For example, the spread between highest and lowest national inflation rates, which rose to 3.5 percentage points in 2000, amounted to 15 percentage points in the 1980s (see European-Central-Bank (1999a) and still amounted to around 7 percentage points in 1992 when the Treaty was signed.

This picture of relatively limited and stable overall inflation differentials however masks some notable, and at times sizeable if largely temporary, cross-country differentials in the inflation rates for particular classes of goods (see European-Central-Bank (2001). Table 2 provides a snapshot of the differences prevailing across countries and broad product headings on using an average over the period July 1999 to June 2001. It is notable that the cross country inflation dispersion in the period concerned is largest in the case of energy prices. This

Table 2. HICP Inflation in Euro Area countries – June 2001^a

	BE	DE	ES	FR	GR	IE	IT	LU	NL	AT	PT	FI	EA
Wskaźnik ogólny	3,0	2,5	3,9	1,9	3,5	4,8	2,8	3,6	3,9	2,2	4,2	3,0	2,7
Ceny dóbr	3,4	3,1	3,7	2,6	3,6	4,3	2,9	4,0	4,7	2,1	3,9	2,6	3,1
Ceny żywności	2,8	2,0	4,3	3,9	3,3	5,7	2,7	3,5	4,6	2,4	5,1	2,6	3,1
Żywność													
nieprzetworzona	4,6	4,0	6,9	5,5	2,7	7,3	4,1	4,6	6,4	4,4	7,9	3,4	5,1
Żywność przetworzona	1,6	1,0	1,3	2,7	3,7	5,0	1,7	3,1	3,7	1,3	2,2	2,3	1,8
Dobra przemysłowe	3,8	3,6	3,4	1,9	3,8	3,0	3,1	4,1	4,8	1,9	3,2	2,5	3,1
Nieenergetyczne													
dobra przemysłowe	1,0	0,5	2,3	0,6	2,2	1,2	1,9	1,6	2,3	0,2	2,0	1,1	1,1
Energia	12,0	13,3	8,1	6,5	10,6	7,2	9,1	12,0	13,7	9,0	7,8	6,1	10,4
Usługi	2,0	1,6	4,3	0,9	3,3	5,6	2,5	3,0	2,7	2,4	4,6	3,8	2,1

^a Average of July 2000 to June 2001 compared to average of July 1999 to June 2000.

Source: Eurostat and ECB calculations.

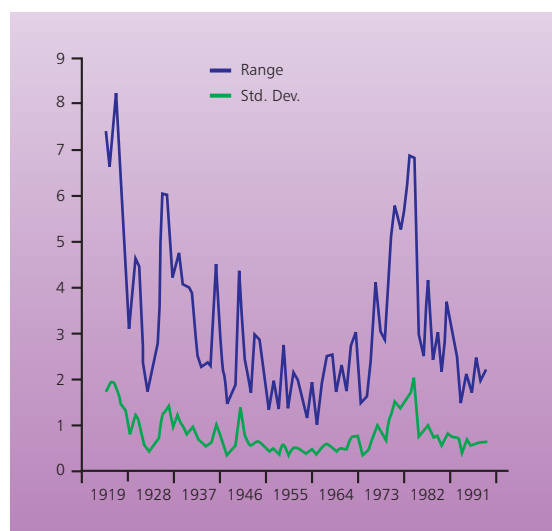
reflects the differential impact of the oil shock on Euro Area countries which in turn mirrors differences in the importance of oil as a source energy, different national policy responses to the oil shock and differences in the extent and nature of deregulation and competition in the energy sector. After energy, the largest dispersion relates to unprocessed food which primarily reflects the differential impact of BSE and animal diseases experienced during the periods. The dispersion for services inflation reflects inter alia differential impacts of deregulation measures, e.g. in telecommunications, changes in indirect taxes and administered prices and cross-country differences in the evolution of housing costs. For the remaining components shown in Table 2 the magnitude of cross-country dispersion in inflation rates is in line with or below the headline figure.

3. Comparison with other monetary unions

The establishment of the monetary union represents a major regime change involving a shift to a single monetary policy clearly directed at the maintenance of price stability in the medium-term. In the case of many countries of the union, this represents a sharp change from past average behaviour. Against this background, past inflation differentials among the countries concerned are not an appropriate benchmark to assess whether inflation differentials which occur under conditions of monetary union are "large" or "small". A more relevant set of benchmarks is provided by the patterns of regional inflation differentials within long-standing monetary unions. For this purpose, we review the experience of four such unions: the US, Italy, Germany and Spain.

Regarding the US, data on regional (specifically major city) inflation rates are available from 1919 onwards. Annual data on two measures of dispersion – the range and the cross city standard deviation – are presented in Figure 1. This data suggests that substantial differences in inflation can arise even within a long-standing monetary union. As is clear from the graph, inflation differentials

Figure 1. Inflation Differentials across US Cities



within the US have been, at times, very substantial with divergences of 7 percentage points being recorded as recently as the early 1980s. In the more recent past, the size of the divergences in consumer price inflation rates is of over 2 percentage points. Empirical work by Cecchetti, Mark, and Sonora (1998) suggests that, while US inflation divergences are persistent, they are not permanent, and there is a tendency for price levels in individual cities to converge back towards a constant level

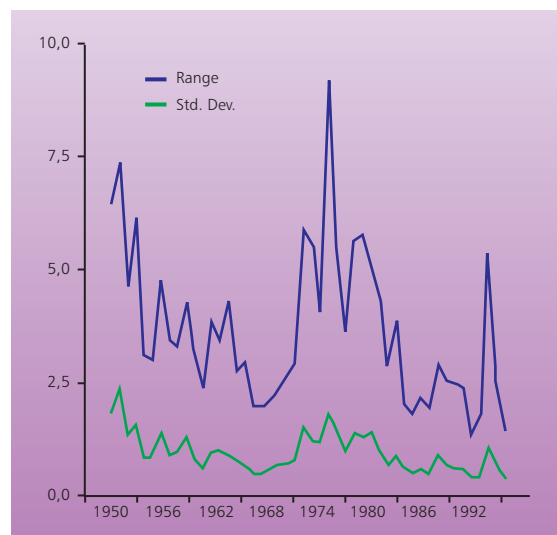
relative to the national average (i.e. there is a tendency for relative PPP to hold within the US). Using a simple measure of persistence¹, the estimated half-life of the shock to a regional relative prices is over 7 years in the majority of cases. Overall, the magnitude of the inflation differentials (as measured using both the range and the standard deviation of inflation) observed in recent years in the Euro Area, though higher than the more recent US observations, is well within the range of experience of the US.

The similarity of these results between the two areas is to some extent surprising. The US is highly integrated politically and economically, shares a common language and culture as well as a high level of labour mobility. All of these factors would be expected to reduce the scope for large and protracted inflation differentials. The Euro Area at present is notably less integrated than these regional or city economies of the US. Furthermore, fiscal policy remains predominantly a national responsibility. Thus, it could be argued that the scope for inflation differentials to emerge in the Euro Area is likely to be larger than in the case of the city economies of the US. On the other hand, it may be argued that Euro Area countries are more diversified economically than are US cities and are thus less vulnerable to sector specific shocks. This might imply that the scope for inflation differentials within the Euro Area would be more limited than within individual countries.

The pattern of inflation differentials within Italy has been studied in depth by Nenna (2000). Using data provided by the Central Institute of Statistics (ISTAT), which collects data on consumer prices in 20 regional capital cities, she examines the pattern of inflation dispersion over the period 1947 – 1997. Figure 2 provides two indicators of cross-regional dispersion, the range and the standard deviation.

A number of observations are derived from the analysis of this data. First, as is clear from the graph, inflation differentials of sizeable magnitude have been observed, with the spread between lowest and highest rates reaching nearly 10 percentage points at various points in the sample. Econometric analysis reveals moreover that interregional inflation differentials can be highly persistent. Second, it is unclear from the evidence whether there is a tendency for relative PPP to hold. Unit root tests on relative price levels are

Figure 2. Inflation Differentials across Italian regional Cities



¹ We define the persistence measure as the autocorrelation coefficient in an AR(1) process _ in which case the half life is defined as $-\frac{\ln 2}{\ln \rho}$.

sensitive to the precise test procedure employed so that overall, the results can be described as borderline. Assuming the deviations from PPP are not permanent, the estimated persistence of shocks to regional price levels is sizeable and, depending on the sample period and region, can vary from between 8 and 22 years! Finally, she reports some evidence in favour of a Balassa-Samuelson effect in the case of regional inflation in Italy.

The pattern of inflation differentials within Spain has been extensively investigated by Alberola and Marques (1999). Specifically, they examine inflation differentials across 50 Spanish provinces over the period 1961 to 1998. They report a gradual decline in the spread between the three highest and lowest provincial inflation rates from 2.5 percentage points at the start of the sample to 1.2 percentage points in the more recent period. The persistence of the provincial inflation rates is relatively large which implies that cumulated inflation differentials can be sizeable. Moreover, evidence on the presence of unit roots in the provincial relative price ratios is borderline. Assuming stationarity of the relative price ratios, deviations from intra-provincial PPP is found to be very persistent, with estimated half lives in 30 of the provinces being greater than 10 years. Alberola and Marques (1999) also examine the sectoral decomposition of the cross-provincial inflation differentials, finding the divergences are more marked in the case of housing and household goods. They find little evidence for a Balassa-Samuelson effect in the Spanish case: in fact, there is a negative relationship between relative regional inflation and growth in relative regional income and productivity. The absence of a regional BS effect in the Spanish case is attributed inter alia to the fact that wage bargaining is largely carried out and at a national or sector level with regional economic conditions playing a limited role in determining regional wages.

Some evidence for Germany is also presented by Nenna (2000). Apart from the divergence occasioned by German unification, differentials across German Länder are found to be relatively small in comparison to the other cases, being usually less than 1 percentage point.

Overall, the experience of existing monetary suggests that differences in inflation rates in different regions are a normal phenomenon in long established monetary unions. Viewed against the background of this experience, the size of the inflation differentials within the Euro Area which have been observed since the start of monetary union do not prima facie appear as particularly large or unusual. Of course, it is too early to make any assessment regarding the persistence of such differentials.

4. Proximate determinants of inflation differentials in the Euro Area

The pattern of inflation differentials across Euro Area countries partly reflects deep and per-sistent economic factors, such as cyclical divergence and price convergence resulting from the integration of markets and the so-called Balassa-Samuleson effect. However, it also reflects more idiosyncratic and transient elements such the differential impact of external shocks on individual countries, differences in the timing and magnitude of tax and deregulation measures and

even the weather. In this section, we examine the evidence on both sets of factors.

4.1. *Idiosyncratic factors*

A number of factors, which may be described as idiosyncratic, can generate cross-country differentials in inflation in a monetary union and indeed there is evidence to suggest that they have also played a role in the case of the Euro Area.

First, the weights employed in the calculation of national HICPs reflects national, rather than Euro Area, consumption patterns and therefore differ in significant ways across countries as shown in Table 3. This technical factor may give rise to differentials in measured inflation. For example, even if there were no differences across countries in the rates of price increase for individual goods, measured inflation could still differ across countries because of the different weighting scheme. In order to assess the magnitude of this effect in the current context, the following exercise was carried out. For each country, the national HICP was recomputed using an assumption that at the two-digit COICOP level prices in each country were rising at the same rate as the corresponding Euro Area increase for that category. Differences in these 'hypothetical' inflation rates across countries – which by construction reflect differences in the weights – were for the period 1999-2001 relatively small. The spread between highest and lowest hypothetical inflation rate is of the order of 0.3 percentage points, well below the observed spread of 2.9 percentage points in this period. Moreover, the pattern of implied differentials were not significantly related to the actual pattern of differentials as shown in Table 2. This suggests that differences in weights are not a major source for the patterns of inflation differentials currently observed in the Euro Area. A similar conclusion was also obtained in a simulation exercise carried out by Alberola (2001).

Second, differences in the sensitivity of national economies to external shocks, such as movements in the exchange rate of the euro or changes in commodity prices, can in principle generate inflation differentials within the

Table 3. Euro Area Countries: HICP Weights^a

	Goods									Services Total
	Total	Total	Food prices			Industrial Goods Prices			Total	
			Unproc. food	Processed food	Total	N.E. Idust. goods	Energy			
BE	100,0	63,1	19,8	7,9	11,9	43,3	32,2	11,0	36,9	
DE	100,0	61,0	18,2	5,9	12,3	42,8	31,5	11,3	39,0	
GR	100,0	64,3	25,7	10,2	15,5	38,6	30,8	7,8	35,7	
ES	100,0	64,3	24,3	12,0	12,4	40,0	31,2	8,8	35,7	
FR	100,0	60,4	20,6	8,7	11,9	39,7	30,7	9,1	39,6	
IE	100,0	59,5	27,8	8,5	19,4	31,6	21,8	9,9	40,5	
IT	100,0	64,3	19,8	8,4	11,3	44,5	36,9	7,6	35,7	
LU	100,0	69,5	23,4	5,9	17,5	46,2	33,0	13,2	30,5	
NL	100,0	60,3	20,2	6,6	13,6	40,0	30,0	9,1	39,7	
AT	100,0	55,5	16,3	5,5	10,8	39,2	31,3	7,9	44,5	
PT	100,0	64,9	24,9	13,0	11,8	40,0	31,7	8,3	35,1	
FI	100,0	62,8	24,4	6,6	17,9	38,4	27,5	10,9	37,2	

^a Source: Eurostat.

area. One source of these differences is the difference across countries in the importance of extra-area trade in the national economies. de Greef, Hofman, and Nahuis (2000) report that on average over the period 1993-1997 extra-area trade in goods (measured by the average of imports and exports as a percent of GDP) varied from a low of 7.8 percent in the case of Spain to a high of 38.4 percent for Ireland. Similarly, countries differ with respect to the energy-intensity of the economies and the dependence on oil. Differences in the sensitivity of the national inflation rates to external shocks can be seen by comparing the pattern of import price inflation across countries of the area. As can be seen in Table 4, differences in the rate of import price inflation across Euro Area countries has been quite marked in recent years. Differences across countries substantially exceed the differences in headline HICP inflation: in 2000, for example, the rise in import prices in Italy exceeded that of France by some 8 percentage points.

Third, national policy measures affecting prices can diverge significantly across countries. While the move to Stage 3 implies that the single monetary policy applies to the area as a whole, the same is not true of other policies, particularly fiscal and structural policies which remain largely under national control. One implication of this is that national policies services. Source: Eurostat and ECB calculations. having a direct bearing on prices – indirect taxation, administered prices and deregulation measures- are desynchronised across countries and differences in the scale and timing of national measures can contribute to cross-country inflation differentials. For example, it is estimated that differences across countries in the effects of indirect tax measures on HICP headline inflation currently span a range of 1.5 percentage points.

Table 4. Import Price Inflation in Euro Area countries^a

	BE	DE	ES	FR	IE	IT	NL	AT	PT	FI	EA
1998	-1,6	-2,0	-0,6	-0,6	2,4	-1,3	-1,5	-0,1	-1,9	-3,0	-1,4
1999	0,6	-1,4	0,3	-0,7	2,7	0,4	0,2	-0,2	-1,0	-1,9	-0,3
2000	10,1	7,7	9,7	4,7	7,4	12,7	8,8	4,8	8,2	6,9	8,1

^a Annual percentage change in the deflator for imports of goods and.

4.2. Price level convergence: market integration and price transparency

Surveys of price levels in different Euro Area countries have been carried out by a number of international organisations and private sector institutions. (For a recent example see Dresdner-Kleinworth-Benson (2000)). These surveys involve detailed comparisons at the level of individual products and services (e.g. well-known consumer brands, specific car models and standard services such as haircuts). The evidence shows that – even for fairly standard consumer

goods which are homogeneous and, potentially, easily transferred across borders – substantial differences in prices (adjusted for differences in indirect taxes) can be observed across countries. Indeed, in a small number of cases the differences between high and low prices for particular commodities can be observed to exceed 50 percent (Dresdner-Kleinworth-Benson (2000)). The differences across countries are far higher than those that are typically found within individual countries. In order for such differences to be observed, it is necessary for producers to be able to segment the market on the basis of national boundaries, by for example, limiting opportunities for cross-border reselling and to have an incentive to do so, due to differences in demand elasticities, indirect taxes etc. The process of the completion of the single market – by reducing barriers to cross-border trade – and the single currency itself – by enhancing price transparency – would tend, over time, to weaken such opportunities and incentives. Indeed, in principle, the observed magnitudes of the difference in prices for standard products which are easily tradable across borders cannot be expected to be sustained in a monetary union in which markets are integrated.

In fact, the available evidence indicates that such convergence in the prices of traded goods is already taking place. For example, in the case of cars, Goldberg and Verboven (2001) show that there has been a considerable reduction in the cross-country dispersion of car prices (corrected for differences in specification) in recent years. The authors link this trend to regulatory measures as well as increased exchange rate stability among participating countries. More generally, Rogers (2001) and Rogers, Hufbauer, and Wada (2001) using detailed data on prices of 65 products in 26 European cities, which are collected annually by the Economist Intelligence Unit, report a substantial decline in cross-country price dispersion, particularly concentrated in traded goods. Interestingly, they note that the level of price dispersion across Euro Area countries is now comparable to the low levels of dispersion found in the US. Of course, there are a number of reasons why such price convergence may not be fully completed. For example, continuing differences in indirect taxes across the Euro Area could prevent full convergence of tax-inclusive traded goods prices across countries. Moreover, a sizeable fraction of the (mainly) services which are consumed by households cannot readily be purchased across borders either because of remaining restrictions and, more importantly, prohibitive transport costs (e.g. personal services). This implies that, for the aggregate price level, there are limits to the extent to which price convergence due to market integration *per se* can proceed. In any event, the available evidence (for example Rogers, Hufbauer, and Wada (2001)) supports the view that the process of price convergence within the area has contributed to the pattern of inflation differentials which has been observed. This is not likely to be a permanent feature, however. In the longer term, when the process of convergence of price levels comes to an end, this factor will no longer contribute to inflation differentials. Indeed, Beck and Weber (2001) demonstrate, using monthly data on detailed sectoral consumer price indices from 81 locations in Europe, that already EMU has led to a decline of the order of 80 percent in the volatility of cross-border real exchange rates although distance and national borders still continue to exert a significant positive impact on intra-area real exchange rate volatility.

4.3 Price level convergence: Balassa-Samuelson effect

In theory, if all goods and services were freely tradable across borders, arbitrage would lead to a situation where price levels (expressed in the same currency) would be equal and strict purchasing power parity would hold. However, this is rarely the case in practice and a number of studies have shown that price levels do differ markedly across countries. These differences cannot be accounted for by factors such as transport costs, taxes and tariffs. In fact, there is a systematic tendency for prices to be lower in poorer countries than in richer countries and, when examined more closely, this pattern seems to be accounted for by differences in the prices of non-traded goods and services, e.g. housing and personal services. Moreover, there is a tendency for countries which are experiencing more rapid growth of productivity, and, therefore, improvements in living standards, to experience faster rates of increase in their price levels (again, correcting for exchange rate movements). Following Balassa (1964) and Samuelson (1964) such differences are often explained by reference to the impact on relative prices of differences in sectoral productivity growth differentials across countries (the so-called Balassa-Samuelson (B-S) effect).

In order to explore this issue in more detail, let us take the case of two countries within a monetary union denoted as country A and country B. Looking first at what happens within one of the countries (A), let us consider the simple example of an economy with two goods (one traded and the other non-traded), two factors of production (capital and labour), competitive markets, constant returns to scale production functions in the two sectors and free access to global capital markets. Labour is assumed to be fully mobile across sectors within a country but fully immobile internationally. On the basis of these assumptions, it can be shown that the rate of increase in non-traded goods compared with traded goods in any country will be given by:

$$\pi_N - \pi_T = \frac{\beta_N}{\beta_T} \Delta PROD_T - \Delta PROD_N \quad (1)$$

where π_N and π_T are the inflation rates in the non-traded and traded goods sectors, respectively. $\Delta PROD_T$ and $\Delta PROD_N$ are the total factor productivity growth rates in the two sectors. β_N and β_T are the shares of labour in both sectors. This equation states that if productivity growth in the traded goods sector is faster than in the non-traded goods sector, non-traded goods prices will tend to rise more rapidly than traded goods prices. The mechanism through which this occurs is straightforward. Given the assumptions of the model, the wage rate prevailing in the economy as a whole is determined by the world real interest rate and the rate of technical progress in the traded goods sector. A rise in productivity in the traded goods sector will drive up the wage rate. In the traded sector, this increase in wages is matched by increased productivity, and prices, which are determined in world markets, will not be affected. However, since labour is assumed to be mobile across sectors, the wages to be paid in the non-traded sector will rise. In the non-traded goods sector the increase in wages will not be matched by a productivity increase, thereby raising costs. This increase in costs will lead to an increase in prices in the non-traded goods sector.

Thus, by construction, the overall rate of change in the consumer price index in this country will be given by a weighted average of the rates of change

in traded and non-traded goods prices. Together with equation (1) this implies that:

$$\pi = \alpha\pi_N + (1 - \alpha)\pi_T = \pi_T + \alpha\left(\frac{\beta_N}{\beta_T}\Delta PROD_T - \Delta PROD_N\right) \quad (2)$$

where α is the share of non-traded goods in consumption. Thus, the overall increase in the consumer price index will be determined by the increase in traded goods prices and by the difference in productivity growth between the two sectors. The more rapid the growth in productivity in the traded goods sector (relative to the non-traded goods sector), the higher the increase in the consumer price index will be (*ceteris paribus*).

Similar relations can be derived for the country, B. By definition, the rate of increase in traded goods prices will be equal across countries, assuming a fixed nominal exchange rate between the countries. Thus differences in the overall rate of inflation of the two countries will – under these assumptions – reflect a ‘double differential’ between the sectoral productivity growth rates of the two countries. If productivity growth in the traded goods sector is higher in country A, wages will be rising more rapidly and, for the reason given above, non-traded goods prices will be increasing at a faster pace. As a result, overall inflation will be higher in country A than in country B.

A number of recent papers have explored the relevance of the B-S hypothesis in EMU countries, using standard techniques to detect cointegration between relative prices and relative productivity. In this framework, the direction of the applied studies has been twofold. A first class of studies focus on the relationship between the long-run behaviour of the aggregate real exchange rate across countries and productivity differentials. The second class focuses more specifically on the relationship between sectoral inflation and sectoral productivities within countries, while others analyse the link between the latter and inflation differentials. The general conclusion of the first approach, confirming the failure of the strict PPP condition, is that there is evidence for a relationship between the evolution of the real exchange rate and the evolution of productivity differentials (Froot and Rogoff (1991)). Following the second approach, a clear relationship between sectoral (traded versus non-traded) productivity growth differentials and sectoral inflation differentials is established. (de Gregorio, Giovannini, and Wolf (1994), Canzoneri, Cumby, Diba, and Eudey (1998)).

Following Canzoneri, Cumby, Diba, and Eudey (1998), a strong rejection of the unit root null in the deviations from the PPP in the traded sector has been found for the whole panel including ten European countries. Both relative prices of traded versus non-traded goods and relative productivity seem to be non-stationary. Nevertheless there is evidence favourable to B-S hypothesis of a long run relationship between the two series. In fact they examine the properties of the variable:

$$\ln \frac{P_N}{P_T} - \ln \frac{PROD_T}{PROD_N} \quad (3)$$

where the first term is the relative price of non-tradeables to tradeables in country *i* and the second term is the ratio of the average products of labour in the two sectors. This variable is found to be stationary, confirming that the two

series have the same stochastic trend. The results seem to show that changes in relative prices have been relevant for many countries to explain the recent trend of the real appreciation of EU countries with respect to the DM, while deviations from the purchasing power parity did not play an important role. Moreover the relative price developments seem to be in line with the evolution of relative sectoral productivity. Consequently, in the EMU context, countries such as Italy, Belgium and Spain, which show high sectoral productivity differentials, are found to have real exchange rate appreciation versus Germany.

In a follow-up study focusing specifically on the Euro Area, Canzoneri, Cumby, Diba, and Eudey (2001) confirm using panel cointegration techniques that the B-S effect was present in the past in the countries now comprising the Euro Area. Extrapolating the trends in productivity differentials into the future, they argue that there is scope for inflation differentials vis-a-vis Germany of up to 2.5 percent.

Alberola and Tyrvaïnen (1998) test the validity of the B-S hypothesis on eight European countries over a sample of approximately 20 years, using the Johansen FIML estimation. Both the standard B-S hypothesis, i.e. long-run relationship between prices and productivity differentials and the extended version which includes relative sectoral wages in the set of the explanatory variables, are analysed. The two equations, which have been tested, corresponding to the two versions of the model are:

$$\ln \frac{P_N}{P_T} - \beta_{qT} \ln q_T + \beta_{qN} \ln q_N = 0 \quad (5)$$

$$\ln \frac{P_N}{P_T} - \beta_{qT} \ln q_T + \beta_{qN} \ln q_N + \beta_w \ln \frac{w_N}{w_T} = 0 \quad (6)$$

where q_N and q_T are respectively the labour productivities in the traded and non-traded sectors while $\frac{w_N}{w_T}$ is the relative sectoral wage rate. The results of the first formulation (equation 3) lead to the acceptance of cointegration for seven of the eight countries, with the exception of Netherlands. However, in five of countries the strict version of the B-S hypothesis (i.e. $\beta_{qN} = 1$ and $\beta_{qT} \geq 1$) is rejected. Therefore the standard version the B-S hypothesis seems appropriate only for Germany, Spain and Belgium. In order to explore possible reasons for the rejection of the standard B-S model, the authors test for long-run homogeneity of wages across sectors in each countries. This is rejected in all countries except Belgium. This leads the authors to test an extended version of the B-S model (shown in equation 4) which allows for long-run differences in wages across sectors to affect relative prices (through the coefficient β_w). They find overall cointegration for the remaining countries. The extended version of the B-S model, finally, is used in order to carry out a simulation exercise for estimating the potential inflation differentials in the EMU. On the basis of post 1985 data, it is suggested that an inflation differential of up to 2.2 percent (between Germany and Spain) would be possible in EMU.

Sinn and Reutter (2000) cite evidence regarding sectoral productivity differences in the Euro Area and argue that these provide scope for significant inflation differentials within the area as a result of the B-S effect. They do not estimate the impact of intersectoral productivity differentials on relative sectoral inflation, instead imposing a priori coefficient values. On the basis of these

coefficients and the extrapolation of past trends, they argue that a maximum differential of up to 2.4 percentage points (between Germany and Ireland) could be expected under monetary union.

In addition to cross-country studies, there have been a number of papers focusing more specifically on the experience of individual countries. In the case of Ireland, McGowan (2000) suggests that the B-S effect can only account for around 1 percentage point of the 3.3 percent differential of Irish inflation over Euro Area recorded during 2000. This is well below estimates provided by cross-country studies and which suffer, in the Irish case, from the problems of accurately measuring productivity in a tradeable sector heavily dominated by multinational firms whose policies, inter alia, of transfer pricing greatly inflate headlined gross value added figures (Aitken (1999)). Costa (2000) presents calculations which suggest that the B-S effect could be reasonably expected to lead to a differential between Portuguese and German inflation of the order of 0.8 percentage points per annum. In the case of Spain, Alberola (2001) reports that while the pattern of intersectoral inflation differentials is broadly consistent with differences in sectoral productivity growth rates. However, he notes that part of the explanation for higher non-traded inflation and lower non-traded productivity growth can be attributed to the impact of structural rigidities in the sheltered sector of the economy which exacerbate inflationary pressures stemming from excess demand in the economy.

In assessing the evidence regarding the B-S effect in the Euro Area, a number of caveats need to be borne in mind. First, the distinction between traded and non-traded goods is not clear cut and the usual classifications may not be accurate: for example, it is often found that the resulting measures of traded goods prices do not satisfy the law of one price even in the long run Canzoneri, Cumby, Diba, and Eudey (1998). Secondly, there may be difficulties concerning the quality of the underlying data being used. Specifically, since Germany is often used as the benchmark in these studies, the results are sensitive to the German data which show differential sector productivity growth which seem low compared to other developed economies. In this context, it should also be noted that errors in deriving the price/volume split at the sectoral level would tend to bias results in favour of the B-S effect. Finally, many studies are predicated on the assumption that past patterns will persist into the future. Given the high level of real convergence which has already been achieved among the countries forming the Euro Area, and the likely impact of changes in behaviour on foot of increased integration, this is a questionable assumption (Remsperger (2001)).

4.4. Cyclical Divergence

Focusing on the demand side of the economy, it is clear that there are a number of factors that could generate inflation differentials within a monetary union in the short-term. In particular, differences in cyclical positions across participating countries of a monetary union could give rise to differences in inflation rates in individual countries. The bulk of such impacts would come via impacts on non-traded goods prices which, in the short run, depend on domestic rather than external demand. In contrast, since, by definition, traded goods prices should be closely linked to developments in the area as a whole, rather than the situation

in a specific country, domestic cyclical conditions could be expected to have a more limited effects on traded goods prices. As is well known, the measurement of the cyclical position of an economy poses considerable difficulties which tend to be aggravated when cross-country comparisons are being made. Despite the fact that cyclical movements have become more synchronised over time in the Euro Area countries (European-Central-Bank (1999b)). Most available measures of the output gap point to some dispersion of cross-country cyclical positions within the area. Moreover, there is a clear positive relation between measures of the relative cyclical position and relative inflation rates of Euro Area economies (Sinn and Reutter (2000)). In addition, as Alberola (2001) points out, it is notable that those countries in the area which have currently higher inflation rates also have positive output gaps on the basis of standard measures. Finally, Blanchard (2001) examines the pattern of inflation differentials in the Euro Area since the start of the monetary union, finding that 'overheating' has played an important role in some of the high inflation countries. Addressing the issue of the desirability or otherwise of a national fiscal policy response to a high inflation differential, he suggests that it is only warranted in the case where the inflation differential stems from excess demand and only when this can be attributed to excessive domestic demand. Where a high national inflation rate stems from external demand, the resulting real appreciation is an appropriate mechanism to restore equilibrium both on the domestic goods market and in the external accounts.

5. Summary of the evidence

The previous section has gone through a list of the 'usual suspects' underlying possible inflation differentials in a monetary union and provided reviewed some of the evidence which has been produced to assess their importance, at least for historical data. Given that the monetary union has only been in operation for a period of less than 3 years, it is not possible – using standard empirical techniques – to give definitive answers regarding the relative importance of the various factors in explaining the pattern of inflation differentials which have been observed since the start of 1999. Indeed, as noted in Section 1, headline inflation figures have been affected by a range of idiosyncratic shocks in individual countries.

With this caveat in mind, it is nonetheless worthwhile to examine – from a statistical point of view – the extent to which some of the main factors indicated earlier are linked to the observed pattern of inflation differentials. For this purpose, the present Section presents the result of a statistical regression analysis which tries to exploit the limited information which is available in an efficient manner.

Specifically, a panel regression technique² has been employed to model the inflation rates in the eleven initial participating countries of the Euro Area in the years 1999, 2000 and the first half of 2001 as a function of a number of possible

² The estimation was carried out using the RATS package using fixed-effects for individual years but otherwise imposing a common set of coefficients across countries and time.

explanatory variables. Specifically, the inflation rates are regressed on time-dummies and the following variables: the OECD measure of the output gap in each country and time period, the price level relative to Germany in each country in the previous year; a variable measuring the impact of indirect taxes on the HICP in each country and each year and, finally, an indicator of differential productivity growth between the traded and non-traded sectors in each country³. Various experiments with import prices indicated that this variable was not significantly related to the pattern of inflation differentials in the period concerned. The results of this estimation are reported in Table 5.

As can be seen from the table, all of the variables considered are found to be statistically significant and to have the 'right' sign. The indirect tax variable was found to be strongly significant and the theoretical value of unity could not be rejected. This value is imposed in the equation reported in the Table. The relative price variable is strongly significant, a result which is in line with results reported by Rogers, Hufbauer, and Wada (2001). Similarly, the output gap and the sector productivity growth differential are both found to be significant, in line with the earlier evidence cited above. Moreover, the equation appears to do a reasonable job of 'fitting' the data, which is confirmed by an R² of 0.82.

Table 5. HICP inflation 1999-2001: panel estimate

$\pi_{i,t}$	=	$0.14y_{i,t} - 0.045 rp_{i,t-1} + 1.0 \tau_{i,t} + 0.44 dprod_i$
		(2.2) (-5.0) (-) (3.0)
$\pi_{i,t}$	-	HICP inflation rate in country i in period t
$y_{i,t}$	-	Output gap (OECD estimate)
$rp_{i,t-1}$	-	Relative consumer price level
$\tau_{i,t}$	-	Indirect tax variable
$dprod_i$	-	Relative productivity growth (traded/non-traded)
R^2		0.82
		N 33

However, it should be stressed that this equation is a 'descriptive statistical' tool and is not a structural economic equation. It would therefore be inappropriate to use the estimated parameters to decompose the country inflation rates into different determinants; it would also be dangerous to use these parameters for simulation purposes. Nonetheless, the results do suggest that a large fraction of the inflation differentials which have hitherto been observed in the area can be explained by price convergence (proxied by relative price levels), cyclical conditions, indirect tax changes and Balassa-Samuelson effects.

³ The output gap series are taken from the June 2001 OECD Economic Outlook and are based on a production function approach to estimating potential output. Data on relative price levels are taken from various issues of the OECD Main Economic Indicators. The indirect tax variable is computed from national budgetary sources. Finally, the sectoral productivity differentials are those reported in Sinn and Reutter (2000)

6. Conclusions

Inflation divergences across countries are a normal phenomenon in monetary unions, as evidenced by the experience of the US and of other monetary unions. In principle, such differentials can stem from a variety of factors: idiosyncratic factors (such as difference in indirect taxes, weather, weights etc.), differences in cyclical positions or differences in sectoral productivity growth rates. In the case of the Euro Area, an additional source of inflation differentials could stem from the impact of cross-country price convergence due to the single market and the single currency itself. On the basis of the evidence cited above, it appears reasonable to conclude that all of these factors have played a role in generating inflation differentials. This, of course, is subject to the strong caveat that – given that the monetary union is less than three years in operation – there is not a sufficiently long experience to derive definitive conclusions.

In many cases, the resulting inflation differentials represent warranted adjustments of relative prices to appropriate equilibrium values and do not warrant a policy response. However, an inflation differential could become problematic if it were to reflect a movement away from equilibrium. This could be the case where a high inflation rate in a particular country results from excessive wage increases, an unsustainable expansion of profit margins and/or an expansionary stance in fiscal policy. In this case, the more such developments were to become embedded in the economy, the more they would lead to a loss in competitiveness and, eventually, to a loss in output and employment growth in the respective country.

The monetary policy of the ECB – which is directed at the maintenance of price stability in the area as a whole – is in no position to influence the geographical distribution of inflation rates within the area and thus cannot address such problems. Instead, problems arising from an inappropriately high national inflation rate can only be tackled by the use of the available national policy instruments such as fiscal adjustment, appropriate wage setting and competition policy.

References

- Aitken, B. (1999): “Ireland and the euro: productivity growth, inflation and the real exchange rate”, IMF Staff Country Report 99/108. Ireland: Selected Issues and Statistical Appendix.
- Alberola, E. (2001): “Interpreting inflation differentials in the euro area”, Banco de Espana, Economic Bulletin, April.
- Alberola, E., and J. M. Marques (1999): “On the relevance and nature of regional inflation differentials: The case of Spain”, Banco de Espana Servicio de Estudios, Documento de Trabajo, 9913.
- Alberola, E., and T. Tyrvainen (1998): “Is There Scope for Inflation Differentials in EMU? An Empirical Evaluation of the Balassa-Samuelson Model in EMU Countries”, Bank of Finland Discussion Paper.
- Balassa, B. (1964): “The purchasing power parity doctrine: A reappraisal”, *Journal of Political Economy*, 72.
- Beck, G., and A. Weber (2001): “How wide are European borders? New evidence on the integration effects of monetary unions”, mimeo, CFS Frankfurt.

- Blanchard, O. (2001): "Country adjustments within Euroland. Lessons after two years", CEPR Report: Monitoring the European Central Bank,.
- Canzoneri, M. B., R. E. Cumby, B. Diba, and G. Eudey (1998): "Trends in European Productivity: Implications for Real Exchange Rates, Real Interest Rates and Inflation Differentials", Oesterreichische Nationalbank Working paper, 27.
- (2001): "Productivity Trends in Europe: Implications for Real Exchange Rates, Real Interest Rates and Inflation", Review of International Economics.
- Cecchetti, S. G., N. C. Mark, and R. Sonora (1998): "Price Level Convergence Among United States Cities: Lessons for the European Central Bank", Oesterreichische Nationalbank Working Paper.
- Costa, S. (2000): "Inflation Differential between Portugal and Germany", Banco de Portugal Economic Bulletin.
- de Greef, I., D. Hofman, and N. Nahuis (2000): "External economic relations of the euro area", in *The Economics of the Euro Area*, ed. by P. van Bergeijk, R. Berndsen, and W. Jansen. Edward Elgar.
- de Gregorio, I., A. Giovannini, and H. Wolf (1994): "International evidence on tradeables and nontradables inflation", *European Economic Review*, 38, 1255–1244.
- Dresdner-Kleinworth-Benson (2000): "DKBR Pricing Survey 2000".
- European-Central-Bank (1999a): "Inflation differentials in a monetary union" ECB Monthly Bulletin, October.
- (1999b): "Longer-term developments and cyclical variations in key economic indicators across euro area countries", ECB Monthly Bulletin, July.
- (2001): "Rising HICP inflation since early 1999 has been accompanied by moderate changes in inflation dispersion across euro area countries", ECB Monthly Bulletin, July.
- Froot, K., and K. Rogoff (1991): "The EMS, the EMU and the Transition to a Common Currency", NBER Macroeconomic Annual.
- Goldberg, P., and F. Verboven (2001): "Market Integration and Convergence to the Law of one Price: Evidence from the European Car Market", NBER Working Paper 8402.
- McGowan, P. (2000): "Ireland: Experiences in EMU", Central Bank of Ireland Quarterly Bulletin, Winter.
- Nenna, M. (2000): "The Real Exchange Rate: Theory and Evidence", Phd Thesis, La Sapienza, Rome.
- Remsperger, H. (2001): "Konvergenz und Divergenz in der Europäischen Währungsunion", speech at Historiker-Konferenz Conflict Potentials in Monetary Unions, Kassel.
- Rogers, J. H. (2001): "Price Level Convergence, Relative Prices, and Inflation in Europe", Board of Governors of the Federal Reserve System – International Finance Discussion Paper 699.
- Rogers, J. H., G. Hufbauer, and E. Wada (2001): "Price Level Convergence and Inflation in Europe", Institute of International Economics Working Paper no. X.
- Samuelson, P. A. (1964): "Theoretical notes on trade problems", Review of Economics and Statistics 46.
- Sinn, H.-W., and M. Reutter (2000): "The Minimum Inflation Rate for Euroland", CESifo Working Paper no. 377.

Should the Maastricht criteria be modified?

Reiner König

1. Introduction

In a short time, the European Union will face another major challenge — enlargement. Put differently, in the foreseeable future the number of EU member states will increase considerably due to the accession of twelve candidate countries — mostly central and east European economies. The first new members are scheduled to join the EU in 2004. It may be assumed that the new EU members will also want to be integrated into EMU very quickly. Their economic policies are already geared towards fulfilment of the convergence criteria. As EU accession approaches, though, those criteria have come increasingly under fire.

Some candidates view them partly as unnecessary hurdles preventing speedy accession to monetary union. This is echoed by occasional doubts among euro-area countries as to whether the convergence criteria are capable of taking due account of the special problems entailed by enlargement. The introduction of additional criteria is also discussed time and again, especially since there are structural differences between the present euro-area countries and prospective candidates, some of which are rather considerable.

Let me give you the end of my remarks at the beginning and tell you that, in my opinion, changes to the current criteria are neither necessary nor justifiable. The answer to the question posed by the hosts, “Should the Maastricht criteria be modified?”, is a resounding “No”. One reason is that the EU Treaty, and the amendments to it which relate specifically to enlargement and the single currency, are a solid and comprehensive foundation for the enlargement process. This goes for both the clearly defined procedures and for the economically founded requirements that the integration steps must meet. Another factor is that, to ensure equal treatment, the same rules which were applied to the current members should be applied to the new accession countries. To that extent, neither the introduction of new hurdles nor the removal of existing barriers is economically necessary or politically justifiable.

However, the predetermined criteria should be strictly complied with in order to ensure that the euro remains a strong currency and the euro area a stable and competitive economic area. Let me explain these conclusions in greater depth by discussing in detail the process of integration, taking into

account the theory of optimum currency area¹. My aim is not to evaluate the current state of convergence efforts in each of the accession countries; rather, I seek to shed light on the complex system of intricately interwoven criteria and its importance in the various stages of the integration process.

2. The three-stage integration process in EMU and its assessment , taking into account the theory of optimum currency areas

The candidates for EMU, mostly from central and eastern Europe, will join the single currency in a *three-stage* integration process. The first major precondition is membership of the EU. To join the EU, the Copenhagen criteria require a functioning market economy, competitive markets, and sustained macroeconomic stability. By joining the EU, new members also commit themselves to adopting the euro at a later date². However, membership of the EU does not mean giving up monetary sovereignty immediately. Instead, a transition period is necessary, one that includes gradually preparing the currency to join the euro zone, especially at least two years of successful membership in the European exchange-rate mechanism. Integration into EMU is thus possible only once the Maastricht criteria have been completely met. My following remarks will explain in greater detail this three-stage integration process and the attendant requirements to be met by accession candidates, together with the underlying theoretical considerations.

2.1. Phase 1 — Accession to European Union

In 1993 the *Copenhagen European Council* took the fundamental decisions shaping the future enlargement of the Union to include central and east European countries. At the same time it defined the criteria for accession to the EU. The so-called *Copenhagen criteria* (see box) require new members to have a sufficient degree of political, institutional and economic stability, to implement the *acquis communautaire* — the body of Community legislation — in national law, and to identify completely with the goals of European integration.

¹ The theory of optimum currency areas arose in the early sixties out of the debate on the merits of fixed or flexible exchange rates. Such areas became increasingly significant when the issue of EMU was being debated. The idea was to define, in terms of economic criteria, an *optimum* currency area where a single currency is used while flexible exchange rates are maintained vis-à-vis other currencies. Over the years, a large number of approaches have been developed which use a multiplicity of characteristics to define “optimum”. They refer to those specific characteristics of economies which reduce the necessity for exchange-rate adjustments between the economies and which promote their internal and external equilibrium. All in all, it is difficult to derive unambiguous normative implications from the theory. As is also noted by Eichengreen (1990), it has not been possible to develop a closed theoretical model which leads to a clear yes/no answer. Despite all that, though, the theory brings to light factors which have a considerable bearing on how well-suited an economy is to integration within a common currency area. Snider (1967) and Mundell (1961) provide a definition of “optimum currency areas”. An overview of this concept is contained in Salin (1977), Ishiyama (1975), Crawford (1993), De Grauwe (1992), and Tavlas (1993), to name just a few.

² As opposed to the United Kingdom and Denmark, the new EU member states will not have an opt-out clause.

Copenhagen criteria

Stability of institutions guaranteeing democracy and the rule of law, human rights and respect for and protection of minorities. (*Political criterion*)

The existence of a functioning market economy as well as the capacity to cope with competitive pressures and market forces within the Union. (*Economic criterion*)

The ability to take on the obligations of membership, including the adherence to the aims of political, economic and monetary union. (*Criterion of ability to assume the obligations of membership*)

The Eurosystem is not directly a party to the accession negotiations. Owing to the much more interwoven links between the EU's economies, the increasing linkage of accession countries to the euro and the existing commitment to adopt the euro at a later date, it is in the Eurosystem's own best interest to keep abreast of the enlargement process. There are two Copenhagen criteria which are of particular relevance to the Eurosystem: the adoption of the *acquis communautaire* and the establishment of a *functioning market economy*.

Adoption of the acquis communautaire implies the recognition and application of all European laws and regulations by national legislative bodies, unless transitional arrangements have been agreed during negotiations. Issues relating to capital account transactions, banking systems, financial market stability and, in particular, central bank statutes are significant for adopting the single currency at a later date.

By adopting the *acquis communautaire*, the accession candidates will already create important institutional preconditions for integration into monetary union³. Accession to the EU will give the central banks of accession countries automatic membership of the ESCB⁴. Consequently, the key features of national central bank legislation must be compatible with the EC Treaty. That includes, in particular, acceptance of the objective of price stability, which, according to *Gros/Thygesen (1990)* can only be guaranteed through institutional, personal and financial independence of the central bank, as set out in Article 109 of the EC Treaty. Moreover, the ban on central bank credits of all types to the public sector and the prohibition of measures granting the public sector privileged access to financial institutions are particularly important (Articles 101/102 of the EC Treaty).

Moreover, new EU members must have the capacity to withstand competitive pressure and market forces within the Union. Hence the accession countries also need to have in place a *functioning market economy*, which in turn requires the existence of certain legal and institutional structures, competitive markets, free price formation, macroeconomic stability and a mature financial sector. A joint regulatory policy framework is also an important foundation for subsequent participation in monetary union. That requires the former transition countries not only to make further improvements in ownership rights but also to continue the

³ Particularly *Lippi (1998)*, *Dornbusch et al. (1998)* and *Buiter (1999)* point out the particular significance of the institutional structure for the long-term success of a monetary union. *Cohen (1993)* stresses the significance importance of credible and reliable institutions. That is attributable in particular to the existence of politico-economic interests in a monetary union. In that context, *Feldstein (1997)*, *Frieden/Jones (1998)*, *Eichengreen/Frieden (2000)* and *Hefeker (1997)* study the maximisation of benefits by socio-economic groups in a monetary union, which must be directed to the right channels by suitable institutions.

⁴ In connection with enlargement, it is not only the accession countries which require additional institutional adjustment, however. The existing structure of the Eurosystem likewise needs to be overhauled. For instance, the future composition of the Governing Council of the ECB following the addition of new members has not been resolved. By introducing an empowerment enabling clause, the Nice European Council has facilitated only the beginning of the resolution of this problem. See *Baldwin et al. (2001)*.

process of privatisation. Competition is possible only where most enterprises are in the private sector and where monitoring of private ownership functions efficiently. Government aid or other interventionist measures to promote the domestic economy are not compatible with the rules of the Common Market. Competitive goods and factor markets are an important prerequisite to enabling the microeconomic efficiency advantages of monetary union to come to full fruition.

To enable an economy to meet the obligations imposed by membership, it should already be sufficiently integrated into the European Union economy prior to accession. The extent and development of trade relations — or, more specifically, the degree of an economy's outward openness — may provide clues as to the ability of enterprises to withstand competitive pressure within the Union. *Mc Kinnon (1963)* is of the opinion that these criteria are also a strong sign of an economy's suitability to adopting a single currency⁵. The accession countries also need a sustainable balance of payments in order to be competitive (see Articles 4 and 98 of the EC Treaty). It is certainly quite normal for countries in the process of economic recovery to run current account deficits. However, such deficits can also pose problems, since excessive foreign debt harbours considerable hazards and perceptibly intensifies the vulnerability of accession countries to internal and external shocks.

The building of functioning, open market economies also presupposes capital account liberalisation. At first glance, the internationalisation of financial relationships is seen as placing a burden on the domestic economy. Yet even in the medium term, direct investment is already capable of making an important contribution to economic and institutional adjustment⁶. In connection with a significant inflow of human capital, they influence the growth potential and the competitiveness of an economy. *Ingram (1973)* additionally assumes that, given sufficient capital mobility, offsetting capital inflows are capable of guaranteeing external equilibrium. For the domestic allocation of capital to function, but also for survival in international competition, the efficiency of the *banking industry and financial sector* is of prime importance. Elements include a great degree of financial intermediation, large and liquid capital markets, adequacy of banks' own funds in conjunction with a functioning banking and securities supervisory structure, and sound payment systems.

2.2. Phase 2 — *The transition phase*

The transition from accession to the EU to integration into the Eurosystem is designed to reduce exchange-rate fluctuations considerably. For that to happen, though, increased convergence between economies is necessary; that in turn presupposes a strictly stability-oriented policy. This has implications for accession countries in terms of both economic and monetary policy.

As early as upon accession to the EU, new members are required to view *economic policy* as a matter of common concern⁷. Accession countries must be

⁵ This is because in open economies nominal changes in the exchange rate are accompanied by changes in price levels which diminish or cancel out the original effect of changes in the exchange rate. Accordingly, nominal exchange-rate changes are hardly capable of contributing over the long run to a change in real competitiveness. Therefore, according to *Masson/Taylor (1993)*, the setting of nominal exchange rates in monetary union is relatively inconsequential.

⁶ See also the "Programme for the liberalisation of capital movements in the Community" (COM (86) 292 final of 23 May 1986).

⁷ See Article 99 of the EC Treaty.

willing and able to participate in the economic policy coordination and monitoring mechanisms. This is a complex and interlocking system of instruments, the implementation of which at the national level is often very sophisticated. The *Broad Economic Policy Guidelines*⁸ are the “flagship” instrument of coordination; once a year, they describe the economic situation and economic policy requirements for the EU as a whole and for the individual countries. Compliance with the recommendations is monitored through special reports. Also, the EU has developed its own strategy for creating jobs (the “Luxembourg process”). In addition, in the “Cardiff process”, progress in the individual countries’ structural reforms is reviewed. Most recently, a macroeconomic dialogue designed to promote the tension-free interplay of various policymaking areas was kicked off. The Stability and Growth Pact⁹ applies specifically to financial policy; it anchors the medium-term object of a largely balanced government budget. Those countries not yet belonging to the Eurosystem must submit convergence reports containing their ideas on the road to lastingly sound public finances. The accession countries must create the legal and organisational conditions to participate in these processes efficiently. In particular, they must be willing to actually implement recommendations given by European bodies — even against political resistance.

During the transition phase, the goal of increased coordination is primarily to establish the necessary convergence for joining monetary union. Not only a corresponding macroeconomic policy is necessary, but also, and in particular, structural adjustments. *Kindleberger (1971)*, for one, sees the integration of goods markets and homogeneity of preferences as important preconditions for integration into a monetary union¹⁰. *Bayoumi/Eichengreen (1994/1996)* point out the importance of the structure of industries and sectors. They likewise come to the conclusion that the broad convergence of the structures of economies and a large degree of intra-industry trade are helpful towards reducing asymmetrical shocks in a monetary union.

Like economic policy, *exchange-rate policy* must be considered a matter of common interest following accession to the European Union¹¹. Although the choice of a specific exchange-rate agreement is up to the economies themselves, the new EU members are basically expected to join the exchange-rate mechanism¹². *Freely floating rates, crawling pegs or currency boards with reference currencies other than the euro* are hardly compatible with the aim of

⁸ See the Council Recommendation of 6 July 1998 on the broad guidelines of the economic policies of the member states and of the Community, OJ L 200, 16 July 1998.

⁹ See OJ C 236 of 2 August 1997.

¹⁰ Integrated goods markets engender similar output structures and increased intra-industrial trade. That leads to greater convergence in terms of trade or, more precisely, increases the likelihood that this type of disruption shock can similarly affect the economies belonging to monetary union.

¹¹ See Article 124 of the EC Treaty.

¹² See OJ C 236 of 2 August 1997 and C 345 of 13 November 1998. The exchange-rate mechanism is made up of bilateral exchange rates between the euro and the currencies of EU member states not yet participating in the Eurosystem. The system is based on central rates which are set vis-à-vis the euro, around which uniform fluctuation margins are defined. A standard fluctuation band of +/- 15 percentage points around the central rate is envisaged. The band can be narrowed on a case-by-case basis. The choice of band is without prejudice to the interpretation of exchange-rate stability as a criterion of convergence (Art. 121 of the EC Treaty). Intervention at the margins is automatic and unlimited. The central rates can be adjusted. At present Denmark is the only member of the exchange-rate mechanism, with a narrow band of +/- 2.25%. It must be decided on the basis of the starting situation of every single candidate whether participation makes sense in terms of stability policy. There is generally a trade-off between a reduction in exchange-rate fluctuations, increasing convergence and lower interest differentials, on the one hand, and a loss of economic-policy (and particularly monetary-policy) degrees of freedom on the other.

joining monetary union at a later date. The unilateral adoption of the euro — “euroisation”, so to speak — is not an option, either.

The minimum length of the transition period is determined by the exchange-rate criterion. A country must have participated in the exchange-rate mechanism for at least two years without any severe tensions before it is allowed to join EMU. Therefore, the EC Treaty does not permit simultaneous accession to the EU and EMU. The longer preparatory period for the overarching objective of integration into the single currency can also be interpreted as a chance to extend the period for undertaking the necessary reforms, which can often be quite painful. In addition, the possibility of exchange-rate adjustments should not be surrendered prematurely; any upheavals in the process of recovery and the attendant structural adjustment can thus be buffered.

2.3. Phase 3 — Integration into EMU

Apart from the minimum period of membership of the exchange-rate mechanism, there is no fixed time schedule for introducing the euro. As is likewise the case for EU integration, not all accession candidates are obligated to join the Eurosystem simultaneously. The Treaty envisages an assessment of accession candidates at least every two years or at the request of an EU member state¹³. Under the EC Treaty, integration into monetary union is only possible if a *high degree of sustainable convergence* is met. There are two aspects which merit particular emphasis. One is the *high degree* of convergence prior to accession to EMU, and the other is the demand that this convergence be *sustainable* within monetary union. A *high degree* of convergence has been achieved if the economies are able to meet the four convergence criteria set forth in the Treaty¹⁴. These criteria, which represent nominal convergence, are a way of quantifying the achievement of these objectives (see box). Sustainability means that the members of the euro area must meet the requirements not just at the time of the assessment itself but also afterwards so as not to endanger cohesion.

Maastricht convergence criteria

A member state must have achieved a high degree of sustainable price stability and, in the last year before the examination, must demonstrate an average annual rate of inflation which is not more than 1.5 percentage points higher than that of the, at most, three best-performing member states in terms of price stability.

At the time of the examination the member state must not be the subject of a Council decision under Article 104(6) of the Treaty that an excessive deficit exists. Such a deficit generally exists if the ratio of the planned or actual government deficit to gross domestic product exceeds three percentage points or the ratio of government debt to gross domestic product exceeds 60 percentage points.

¹³ See Art. 122 of the EC Treaty.

¹⁴ These are set forth in Article 121 of the EC Treaty and specified in the accompanying “Protocol on the convergence criteria referred to in Article 121 (ex-Article 109j) of the Treaty establishing the European Community (1992)”.

Over the course of one year, prior to the examination, the average nominal long-term interest rate must not exceed by more than two percentage points that of the, at most, three best-performing member states in terms of price stability.

A member states must have respected the normal fluctuation margin provided for by the exchange-rate mechanism of the European Monetary System without devaluation for at least the last two years before the examination.

2.3.1. A high degree of convergence

In monetary union, in which there are by definition no exchange-rate adjustments to offset regional tensions, *price developments* should move more or less in sync with one another. Although relative prices must remain flexible in a market economy to maintain their signalling effect for market participants, lasting shifts in the price level within a monetary union will influence the competitiveness of the regions in question. Apart from the political pressure for adjustment which this would generate, in an environment of pronounced differences in inflation rates it would also be difficult to conduct a monetary policy which is adequate and affects all countries equally. *Ohr (1993)* describes considerable efficiency losses where monetary policy is suboptimal.

In the light of the prime role that price developments play for the functional viability of a monetary union, the major significance of price convergence as a criterion for entry is only too understandable. The important thing is not only to have relatively equivalent inflation rates, which in themselves could prevent exchange-rate tensions according to the theory of purchasing power parities. In addition, a high degree of price stability ought to have been achieved. The economic agents in monetary union must be able to make their decisions in an environment of predictability. Price stability is an indispensable precondition for improving the framework conditions for economic growth, thereby creating more jobs. Price stability must not only be achieved temporarily through administrative measures but must also be assured under market economy conditions. In this connection, too, liberalisation and deregulation processes play a role of key importance.

The second criterion required is a sustainable *government financial position*. Sound government finances, measured in terms of low deficit and debt ratios, are necessary for sustainable and tension-free growth. In addition, they are necessary so that countries participating in monetary union can undergo normal cyclical fluctuations without government spending getting out of hand. According to *Bovenberg/Kremers/Masson (1991)*, integration into a monetary union lowers fiscal policy room for manoeuvre, yet increases the need for fiscal policy stabilisation¹⁵. *Kenen (1995)* says that increasing tendencies towards new borrowing in a monetary union could end up even jeopardising the existence of

¹⁵ One reason is the trend increase in expenditure that expenditure will tend to rise, which *Grassinger (1994)* associates with an increased incentive for deficit spending, whereas *Buiter et al. (1992)*, *Rotte/Zimmermann (1998)* and *Jochimsen (1997)* associate it with a diminished risk of devaluation and the pass-through of negative interest-rate effects. In addition, a trend reduction in public income is to be expected can be expected to decrease, which *Crawford (1993)* and *Isard (1990)* assume will happen owing to increasing tax competition. *De la Dehesa and Krugman (1992)* go even further and assume the existence of increasing regional differences which can only can no longer be balanced out by means of monetary policy measures. The resultant regional differences in incomes and employment, in the light of the absence of a central budget – according to *Sala-i-Martin/Sachs (1991)*, such a central budget makes an important contribution to eliminating real disequilibria in the United States – is relevant concerning strains on national budgets.

the monetary union. *De Grauwe (1997)* likewise points to the danger of speculative crises caused by massive government debt. In addition, sound government finances contribute to keeping inflation expectations down, thereby facilitating the maintenance of price stability in the euro area.

Whereas the accession countries have basically accepted the aforementioned criteria and differences of opinion only exist regarding the concrete interpretation, the *interest-rate criterion* is being fundamentally called into question.¹⁶ The reason given is that the introduction of the euro would do away with the currently existing exchange-rate risk premium and that nominal interest rates would converge *automatically*. It is certainly true that once the euro is introduced, an even greater convergence of nominal interest rates is to be expected. A “convergence game” overshadowing everything else could ensue in the final approach to EMU accession. However, the meaningfulness of the interest-rate criterion cannot generally be disputed. Given the liberalisation of capital markets and consequently a major convergence of real interest rates¹⁷, differences in nominal interest rates reflect in particular the expectations of financial markets regarding inflation, public finance and exchange-rate stability. To that extent, the fulfilment of the exchange-rate criterion is a sign as to whether nominal convergence and exchange-rate stability can be maintained over the long haul, and is consequently a judgement by the financial markets on the sustainability of the convergence achieved so far.

The *exchange-rate criterion* has also come under fire. Arguing that their monetary policy room for manoeuvre is virtually nil anyway and is largely predetermined by the ECB’s monetary policy, the new EU member states want to adopt the euro quickly. However, the exchange-rate criterion requires two years of membership of the exchange-rate mechanism and the concomitant stabilisation of nominal exchange rates¹⁸.

The complete elimination of nominal exchange-rate fluctuations is surely one of the key advantages of the single currency. The exchange-rate mechanism provides some of these advantages even prior to monetary union¹⁹. Consequently, by way of reducing nominal exchange-rate fluctuations, membership of the exchange-rate mechanism is likely to reduce swings in real exchange rates considerably even in the transition phase²⁰. According to *Vaubel (1976)* this is a fundamental condition for integration into a monetary union.

¹⁶ See the article in the 3 July 2001 edition of the Frankfurter Allgemeine Zeitung titled “*Die Maastricht-Kriterien unter Beschuss*”.

¹⁷ The level of long-term interest rates is a function of the underlying real interest rate, the expected rate of inflation and the risk premia (which are especially linked to defaults, the expected exchange-rate movements and uncertainty regarding the inflation rate and exchange-rate expectations). See *European Commission (1998)*.

¹⁸ The problem of short-term exchange-rate fluctuations becomes increasingly prominent as capital account liberalisation makes further progress. If capital restrictions are loosened, this increases the possibility of a rise in exchange-rate risks triggered by market overreactions and not by real factors.

¹⁹ Numerous economic variables are positively influenced by this, which likewise increases candidates’ suitability for adopting the single currency. *Rose (2000)*, *De Grauwe (1987)* and *Baldwin/Krugman (1989)* point out that there is a positive correlation between exchange-rate stability and trade. *Ricci (1998)* assumes a positive influence of exchange-rate stability on inflows of direct investment. *Buiter (2000)* sees exchange-rate fluctuations, in an environment of extremely integrated financial markets, as a source of shocks and instability. According to *Dixit (1989)* even a low degree of exchange-rate uncertainty correlates with a causes a significant misallocation of resources. As is explained by *Bayoumi/Rose (1993)*, capital mobility is likewise considerably limited by the extent of exchange-rate uncertainty.

²⁰ Much of the variance of the real exchange rate is explained by nominal exchange-rate fluctuations. See also the empirical studies by *von Hagen/Neumann (1994)* and *Eichengreen (1991)*.

Despite increasing exchange-rate stability, the exchange-rate mechanism has maintained sufficient flexibility to take account of the new accession countries' specific situations. Since, within the predefined bandwidth, the exchange rate still has room to fluctuate, real appreciation trends (owing to extensive privatisation programmes, comprehensive inflows of foreign capital and considerable productivity gains, for instance) do not have to be offset completely through internal price adjustments. As the southern European countries' case shows, it appears to make sense to undertake the majority of structural reforms caused by accession to the EU *prior to* integration into monetary union, while the exchange rate is still adjustable. Moreover, the central rates in the exchange-rate mechanism can still be adjusted, which helps preventing the conversion rates from being prematurely fixed²¹.

2.3.2. *The sustainability of convergence*

For the monetary union to function in an environment where tensions are at a minimum, it is not enough for the convergence criteria to be met on a one-off basis before accession. Rather, it must also be ensured that the individual members do not drift apart²². Major structural discrepancies and significant differences in living standards constitute risk factors. In terms of sustainability, real and nominal convergence are two sides of the same coin.

This is particularly true of *price developments*. According to the Balassa-Samuelson effect²³, above-average growth rates in the process of economic recovery lead to higher inflation in the accession countries. Sharp productivity gains in the traded goods sector have implications for wage demands in the non-traded goods sector. That drives up macroeconomic unit labour costs, and ultimately consumer prices, faster than in the current EU countries, which have already achieved a relatively high standard of living.

Even if there is no disputing the principle of the Balassa-Samuelson argument, there are differences of opinion on the magnitude and the economic policy significance of that effect. Empirical studies conducted so far confirm structural inflationary trends in the "catch-up economies". Some conclude from these findings that the ECB's current price objective will be too tight following enlargement and must therefore be revised upwards²⁴. Otherwise, the outlook for growth in the old and new euro-area countries would be excessively depressed. However, at an early stage the ECB pointed out²⁵ that a certain

²¹ *Obstfeld (1997)* and *De Grauwe/Spaventa (1997)* study issues regarding the setting of key currencies central rates.

²² This objective is oriented towards the *endogenous approaches* of the theory, which, in the sense of applying the "Lucas critique", integrate dynamic aspects into the theory of optimum currency areas. *Frankel/Rose (1996/1997)* and *Bayoumi/Eichengreen (1996)*, in particular, regard it in this connection as necessary for the structure of the studies to be adapted to the changing monetary environment. *Fatas (1997)*, *Rose (2000)* and *Fontagne/Freudenberg (1999)* likewise question the exclusive examination of historical data. Correlations which hold prior to the introduction of a single currency are in some circumstances no longer relevant in monetary union.

²³ If there are considerable differences in labour productivity between the traded and non-traded goods sectors, and the traded goods sector is showing strong output productivity growth owing to international competition, the catch-up economy will have a higher inflation rate if wage developments in both sectors are similar. See *Samuelson (1964)* and *Balassa (1964)*.

²⁴ As suggested by, for instance, *Sinn/Reutter (2001)* owing to this problem.

²⁵ On this see *European Central Bank (1999)*.

inflation differential is quite normal in a monetary union and that higher inflation rates in former catch-up economies such as Portugal, Spain and Ireland did not impair monetary policy in Europe.

This qualification of the Balassa-Samuelson effect undoubtedly holds for the central and east European countries, too. Owing to the relative weakness of their economies, higher rates of structural inflation in those countries will probably only have a limited impact on the overall European aggregate. In addition, they are probably subsumed by the ECB's definition of price stability, which is a rate of price increase of up to 2 %. By tolerating up to 2 % inflation, the ECB sought to take due account of precisely the statistical uncertainty of price measurement and other unavoidable price impulses. If the ECB were to change its price objective, this could, especially since the institution is still quite new, raise doubts as to the credibility of its stability orientation.

From the vantage point of the accession countries, there are two mutually complementary ways to react to structural price shifts. One is that since countries normally enter the Eurosystem with an undervalued currency, higher inflation indirectly guides conversion rates towards their equilibrium level. The other is that, by making labour markets sufficiently flexible, it can and should be possible to ensure that wages in the traded and non-traded goods sectors do *not* move in sync. Real wage increases should not just correspond to growth in labour productivity in the macro economy but should also take account of sectoral (and regional) differences in productivity. *Blanchard/Katz (1992)* and *Bean (1992)* consider a high degree of real wage flexibility precisely to be an equalisation mechanism for shocks in international competitiveness. Particularly when nominal exchange rates are fixed, real wages can help change the real competitive situation.

The considerations on sustainability I have been talking about at this juncture are in keeping with the Maastricht Treaty; they do not imply additional criteria or even barriers to participating in monetary union. The sustainable convergence prescribed by the Treaty can only be guaranteed if there is a sufficient level of "real" convergence in economic development and economic structures. In that context, it is only logical that the Treaty lists developments in the integration of markets, the situation and development of balances on current account, and the developments in unit labour costs and other price indices as factors to be taken into account when a decision on new members is necessary (Article 121 (1)).

Moreover, a comprehensive fiscal policy framework should ensure that sound *government finances* — the second convergence criterion — are also maintained over the longer run even after accession to EMU. The Treaty already envisages the long-term avoidance of excessive government deficits (Article 104). Preventive measures as part of an early warning system should already indicate problems at an early stage. If that does not suffice, there is the final step of imposing serious penalty payments. The already-mentioned Stability and Growth Pact gives concrete shape to and intensifies the contractual obligations of the member countries. In stability programmes, which require particular surveillance, the euro-area members must demonstrate how and when they aim to achieve the goal of a medium-term budget which is close to balance or in surplus.

Strict budgetary discipline is a cornerstone of monetary union. Fiscal and monetary policies must not be operating at cross purposes. At the very least, public sector budgets should not undermine the stability orientation of the ECB. In the medium term deficits should be reduced to such a level that even in phases of cyclical weakness automatic stabilisers can take effect without casting doubts on the soundness of government finances. In the long term, the important thing is, in the light of the strain caused by demographics and the already high level of government debt in some countries, to maintain the necessary budgetary leeway. Ergo, budgetary consolidation is not just a one-off effort but requires patience and determination. General government must prevail in the long run, too, against a number of interest groups whose actions are mostly born of short-term considerations.

3. Summary and conclusions

The three-stage integration process from EU accession to adopting the single currency represents a far-reaching, understandable and well-structured regulatory framework which subjects all accession countries, regardless of the prevailing political climate, to the same economically well-founded criteria. At every stage of integration, specific preconditions must be met; although they are not directly geared towards EMU accession, they have a key impact on economies' suitability to adopt the single currency.

As a condition for *joining the EU*, the Copenhagen criteria, through the adoption of the *acquis communautaire*, already ensure that central bank statutes will be brought into line with the concrete institutional framework of the ECB. The development of *functioning market economies* will improve the ability of accession countries to live without the nominal exchange rate as an adjustment instrument. The economic policy coordination in the *transition period*, by way of greater integration of goods markets, will particularly promote the increasing convergence of economic structures and economic policy preferences. Membership of the exchange-rate mechanism will contribute to dampening short-term exchange-rate fluctuations and further stabilisation of the convergence process. A sufficiently high degree of sustainable nominal convergence is a precondition for *joining EMU*. For a single monetary policy to be able to function, it is necessary to achieve an adequate level of sustainable price stability in prospective euro-area countries, to guarantee the soundness and flexibility of fiscal policy throughout the single currency area, to rule out excessively wild swings in exchange rates prior to accession to monetary union, and to stabilise financial markets' expectations regarding successful participation in monetary union. Besides all that, though, a sufficient level of real convergence is also important in the run-up to monetary union. Only by striving for real convergence prior to integration into monetary union will it be possible to fulfil the convergence criteria lastingly beyond the date of accession. The Stability and Growth Pact and the Broad Economic Policy Guidelines underscore the need for sustained efforts towards convergence.

All in all, the criteria agreed in the Treaty are well-founded in theory and in addition take due account of the transition countries' specific situations.

Moreover, the existing intricate web of criteria has served EMU well, particularly in the difficult beginning stage. To reiterate my response to the question after which the paper is titled: it is neither necessary nor justifiable to modify the criteria for accession. The rules in the EU Treaty and the more specific ancillary agreements provide a solid foundation for monetary union to function. New and old EMU members will be treated equally. We will give the prospective accession countries a clear sign of the road ahead if we stick with the agreed rules — as well as give them enough time to make the necessary adjustments.

Bibliography

- Balassa**, B., (1964), “The Purchasing Power Doctrine: A Reappraisal”, *Journal of Political Economy*, Vol. 72, 584-596
- Baldwin**, Richard E., et. al., (2001), “Nice Try: Should the Treaty of Nice be ratified?”, *Monitoring European Integration*, No. 11, Centre for Economic Policy Research, London
- Baldwin**, Richard E. and **Krugman**, Paul, (1989), “Persistent Trade Effects of Large Exchange Rate Shocks?”, *Quarterly Journal of Economics*, Vol. 104 (4), 635-654
- Bayoumi**, Tamim and **Eichengreen**, Barry, (1994), “One Money or Many? — Analyzing the Prospects for Monetary Integration in Various Parts of the World”, *Princeton Studies in International Finance*, No. 76, Princeton, New Jersey
- Bayoumi**, Tamim and **Eichengreen**, Barry, (1996), “Operationalizing the Theory of Optimal Currency Areas”, *CEPR Discussion Paper Series*, No. 1484, Centre for Economic Policy Research, London
- Bayoumi**, Tamim and **Rose**, A.K., (1993), “Domestic Savings and Intra-National Capital Flows”, *European Economic Review*, Vol. 37(6), 1197-1202
- Bean**, Charles, (1992), “Economic and Monetary Union in Europe”, *Journal of Economic Perspectives*, Vol. 6, No. 4, 31-52
- Blanchard**, Olivier and **Katz**, Lawrence, (1992), “Regional Evolutions”, *Brookings Papers on Economic Activity*, No. 1: 1992, 1-75
- Bovenberg**, A.; **Kremers**, J. and **Masson**, P., (1991), “Economic and Monetary Union in Europe and Constraints on National Budgetary Policies”, *IMF Staff Papers*, Vol. 38, No. 2, International Monetary Fund, Washington D.C.
- Buiter**, Willem H., et. al., (1992), “Excessive Deficits: Sense and Nonsense in the Treaty of Maastricht”, *CEPR Discussion Paper Series*, No. 750, Centre for Economic Policy Research, London
- Buiter**, Willem H., (1999), “Alice in Euroland”, *CEPR Policy Paper*, No. 1, Centre for Economic Policy Research, London
- Buiter**, Willem H., (2000), “Optimal Currency Areas: Why does the Exchange Rate Regime Matter?”, *CEPR Discussion Paper Series*, No. 2366, Centre for Economic Policy Research, London
- Cohen**, Benjamin J., (1993), “Beyond EMU: The Problems of Sustainability”, *Economics and Politics*, Vol. 5, No. 2, 187-203

- Crawford**, Malcolm, (1993), *“One Money for Europe”*, The MacMillan Press LTD, London
- De Grauwe**, Paul, (1987), “International Trade and Economic Growth in the European Monetary System”, *European Economic Review*, No. 31, 389 - 398
- De Grauwe**, Paul, (1992), *“The Economics of Monetary Integration”*, Oxford University Press, Cambridge, Massachusetts
- De Grauwe**, Paul, (1997), “Exchange Rate Arrangements between the Ins and the Outs”, *CEPR Discussion Paper Series*, No. 1640, Centre for Economic Policy Research, London
- De Grauwe**, Paul and **Spaventa**, Luigi, (1997), “Setting Conversion Rates for the Third Stage of EMU”, *CEPR Discussion Paper Series*, No. 1638, Centre for Economic Policy Research, London
- De la Dehesa**, Guillermo and **Krugman**, Paul, (1992), “EMU and the Regions”, *Occasional Paper*, No. 39, Group of Thirty, Washington D.C.
- Dixit**, A., (1989), “Entry and Exit Decisions under Uncertainty”, *Journal of Political Economy*, Band 97, 620-630
- Dornbusch**, Rudi, et. al., (1998), “Immediate Challenges to the European Central Bank”, in Begg, David, et. al. (1998), *“EMU: Prospects and Challenges for the Euro”*, Blackwell Publishers, Malden, Massachusetts
- Eichengreen**, Barry, (1990), “One Money for Europe? Lessons from the U.S. Currency and Customs Union”, *Economic Policy*, Vol. 10, 117-187
- Eichengreen**, Barry, (1991), “Is Europe an Optimum Currency Area?” *NBER Working Paper Series*, No. 3579, National Bureau of Economic Research, Cambridge, Massachusetts
- Eichengreen**, Barry and **Frieden**, Jeffrey, (2000), *“The Political Economy of European Monetary Union: An Analytical Introduction”*, Westview Press, Colorado, 2nd edition
- European Central Bank**, (1999), “Inflation Differentials in a Monetary Union”, Monthly Bulletin, October 1999
- European Commission**, (1998), “Report on Progress towards Convergence and the Recommendation with a View to the Transition to the Third Stage of Economic and Monetary Union”
- Fatas**, Antonio, (1997), “EMU: Countries or Regions? Lessons from the EMS Experience”, *CEPR Discussion Paper Series*, No. 1558, Centre for Economic Policy Research, London
- Feldstein**, Martin, (1997), “The Political Economy of the European Economic and Monetary Union: Political Sources of an Economic Liability”, *Journal of Economic Perspectives*, Vol. 11, No. 4, 23-42
- Fontagne**, Lionel and **Freudenberg**, Michael, (1999), “Endogenous Symmetry of Shocks in a Monetary Union”, *Open Economic Review*, No. 10(3), 263-287
- Frankel**, Jeffrey and **Rose**, Andrew, (1996), “The Endogeneity of the Optimal Currency Area Criteria”, *NBER Working Paper Series*, No. 5700, National Bureau of Economic Research, Cambridge, Massachusetts
- Frankel**, Jeffrey and **Rose**, Andrew, (1997), “Is EMU more Justifiable Ex Post Than Ex Ante”, *European Economic Review*, Vol. 41, 753-760
- Frieden**, Jeffrey and **Jones**, Eric, (1998), “The Political Economy of European Monetary Union: A Conceptual Overview”, in: Frieden, Jeffrey,

- et al. *“The New Political Economy of EMU”*, Rowman & Littlefield Publishers, Inc., New York
- Grassinger**, Robert, (1994), “Stabilization Policy in a Monetary Union: Does Stimulating Demand Shrink Total Output of the Union?”, *Münchener Wirtschaftswissenschaftliche Beiträge*, München
- Gros**, Daniel and **Thygesen**, Niels, (1990), “The Institutional Approach to Monetary Union in Europe”, *The Economic Journal*, Vol. 100, 925-935
- Hefeker**, Carsten, (1997), *“Interest Groups and Monetary Integration”*, Westview Press, Boulder, Colorado
- Ingram**, James, (1973), “The Case for European Monetary Integration”, *Essays in International Finance*, No. 98, Princeton, New Jersey
- Isard**, Peter, (1990), “Corporate Tax Harmonization and European Monetary Integration”, *Kyklos*, Vol. 43, Facs. 1, 3-24
- Ishiyama**, Y., (1975), “The Theory of Optimum Currency Areas: A Survey”, *IMF Staff Papers*, No. 22, 344-383
- Jochimsen**, Reimut, (1997), “A Stability Pact for Europe”, *Policy Paper*, No. B97-01, Center for European Integration Studies, Bonn
- Kenen**, P., (1995), *“Economic and Monetary Union in Europe: Moving beyond Maastricht”*, Cambridge University Press, Cambridge, Massachusetts
- Kindleberger**, Charles, (1971), “Optimal Economic Interdependence”, in: Kindleberger, C. and Shonfield, A. (Hrsg.), *“North American and Western European Economic Policies”*, International Economic Association, London
- Lippi**, Francesco, (1998), “On Central Bank Independence and the Stability of Policy Targets”, *Scandinavian Journal of Economics*, Vol. 100 (2) 495-512
- Masson**, Paul R. and **Taylor**, Mark P., (1993), “Currency Unions: A Survey of the Issues”, in: Masson, Paul R. and Taylor, Mark P. (Hrsg.), *“Policy Issues in the Operation of Currency Unions”*, Cambridge University Press, Massachusetts
- McKinnon**, R.I., (1963), “Optimum Currency Areas”, *American Economic Review*, Band 53, 382 ff.
- Mundell**, Robert, (1961), “A Theory of Optimum Currency Areas”, *American Economic Review*, Band 51, 657-665
- Obstfeld**, Maurice, (1997), “A Strategy for Launching the Euro”, *CEPR Discussion Paper Series*, No. 1732, Centre for Economic Policy Research, London
- Ohr**, Renate, (1993), *“Integration in einen nicht-optimalen Währungsraum”*, *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik*, No. 38, 31-47
- Ricci**, Lucca, (1998), “Uncertainty, Flexible Exchange Rates and Agglomeration”, *IMF Working Paper*, No. 98/9, International Monetary Fund, Washington D.C.
- Rose**, Andrew K., (2000), “One Money — One Market: Estimating the Effect of Common Currencies on Trade”, *NBER Working Paper Series*, No. 7432, National Bureau of Economic Research, Cambridge, Massachusetts
- Rotte**, Ralph and **Zimmermann**, Klaus, (1998), “Fiscal Restraint and the Political Economy of EMU”, *Public Choice*, Vol. 94, 385-406
- Sala-i-Martin**, Xavier and **Sachs**, Jeffrey, (1991), “Fiscal Federalism and Optimum Currency Areas: Evidence for Europe from the United States”,

- NBER Working Paper Series*, No. 3855, National Bureau of Economic Research, Cambridge, Massachusetts
- Salin**, Pascal, (1977), “*Die Theorie des optimalen Währungsgebietes*”, in: Claasen, E. (ed.), “*Kompendium der Währungstheorie*”, München
- Samuelson**, P.A., (1964), “Theoretical Notes on Trade Problems”, *Review of Economics and Statistics*, Vol. 46, 145-154
- Sinn**, Hans-Werner and **Reutter**, Michael, (2001), “The Minimum Inflation Rate for Euroland”, *NBER Working Paper Series*, No. 8085, National Bureau of Economic Research, Cambridge, Massachusetts
- Snider**, Delbert, (1967), “Optimum Adjustment Processes and Currency Areas”, *Essays in International Finance*, No. 62, Princeton, New Jersey
- Tavlas**, Georg, (1993), “*Das Wiederaufleben der Theorie optimaler Währungsräume*”, *Finanzierung and Entwicklung*, Vol. 30(2), 32-35
- Vaubel**, Roland, (1976), “Real Exchange Rate Changes in the European Community: The Empirical Evidence and its Implications for European Currency Unification”, *Weltwirtschaftliches Archiv*, No. 112, 429-470
- Von Hagen**, Jürgen and **Neumann**, Manfred, (1994), “Real Exchange Rates within and between Currency Areas: How Far is EMU?”, *The Review of Economics and Statistics*, Vol. 76 (2), 236-244

Can Poland Meet the EMU Convergence Criteria?

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1. General Remarks

The meeting by Poland of EMU's formal criteria and its joining the eurozone is part of the *acquis communautaire*, though not required to be met on joining the EU. In other words, Poland commits itself to striving for eurozone membership, but the detailed time-table for meeting EMU's formal criteria (the so-called Maastricht Criteria) is an open-ended question depending on the country's economic situation and policy. In addition, whereas the meeting of the fiscal and exchange rate criteria can be treated as an EU member state's political commitment, the meeting of the inflation criterion is rather seen as a test of a country's actual preparedness to join EMU. However, the fact that the most reform-advanced CEEs are now closer to meeting the convergence criteria than Club Med countries were in the early nineties has not passed unnoticed (Gros [2001]).

The Maastricht EMU participation criteria pertain to: stabilising the government fiscal position (defined as keeping the public sector deficit below 3% of GDP and public debt below 60% of GDP), stabilising the exchange rate (defined as participation in the joint Exchange Rate Mechanism and with respect to new member countries – most likely in ERM2) and bringing down the inflation rate and the interest rate differentials to 1.5 and 2 percentage points, respectively, above the three best inflation performers.

In analysing the problem of Poland's ability to meet the EMU membership formal criteria let us make a number of initial assumptions which I consider highly plausible.

These are the following assumptions:

- Poland's public debt level, currently reaching 46% of GDP, most likely will not be an impediment to joining EMU (although the current fiscal crisis may lead to a temporary increase in the GDP to debt ratio).
- The criterion of interest rate convergence will be achieved almost automatically as soon as the exchange rate has settled, the capital market is fully open (this is an EU membership condition) and a stable government fiscal position has been achieved.

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ERM2 participation, despite a probably rather high fluctuation band (understood mainly as a tool of discouraging speculative attacks) will mean a medium-term stabilisation of the zloty exchange-rate vis a vis the euro (zero devaluation). It will obviously mean no speculative attacks or currency turmoil on a scale which would force Poland to irrevocably devalue its currency.

This means that Poland's actual ability to meet the EMU participation criteria depends on fulfilling two criteria: bringing down inflation to the required level and sustainably reducing the scale of budget deficit. It should be added that the meeting of both criteria should also be seen in the context of growth rates and the unemployment level which are corollary to the meeting of the criteria. For instance, if the meeting of the inflation criterion is only possible in conditions of a considerable economic slow-down, two questions should be answered: what policy instruments ought to be employed by the government and the central bank in order to restrain, as required, macroeconomic policy (interest rates and the exchange rate being practically no longer available) and how large unemployment growth could be socially acceptable and to what extent?

In this paper I will focus mainly on the problem of Poland's meeting the inflation criterion and the GDP growth rate and unemployment rate which accompany the desirable inflation level. Assuming that Poland would join the EU in 2004 or 2005, let us consider two possible scenarios of joining EMU:

A programme for meeting the convergence criteria implemented promptly on accession meaning that the targeted inflation level is to be achieved by Poland in 2005-2007.

The programme postponed until the years 2008-2010, thus implemented after the full absorption of whatever shocks can be connected with joining the EU.

2. Inflation and Growth – a Theoretical Model

The main problem relating to Poland's fulfilment of the EMU membership inflation criterion is the occurrence of the so-called Balassa-Samuelson effect, as a result of which the rate of growth in non-tradables (mainly services) prices in a fast growing economy tends to exceed the growth rate of tradables prices. This is because of a faster growth of labour productivity in the tradables sector with a simultaneous trend towards a similar wage growth rate in both sectors. The result of both phenomena is a steady growth of unit labour costs in the non-tradables sector and, consequently, higher inflation. It should be noted that the trend is hardly noticeable in developed and relatively slowly growing economies (Duval [2001]). Nevertheless, it is clearly noticeable in fast growing countries which converge in real terms. For example in the fast growing Irish economy recent years' inflation has slightly exceeded the inflation observable in other EU countries, despite exchange rate stability guaranteeing a high extent of tradables price stability. Another example is united Germany with its 1990-1995 prices growing much faster in Eastern lander than in Western lander, despite one money (Orlowski [1998]).

I will use a simple model in order to analyse the relations between inflation and GDP growth in the period of Poland's eurozone accession.

Let us divide the goods and services whose prices impact the total CPI inflation level into three groups. In the case of *non-food tradables* the inflation rate closely shadows the growth rate of prices in the eurozone. In the case of *food* there is a similar connection, but there are also other elements which impact inflation. In particular, in the period of Poland's joining the EU there will be a harmonisation of the extent of foodstuffs' protection in connection with Poland's adoption of the Common Agricultural Policy. A higher level of price support in the EU means that the first years of EU membership will see the food price level in Poland go up by an estimate of 5-6% (Orłowski [1998]). Which means that food price inflation in the first period (2005-2007) will be, on a year average basis, almost 2 per cent higher than it would follow from the rate of price growth in the Union market (I assume, for simplification, the additivity of the growth rates). In the case of non-tradables the growth rate of prices will exceed the growth rate of prices for tradables by the difference in growth rate of labour productivity between the tradables and non-tradables sector (a simple derivation of this relationship is contained among others in Sinn, Reutter [2001]). This means that the comprehensive inflation model is as follows:

$$p = \alpha p^F + \beta p^T + (1-\alpha-\beta) p^{NT} \quad (1)$$

$$p^T = p^{UE} + xr \quad (2)$$

$$p^F = p^{UE} + xr + p^{CAP} \quad (3)$$

$$p^{NT} = p^T + y^T - y^{NT} \quad (4)$$

where: p – inflation rate, p^F – food price growth, p^T – non-food tradables price growth, p^{NT} – non-tradables price growth, xr – rate of devaluation vs. the euro (equal to zero), p^{UE} – inflation in the eurozone (exogenous), p^{CAP} – price effects of Common Agricultural Policy adoption, y^T – growth of labour productivity in the tradables sector, y^{NT} – growth of labour productivity in the non-tradables sector, α , β – weights for calculating CPI inflation.

The next equations determine growth in labour productivity in the tradables sector and the rate of wage growth. Let us assume that due to the nature of technical progress in the services sector the growth rate of labour productivity in the non-tradables sector can be considered determined by long-term trends (cf. below, table 2). A condition, in turn, of maintaining its competitive position by the tradables sector is to have its euro denominated wage growth compensated for by the corresponding labour productivity growth (see below, tab. 3). In turn, the rate of wage growth is determined by the sum of real wage growth and domestic inflation less the zloty/euro devaluation rate. The growth rate of real wages remains in a certain relation to GDP growth. Thus we have:

$$y^T = w^\epsilon \quad (5)$$

$$w^\epsilon = w^R + p - xr \quad (6)$$

$$w^R = \gamma \text{GDP} \quad (7)$$

where w^ϵ – growth rate of euro denominated wages, w^R – growth in real wages, GDP – growth rate of GDP, γ – wage elasticity vs GDP (In Poland, historically at the level of 0.7).

It is worth noticing that data on GDP growth and labour productivity growth in the tradables and non-tradables sectors, augmented by the additional

assumption of relative constancy (in the medium term) of the sectoral structure of GDP generation and the extent of labour market rigidities allow to estimate changes in the unemployment rate which are connected with a given inflation distribution and GDP dynamics.

So we have a model consisting of 7 equations (1)-(7), with 8 endogenous variables: p , p^F , p^T , p^{NT} , y^T , w^ϵ , w^R , GDP, and 4 assumed or exogenous variables p^{UE} , xr (equal to zero due to ERM2 participation), p^{CAP} , y^{NT} . In order to solve the model one endogenous variable has to be taken as given: either target inflation (in order to calculate the growth rate under which the criterion can be met) or the growth rate (in order to check what inflation is consistent with it).

3. Key Parameters of the Model

Critical to solving the model in the context of Poland's meeting the Maastricht Inflation Criterion is the establishment of a number of parameters.

First, let us establish the probable changes in the α and β co-efficients (weights for calculating CPI inflation). Weight projections can be made by assuming Poland's consumption structure (strongly aggregated) gradually coming closer (converging) to the consumption structure of the countries whose development level approximates the one Poland will probably have around the year 2010 (see tab. 1; for distinction between tradables and non-tradables, see below)

Second, let us use OECD data to verify the hypothesis on long-term labour productivity growth trends in the non-tradables sector (mainly in the market services sector). The data presented in table 2 on the four biggest West European economies suggest a 2% per annum growth rate (order of magnitude) as "normal" (the slightly higher growth rate in Poland in the 1990s was connected with its shedding part of redundant employment; in the coming years this process should probably be coming to an end.)

Third, let us verify the hypothesis on the existence of a clear correlation between the growth rate of Polish euro-denominated wages and the growth rate of labour productivity in the tradables sector. In 1994-97 euro denominated wages in Polish industry grew 4% faster than labour productivity, but Poland's balance of trade has also largely deteriorated. In 1997-2000, when the trend towards deteriorating balances had been averted, both growth rates were almost identical. This means that the growth of euro denominated wages (mainly due to the zloty's real appreciation) has thrust upon Polish industry an analogous growth of labour productivity, largely achieved by employment shedding.

Table 1. Projected Changes in Weights (Required to Determine CPI Inflation)

	1998 (Eurostat comparison)			Poland: projection		
	Portugal	Germany	Poland	2000	2007	2010
Food and alcohol	26,8	16,1	32,1	34,1	36,5	39,0
Tradables	34,4	36,2	33,1	33,1	33,5	34,0
Non-tradables	38,8	47,7	34,1	34,1	36,5	39,0

Source: Eurostat, own estimates

Table 2. Long-term Labour Productivity Growth in Sectors, Selected Countries

	Germany 1960-1993	France 1970-1994	Italy 1960-1994	United Kingdom 1962-1989	Poland 1994-2000	
All economy		2,7	2,3	3,4	2,0	4,6
Agriculture		6,1	5,3	5,1	4,5	1,1
Industry		2,9	3,3	4,3	3,6	9,6
Pozostale dzialy		2,0	1,6	2,1	1,1	2,9
Difference: industry–non-industry		0,8	1,7	2,2	2,4	6,6

Source: OECD (International Sectoral Database), Central Statistical Office (GUS).

Fourth, let us verify the hypothesis on the operation, in tradables, of the law of one price which states that there is an absolute trend towards price convergence, and – under a stable exchange rate or single currency – also towards convergence in the tradables inflation rates.

The data presented in table 5 (coming from international price comparisons and GDP levels by purchasing power parity) demonstrate that the view on the absolute validity of the law of one price is a serious simplification. Even in the case of such groups of goods which are usually recognised as typically tradable there are major price discrepancies between the eurozone accession countries (the data cover 1998, i.e. the period when the exchange rates had already been stable for a couple of years under the ERM mechanism). On the one hand, this demonstrates the impact of such factors as differences in tax rates, but, on the other, encourages deeper reflection. For it is worth noting that a typical tradable supplied to a consumer contains a large component of added value produced in the services sector (non-tradables), e.g. the wholesale and retail margin. It thus turns out that in practice there are no pure tradables and non-tradables, but each item of goods is a certain mixture of both. Thus the *a priori* assumption about the essence of various groups of goods will not be taken as the principle of demarcation between tradables and non-tradables. A statistical method will be taken instead: let us assume that the standard deviation in price levels between the 11 countries entering the euro zone exceeding 20% means that a given group is predominantly nontradable.

A second comment in connection of the operation of the law of one price pertains to the question of uniform inflation in the case of predominantly tradable goods. The data adduced in table 4 demonstrate that in the countries which were on a real convergence path a rising price level relative to the union average often occurred both in the group of tradables and non-tradables.

This effect was particularly noticeable in Ireland, Portugal and Poland and to a smaller extent in Greece. Only in Spain we had a situation which is suggested

Table 3. Growth rates of labour costs and labour productivity in the tradables sector in Poland, 1994-2000

	1994-1997	1997-2000
Euro-denominated nominal wage in industry	12,9	10,7
Euro.zloty exchange rate	11,2	2,7
Zloty denominated wage in industry	25,6	13,7
Real Wage	4,0	3,7
CPI inflation	20,7	9,7
Labour productivity in industry	8,8	10,3

Source: Own calculations based on Central Statistical Office (GUS) data.

Table 4. Changes in price levels in selected countries in 1994-1998 relative to EU average (EU average=100)

	1994	1998	Change	1994	1998	Change
Spain				Ireland		
Total	83,0	84,0	1,0	88,0	99,0	11,0
Goods	85,5	85,3	-0,2	93,4	99,7	6,3
Services	80,4	84,6	4,2	79,9	100,0	20,1
Portugal				Greece		
Total	67,0	72,0	5,0	75,0	80,0	5,0
Goods	77,9	80,7	2,8	79,8	82,6	2,8
Services	56,5	66,5	10,0	73,6	77,1	3,5
Poland						
Total	39,0	51,0	12,0			
Goods	55,1	62,4	7,3			
Services	34,2	47,6	13,4			

Source: Own calculations on the basis of Eurostat data

by theoretical models: zero growth in the level of tradables prices and fast growth in the level of non-tradables prices.

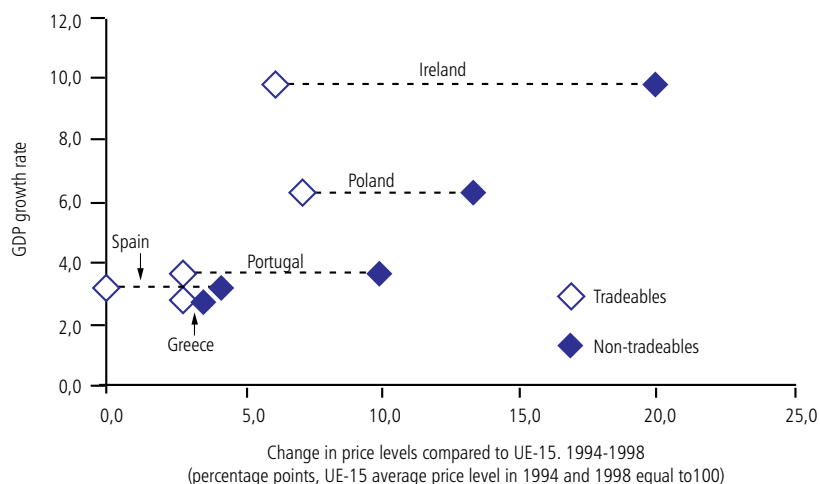
The picture below compares GDP growth rates in five countries covered by table 4, with the observed change in tradables and non-tradables prices compared to the EU average. Two basic conclusions can be drawn from this comparison:

Firstly, the strength of the Balassa-Samuelson effect (as measured by the distance between the change of the level of non-tradables and tradables prices, dotted line) increases with the growth of GDP rate.

Secondly, there is also growth in tradables prices.

This phenomenon can be explained both by the above-mentioned “non-tradable” component and an imprecise measurement (mismeasurement) of tradables inflation, (Shapiro, Wilcox [1996]), which does not take into account to a sufficient extent changes in goods quality. Price growth should be measured with respect to identical products. But year-on-year upgrades and quality growth make an apparently identical product an ever better one and the registered growth in its price is partly accounted for by quality growth. This effect was particularly strongly observed in Poland in which the nineties saw a definite

Figure 1 GDP growth rate vs intensity of the Balassa-Samuelsson effect



Source: Eurostat, CSO

Table 5. Breakdown into tradables and non-tradables based on experience of countries qualified to join the eurozone

Groups of goods (acc to ESA 95)	Price level in the euro zone, 1998 (average = 100)										Measure of price differential			Group break-down*	
	Belgium	Denmark	Spain	France	Ireland	Italy	Luxembourg	Holland	Austria	Portugal	Finland	standard deviation	(Max-Min)/Min	Food	Nontradable
Food and non-alcoholic beverage	105	102	86	109	103	98	107	95	105	87	115	8,5	33	x	
Alcohol beverage and tobacco	105	98	70	113	161	102	84	100	103	74	162	28,7	131	x	
Apparel	118	105	94	97	76	99	116	101	107	85	101	11,5	54		x
Footware	129	129	83	113	103	88	144	119	127	69	128	22,2	108	x	
Housing and energy	103	130	80	113	117	68	123	100	101	45	125	25,2	190		x
Furnishings	103	111	82	105	99	93	103	109	94	82	85	10,0	35		x
Household equipment and routine maintenance of the house	127	108	93	90	118	98	109	121	144	60	115	21,3	142		x
Other housing expenses	99	96	89	125	100	90	91	116	102	76	119	14,1	66		x
Medical products, appliance aid equipment	101	118	73	88	69	82	97	80	113	77	118	17,2	70		x
Medical services	89	97	123	109	118	122	120	74	123	173	141	25,2	135		x
Means of transport	100	97	97	101	132	92	90	120	107	123	140	16,3	57		x
Use of means of transport	105	96	92	107	94	100	88	100	107	91	121	9,1	38		x
Transport services	106	131	79	103	109	70	78	113	113	61	127	22,4	115		x
Communication	154	111	91	73	107	102	70	150	133	92	153	29,5	119		x
Recreation equipment	113	100	93	105	98	90	105	100	111	89	127	10,8	43		x
Recreation services	106	96	91	115	97	97	96	92	108	76	113	10,7	51		
Books and newspaper	107	103	84	101	103	97	85	104	86	108	159	20,1	89		x
Education	114	139	77	121	88	96	159	102	114	59	124	27,1	172		x
Restaurants and hotels	111	97	93	110	122	104	105	90	101	84	127	12,4	50		x
Miscellaneous	101	101	85	119	98	90	80	100	103	68	123	15,0	80		x

* The breakdown into groups arbitrarily presupposes a standard deviation of 20% as a demarcation line between tradables and non-tradables.

Source: Own calculations based on Eurostat data

improvement in the quality of products offered in the market. The data from table 4 suggest that the inclusion of quality changes may result in increasing the rate of change in tradables prices by about 1% a year.

4. Results of Calculations

We performed the calculations with the use of model (1)-(7) in two variants. In the first one, in accordance with theory and the experience of Spain, we assume that there is no need to adjust the non-tradables price growth rate to changes in quality and the “non-tradable component” (thus, tradables inflation in a country with a stable currency is equal to one which we find in other eurozone countries). In the second one we allow for a necessary adjustment which increases Poland’s tradables growth rate by 1% under a fast GDP growth and by 0.5% under a slow growth (in accordance with the experience of Portugal and Greece).

In each case let us perform two types of calculations. First, we shall calculate the rate of inflation which would be consistent with a high GDP growth rate (6% year average). Second, we calculate what rate of GDP growth would be consistent with the acceptable rate of inflation required by the convergence criteria (if we assume that inflation in the most stable eurozone economies is 1.5%, this means the 3% level).

The results of our calculations please find in table 6. They cover two periods: the first one between 2005-07, in which the rate of inflation is increased by the adjustment of food prices to the above protection level under the EU CAP and the second: the years 2008-10.

In the case when we do not adjust for changes in quality and the „non-tradable component”, the inflation rate consistent with the high GDP growth (6%) is 4.6% in the years 2005-07 and thereafter it goes down to 3.9% in the years 2008-10. Naturally, this is much more than allowed by the EMU membership criteria.

On the other hand the GDP growth allowing to achieve a 3% inflation rate is about 2% in the years 2005-07, and about 4% in the years 2008-10.

Adjusted for changes in quality and the „non-tradable component” the rate of inflation consistent with a fast GDP growth is above 5% in both periods. In this case the GDP growth rate allowing to achieve an inflation of about 3% is less than 1% in 2005-07 and 2.6% in 2008-10.

The estimation of changes in the unemployment rate in connection with various growth and nominal convergence scenarios suggests that the rate will be subject to a rather strongish fall in the case of implementing the fast GDP growth scenario (6%) and tolerating a relatively high inflation.

In the event of efforts being taken to fulfil the inflation convergence criterion, the disinflation cost can be very high. If adjustments for quality are taken out, the achievement of a 3% inflation target in the first years of membership may be connected with the unemployment rate rising by almost 4 percentage points (if the current labour market rigidities are retained). The achievement of this target without unemployment growth would only be possible in 2008-2010.

Table 6. Growth rates for basic parameters: scenarios

	Scenarios							
	No adjustment for changes in quality				Adjustment for changes in quality			
	Growth		Inflation		Growth		Inflation	
	scenario 6%		scenario 3%		scenario 6%		scenario 3%	
	2005-	2008-	2005-	2008-	2005-	2008-	2005-	2008-
	2007	2010	2007	2010	2007	2010	2007	2010
Change in exchange rate								
(PLN/EUR)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CPI Inflation in the eurozone	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
CPI Inflation in Poland	4,6	3,9	3,0	3,0	5,7	5,1	3,0	3,0
of which:								
Food 3,5	1,5	3,5	1,5	3,5	1,5	3,5	1,5	
Tradables	1,5	1,5	1,5	1,5	2,5	2,5	2,0	2,0
Non-tradables	8,5	7,8	3,9	5,4	10,6	10,0	3,4	4,8
Wage growth								
Real	4,3	4,3	1,4	2,9	4,3	4,3	0,4	1,9
Nominal	9,0	8,3	4,4	5,9	10,1	9,5	3,4	4,8
Labour productivity in sectors								
Tradables	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Non-tradables	9,0	8,3	4,4	5,9	10,1	9,5	3,4	4,8
GDP growth	6,0	6,0	2,0	4,0	6,0	6,0	0,6	2,6
Estimate change in								
unemployment rate (% points)	-1,6	-2,9	3,7	-0,3	-1,0	-2,2	5,8	1,8

Source: Own calculations

But if we bring back the quality adjustments, then the achievement of the 3% inflation target would be costly in both the first and the second period, leading to a growth in the unemployment rate by almost 6 and almost 2 percentage points, respectively.

5. Remaining Criteria

The results presented in table 6 are very important for assessing problems connected with the meeting of the remaining convergence criteria.

Firstly, if it is true that the achievement of the inflation criterion is possible only under a slowdown of GDP growth, the simultaneous objective of meeting the fiscal criterion calls for vigorous structural reform in public finances. The current structure of expenditures, in particular the share and growth rate of rigid expenses entail that under a slow-down there is strong pressure for more deficit financing (Ministry of Finance [2001])

Secondly, the necessity to temporarily constrain the rate of GDP growth in circumstances of coming closer to meeting the inflation criterion, fixed exchange rate and market interest rate convergence may pose a problem to Poland's macroeconomic policy. This is achievable by radically constraining fiscal policy or directly impacting wage growth (e.g. through negotiating agreements with the unions on suspending indexation, cf. Orowski [1999]).

Thirdly, the meeting of the inflation criterion will be the easier, the more flexible the labour market is going to be: growing unemployment will increase pressures for the reduction of wage growth and, consequently, non-tradables inflation. This means that it is possible to meet the inflation criterion at much lower cost to unemployment growth.

6. Conclusions

The most important conclusions from the above discussion are as follows:

Firstly, the presence of the Balassa-Samuelson effect may largely hinder the meeting by Poland of the Maastricht inflation criterion of EMU membership. From the perspective of the country's actual ability to join EMU, the inflation criterion should in principle be verified by and limited to tradables and food inflation (non-tradables inflation is irrelevant for competitiveness as long as effective tradables sector enterprises can compensate with increased labour productivity for increased nominal wage growth).

Secondly, the meeting of the inflation criterion of EMU membership will be much easier after the absorption of the price shock in connection with the unification of food price protection between Poland and EU (between 2008-10)

Thirdly, public sector structural reform in order to considerably downsize rigid spending is a must, if Poland is to meet simultaneously the inflation and fiscal criterion.

Fourthly, the policy of bringing Poland round to meeting the inflation criterion by controlling demand with high interest rates is not a promising policy under an imminent drop in interest rates in connection with exchange rate stabilisation and capital market opening.

Fifthly, the meeting of the inflation criterion will be the easier and less costly, the more flexible the Polish labour market will be.

References

- Czyżewski A.B. et al. [1996], „Wpływ oczekiwań inflacyjnych na zachowanie podmiotów gospodarczych” [in Polish: „The Impact of Inflationary Expectations on the Behaviour of Businesses], *Studia i Price ZBSE* no 242, Warsaw.
- Dethier J.J, Orłowski W.M., [1999], Long Term Effects of Fiscal Adjustment, [in:] *Public Finance Reform During the Transition: The Experience of Hungary*, [ed.] Bokros L., Dethier J.J., World Bank, Washington.
- Duval R. [2001], Taux de change réel at effet Balassa-Samuelson, *Économie Internationale*, no 85, 1/2001.
- Gros D., [2001], *5 Years to the euro for the CE-3?*, CEPS, Brussels.
- Ministry of Finance [2001], *Założenia do projektu budżetu państwa na rok 2002* [in Polish: Assumptions for the Preliminary State Budget for 2002], Warsaw.
- Orłowski W.M. [1998], *The Road to Europe. Macroeconomics of Accession to the European Union*, European Institute, Lodz.
- Orłowski W.M. [1999], „Pespektywy polityki dezinflacyjnej w Polsce” [in Polish: Prospects of Disinflation Policy in Poland], *Studies & Analysis CASE*, no 160.
- Shapiro M.D., Wilcox D.W. [1996], „Mismeasurement in the Consumer Price Index: An Evaluation”, *NBER Macroeconomics Annual 1995*, MIT Press, Cambridge, Mass.
- Sinn H.-W., Reutter M. [2001], „The Minimum Inflation Rate for Euroland”, *NBER Working Papers*, W8085, Cambridge, Mass.

Real Convergence, Real Exchange Rates and Inflation in the CEECs¹

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1. Introduction

The future enlargement of the EU and the euro area will bring together countries with mutually highly integrated trade, but larger differences in per capita incomes than countries which joined in past rounds of EU enlargements. Besides, since the last rounds of EU enlargement, European integration has made significant progress, with the advent of the single European currency as the most notable cornerstone. While great progress in accession negotiations with 12 prospective future EU members has been achieved, the integration of these new EU members still poses a number of challenges for economists and policymakers.

In the field of monetary policy, the enlargement of the euro area is at the center of interest. As is well known, the Treaty of Maastricht stipulates the fulfillment of the convergence criteria on inflation, nominal long-term interest rates, exchange rates, public sector deficits and public debt as a precondition for introducing the euro. This implies that entry into the euro area can only take place a few (at least: two) years after EU accession. Despite the remarkable progress on economic stabilization many candidate countries have achieved, a lively academic debate about whether the criteria of Maastricht are appropriate in the context of the integration of CEECs into the euro area has evolved. Within the criteria of Maastricht, the discussion focuses on whether there is a contradiction between the exchange rate and the inflation criterion for transition countries.

The main economic rationale for imposing criteria on inflation and exchange rate stability as a precondition for joining the common currency area is fairly straightforward: Within a monetary union, differences in inflation rates affect the real exchange rate and are thus expected assumed to lead to changes in the relative competitive positions between member countries. Having lost the

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adjustment mechanism of the nominal exchange rate, countries at a competitive disadvantage resulting from an appreciation of the real exchange rate would suffer from higher unemployment and lower growth.

While this conclusion probably was broadly valid for the founding members of the euro area, a number of authors have challenged this view in the context of transition economies. Because of reasons related to the ongoing process of real convergence, these countries may be subject to upward pressures on the real exchange rate which do not harm competitiveness. As a consequence, criteria that aim at limiting changes in the real exchange rates for CEE candidate countries would be counterproductive. In other words: There might be “good” and “bad” inflation in transition countries if one assumes that changes in the real exchange rate take place primarily via inflation differences. This paper contributes to this discussion by providing insights into the relative importance of these two kinds of inflationary pressures in selected CEECs (Czech Republic, Hungary, Poland, Slovenia) during the 1990s. Moreover, it provides a quantification of the impact of real convergence on inflation and real exchange rates in CEECs. Finally, the paper presents some policy conclusions.

2. Theoretical Links Between Real Convergence, Real Exchange Rates and Inflation

2. 1. *Economic Equilibrium Forces Towards Price Level Convergence Between the CEECs and the Euro Area*

Despite experiencing sizeable amounts of real appreciation in the course of the 1990s, the CEECs still exhibit comparative price levels³ which are significantly below levels prevailing in the euro area at present. A comparative price level of 100% means that, at the given (market) exchange rate, price levels

Table 1. Comparative Price Levels (in % of the German Price Level)

	1991	1992	1994	1998	1999
Bulgaria	15,8	16,3	17,9	26,2	27,0
Czech republic	21,7	22,3	28,3	36,5	35,7
Estonia	b.d.	12,1	31,7	38,8	41,1
Hungary	34,6	35,5	38,2	38,8	39,3
Latvia	b.d.	11,5	35,7	36,6	38,5
Lithuania	b.d.	7,5	28,0	35,3	39,8
Poland	34,9	33,6	34,6	43,9	43,0
Romania	19,5	13,1	18,6	26,7	23,7
Slovakia	23,3	24,4	27,6	33,2	31,5
Slovenia	50,2	47,3	49,0	58,7	59,8
Austria	96,2	96,2	95,6	96,9	97,5
Greece	70,1	67,5	63,4	70,4	72,4
Ireland	85,4	82,2	75,0	89,7	90,9
Portugal	60,3	64,7	55,8	62,4	63,4
Spain	84,2	84,7	71,0	76,4	77,4

Source: WIIW, World Bank, OECD.

³ The comparative price level is the ratio of the (market) exchange rate to purchasing power parity, both denominated in currency units of the reference country per one local currency unit.

are the same in the country under examination and in the reference country. Figures below 100% indicate that the price level in the country under examination is lower than the price level in the reference country. More specifically, they imply that the (market) exchange rate assigns a lower value (in currency units of the reference country) to one local currency unit than the purchasing power parity. Starting from such a position, price level convergence is a process of real appreciation of the local currency against the currency of the reference country.

Table 1 reports the development of comparative price levels relative to Germany during the course of the 1990s. It therefore provides information about price level deviations of accession countries and selected EU countries from the German level.

Although it is a well known fact that full equalization of price levels across borders does not need to take place even in the long run (e.g. because of differences in tax rates), there are several economic forces which are expected to work towards a further convergence of price levels between present and prospective euro area members. Most prominently in the literature the Balassa-Samuelson (1964) effect is mentioned, which postulates a relationship between real convergence and real exchange rates, and thus also between comparative price levels.

According to the Balassa-Samuelson (B-S) effect, catching-up countries will experience quicker increases in productivity in the tradables sector than in the nontradables sector. Real wages in the tradables sector are determined by the marginal product of labor. Under the assumption of wage equalization across sectors, wages in the nontradables sector follow wages in the tradables sector. As productivity increases in the nontradables sector do not match wage increases, inflation in the nontradables sector will exceed inflation in the tradables sector. The sectoral divergences in productivity (and therefore also in inflation) are assumed to be higher in catching-up countries than in countries with an overall high level of productivity, which results in a real appreciation of catching-up countries. Stated in formal terms, the price ratio (P_r) between nontradables (P_n) and tradables (P_t) would develop as follows (all variables are in logs)⁴:

$$P_r = P_n - P_t = \frac{\delta}{\gamma} a_t - a_n \quad (1)$$

where g and d represent labor elasticities in the tradables and nontradables sectors, respectively, while a_t and a_n stand for the respective sectoral productivities.

In other words, this effect results from differential productivity developments between tradables and nontradables, while wages are assumed to develop uniformly across sectors, with wage increases being driven by productivity increases in the tradables sector. Consequently, nontradables inflation is higher than tradables inflation, leading to a trend appreciation of the real exchange rate and to a convergence of comparative price levels.

In addition to the the supply-side-oriented drivensupply-side-driven Balassa-Samuelson effect, demand factors might be of relevance, too. According

⁴ For a derivation of this formula, see Rother (2000).

to Halpern and Wyplosz (2001), developments on the demand side of the economy should be expected to have a neutral effect or tend to reinforce the Balassa-Samuelson effect. If demand for traded goods and nontraded goods grows at the same rate, there should be no effect on the real exchange rate. A bias in demand growth in favor of traded goods would partially or totally offset the Balassa-Samuelson effect, but usually it is assumed that according to Halpern and Wyplosz (2001) demand growth is biased rather towards nontraded goods than vice versa. In this case, demand factors would reinforce the impact of the Balassa-Samuelson effect.

Moreover, the ECB (1999) cites market integration effects as a reason for convergence in price levels within the euro area. In contrast to the factors mentioned above, which focus on relative prices between tradables and nontradables, these effects apply mainly to tradables. While there are probably fewer impediments to the equalization of tradables prices across borders within existing euro area members than between the CEECs and the euro area, the massive reorientation of the CEECs' foreign trade towards the EU that occurred in the course of the 1990s should favor the convergence of tradables prices between these groups of countries.

Finally, the CEECs are still in the process of adjusting a set of administered prices (e.g. energy prices) that had been kept artificially low during the communist era. Although they are below levels prevailing in the euro area, a comparison of energy prices in Backé, Fidrmuc, Reininger and Schardax (2000) shows that energy price levels in industry are higher than (general) comparative price levels. For household prices, the picture is mixed across countries and energy sources⁵. Although important, this finding suggests that price level convergence has an even longer way to go in prices other than energy.

2.2. Cost Factors

While the Balassa-Samuelson effect assumes that wages in the tradables sector develop in line with productivity the case of wage increases in excess of productivity gains ought to be considered, too. Assuming that rising wage costs are passed on into prices Although cost pressures arising from wage increases in excess of productivity gains are not directly related to the real convergence process, they are important for determining real exchange rates and inflation. Under fixed exchange rates, an inflation differential resulting from this factor causes a real exchange rate appreciation that is connected with a worsening of competitiveness under fixed exchange rates. If inflation in the CEECs is driven to a large degree by cost pressures, this would be a bad signal for membership in the common currency area, as a continuation of these pressures after the adoption of the euro would affect the CEECs' competitiveness. Thus in this case, the Maastricht criteria on inflation and nominal exchange rates would be a very sensible yardstick to measure the degree of preparedness for adopting the common currency.

⁵ The comparison was made for price levels prevailing in 1998/99 with France as the reference country.

A wage pressure-induced real appreciation will be reflected in a rise in unit labor costs (expressed in common currency terms) in the tradables sector⁶. A comparison of the development of unit labor costs in common currency with the development of the real exchange rate (deflated by the prices of tradables) shows that cost factors may have contributed to real appreciation in the Czech Republic and to some extent in Poland and Slovenia, because these countries experienced a rise in unit labor costs in common currency between 1992 and 2000 (Table 2).

Unlike in Poland, not only did unit labor costs in common currency rise in the Czech Republic and Slovenia, but so did the real exchange rate. This seems to indicate that producers in the Czech Republic and in Slovenia were more successful in passing on rising wage costs to customers than their peers in Poland. The massive real appreciation in the tradables sector in the Czech Republic can probably be explained in part by the very low level of the real exchange rate in 1992.

Nevertheless, it should be also noted that profitability in the tradables sectors in Poland and the Czech Republic must have declined in the period under observation, as the rise in exchange rate-adjusted unit labor costs exceeded the increase in the real exchange rate. Indeed, for the Czech Republic, Cincibuch and Vavra (2000) provide evidence in support of this hypothesis. Although one should be aware of the importance of the choice of the base year, the development of wages in the Czech Republic and in Poland between 1992 and 1998 thus affected competitiveness.

A persistence of this development would cause problems in the long run if these countries stuck to fixed exchange rates (or were members of a monetary union). Slovenia and Hungary nominally devalued their currencies between 1992 and 2000 to maintain the price competitiveness of exports. However, unlike in Poland⁷ and the Czech Republic, the rise in unit labor cost in Deutsche mark terms did not exceed the real appreciation in terms of tradables prices. Thus, wages did not cause a decline in competitiveness.

However, when comparing the development of real exchange rates and unit labor costs, some caveats have to be borne in mind: First, quality improvements may not be properly captured statistically. If prices and real exchange rates rise because of wage inflation, competitiveness need not necessarily suffer, because there could be quality improvements in output. Secondly, the conclusion that profit margins have changed does not take into account whether the level prevailing in the base year was unusual or not. Finally, it is obvious that one cannot conclude that wage developments in the past (whether they were in line with productivity developments or not) would continue in a similar way if these countries were members of the euro area. The wage setting mechanism may well change in response to the membership in the common currency area. Nevertheless, I consider this analysis is important, because it provides some information about how far wage setting has to be adjusted to fulfill the economic rationale for participation in the euro area. In this context it is relevant to recall the experience of a number of euro area countries which underwent significant changes in the wage setting mechanism in the convergence process.

⁶ In the empirical treatment the tradables sector is identified with the manufacturing sector. Nontradables encompass the remaining parts of GDP.

⁷ Poland undertook (nominal) devaluations, too.

Table 2. Unit Labor Cost and Real Appreciation from 1992 to 2000/1998, Total

		Poland	Slovenia	Czech Republic	Hungary
Unit labor cost in					
the tradables sector	1999	-0,3	7,7	115,7	-26,7
expressed in Deutsche mark terms	2000	4,4	3,9	110,3	b.d.
Real exchange rate					
against the Deutsche mark	1999	12,8	16,2	69,9	-14,0
based on the deflator for tradables	2000	0,8	13,2	72,7	n.a.

Source: WIIW, own calculation.

3. Empirical Evidence

3.1. Equilibrium Forces Price Equalization Level Price Level Convergence Versus Cost Factors

For some insight into the relative importance of cost factors and the real convergence-induced real appreciation in the CEECs, I decomposed the development of the (GDP deflator-based) real exchange rate was decomposed in the same way as in Micossi and Milesi-Ferretti (1996). Changes in the real exchange rate (on a GDP deflator basis) are broken up into changes of the real exchange rate based on price indices for tradables and changes of the relative price between tradables and nontradables in the home country and “abroad.” Let us define the GDP deflator as $\Pi = \alpha \Pi_N + (1-\alpha) \Pi_T$ ⁸, where α represents the share of nontradables in GDP and P_N and P_T represent the deflators of nontradables and tradables, respectively. Thus, we are able to express the evolution of the (GDP deflator-based) real exchange rate, R , as follows:

$$R = NX + P - P^* = (NX + P_T - P_T^*) - \alpha (P_T - P_N) + \alpha^* (P_T^* - P_N^*), \quad (2)$$

where NX means the nominal exchange rate and $*$ stands for foreign (German) variables. The results are reported in **Table 3**.

Table 3. Decomposition of Exchange Rate Changes 1992 to 2000⁹

	R	NX	P_T/P_T^*	Residual	P_N/P_T	P_N^*/P_T^*
	(1)	(2)	(3)	(4)	(5)	(6)
Poland	50,2	-54,8	119,8	51,4	77,5	2,3
Slovenia	24,8	-50,7	129,7	10,3	25,2	2,3
Czech Republic	80,8	-0,8	74,1	4,7	13,7	2,3
Hungary	12,5	-60,4	117,8	30,6	32,0	2,3

Źródło: WIIW, OECD, own calculation.

(1) Real exchange rate based on the GDP deflator (“+” means real appreciation)

⁸ All variables in logarithms.

⁹ Changes in table 5 Table 4 were calculated in a discrete way. (The logarithmic expression in equation (7) assumes continuous growth rates.) Hungary: 1992-1999.

- (2) Nominal exchange rate
- (3) Relative deflator of tradables
- (4) $[1 + (1)/100] / \{ [1 + (2)/100] * [1 + (3)/100] \} - 1$
- (5) Relative deflator: nontradables / tradables, domestic
- (6) Relative deflator: nontradables / tradables, foreign (Germany)

Column (4) – the “residual” – expresses the amount of change in the GDP deflator-based real exchange rate not accounted for by changes in the real exchange rate based on tradables prices. It is therefore interesting to compare columns (1) and (4): A large residual in comparison with the change in the GDP deflator-based real exchange rate means that real appreciation is mainly attributable to the nontradables sector. This would be consistent with the working of the Balassa-Samuelson effect, whereas wage pressure-driven real appreciation would affect the tradables and nontradables sectors similarly. However, it would be incorrect to take the proportion of the residual to the total amount of real appreciation as an exact relative measure of the Balassa-Samuelson effect as opposed to wage pressure-induced real appreciation. Among other reasons, divergences in sectoral profit margins (which indeed have taken place according to the analysis in section 2.2.) would bias the results. Column (5) shows the cumulative relative price differential between tradables and nontradables between 1992 and 1998.2000. In all countries the prices of nontradables grew more quickly than the ones for tradables, with Poland leading by far. Again, this outcome is in line with the Balassa-Samuelson effect.

3. 2. *The Balassa-Samuelson Effect Equilibrium Forces*

3. 2. 1. *Recent Studies*

In recent years numerous papers dealing with the impact of real economic convergence on inflation and real exchange rates within present euro area members and future candidates have been produced. The majority of contributions dealing with CEECs presents estimates of the magnitude of the Balassa-Samuelson effect for a panel of CEECs. Among the most recent contributions are Halpern and Wyplosz (2001) and Coricelli and Jazbec (2001). Halpern and Wyplosz (2001) first investigate confirm the empirical validity of the central assumptions of the B-S hypothesis, namely (1) stability equalization of relative wages across sectors, (2) faster productivity increases in the tradables sector and (3) quicker price rises in the nontradables sector for panels of up to 11 CEECs. Second, they investigate analyze the B-S effect directly for a panel of 9 CEECs. A regression of changes in productivity in industry and services plus demand variables on the service-to-non-food price ratio is in line with expectations. Depending on the exact specification of their equation, they estimate an average annual real appreciation (defined as the ratio between traded goods and nontraded goods) of about 3.5% for an (unbalanced) panel¹⁰ of 9 CEECs for the time period 1991-19998.

Coricelli and Jazbec (2001) present a similar setup for a panel of 19 countries for the time period 1990-1998¹¹. A major difference in comparison to Halpern and

¹⁰ Different time periods were used for some countries.

¹¹ Again, the length of time series differs between countries.

Wyplosz (2001) is their treatment of structural variables, which feature prominently in their estimates. Overall, their results are similar comparable to those of Halpern and Wyplosz (2001): Again, the empirical relevance of the B-S effect is confirmed, and the equation coefficient for the relative productivity term is of comparable size with the respective coefficients in Halpern and Wyplosz's (2001) equation. The elasticity of the real exchange rate with respect to productivity differentials between tradable and nontradable sectors is estimated at $1/2$. Based on Coricelli and Jazbec's lower assumption of a yearly rate of real convergence of only 2% between the CEECs and EU countries, they estimate the impact of the B-S effect on the real exchange rate¹² (relative to EU countries) at 1%.

With the methodological focus correct aimed directly at the relationship between sectoral productivity developments and the real exchange rate, these studies have two common drawbacks: First, data from the 1990s are used to investigate empirically a long-term equilibrium phenomenon. As the 1990s were a period of deep structural change for CEECs, the application of coefficients from this time period for forecasts should be treated with great caution. In addition, productivity measures may be influenced by short-term business cycle developments. Second, estimates are derived for groups of countries only. Considerable dispersion in per capita incomes and comparative price levels within CEECs are likely to give rise to significant differences in the magnitude of the B-S effect in individual countries, thereby reducing the usefulness of panel estimates for applications in individual countries.

A study by Pelkmans, Gros and Ferrer (2000) avoids the former problem. In a first step, the authors provide evidence of the negative relationship between relative prices of nontradables and tradables (x_{rpl}) within a euro area country and deviations in inflation rates¹³ (Y_d^{HICP}) from the euro area average. The coefficients from this equation are reported in equation (3)¹⁴:

$$Y_d^{HICP} = 18.9 - 4.13x_{rpl} \quad (3)$$

Then, using the relationship suggested by the B-S effect between relative prices of tradables and nontradables (Y_{rpl}) within a country on the one hand and comparative price levels (x_{GDP}) on the other hand, Pelkmans, Gros and Ferrer (2000) derive coefficients for this relationship for a sample of 29 OECD countries (equation 4)¹⁵:

$$Y_{rpl} = 4.453 - 0.897x_{GDP} \quad (4)$$

As data on relative price levels within CEECs are not available, relative prices between tradables and nontradables in CEECs are computed by applying the coefficients of the equation from the OECD sample to comparative prices in the CEECs. Finally, inflation differences between the CEECs and the euro area are calculated with the use of coefficients derived from the regression of relative price levels on inflation differences within the euro area and relative prices in the CEECs. Using this methodology, the authors estimate the inflation differential between 10 CEECs and the euro area at 3.8%. Pelkmans, Gros and Ferrer's (2000) results are mainly driven by the differences in comparative price levels between the euro area and the CEECs on the one hand and the relation between relative price levels and inflation differences in the euro area on the other hand,

¹² The real exchange rate is also defined as the ratio of tradables and nontradables prices.

¹³ Measured in terms of the harmonized index of consumer prices.

¹⁴ Variables in logarithms.

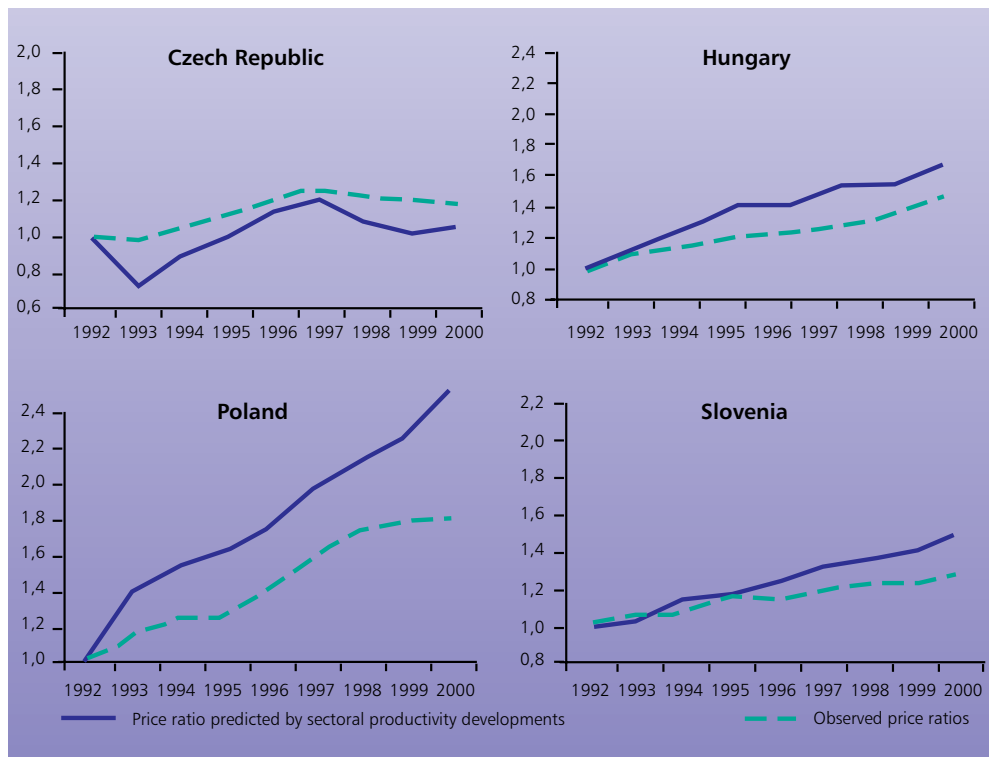
¹⁵ Variables in logarithms

rather than dealing directly with the relationship between sectoral productivity differences and inflation differences as predicted by the B-S effect. Thus, they probably represent an estimate of the potential for real appreciation and inflation in the CEECs versus the euro area and may serve as an upper bound for estimates of inflation differences and real appreciation between the euro area and the CEECs. As these results are valid for the whole group of CEECs, itthey obviously does not preclude higher estimates for individual countries.

Because of the limited availability of time series of adequate length in CEECs, individual country studies are scarce and their results are very sensitive regarding assumptions and the period of investigation. Based on data for 1991-1996, Simon and Kovacs (1998) estimate the real appreciation of the GDP deflator-based real exchange rate at 2.9% annually for Hungary. However, their estimates are very sensitive to the treatment of agricultural prices. Treating agriculture as a nontradable and applying actual developments in agricultural prices during 1991-1996, increases their estimate for appreciation of the GDP deflator-based real exchange rate to 3.6%. With data for 1993-1998, Rother (2000) estimates the real appreciation of the CPI-based real exchange rate relative to the EU which is due to the B-S effect at 1.5% to 2% for Slovenia. This result is based on the estimate for the B-S effect of 0.8% in core European countries and 2.6% in Slovenia.

3. 2. 2. Results

Figure 1: Relative Prices: Nontradables/Tradables (Price Ratio)



Source: WIIW, own calculations.

Note: Labor productivities were used instead of total productivities (for sectoral productivities). Labor elasticities in the tradables and nontradables sectors (g and d , respectively) were computed as share of wage sum to sectoral contribution to GDP.

Although the lack of appropriate data does not permit rigorous empirical tests of the Balassa-Samuelson hypothesis for individual CEECs, the magnitude of relative price changes seems to be broadly in line with predictions. Figure 1 (which is based on the approach of Rother, 2000) compares the predicted relative price ratio of tradables and nontradables, which is implied by sectoral productivity developments according to equation (1), with actual outcomes. In general, predicted and observed price ratios move closely together. This is also confirmed by high correlations between observed changes in the price ratio and predicted outcomes; with the exception of Slovenia they range between 0.29 (Hungary) and 0.93 (Czech Republic). In Slovenia the relationship between predicted and observed price changes seems to work with a lag: The introduction of a lag changes the correlation between these two variables from -0.41 to +0.84. In all other cases the introduction of a lag reduces the correlations to values near zero, which supports the hypothesis that the high correlations reported above were not achieved by accident.

Except in the case of the Czech Republic, the outcomes of the price ratios are somewhat below predictions, which is in accordance with other studies with different country samples (see e.g. Canzoneri, Diba and Eudey, 1996).

Although the lack of appropriate data does not permit rigorous empirical tests of After having shown that the Balassa-Samuelson hypothesis for individual CEECs, the magnitude of relative price changes seems to be broadly in line with predictions. Figure 1 (which is based on the approach of Rother, 2000) compares the predicted relative price ratio of tradables and nontradables, which is implied by sectoral productivity developments according to equation (1), with actual outcomes. In general, predicted and observed price ratios move closely together. This is also confirmed by high correlations between observed changes in the price ratio and predicted outcomes; with the exception of Slovenia they range between 0.29 (Hungary) and 0.93 effect explains the development of relative prices well, I will address what this means for inflation rates (measured by the GDP deflator). Table 4 illustrates the impact of the relative price change between tradables and nontradables on the GDP deflator. In line (1) of Table 4 the average inflation differential (based on observed prices) between tradables and nontradables, weighted by their share in the GDP deflator, is reported. Stated differently, the figures in line (1) indicate how many percentage points of additional inflation have been added to tradables inflation because of relative price changes between tradables and nontradables. In line (2) of Table 4 the impact of sectoral productivity development-predicted relative price changes on the GDP deflator is given. Except for the fact that the numbers in line (2) are based on predictions according to sectoral productivity developments, the interpretation is identical with line (1).

In line (3) of Table 4 inflation differentials are predicted on the basis of the coefficients given in Pelkmans, Gros and Ferrer (2000) according to equations (3) and (4) and the comparative price levels reported in Table 1. Estimated inflation differentials in line (3) of are not directly comparable with lines (1) and (2) as they measure inflation differentials in the harmonized index of consumer prices (HICP). As mentioned above, the inflation differentials reported in line (1) and (2) refer to inflation differentials between tradables and nontradables and are calculated on the basis of GDP deflators.

However, taking into account these differences, it is nevertheless informative to compare lines (1) and (2) of Table 4 with line (3) under long/short-

Table 4 Impact of Relative Price Changes on the GDP Deflator (per year, based on 1992-2000 averages¹⁶)

	Poland	Slovenia	Czech Republic	Hungary
Inflation differential nontradables/tradables, weighted by their share of the GDP deflator	5,76	2,02	1,16	4,05
Predicted (by productivity differentials) inflation differential between tradables/nontradables, weighted by share of the GDP deflator	9,38	3,56	-0,13	5,52
Predicted by coefficients given in Pelkmans, Gros and Ferrer (2000)	3,64	2,41	4,32	3,97

Source: WIIW, OECD, own calculations.

run considerations. The extremely high inflation differentials predicted on the basis of sectoral productivity developments for Hungary and Poland seem to reflect mainly the massive gains in productivity in the tradables sector that have been achieved by quick restructuring during the 1990s in these two countries. The values given in line (2) are not a good benchmark for future long-term developments for two reasons: First, they were derived from a short time period that may have been characterized by unusually large productivity gains in the tradables sector because of the recovery from the early recession and particularly large gains related to the change in the economic system. Second, as mentioned above, sectoral productivity based estimates of relative price developments tend to overpredict actual relative price developments.

Under a medium to long-term perspective, the estimates presented in line (3) (which are mainly driven by comparative prices and coefficients from EU/OECD countries) are probably a more realistic alternative. The large positive and negative deviations between the results in line (1) and line (3) point to the possibility of large short-run fluctuations in the magnitude of the Balassa-Samuelson effect.

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4. Conclusions

This paper shows that economic forces connected with real convergence as well as cost pressures were important in driving real exchange rate appreciation and inflation in CEECs in the course of the 1990s. Moreover, four countries which are often considered to be relatively homogeneous display significant differences in the magnitudes of these effects. This result points to the need for more country-specific analyses which are, however, difficult to conduct because

¹⁶ Hungary: 1992-1999 averages in lines (1) and (2.)

of the shortness of available time series. These two factsfindings represent a strength and a weakness of this paper at the same time: On the one hand, the paper adds to the few empirical investigations for individual CEECs on the links between real convergence, real exchange rate appreciation and inflation in CEECs, while on the other hand caveats have to be made because of the short time series that were available.

What do these results mean for the appropriateness of the Maastricht criteria for inflation and nominal exchange rates? The results presented above point to a relatively strong impact of economic forces related to real convergence on real exchange rates and inflation. While similar results have been used as an argument against the appropriateness of these criteria, such a conclusion is based on a number of assumptions that are to be questioned too nearsighted: First, it is sometimes overlooked that the Maastricht exchange rate criterion does not allow a devaluation of the central parity, but it does allow a revaluation of the central parity. Thus, the use of the nominal exchange rate as an anti-inflation device is not restricted by the exchange rate criterion.

Secondly, it is not clear how the upward pressure on the real exchange rate induced by the Balassa-Samuelson effect will be transmitted into nominal exchange rate appreciation and/or higher inflation. In this respect the wage setting mechanism clearly plays a key role. A high degree of nominal wage restraint would allow the countries to achieve nominal appreciation and at the same time low inflation without a loss of competitiveness. However, one can draw the conclusion that a larger extent of real convergence-induced real appreciation pressure presents a bigger challenge for the wage-setting mechanism in the CEECs. Using Pelkmans, Gros and Ferrer's (2000) results and the comparative price levels presented Table 1, the paper shows that Slovenia is now in a similar position as Portugal was, and Portugal was able to meet the Maastricht criteria. The other countries covered by this study would have to accommodate in addition about 1.6 percentage points of real convergence-related inflation at 1999 comparative price levels.

Moreover, as Backé (2001) notes, inflation is driven by a variety of factors which may have less benign sources than the Balassa-Samuelson effect and which are difficult to disentangle. Wage increases in excess of productivity increases have been identified as such a factor in this paper.

The analysis of wage-related cost pressures shows that the impact of wage setting on competitiveness during the 1990s differed greatly among CEECs and thus does not provide firm conclusions whether the wage-setting mechanisms in CEECs would be able to support a fixed nominal exchange rate (or even a nominal appreciation) versus the euro. While Hungary was able to improve its competitive position (which would indicate that it should have been able to absorb a larger portion of real convergence-related real exchange rate appreciation pressure with the nominal exchange rate), competitiveness deteriorated substantially in the Czech Republic. Conversely, the different starting positions of both countries also have to be taken into consideration. Nevertheless, the presence of wage cost pressures in some cases shows that downward pressures on the equilibrium exchange rate as a consequence of a deterioration of competitive positions should not be forgotten in the discussion about long-term trends in exchange rates and inflation in CEECs.

References

- Backé, Peter.** 2001. **The Maastricht convergence criteria and the Central and Eastern European EU accession countries: A short reflection on some strands of the current discussion** mimeo, Oesterreichische Nationalbank, Vienna.
- Backé, Peter, Jarko Fidrmuc, Thomas Reininger and Franz Schardax.** 2000. **Price Dynamics in Central and Eastern European EU Accession Countries**, mimeo, Oesterreichische Nationalbank, Vienna.
- Balassa, Bela.** 1964. "The Purchasing Power Parity Doctrine: A Reappraisal." *Journal of Political Economy* (December): 584–596.
- Canzoneri, Matthew B., Behzad Diba and Gwen Eudey.** 1996. **Trends in European Productivity and Real Exchange Rates: Implications for the Maastricht Convergence Criteria and for Inflation Targets after EMU.** Discussion Paper no. 1417. CEPR, London.
- Cincibuch, Martin and David Vavra.** 2000. **Towards the EMU: A Need for Exchange Rate Flexibility**, Working Paper of the Transition Economics Series no. 17. Institute for Advanced Studies, Vienna.
- Coricelli, Fabrizio and Bostjan Jazbec.** 2000. **Real Exchange Rate Dynamics in Transition Economies.** Discussion Paper no. 2869. CEPR, London
- ECB.** 1999. **Inflation Differentials in a Monetary Union.** *ECB Monthly Bulletin* (October):35–44.
- Halpern, Laszlo and Wyplosz, Charles.** 2001. **Economic Transformation and Real Exchange Rates in the 2000s: The Balassa-Samuelson Connection.** In: *Economic Survey of Europe 2001 no.1.* UNECE
- Micossi, Stefano and Gian Maria Milesi-Ferretti.** 1996. **Real Exchange Rates and the Prices of Non-Tradable Goods.** In: De Grauwe P, S. Micossi and G. Tullio (eds.) *Inflation and Wage Behaviour in Europe*, Clarendon Press Oxford.
- Pelkmans, Jacques, Daniel Gros and Jorge Nunez Ferrer.** 2000. **Long-Run Economic Aspects of the European Union's Eastern Enlargement.** WRR Working Dokument W 109. The Hague
- Rother, Philipp C.** 2000. **The Impact of Productivity Differentials on Inflation and the Real Exchange Rate: An Estimation of the Balassa-Samuelson Effect in Slovenia.** In: *Republic of Slovenia: Staff Report for the 1999 Article IV Consultation and Selected Issues, Selected Issues.* IMF, Washington: 26-38.
- Samuelson, Paul.** 1964. **Theoretical Notes on Trade Problems.** *Review of Economics and Statistics* (46) (May): 145-154.
- Simon, Andras and Mihaly A. Kovacs.** 1998. **Components of the Real Exchange Rate in Hungary.** NBH Working Paper 1998/3. National Bank of Hungary

The Samuelson-Balassa effect vs. the real sector in Poland

Krzysztof Marczewski

The Samuelson-Balassa effect¹, known in literature for almost 40 years, has in recent years become very popular in Polish economic discussions. Interestingly, this effect was quoted almost exclusively in the context of inflation control. In particular, the presence of this effect with its translation into price growth was confronted in discussions with the strict Maastricht Treaty inflation criterion and led some to the conclusion that unilateral euroisation was a better solution than allowing a considerable appreciation of the zloty², while others were led by it to proposing an evolutionary exchange rate strategy³.

But the model which implies the Samuelson-Balassa effect (SBE) is not limited merely to price and exchange-rate relations. This is a model of mutual interactions between price and exchange rate variables and real sector variables. It is therefore worth considering the operation of the SBE in such broader context. Below, following the presentation of a model we will analyse various forms which the Samuelson-Balassa effect took in Poland in the 1990's, with particular reference to the processing industry, the main producer of tradables.

1. A Model

Let there be an economy consisting of two sectors: the tradables sector (T) and the non-tradables sector (N). The general price level (P) in the economy is expressed as a weighted geometric average of prices for the two sectors⁴.

$$P = (P^T)^\alpha \cdot (P^N)^{1-\alpha} \quad (1)$$

where:

P^T – price level index in tradables sector

P^N – price level index in non-tradables sector

α – share of tradables sector, $0 < \alpha < 1$

¹ Cf. B.Balassa [1] and P.Samuelson [7].

² Cf. A.Bratkowski, J.Rostowski [2].

³ Cf. S.Gomulka [3].

⁴ Usually, the Consumer Price Index is taken as a measure of the general price level. See M.Burda, C.Wyplosz: *Macroeconomics, A European Text*; Oxford University Press 1993, p.147-150.

The model is based on five basic assumptions concerning the trends of prices, wages and labour productivity in particular sectors of the economy.

According to assumption one the price level of tradables is determined, under a given exchange rate level (E)⁵, by the price level of tradables abroad (P^{T*}). It is thus assumed that the law of one price holds for the tradables sector:

$$P^T = E \cdot P^{T*} \quad (2)$$

In accordance with assumption two the labour market is uniform in the economy under analysis and, thus, there is a single nominal wage (W):

$$W^T = W = W^N \quad (3)$$

where:

- W^T – nominal wage in tradables sector
- W^N – nominal wage in non-tradables sector.

Assumption three expresses the condition of labour market equilibrium in both sectors of the economy, i.e. the condition of equalising the marginal productivity of labour with real wages for work in each of the sectors:

$$W/P^T = MPL^T \text{ and } W/P^N = MPL^N \quad (4)$$

or put differently

$$MPL^T = W/P^T = (P^N/P^T) \cdot MPL^N \quad (4)$$

where:

- W – nominal wage in the economy
- MPL^T – marginal productivity of labour in tradables sector
- MPL^N – marginal productivity of labour in non-tradables sector

Thus, from (1):

$$P = EP^{T*} \cdot (MPL^T/MPL^N)^{1-\alpha} \quad (5)$$

According to assumption four the marginal productivity of labour in non-tradables sectors is the same domestically and abroad:

$$MPL^N = MPL^{N*} \quad (6)$$

where:

- MPL^{N*} – marginal productivity of labour in non-tradables sector abroad:

⁵ The exchange rate is construed as the price of a unit of foreign currency in domestic currency.

Finally, according to assumption five, the general price level abroad P^* is also determined by formula (1), given the same share of tradables sector a as in the domestic economy:

$$P^* = (P^{T^*})^\alpha \cdot (MPL^{T^*} / MPL^{N^*})^{1-\alpha} \quad (7)$$

where

MPL^{T^*} – marginal productivity of labour in tradables sector abroad
 P^* – price level index abroad

Under these assumptions the level of the real exchange rate in the analysed economy is given by the formula:

$$R = P/(EP^*) = (MPL^T/MPL^{T^*})^{1-a} \quad (8)$$

where:

R – real exchange rate understood as the real price of a domestic currency unit in foreign currency

Thus, the real value of the domestic currency is the higher, the higher is marginal labour productivity in the domestic tradables sector compared to the tradables sector abroad. In flow terms, this means that the domestic currency undergoes real appreciation the faster, the faster is the growth of marginal labour productivity in the domestic tradables sector with respect to the productivity of the foreign tradables sector. This is precisely the classical version of the Samuelson-Balassa effect.

But this is by no means the only interpretation of the SBE. As noticed by L.Halpern and C. Wyplosz⁶ a certain cause-and-effect relationship can be found by proceeding from left to right-hand side of equation (8), i.e.:

$$MPL^T/MPL^{T^*} = (P/EP^*)^{1/1-\alpha} = P^N/EP^{N^*} \quad (9)$$

Under this approach growth in the labour productivity of the domestic tradables sector is induced by the pace of the domestic currency's real appreciation. This trend was called by L.Halpern and C. Wyplosz the Samuelson-Balassa effect in reverse. Let us note that the domestic currency's real appreciation can be effected both by nominal exchange rate appreciation and by an increase of non-tradables prices in the economy. Hereinafter, the classical version of the SBE will be marked as SBE(k), while the SBE effect in reverse – as SBE(o).

Trends in labour market changes are critical to identifying the type of Samuelson-Balassa effect which is present in a given period.

Fig. 1 and 2 show a diagramme of labour market operation in a model which implies the SBE. The demand for workforce, as reported by particular sectors, is plotted on the horizontal X-axis, with the demand for workforce in the tradables sector (T) calculated to the right of vertex O_T , and demand for

⁶ L.Halpern, C.Wyplosz [5].

Figure 1

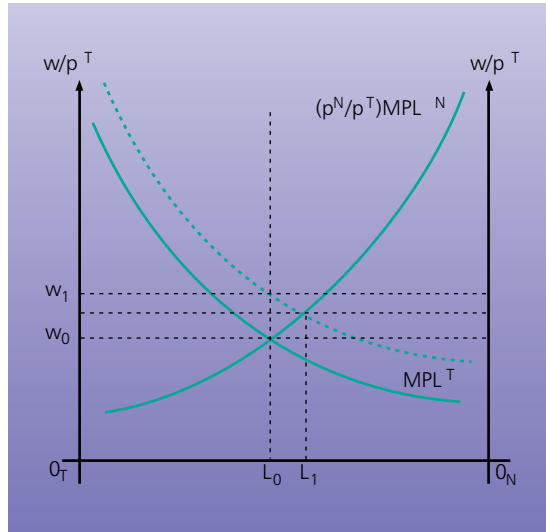
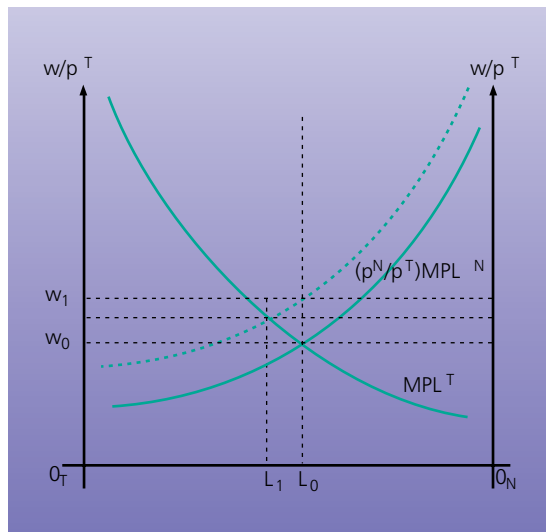


Figure 2



workforce in the non-tradables sector calculated to the left of vertex O_N . The wage level in the economy deflated by the level of tradables (W/P^T) is measured along the vertical Y-axis. Let us recall that labour mobility between the sectors is assumed. But capital is sector specific and thus immobile. In a situation like this given a constant stock of capital the value of marginal labour product in each of the sectors goes down along with growth in employment. The level of equilibrium in the economy is achieved under such workforce allocation between the sectors that the value of marginal labour product in both sectors evens out, determining the monetary wage level in terms of a tradable⁷.

Let us note that, like wage, also the curves referring to value of marginal product of labour (VMPL) in both sectors are defined in relation to the price of tradables. We thus have:

$$VMPL^T = P^T \cdot MPL^T/P^T = MPL^T$$

$$VMPL^N = P^N \cdot MPL^N/P^T = (P^N/P^T) \cdot MPL^N$$

Fig. 1 illustrates the working of the Samuelson-Balassa effect in the classical version. Under a given price level for tradables there is a growth in the labour productivity of the tradables sector. This is expressed in a shift upwards and to the right of the MPL^T curve. On the one hand, it results in pressure for nominal wage growth, but, on the other, it also results in a growth of up to $O^T L^1$ in the demand for labour in sector T. Under unchanged marginal labour productivity in the non-tradables sector, the pressure for nominal wage growth enforces growth on non-tradables prices (P^N), which in fig. 1 is expressed by the left-upward shift of the $VMPL^N$ curve. A new point of equilibrium is now determined on condition that the adjustment process is complete for the wage $W_1/P^T > W_0/P^T$ and with the same as initially allocation of the workforce

⁷ This is thus a version of a model known in international trade theory under the name of specific factors model, cf. N.Vousden [8], p.15-18.

between the diagrammes. Thus, as a result of the adjustments and influenced by the growth of P^N , up goes general price level P , and the domestic currency appreciates in real terms. Let us note that the pressure for **employment growth** in the tradables sector is an important factor in the adjustment process and that it translates into an impulse of monetary wage growth in the economy.

Fig. 2, on the other hand, illustrates the operation of the Samuelson-Balassa effect in reverse. This time the real appreciation of the domestic currency is triggered off by growth in the price level of non-tradables. This is expressed by a shift upwards and to the left of the $VMPL^N$ curve. Consequently, there is pressure for nominal wage growth and employment growth up to $O_N L_1$ in the non-tradables sector (drop of employment in the tradables sector to $O_T L_1$). Under the unchanged price level of tradables dictated by world market prices the pressure for nominal wage growth enforces rising productivity on the tradables sector. In fig. 2 this is expressed by the shift of the MPL^T curve upwards and to the right. A new point of equilibrium is determined on condition that the adjustment process is fully completed for the wage $W_1/P^T > W_0/P^T$ and with the same as initially allocation of the workforce between the sectors. As a result of the adjustments caused by domestic currency appreciation up goes productivity in the tradables sector. Let us note that this time pressure to **reduce employment** in the tradables sector is a key factor in the adjustment process in the tradables sector.

If we assume that the manufacturing technology in the sector, both domestically and abroad, can be described by means of the Cobb-Douglas production function with the same elasticities of output vis a vis labour, then relation (8) can be described as:

$$R = P/(EP^*) = (LP^T/LP^{T*})^{1-a} \quad (10)$$

where:

- LP^T – average labour productivity in domestic tradables sector
- LP^{T*} – average labour productivity in foreign tradables sector.

2. Historical analysis

Relation (10) can be adequately used for calculations in order to check what rate of zloty appreciation is associated with the impact of the SBE effect. To this end, growth rates of labour productivity in the Polish processing industry (section D of NACE classification) are compared with the growth rates of labour productivity in the processing industry of the OECD states. 1989 was adopted as the base year. In fig. 3 the graph of this relation is defined as the so-called **path of relative productivities**. The path is confronted with the actual zloty appreciation paths calculated in two variants:

- **real exchange rate path according to the IMF**, where the Consumer Price Index is the domestic price index, while the Aggregated Consumer Price Index of our main trade partners is the foreign price index. This way the growth path of the Real Effective Exchange Rate for the zloty, under the IMF approach is constituted.
- **path of relative prices**, where the domestic final demand deflator (individual consumption + gross investment outlays) is chosen as the domestic

price index, while the integrated rate of GDP deflators in OECD countries serves as the foreign price index.

It can be seen that in each case the actual real zloty appreciation was, in the period under discussion, higher than the one resulting from the SBE.

The most radical deflection of the real path (in both variants) from the theoretical path towards appreciation occurred in 1991. According to the SBE in its classical version the zloty should have depreciated in real terms that year. A strong appreciation of the domestic currency was witnessed instead. 1992-94, in turn, saw a depreciative correction in the movement of the real path back to the theoretical one.

The years 1995 – 1996, in connection with a partial floatation of the zloty, are characterised by yet another departure of the real path from the theoretical one, which means that in those years the zloty appreciated much faster than it would have followed from the differences between the rates of labour productivity in the tradables sectors domestically and abroad. Again, that period was followed by a correction in 1997. An even higher depreciative correction of the exchange rate took place in 1999, although the path of relative productivities actually climbed. But in 2000 the appreciation trend returned with a vengeance.

It follows from this analysis that although the zloty under transformation generally appreciated more in real terms than it would have followed from the SBE in the classical version, there can also be observed a certain „gravity” of the zloty real appreciation path to the theoretical path determined by the effect. The “gravity” is exemplified by depreciative corrections, which occurred in the period under examination in the years 1992-1994, 1997 and 1999.

The results presented here are very much sensitive to the selection of the reference year. This can clearly be seen by comparing fig. 3 with fig. 4 in which 1992 was taken as the base period. Under this approach the path of relative productivities displays faster growth than the real appreciation path. It thus means that 1991 developments were critical to the mutual positioning of the productivity line and the real exchange rate line.

Figure 3 Samuelson-Balassa Effect in 1990-2000 (1989 r. = 100)

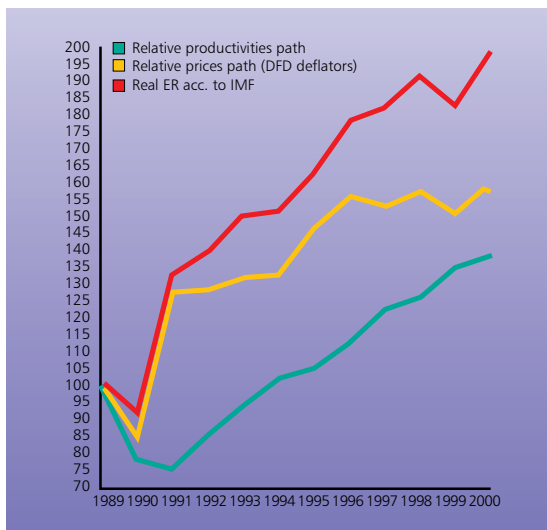
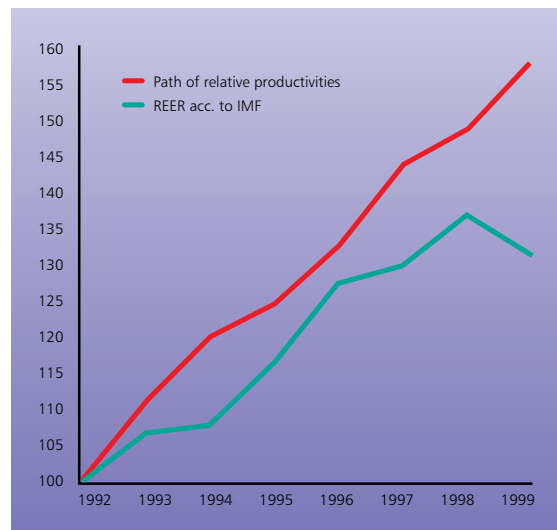


Figure 4 Samuelson-Balassa Effect in 1993-1999 (1992 r. = 100)



The analysis of the two versions of Samuelson-Balassa effect demonstrates that what makes them different is the labour market trend in the tradables sector. If a rising employment trend is observed in the sector, then the appreciation of the domestic currency can be said to be connected with the operation of the SBE in its classical form. On the other hand, if a falling employment trend is observed in the sector, then, as far as domestic currency appreciation is concerned, the SBE in reverse can be said to be at play.

The important thing to define at this juncture is the marginal level of employment drop. Two variants of such level (Z_1^* and Z_2^*) are assumed. In the first variant each drop in employment (practically below 0.5% per annum) is the basis for qualifying a given situation as a consequence of the SBE in reverse. In the second variant the marginal employment drop level is determined as the reverse of the rate of the domestic currency's real appreciation⁸, i.e.:

$$Z_2^* = 1/REER \quad (11)$$

where:

- Z_2^* – marginal growth rate of employment drop
- REER – growth rate of real effective exchange rate

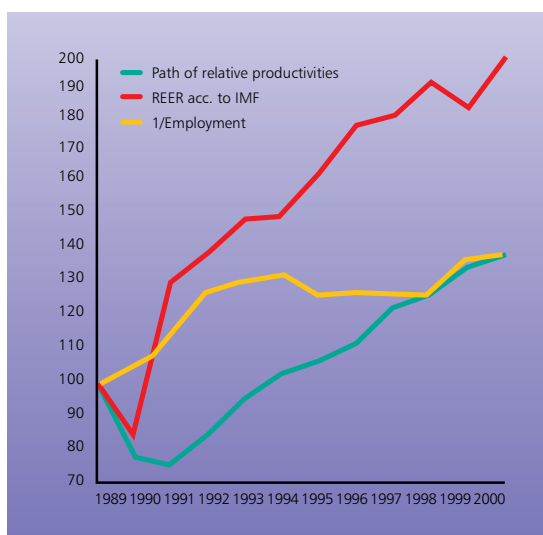
The strength of the SBE will, in turn, be measured by means of the ratio of relative productivity growth rate (RWYD) to growth rate of real effective exchange rate (REER). In the case of the SBE in the classical version $RWYD \geq REER$ will mean a strong SBE (k), while $RWYD < REER$ will mean a weak SBE (k). On the other hand, in the case of the SBE in reverse $RWYD < REER$ will mean a strong SBE (o), while $RWYD \geq REER$ will mean a weak SBE (o).

Let us also note that the Samuelson-Balassa effect can also explain the real depreciation of domestic currency in conditions when the labour productivity of the tradables sector in a given economy grows more slowly than labour productivity in the same sector with the trade partner countries.

Pulling all these factors together a complete classification of ways in which the SBE manifests itself can be developed. It is presented in table 1.

The above-presented typology allows to use the SBE perspective in order to characterise particular periods, as well as the situation in particular sectors of the economy. Tables 2 and 3 present

Figure 5 Samuelson-Balassa Effect vs Employment in Processing Industry in Year 1989-2000 (1989 r. = 100)



⁸ This is a drop in employment which is required to maintain relative labour productivity at the level determined by REER in conditions when labour productivity abroad does not change and neither does the domestic production volume, cf. fig. 5

Table 1. Classification of Forms of Samuelson-Balassa Effect Manifestation

	REER \geq 100?	Z \geq Z*?	RWYD \geq REER?
Weak SBE(k) under depreciation	yes	yes	yes
Strong SBE(o) under appreciation	no	no	yes
Strong SBE(k) under depreciation	yes	no	no
Weak SBE(o) under appreciation	no	no	no
Weak SBE(k) under appreciation	yes	no	yes
Strong SBE(o) under depreciation	no	yes	yes
Weak SBE(o) under depreciation	no	yes	no

Source: Own studies

appropriate ratios for the years 1990-2000 and, based on their analysis, the assessment of forms of SBE manifestation.

When comparing the results contained in tables 2 and 3 let us note that the second criterion for assessing growth of employment is more liberal under appreciation, but under depreciation it is more rigorous than the first criterion

Table 2. Forms of SBE Manifestation in 1990-2000 under First Criterion of Assessing Employment Growth Rate in Tradables Sector

Year/period	REER \geq 1000?	Z \geq Z,*?	RWYD \geq REER?	Form of SBE
1990	no	no	no	Strong SBE(k) under depreciation
1991	yes	no	no	Strong SBE(o) under appreciation
1992	yes	no	yes	Weak SBE(o) under appreciation
1993	yes	no	yes	Weak SBE(o) under appreciation
1994	yes	yes	yes	Strong SBE(k) under appreciation
1995	yes	yes	no	Weak SBE(k) under appreciation
1996	yes	yes	no	Weak SBE(k) under appreciation
1997	yes	yes	yes	Strong SBE(k) under appreciation
1998	yes	no	no	Strong SBE(o) under appreciation
1999	no	no	yes	Weak SBE(k) under depreciation
2000	yes	no	no	Strong SBE(o) under appreciation
1990-2000	yes	no	no	Strong SBE(o) under appreciation
1993-1999	yes	no	yes	Weak SBE(o) under appreciation
1993-2000	yes	no	yes	Weak SBE(o) under appreciation

Source: Own calculations on the basis of CSO and IMF data.

Table 3. Forms of SBE Manifestation in 1990-2000 under Second Criterion of Assessing Employment Growth Rate in Tradables Sector

Year/period	REER \geq 1000?	Z \geq Z,*?	RWYD \geq REER?	Form of SBE
1990	no	no	no	Strong SBE(k) under depreciation
1991	yes	yes	no	Weak SBE(k) under appreciation
1992	yes	no	yes	Weak SBE(o) under appreciation
1993	yes	yes	yes	Strong SBE(k) under appreciation
1994	yes	yes	yes	Strong SBE(k) under appreciation
1995	yes	yes	no	Weak SBE(k) under appreciation
1996	yes	yes	no	Weak SBE(k) under appreciation
1997	yes	yes	yes	Strong SBE(k) under appreciation
1998	yes	yes	no	Weak SBE(k) under appreciation
1999	no	no	yes	Weak SBE(k) under depreciation
2000	yes	yes	no	Weak SBE(k) under appreciation
1990-2000	yes	yes	no	Weak SBE(k) under appreciation
1993-1999	yes	yes	yes	Strong SBE(k) under appreciation
1993-2000	yes	yes	yes	Strong SBE(k) under appreciation

Source: As in table 2.

for assessing growth of employment. In terms of particular years there are four cases when the relevant indications contained in both tables actually differ – in 1991, 1993, 1998 and 2000. Apart from 1993, when the identification of a weak SBE(o) under the first assessment criterion changes into the identification of a strong SBE(k) under the second criterion, for the remaining years the change in identification consists in a shift from a strong SBE(o) to a weak SBE(k). In general, the second criterion much more frequently than the first one points to the occurrence of the SBE in the classical version.

On the other hand, for multiyear periods the different criteria give diametrically different assessments. Having applied the first criterion we found that in 1990-2000 and 1993-1999, as well in 1993-2000 Poland had the SBE in reverse – a strong one for the whole period 1990-2000 and a weak one for periods starting from 1993. But having applied the second criterion, we detected the classical SBE for all the above-presented periods, but it was the weak form for the whole period 1990-2000 and the strong form for the periods from 1993.

We can thus see how important the selection of the marginal employment level is. Somewhere between the indicators defined by the application of the first and the second criterion you could probably find a critical level which would most adequately render the marginal employment level determined by long-term factors. The issue needs further studies.

3. Sectoral analysis

The adopted classification of forms of SBE manifestation additionally allows to analyse the situation in particular sectors of the processing industry. For reasons of statistical data availability the analysis can cover the years 1993-1999 only. In the period before that it was not NACE which was applied but rather the NACE incompatible National Economy Classification (KGN). For the year 2000, on the other hand, no data is yet available for the whole cohort of industrial enterprises. With respect to sectors two criteria of assessing the marginal unemployment level are employed again.

The period under examination saw considerable real zloty appreciation, which nevertheless did not, for the processing industry (manufacturing) as a whole, exceed the growth rate of relative labour productivity. The relevant sectoral data are presented in table 4 with the growth rates of labour productivity in the OECD countries' processing industry adopted as benchmark.

Tables 5 and 6, in turn, present growth rates of employment and the ratio of the reverse of the growth rate of employment to REER, which provides the basis for the application of, respectively, the first and the second marginal employment level criterion.

In 5 out of 22 sectors of the processing industry the growth rate of relative labour productivity was lower than the growth rate of the zloty REER. (see table 4). Those were the following industries: food products, tobacco products, wearing apparel, wood, and coke and petroleum products. But in many sectors the growth rate was several times higher. This was particularly true of computers and office machines, radio, television and communication equipment, motor vehicles and medical, precision and communication equipment. The labour productivity explosion in the four sectors can be explained by a change in

Table 4. Relative Labour Productivity In Processing Industry vs. REER (Real Effective Exchange Rate) (Preceding Year = 100)

Relative labour productivity/REER	1993	1994	1995	1996	1997	1998	1999	1999 (1992=100)
Food products and beverages	100.63	109.44	91.33	97.26	100.57	93.91	104.78	96.81
Tobacco products	96.79	101.78	88.57	83.90	99.35	107.75	103.69	81.26
Textiles	107.02	108.96	91.69	98.24	104.98	103.76	109.27	125.01
Wearing apparel and furriery	92.41	101.21	78.95	98.41	107.88	97.81	98.90	75.84
Leather and leather products	99.44	110.95	97.75	99.93	89.23	99.67	110.37	105.78
Wood and wood products	95.97	103.48	86.34	93.96	104.32	95.86	114.35	92.14
Paper and paper products	101.45	105.84	110.40	94.05	105.82	98.19	115.55	33.85
Publishing and printing	129.12	99.51	93.20	98.15	98.79	104.69	116.75	141.91
Coke and petroleum products	101.63	100.27	94.89	92.18	96.73	87.88	104.38	79.09
Chemicals and chemical products	99.44	107.26	100.24	94.41	107.70	92.43	137.19	137.83
Rubber and plastic products	101.45	98.95	99.88	97.43	104.60	100.14	115.45	118.14
Other non-metallic products	102.91	113.40	90.08	97.79	103.38	103.95	119.94	132.51
Basic metals	93.69	118.22	105.59	87.10	112.48	92.06	104.09	109.78
Finished metal products	104.46	105.56	93.56	99.48	103.38	100.88	111.96	119.84
Machinery and equipment	105.28	113.97	107.28	102.06	105.45	97.26	104.58	140.92
Computers and office machines	187.19	113.03	135.08	132.88	105.63	112.31	131.50	592.46
Electrical machinery and apparatus	104.37	99.70	100.69	98.77	102.45	103.57	113.26	124.36
Radio, television and communication equipment	134.41	130.41	112.63	113.55	125.78	120.48	110.47	375.31
Medical, precision and optical instruments	118.25	102.06	108.17	101.71	116.97	96.61	114.55	171.89
Motor vehicles	132.31	103.01	104.16	117.65	177.54	109.24	123.33	264.48
Other transport equipment	104.83	117.18	94.63	88.88	113.79	111.84	107.18	140.92
Furniture, other manufacturing	99.71	104.43	95.25	99.57	109.85	93.08	110.77	111.85
Manufacturing	103.28	107.73	95.34	98.06	105.63	98.46	110.77	119.84

Source: Own calculations on the basis of CSO and IMF data.

Table 5. Employment Growth Rate in Processing Industry (preceding year = 100)

Employment	1993	1994	1995	1996	1997	1998	1999	1999 (1992=100)
Food products and beverages	101.2	97.4	106.6	100.4	102.2	102.8	95.7	106.07
Tobacco products	110.0	102.1	100.1	1005.5	98.2	90.9	93.2	94.00
Textiles	93.7	99.4	96.2	93.1	95.4	87.7	84.6	59.04
Wearing apparel and furriery	107.0	103.7	115.3	94.8	97.9	101.6	87.1	105.07
Leather and leather products	90.7	95.9	98.7	100.3	109.5	77.0	81.9	59.46
Wood and wood products	98.6	101.0	113.5	106.8	100.7	104.1	98.8	125.03
Paper and paper products	96.0	1114.4	95.3	104.0	105.2	100.7	95.4	107.12
Publishing and printing	98.3	101.5	112.1	103.8	109.6	106.6	101.2	137.27
Coke and petroleum products	100.9	101.1	99.1	99.3	98.6	93.4	100.4	92.82
Chemicals and chemical products	97.4	103.4	100.5	99.0	97.4	95.9	93.0	87.04
Rubber and plastic products	107.8	110.9	104.4	107.1	108.6	105.6	100.8	154.52
Other non-metallic products	97.4	95.5	103.6	99.8	101.4	98.9	95.5	91.11
Basic metals	99.2	93.3	97.5	102.3	94.3	93.7	89.4	72.92
Finished metal products	93.6	103.5	110.3	107.8	103.5	107.7	92.9	119.28
Machinery and equipment	94.9	95.7	100.4	95.4	96.6	96.0	90.6	73.39
Computers and office machines	73.8	82.2	106.9	96.7	110.3	103.6	106.5	76.32
Electrical machinery and apparatus	97.0	104.0	102.7	100.9	106.1	99.4	97.9	107.93
Radio, television and communication equipment	86.3	91.9	92.9	93.4	96.1	93.9	91.0	56.51
Medical, precision and optical instruments	89.6	103.4	103.5	100.5	95.9	99.9	96.7	89.28
Motor vehicles	87.9	104.3	97.6	101.5	104.5	102.7	92.8	90.45
Other transport equipment	95.4	98.8	97.9	95.3	91.6	92.2	93.1	69.14
Furniture, other manufacturing	102.0	103.6	116.2	102.2	107.0	104.1	94.1	132.23
Manufacturing	97.6	99.7	104.3	99.8	100.7	99.3	93.2	94.40

Source: Industrial Statistical Yearbook, CSO 2000.

Table 6. Ratio of Reverse Employment in Processing Industry to REER
(preceding year = 100)

Employment/REER	1993	1994	1995	1996	1997	1998	1999	1999 (1992=100)
Food products and beverages	92,13	101,78	86,68	91,55	95,55	92,62	108,87	71,70
Tobacco products	84,76	97,10	92,31	91,45	99,46	104,75	111,79	80,90
Textiles	99,50	99,73	96,05	98,72	102,38	108,57	123,15	128,80
Wearing apparel and furriery	87,13	95,60	80,14	96,95	99,76	93,71	119,62	72,37
Leather and leather products	102,79	103,37	93,62	91,64	89,19	123,65	127,21	127,89
Wood and wood products	94,56	98,15	81,41	86,06	96,99	91,46	105,45	60,82
Paper and paper products	97,12	88,99	96,96	88,38	92,84	94,55	109,21	70,99
Publishing and printing	94,84	97,67	82,43	88,55	89,11	89,32	102,95	55,40
Coke and petroleum products	92,40	98,06	93,24	92,56	99,05	101,94	103,77	81,93
Chemicals and chemical products	95,72	95,87	91,94	92,84	100,27	99,28	112,03	87,36
Rubber and plastic products	86,49	89,39	88,51	85,82	89,93	90,16	103,36	49,21
Other non-metallic products	95,72	103,81	89,91	92,10	96,32	96,27	109,09	82,56
Basic metals	93,98	106,25	94,77	89,85	103,57	101,62	116,54	104,28
Finished metal products	99,61	95,78	83,77	85,26	94,36	88,41	112,15	63,75
Machinery and equipment	98,24	103,59	92,03	95,94	101,10	99,18	114,99	103,62
Computers and office machines	126,33	120,60	86,44	95,05	88,55	91,91	97,83	99,65
Electrical machinery and apparatus	96,11	95,32	89,97	91,09	92,05	95,79	106,42	70,46
Radio, television and communication equipment	108,03	107,87	99,46	98,41	101,63	101,40	114,49	134,57
Medical, precision and optical instruments	104,05	95,87	89,28	91,45	101,84	95,31	107,74	85,18
Motor vehicles	106,07	95,05	94,67	90,55	93,46	92,71	112,27	84,07
Other transport equipment	97,73	100,34	94,38	96,44	106,62	103,27	111,91	109,98
Furniture, other manufacturing	91,40	95,69	79,52	89,93	91,28	91,46	110,13	57,51
Manufacturing	95,52	99,43	88,59	92,10	96,99	95,88	111,79	80,56

Source: As in tables 4 and 5.

manufacturing technology and transition from comprehensive manufacturing based on domestic cooperation chains to import intensive assembling. Much poorer were the relative labour productivity/REER for traditional labour and raw material intensive sectors. This is particularly true of the industries: leather, basic metals and furniture.

In the period under investigation employment in the processing sector went down 5.6%. Only in 9 out of 22 sectors employment went up (see table 5). Particularly high employment increments (over 25%) were noted in the industries: rubber and plastic products, publishing, furniture and wood. On the other hand there were spectacular drops in employment (in excess of 40%) which affected industries: textiles, leather, and radio, television and communication equipment.

The more liberal criterion of the marginal employment level which makes it relative to the reverse growth ratio of the domestic currency's real appreciation brings down the number of sectors with an excessive employment drop from 13 to 6 (see table 6). There are seven sectors which do not meet the first criterion, but meet the second one: tobacco industry, coke and petroleum products chemicals and chemical products, other non-metallic products (minerals), computers and office machines, medical, precision and communication equipment and motor vehicles.

On the basis of the data contained in tables 4 – 6 the sectors can be broken down by forms in which the SBE manifests itself. Tables 7 and 8 show the outcome of such breakdown with the appropriate use of the first and second marginal employment level criterion.

Table 7. Breakdown of Processing Industry Sectors according to Forms of SBE Manifestation in 1993–1999 under First Criterion of Employment Level

		RWYD ≥ REER?		Number of sectors
		NO	YES	
		Weak SBE(k)	Strong SBE(k)	
		– food	– paper	
Z ≥ Z ₁	YES	– wearing apparel	– publishing	
		– wood	– rubber products	9
			– finished metal products	
			– electrical machinery	
			– furniture	
	NO	Strong SBE(o)	Weak SBE(o)	
		– tobacco	– minerals	
		– coke and petroleum products	– medical and precision equipment	
			– motor vehicles	
			– chemicals	
			– computers and office machines	13
			– textile	
			– leather	
			– basic metals	
			– machines and equipment	
			– radio and television equipment	
			– other transport equipment	
Number of sectors		5	17	2

Source: own calculations on the basis of tables 4 and 5.

Table 8. Breakdown of Processing Industry Sectors according to Forms of SBE Manifestation in 1993–1999 under Second Criterion of Employment Level

		RWYD ≥ REER?		Number of sectors
		NO	YES	
		Weak SBE(k)	Strong SBE(k)	
		– food	– paper	
Z ≥ Z ₂	YES	– wearing apparel	– publishing	
		– wood	– rubber products	
		– tobacco industry	– finished metal products	16
		– coke and petroleum products	– electrical machinery and apparatus	
			– furniture	
			– minerals	
			– medical and precision equipment	
			– motor vehicles	
			– chemicals	
			– computers and office machines	
	NO	Strong SBE(o)	Weak SBE(o)	
			– leather	
			– textile	
			– basic metals	
			– machines and equipment	6
			– radio and television equipment	
			– other transport equipment	
Number of sectors		5	17	22

Source: own calculations on the basis of tables 4 and 6.

The application of the first, rigorous criterion of marginal employment level leads one to the conclusion that most sectors were subject to the Samuelson-

Balassa effect in reverse. That would mean that the growths in productivity of labour were in a way “enforced” on them by the rate of real zloty appreciation and were connected with employment shedding, often considerable one. On the other hand, one can also see that a definite majority of those sectors was able to achieve much higher growth rate of relative labour productivity than the rate of domestic currency’s real appreciation. Only the tobacco industry and coke and petroleum products failed to reach the level, which may mean that the sectors in question will have to face considerable employment shedding in subsequent years. The strong classical Samuelson-Balassa effect occurred, according to this division, in only 6 sectors. Thus, it was unable to impact the situation in the whole processing industry. Companies with a foreign shareholding play a big part in the ownership structure of the sectors (except finished metal products) and their output (except electrical machinery and apparatus) is mainly based on domestic raw materials. The weak classical SBE occurred only in the three sectors which were fairly labour intensive and based on domestic raw materials. It is noteworthy that in the period under examination those industries were among ones which had the highest effective customs protection rate (alongside the auto making industry).

The application of the second, less stringent criterion of the marginal employment level substantially reduces the number of sectors subject to the operation of the SBE in reverse. According to this classification the group of sectors displaying the strong classical Samuelson-Balassa effect is becoming the dominant category. Let us note that the group of sectors which displayed the strong SBE in reverse is dwindling. The group of 6 sectors which also according to this criterion can be said to be subject to the weak SBE in reverse is dominated (excepting radio, television and communication equipment) by labour-intensive industries with low foreign capital penetration⁹.

Additionally, let us investigate the evolution of the ratios of export transaction prices to unit labour costs in particular groups of sectors distinguished in tables 7 and 8. Export transaction prices to unit labour costs are an important ratio with which to measure changes in export profitability. They can only be roughly calculated at the level of industrial sectors in Polish conditions, as the Central Statistical Office publishes foreign trade price indices by goods only according to the NTHZ (National Trade Classification) and SITC frameworks which are not directly comparable with the NACE. It is slightly easier to compare the NTHZ and NACE frameworks. Such method was employed in the calculation of table 9.

The NTHZ food industry price index was taken as the transaction price index for the food and tobacco industry; the NTHZ light industry price index – for textiles, wearing apparel and leather; the NTHZ wood and paper industry price index – for the wood, paper and the furniture industry; the NTHZ fuel and energy price index – for coke and petroleum products; the NTHZ chemical industry price index – for chemical products and rubber and plastic product industries; the NTHZ mineral industry price index – for other non-metallic products; the NTHZ metallurgic products price index – for basic metals; the NTHZ electrical machinery industry products price index – for the industries: finished metal products, machinery and equipment, computers and office

⁹ Cf. K.Marczewski [6], table 22 and table A.14.

Table 9. Export Transaction Prices to Unit Labour Costs (Preceding Year = 100)

	1994	1995	1996	1997	1998	1999	1999 (1993=100)
Food products and beverages	110,2	91,1	88,8	101,1	86,7	96,7	75,55
Tobacco products	92,8	86,0	63,0	98,3	89,8	95,9	42,54
Textiles	102,3	88,1	95,3	104,8	93,0	107,6	90,11
Wearing apparel and furriery	100,5	78,5	97,5	109,6	88,8	100,1	74,92
Leather and leather products	106,9	91,6	95,1	92,5	91,8	107,2	84,74
Wood and wood products	105,0	98,6	95,4	102,5	86,8	109,8	96,43
Paper and paper products	106,0	112,8	91,3	105,7	90,5	107,4	112,14
Publishing and printing	96,4	97,8	90,9	95,3	93,1	111,5	84,82
Coke and petroleum products	89,2	90,3	97,5	105,2	82,5	102,4	69,84
Chemicals and chemical products	100,5	109,8	82,8	103,4	82,1	135,2	104,95
Rubber and plastic products	98,2	113,3	91,1	102,4	94,4	110,1	108,10
Other non-metallic products	105,2	89,7	96,9	100,3	92,0	118,4	99,88
Basic metals	115,8	109,8	76,6	115,5	87,5	96,5	94,91
Finished metal products	109,8	91,5	102,5	100,8	83,8	112,0	97,51
Machinery and equipment	117,4	103,9	103,2	103,2	79,3	105,8	109,04
Computers and office machines	126,5	139,6	130,8	90,1	88,8	105,7	195,39
Electrical machinery and apparatus	101,6	99,9	100,2	101,8	82,5	114,0	97,39
Radio, television and communication equipment	132,0	107,7	115,1	118,8	94,1	106,1	193,97
Medical, precision and optical instruments	101,8	106,1	105,0	110,4	79,4	115,0	114,30
Motor vehicles	105,4	102,7	115,0	113,5	89,9	122,4	155,30
Other transport equipment	119,0	93,8	92,5	110,0	88,6	105,6	106,20
Furniture, other manufacturing	110,6	108,3	99,8	107,0	84,3	105,0	113,22
Manufacturing	106,4	97,1	94,1	104,5	86,9	107,4	94,85

Source: Own calculations based on CSO data

machines, electrical machines and apparatus, radio, television and communication equipment, medical, precision and optical instruments, motor vehicles and other transport equipment; the NTHZ price index for products of the remaining industrial sectors – for publishing and printing.

In the period of 1994-1999 export transaction prices for the whole processing industry went up more slowly than unit labour costs¹⁰, so relative export profitability, thus calculated, declined. 10 out of 22 sectors improved their profitability. This holds for most sectors of the electrical machinery industry, both parts of the chemical industry and the paper and furniture industry. Thanks to impressive increases in the productivity of labour the highest rates of profitability improvement have been achieved by the “assembling” industries: computers and office machines, radio, television and communication equipment and motor vehicles. Down went, on the other hand, profitability of exports in both parts of the food industry, textile industry and coke and petroleum products.

Having compared the data from table 9 with the sectoral breakdown presented in table 7 we find that both groups of sectors whose growth rates of relative labour productivity underperformed the growth rate of real zloty appreciation displayed sliding export profitability, while the group of sectors in which the weak SBE in reverse was found mostly showed growing export profitability. Growing or fairly stable export profitability was also displayed by most sectors for which we found the occurrence of the strong SBE in the

¹⁰ The 1993 data were not taken into account because between 1992 and 1993 the CSO changes its way of accounting for the so-called value-added transactions in foreign trade.

classical version. Thus the relative profitability ratio split the population under examination similarly to the ratio between the relative labour productivity rate and REER.

In turn, by comparing the data from table 9 with the sectoral breakdown presented in table 8 we can see that while under the Samuelson-Balassa effect in its classical version the relative profitability ratio leads to a similar distribution of the population as the RWYD/REER ratio, under the Samuelson-Balassa effect in reverse it is difficult to establish the prevailing type of ratio of export transaction prices to unit labour costs. On the one hand in the industries: leather, textiles and basic metals export profitability clearly declined, but, on the other, in the industries: machinery and equipment, radio and television equipment and other transport equipment – export profitability improved. This may mean that for the first group of sectors the appreciation pressure was so strong that despite their aggressive employment shedding and relative labour productivity growing higher than real zloty appreciation they were unable to sustain their early export profitability.

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The study has attempted to identify the forms in which the Samuelson-Balassa effect operates in the Polish processing industry. Due to the key importance of the definition of the marginal employment level the results are presented in two variants. The results of the first variant seem to be, in the author's estimation, closer to real processes.

In general the results confirm the occurrence of the SBE, although they fail to provide a conclusive statement as to the forms of such occurrence in particular sectors. However, we were able to single out sectors in the case of which it can be recognised, irrespective of the calculation variant, that their high productivity generated in 1993-1999 the classical version of the SBE. Those were: paper industry, rubber and plastic products, finished metal products, electrical machinery and apparatus, furniture and publishing. On the other hand we were able to identify sectors subject, throughout the same period, to the ESB in reverse. Those were: the leather industry, textiles, basic metals, machinery and equipment, radio, television and communication equipment, and other transport equipment. For those sectors the real appreciation of the domestic currency posed a serious challenge. So far, only the last-mentioned three were able to meet that challenge.

Literature

- [1] B.Balassa: The Purchasing Power Parity Doctrine: A Reappraisal. Journal of Political Economy, vol. 72, 1964.
- [2] A.Bratkowski, J.Rostowski: Własną drogą do unii monetarnej czyli Polska potrafi! [in Polish: Own Way to EMU. Poland Can Do It] in: Magazyn finansowy no 1/2000, Warsaw.

- [3] S.Gomułka: Czy program oficjalny nie jest optymalny? [in Polish: „Is the Official Programme Suboptimal?”] in: Magazyn finansowy no 1/2000, Warsaw.
- [4] L.Halpern, C.Wyplosz: Equilibrium Exchange Rates in Transition Economies. IMF Staff Papers, vol. 44, 1997.
- [5] L.Halpern, C.Wyplosz: Equilibrium Exchange Rates in Transition Economies: Further Results. in: Monetary and Exchange Rate Policies in Central and Eastern Europe and the Introduction of EMU. CEPR/EWI Economic Policy Institute Forum, Brussels, 20-22 November 1998.
- [6] K.Marczewski: Foreign Trade, Industrial Growth and Structural Changes in Poland. Discussion Papers no. 75, Foreign Trade Research Institute, Warsaw 1999.
- [7] P.Samuelson: Theoretical Notes on Trade Problems. Review of Economics and Statistics, vol. 46, 1964.
- [8] N.Vousden: The Economics of Trade Protection. Cambridge University Press 1990.

Central Eastern European Convergence and the Euro*

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Introduction

Countries of Central and Eastern Europe (CEE) have left behind a painful but at the same time fruitful period of transition from a planned economy into a full-fledged market economy. The pace of events were breathtaking: nobody hoped ten years ago that these countries would get into the stage of an imminent access to the European Union by early in the first decade of the 21st century. While talks are now concentrating on how and when accession would occur, with the creation of EMU a new phase in the integration process and a new issue for discussion is emerging, the question of how and when these countries should join the monetary union.

The experience of the last decade made us optimistic regarding the rate of economic and institutional convergence between the candidate countries and the EU. This speed may give part of the explanation why the expected enlargement process will probably be faster than in the case of the Mediterranean countries formerly. However, in the run-up to EMU-membership the speed of convergence might raise problems that are not new for analysts but might gain more weight in the new situation.

The purpose of this paper is to contribute to the discussion on the best exchange rate and inflation policy in the pre-EMU period that is consistent with the exchange rate goals of EMU membership and consistent with the Maastricht criterion on inflation at the same time. High growth is usually accompanied by higher variances (risks). Policies have to be designed to mitigate these risks. I am going to argue that the Maastricht criteria have inconsistencies that work in the direction of exacerbating the economic imbalances and thus increasing risks for the accessing countries and at the same time for the Monetary Union as a whole. Some propositions will be discussed for getting around or eliminating the present inconsistencies in the required conditions.

The importance and choice of exchange rate policy

The accession countries maintain a wide diversity of exchange rate regimes: practically all varieties can be found from currency board arrangements

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(e.g., Estonia) to floating regimes (e.g., the Czech Republic and Poland). Up to May 2001 Hungary's system had been somewhere between these two ends: a preannounced crawling peg with a relatively narrow band of ± 2.25 percent. Experience with this variety of systems shows that there is no direct link between the exchange rate regime in place and the progress in the disinflationary process after the transition shock. For instance, close to EU inflation level has been achieved in Estonia with a currency board and in the Czech Republic with a floating regime; and approximately the same path of disinflation has been secured in Poland with a wide band crawling peg and in Hungary with a narrow band crawling peg.

It would be difficult to differentiate between the two systems according to their resistance to speculative capital movements either. The argument often made in favor of floating or wide bands is that it provides better protection against speculative attacks. However, as it was shown in Darvas–Szapáry (2000), the experience during the Russian crisis of Poland and Israel showed that when there is a sudden shift in market sentiment, wide bands do not shield against speculative attacks. Wide bands did not discourage speculative capital inflows either. Both countries witnessed large inflows of short-term capital prior to the Russian crisis.

The uniform performance of various exchange rate systems does not mean that the choice is free and any system is good for any case. On the contrary, the best choice is very much case dependent.

It is well known that inflation in the long run depends on the success of policy to tie down expectations to so called anchors. If the commitment to a non-inflation policy is fully credible, the best anchor is the inflation rate itself. In this case the exchange rate has no role in forming expectations and fluctuations of the exchange rate as a buffer of external shocks may even consolidate the belief that policy is concerned only about inflation and nothing else. It is probably true that the smaller and more open the country the more credibility is needed to convince people that any swings in the exchange rate are really irrelevant for inflation.

If credibility is low and the country small and open, the exchange rate may be a better or the only possible anchor for inflationary expectations. Comparing the Polish and the Hungarian choice gives a good example how much the optimal strategy depends on the starting conditions. Hungarian monetary policy gave a marked example of low credibility after the stabilization of 1995 and chose a crawling-peg exchange rate system. Conditions in Poland were wholly different. After a period of an unconvincing experimentation with an exchange rate targeting regime they could make use of the credibility asset that the earlier take-off of the economy, better fiscal and external balances had given. This gave a favorable background to a monetary policy that promised ruthless determination in restraining aggregate demand, disregarding losses in output or competitiveness. With the stronger financial balances Poland could afford the fiscal burden of a period of high real interest rates, while conditions in Hungary forced policy to be more cautious in this respect as well.

However dependent the optimal system on conditions are, a good choice of the exchange rate system cannot eliminate the principal macroeconomic problem that the newly accessing countries have to cope with. This problem originates in the high rate of growth that creates an interdependent inflation and external balance risk. I am going to argue that the choice of the exchange rate system determines only the channel where these risks work through.

Catching-up is a high-risk project

The Balassa-Samuelson (BS) effect is a well-known relationship that prevails among economies with differing rates of productivity growth. According to this theory differences in growth rates lead to changes in real exchange rates.

The inference is based on the observation that productivity growth in the tradable sector is faster than in the non-tradable sector. The faster the aggregate productivity growth, the wider the growth gap between the two sectors. As prices are determined by costs in the long run and tradables prices determine the exchange rate, the gap in the sectoral productivity growth rates in the fast growing country leads either to higher inflation or an appreciation of the currency.

Empirical verification results attempts of the BS-effect are not uniform. Isard-Symansky (1996) testifies that there are several countries where the services sector seems to post a higher rate of productivity growth than the tradable sector. However, the European experience markedly indicates the validity of the BS-effect. ECB (1999) notes that there is clear evidence that the BS effect has been at work within the euro area, though it does not provide precise estimates. IMF (2000) reports calculations estimating the BS effect in the range of 1.5 and 2 percent per year for certain individual member countries of the EU. Pelkmans-Gros-Nunez Ferrer (2000) make precise estimates for the candidate countries and find that the BS effect could be around 3.5-4 percent for these countries. Simon-Kovács (1998 and 2000) estimate the BS effect for Hungary at 1.9 percent per year during the period 1991-98. For Slovenia, IMF (2000) reports an estimate of 2.5 percent per annum. Results of Halpern-Wyplosz (1996) and Krajnyak-Zettelmeyer (1997) imply a 0.6 increase in the real exchange for each percent of the rate of catching-up in terms of GDP/capita. These calculations all show that if the present trend of the positive productivity growth gap persists, it is highly probable that the candidate countries have either to exceed the 1.5 percent permissible inflation deviation under the Maastricht criterion or they have to appreciate their currency, which is again in contrast to the principle of convergence of the exchange rates.

Why does the BS effect imply macroeconomic risks? The risk lies in a consequence of the BS-effect: because of the uncovered interest rate parity the equilibrium real interest rate is proportionately lower in a country where the currency is appreciating in real terms.

Low interest rates encourage spending and create external deficits. We know from theory that this might be an equilibrium process of smoothing out consumption intertemporally, spending at the expense of the future when we know that we will be rich. This would be fine if we knew the future exactly. However, the world is stochastic and getting indebted is risky. We are not sure about the future rate of catching up, we are not sure about the end of the process; are we going to end up at the average level of the EU, or at a lower level, where all these countries have been in the centuries of history before the destruction of the communist period? The future bears uncertainty for any country of course, but for a country, which takes debts on this uncertain future, the risks are larger. This high uncertainty appears in the volatility of her asset prices. Assessment of the future changes from time to time and so does the behavior of investors. High risks might discourage them from buying long-term

securities and make them finance the debt through short-term papers, increasing the country risk further.

Japan is the textbook example of a country where fast growth generates a low real interest rate. However the Japanese example does not supply any lesson for the present situation of the CEE countries. In the period of the Japanese miracle Japan was a much more closed economy with closed capital markets and a notoriously thrifty population. For the CEEs none of these conditions apply. Macroeconomic prudence cannot be expected from the population, it has to be exercised by policy makers.

What are the tools that policy can use? Is the exchange rate system an important element of this policy? As it was mentioned earlier, experience in CEEs does not confirm the idea that exchange rate systems would differ by their efficiency in inflation stabilization. The same is true for their role as a stabilizer of the external balance.

The exchange rate based strategy resigns itself from interest rate policy and thus gives up any attempt to curb demand through monetary policy. The country runs the risk of exuberant spending, followed by periods of disappointment and recessions, depending on the vagaries of market sentiment.

In a floating exchange rate system monetary policy may overrule market expectations by interest rate policy and thus lower “market sentiment” risk. However, this flexibility is limited because it has a price. The effects of interest rate policy on tradable and on non-tradable sectors are not symmetric. The real appreciating effect of an interest rate hike hurts tradables more severely. Relative prices get distorted and a risk of a long lasting disequilibrium on the goods market arises. This means a period of high external deficits that might exceed the tolerance limit determined by the available stock of credibility of policy.

This is the same external deficit risk that the fixed rate system bears, the difference is only that the risk arising from a distortion in intertemporal allocation (between consumption today and tomorrow) is converted into a risk of a structural disequilibrium (between tradables and non-tradables).

The conclusion is not new for economic theory: monetary policy is not a suitable tool for solving long-run structural problems like the intertemporal allocation of expenditures, whatever the exchange rate system attached to that policy. Fiscal restraint would be a suitable tool, but its use is restricted by if policy could get rid of the short-run pressures that are usually governing fiscal behavior.

To make things worse, the issue of external balance and inflation are interdependent. with the inflation problem. Any shock on the external balance spills over to inflationary expectations. The market knows that debt crises can be solved either by recession or depreciation accompanied by inflation or both. This means that if we state that catching-up countries are exposed to high external balance risk, we have to conclude that they bear a high inflation risk as well. Policies that aim at minimizing inflation risk have to minimize external balance risks at the same time.

It is an understandable intention of the EMU member countries that they try to minimize both structural and inflation risks that the accession countries might bring into the union. The Maastricht criteria are devised for this purpose. Let us see how efficiently this is done.

Run-up period: Maastricht enforces more risk-taking

One of the Maastricht criteria is that one year prior to joining the EMU, the accession country's rate of inflation should not exceed by more than 1.5 percentage point the average rate of inflation in those three EU countries where inflation is the lowest. Obviously, this requirement enforces an inflation rate on the accessing country that is not consistent with the structural changes that is reflected in the BS effect. Knowing that in the long run there is no possibility of an appreciation of the currency, this enforced rate of inflation would be necessarily lower than rational inflationary expectations are oriented.

This prescription is a sure recipe of a policy-generated recession that has no rational purpose: it does not contribute to the build-up of policy credibility that similar recessions usually do by demonstrating determinedness of antiinflationary policies. On the contrary, if the recipe is taken seriously, policy makers may gain a reputation for irrational behavior. In addition to credibility loss, further losses are inevitable. An irrational policy is probably a surprise for the market that means that the sacrifice of enforcing the required inflation target may be enormous. High interest rates are needed to enforce the setback triggering an appreciation of the currency. The market knows that both high interest rates and the strong currency are transitional. Its natural answer is a rush on short-term papers destabilizing the money market and a high reluctance of passing the effect of appreciation through into domestic prices. This means that the price of the process has to be paid both in terms of stability and output gap loss.

Ways of meeting the Maastricht criteria cutting risks

The system of the Maastricht criteria is a legislative tool that was the result of a long and complicated international political process. An attempt to change the criteria in order to allow for the BS-effect would be a formidable undertaking considering the sophisticated economic argumentation and calculations that would be needed to work out an alternative framework. Such subtleties are not suitable for political debate. Therefore the Balassa-Samuelson effect does not deserve a proposition to modify the criteria. However, it deserves much attention when assessing the inflation achievements of the candidate countries in the run-up period to EMU. Here it is possible to refer to the spirit of the Maastricht-requirements rather than the formal wording.

The spirit of the requirements can be derived from the The first best approach to this requirement is to convince the EMU member countries that such a destabilizing process is counterproductive and not good for any of the parties.

The main argument against a modification of the requirements is political, referring to the principle of equal treatment. However, the interpretation of this principle is principle is respectable and honorable in general but inapplicable without a specific interpretation and interpretations have to depends on the objectives that this purpose of the "treatment" should serve. The world changes, conditions change and countries are different. How could we define

equal treatment? Did Greece or Portugal join the EU at the same formal terms as the present applicants are expected to do? Definitely not, present requirements are much stricter, because the previous terms today would give much more room for destabilizing forces in the new global economic conditions than they gave that time. The common principle that makes the two treatments still equal (if it does) is the requirement of stability. Do poor and rich countries contribute to the financing of development projects evenly? Definitely not, because equal treatment in this case has been interpreted in an “equalizing “ or “evening out” sense. Is it a good interpretation of equal treatment that everybody has to target the same inflation rate even if it is stabilizing the economy in a matured economy but destabilizing a catching-up economy? Definitely not. This interpretation is both unfair and unreasonable. “Inflation policy in each country should serve uniformly the purpose of stability”. This is the only interpretation of equal treatment that serves both goals: fairness and stability.

If the candidate countries encountered a rigid interpretation of the criteria they would have several alternative options.

The second best approach is to get around the requirements informally. One of them is a cavalry attack against inflation, using high interest rates and a high rate of real appreciation of their currencies in order to produce the required inflation rate. Poland and recently Hungary took this option when fighting with an inflation in the 10 percent range. We will see whether this policy has to be maintained in the “last lap” of the race, when inflation will approach but possibly still stay above EU levels.

Another option will be This is to produce what Szapáry (2000) calls the “weighing-in” syndrome: like the boxer who refrains from eating for hours prior to the weigh-in only to consume a big meal once the weigh-in is over, the candidate country will repress inflation by resorting to all sorts of techniques (freezing of administered prices, lowering of consumption taxes, etc.) with short run effects to improve inflationary statistics prior to accession only to shift back gears after it has joined the EMU. Obviously this is a second (or third) best solution because a certain amount of destabilizing takes place: the market is hurt by the enforced price distortions. However, the useless recessionary effect of such measures might be small. the shock might be mitigated. Elements of this behavior could be detected during the pre-accession period of countries joined previously. For the fast-growing countries of CEE the phenomenon might be much more conspicuous and much more damaging at the same time.

A third possible approach that I decline to call third best is a strategy that introduces euro unilaterally. Recently Bratkowski–Rostowski (1999) and several others put forward the idea that accession countries should not wait in the lobby of the EMU so long working on costly deflationary schemes but rather take the initiative themselves and introduce euro without the support and guarantees of the Union. This would establish credibility of the antiinflationary stance of policies, make interest rates decrease, cut transaction costs and as a result of all these high level of output and price stability would be assured.

Is unilateral euroization worth of its cost?

Credibility has a value. Its price in this case is the lost seigniorage revenue. Seigniorage revenues differ country by country, but for the moderate inflation CEE countries the estimates of their magnitude are similar. For example for Hungary Central Bank figures are around 0.8-1 percent, while for Poland Cukrowski – Janecki (1998) find seigniorage revenues in the range between 0.5-1.5 percent of GDP.

These costs have to be compared with the possible benefits. There are several items on the list of benefits:

1. Transaction cost savings. Wojcik (2000) puts the saved foreign exchange transaction costs to 0.1 percent of GDP.

2. Faster disinflation. CEEs are on a path of disinflation. In Hungary for example a low-cost disinflation process is under way successfully and it is doubtful whether a switch to euro would speed up the process at all. (We know that even in currency board systems the retreat of inflation is gradual and not costless). Even in a country with several unsuccessful campaigns behind and where policy has lost all the credibility that it had, the currency board system may offer a cheaper alternative. However, CEEs are far from such a loss in credibility.

3. Higher potential output by either a windfall productivity gain or through higher investments.

On the basis of a gravity model Rose (2000) suggests that output gains of belonging to a common currency area are really significant. However, his empirical substantiation is based on the experience of some Pacific Islands countries.

A different line of thought argues that enhanced credibility would create lower interest rates that would generate more investments and investments create output. Simple back-of-an-envelope calculations can show that a 10 percent increase in the investment share of GDP is able to produce the 1 percent extra output that compensates for the seigniorage loss. It is illusionary to expect such an enormous response on interest rate changes.

4. Improvement in the intertemporal allocation of consumption.

According to this argument, the existence of separate currencies makes the world not willing to lend as much as *desirable*, because it is watching the current account balance, looking for signals of currency crises. If however currency crises cannot happen the balance of payments will lose its significance. Who is watching items of the current account balance of British Columbia within Canada?

The argument is a euphemistic formulation of a call for less prudence in economic behavior, both private and governmental/fiscal. I do not think that prudence is a nuisance forced out by currency systems. On the contrary, it is a behavior that is needed at least as much in a monetary union as outside a union. Any region may get into a crisis and depression after an upswing propped up by easy borrowing.

In light of these arguments the caution of the EU in this respect seems to be understandable. Examples show that countries with sustained stable high growth rates are usually characterized by high prudence: thrifty privates or

saving governments finance most of the high investments that accompany growth. An early euroization would evade a prior test of this prudence.

In summary, early euroization seems to be an unreasonable response on the inconsistency of the Maastricht criteria.

References:

- Balassa, Béla (1964)** „The Purchasing-Power-Parity Doctrine: A Reappraisal”
Journal of Political Economy Vol.72 (December)
- Bratkowski, Andrzej and Rostowski, Jacek (1999)**: 2000. Unilateral Adoption of the Euro by EU Applicant Countries: The Macroeconomic Aspects. Paper presented at the sixth Dubrovnik Economic Conference, June, Dubrovnik.
- Canzoneri, Matthew B. and Cumby, Robert E. and Diba, Behzad (1999)**: Relative Labor Productivity and the Real Exchange Rate in the Long Run: Evidence for a Panel of OECD countries. Journal of International Economics 47, 245-266.
- Darvas, Zsolt and Szapáry, Gy. (2000)**: Financial Contagion in Five Small Open Economies: Does the Exchange Rate Regime Really Matter? International Finance, 3:1, pp 25-51.
- De Gregorio, José and Giovannini, Alberto and Krueger, Thomas H. (1993)** „The Behaviour of Nontradable Goods Prices in Europe: Evidence and Interpretation” Review of International Economics 2, 284-305.
- De Gregorio, José and Giovannini, Alberto and Wolf, Holger C. (1994)** „International evidence on Tradables and Nontradables Inflation” European Economic Review 38, 1225-1244.
- ECB (1999)**, Monthly Bulletin, October
- Dodsworth, John and Mihajlek, Dubravko (1997)** „Hong Kong, China: Growth, Structural Change, and Economic Stability During the Transition” IMF Occasional Paper 152
- Halpern László and Wyplosz, Charles (1996)** „Equilibrium Exchange Rates in Transition Economies” IMF Working Paper 96/125
- IMF (2000)**: Exchange Rate Regimes in Selected Advanced Transition Economies Coping with Transition, Capital Inflows, and EU Accession. SM/00/43, February 24.
- Isard, Peter and Symansky, Steven (1996)**” Long-Run Movements in Real Exchange Rates” In: Takatoshi Ito, Peter Isard, Steven Symansky and Tamim Bayoumi: Exchange Rate Movements and Their Impact on Trade and Investment in the APEC Region IMF Occasional Paper 145 IMF Working Paper 97/1
- Krajnyák, Kornélia and Zettelmeyer, Jeromin (1997)** „Competitiveness in Transition Economies: What Scope for Real Appreciation?” IMF Working Paper 97/1
- Micossi, Stefano and Milesi-Ferretti, Gian Maria (1994)** „Real Exchange Rates and the Prices of Nontradable Goods” IMF Working Paper 94/19
- Oblath, Gábor (1997)** „Árfolyampolitika, bérköltségek, versenyképesség és gazdasági fejlődés : Elméletek és hazai tapasztalatok” (Exchange Rate Policy, Competitiveness and Economic Growth: Theory and Hungarian Experience) KOPINT DATORG

- Oblath, Gábor (1998):** Makrogazdasági trendek, in: A világ és Magyarország gazdasága középtávon: 1998-2002, ("Macroeconomic Trends" in "The Economy of the World and Hungary in the Medium Run: 1998-2002") KOPINT DATORG, Budapest.
- Pelkmans, Jacques and Gros, Daniel and Ferrer, Nunez J. (2000):** Long-Run Economic Aspects of the European Union's
- Rose, Andrew K. (2000):** One Money, One Market: the Effect of Common Currencies on Trade. Economic Policy: A European Forum. Center for Economic Policy Research (April), London.
- Kovács, M. András and Simon, András (2000):** Components of the Real Exchange Rate in Hungary. NBH Working paper 1998/3 and subsequent update in Mimeo.
- Szapáry, György (2000):** Maastricht and the Choice of Exchange Rate Regime in Transition Countries During the Run-Up to EMU. Working paper of the National Bank of Hungary 2000/7
- Wójcik, Cezary (2000):** A Critical Review of Unilateral Euroization Proposals: The Case of Poland. Focus on Transition, Vienna: Oesterreichische Nationalbank, 2.

SESSION III

Costs and Benefits of Joining the Eurozone

Fiscal policies in the European Union: policy-making in a rules-based framework ¹

Gabriel Glöckler

The title of this paper creates an association between fiscal policies and the European Union which, as such, is not self-evident. In fact, the notion of a European dimension to domestic fiscal policy-making is a relatively recent development, and it is through the establishment of Economic and Monetary Union (EMU) and the introduction of the euro that the topic has risen to such prominence, not only in academic circles but also in political discourse.

Regardless of whether one takes a domestic or European perspective, it is hard to overestimate the importance of fiscal policies for key macroeconomic variables such as growth, employment or the general price level. Stability-oriented fiscal policies and sustainable budgetary positions generate, *inter alia*, in the long run a positive effect on aggregate savings and capital investment. They also foster low and stable inflationary expectations and create room for manoeuvre for policy-makers. Since they are conducive to a stable macroeconomic environment, sound public finances also facilitate the task of a central bank in reaching and preserving price stability. These beneficial effects of sound fiscal policies are widely recognised and a policy-maker who aims to maximise growth and employment will certainly be aware of them. However, they are applicable to any economy and thus by no means specific to the European Union. Therefore, such general considerations of the underlying reasons for the conduct of an appropriate fiscal policy are not the main theme of this paper. Rather, we illustrate the relevance of appropriate fiscal policies – and this is a specificity of the European context – for a country's economic (and eventually monetary) integration into the European Union, the European Single Market and ultimately for the adoption of the single currency. It is against this background that the experiences of current Member States can be of value to future Member States. In this context, the paper will place particular emphasis on the role and functioning of fiscal rules at the Community level, on their justification and underlying economic rationale, and on their impact on the actual conduct of Member States' fiscal policies since the adoption of the Maastricht Treaty.

¹ The author would like to thank Raymond Ritter (ECB) for laying the groundwork and providing remarks, Julio Durán (ECB) and Theodor Martens (ECB) for accompanying the drafting process with invaluable comments and Demosthenes Ioannou (ECB) for his support.

The paper is organised as follows. In Section 2, we look back on the history of the Community since the Rome Treaties in order to identify how the inherent logic of the economic integration process has helped to shape a consensus among policy-makers on the desirability of a close coordination of macroeconomic policies, and in particular on binding rules for fiscal policies. Section 3 will examine in more detail the design of the existing rules for fiscal policies in the Community, including the underlying economic rationale of the current rules. Section 4 will present the evidence of actual fiscal developments in the Member States since the adoption of the Maastricht Treaty. While concluding that the current rules-based framework has worked well thus far, the more forward-looking Section 5 will review recent public and academic criticisms and suggestions to scrap the fiscal rules in the EU altogether². A conclusion will summarise the arguments.

2. Looking back: Fiscal policies and the progress of economic integration since the founding of the Community

2.1. The early years

Fiscal policy is part of the core activities of government policy as identified by Musgrave³ which attributes to it allocative, redistributive and stabilising functions. As such, fiscal policy is, naturally, a national policy competency, shaped within a domestic political discourse and, in this way, underpinned by the necessary political legitimacy. It is therefore not obvious that the creation of a Common Market, which was at the heart of the 1957 Rome Treaty, should have an influence on the conduct of the, then, six Member States' domestic fiscal policies. Nor was it unambiguously clear that the establishment of a common economic area, in which goods, services, capital and people could circulate freely, in fact necessitated a coordination of national fiscal policies. Even though the Rome Treaty calls on Member States to “regard their economic policies as a matter of common concern”⁴, in practice, national fiscal policies were entirely geared towards domestic concerns leading to a great divergence of actual policy decisions as well as the underlying “philosophies” for economic policy. During the late 1950s and throughout the 1960s, as the Community was successfully taking the necessary steps towards establishing, first a customs union, and later on a Common Market, these divergencies did not matter much: economic interpenetration of European economies was only gradually increasing, capital

² See *ECONOMIST* of 25 August 2001, Scrap the Stability Pact: Constraints on Europe's fiscal policies could seriously damage its economic health.

³ See, inter alia, Musgrave, R. A. & Musgrave, P.B., *Public finance in theory and practice*, 5. ed., New York, 1989

⁴ Article 99 of the Treaty establishing the European Community (new numbering)

movements were far from liberalised and the Bretton Woods system with its international anchor role of the US dollar provided exchange rate stability also for European currencies.

Nevertheless, as early as 1960, the Community had set-up a “Short-term Economic Policy Committee” dedicated to “the coordination of the conjunctural policies of the Member States”⁵, followed by the establishment, in 1964, of the “Medium-term Economic Policy Committee”⁶ and of the “Budgetary Policy Committee” which was to allow for “cooperation between the competent government departments of Member States in the field of budgetary policies”⁷. This proliferation of committees at Community level can be seen as a first, and rather weak, institutional expression of the emerging consensus that the creation of a fully functioning Common Market would also necessitate closer cooperation of macroeconomic policies, notably budgetary policies. It was the 1969 European Council at The Hague which explicitly recognised that the ultimate consequence of deeper economic integration in the Community would be full economic and monetary union. Following this logic, the Werner Report, which mapped out the path for the Community to establish EMU in stages over ten years, diagnosed that with “the marked differences existing between member states in the realisation of the objectives of growth and stability, there is a grave danger of disequilibria arising if economic policy cannot be harmonised effectively”⁸. In the budgetary field, such effective harmonisation was to be accomplished through a far-reaching transfer of decision-making competency to the Community level: a not very clearly defined “centre of decision for economic policy” were to have a “decisive influence over the general economic policy of the Community” and direct “essential features of the whole of the public budgets, and in particular variations in their volume, the size of balances and the method of financing the deficits or utilising the surpluses”⁹. With view to fulfil (at least in part) the function of stabilising income and demand at Community level, and to be able to fine-tune the economy in a activist manner from the centre, a considerable reinforcement of the Community’s financial resources was suggested¹⁰.

As is well-known, the Werner Plan never got fully implemented. The 1970s were to go down in economic history as a period of high inflation, low growth and rising unemployment. In line with the prevailing Keynesian consensus, most governments sought to counter the oil shock-induced recession by way of discretionary measures aimed at managing aggregate demand in the short term. The impact on public finances was higher public spending, financed by ever increasing public sector borrowing – which was, however, not scaled back in subsequent cyclical upturns. Rather, public spending remained permanently at a higher level, leading to a “ratcheting-up” of public spending and the related

⁵ Council Decision EC 031/60 of 9 May 1960 on coordination of conjunctural policies of the Member States

⁶ Council Decision 64/247/EEC of 15 April 1964 setting up a Medium-term Economic Policy Committee, published in the Official Journal of the European Communities, No.64 of 22 April 1964, p. 1031

⁷ Council Decision EC 64/299/EEC of 8 May 1964 on cooperation between the competent government departments of Member States in the field of budgetary policies, published in the Official Journal of the European Communities, No.77 of 21 May 1964, p. 1205

⁸ Council of European Communities, “Report to the Council and the Commission on the realisation by stages of economic and monetary union in the community” Supplement to the Bulletin 11, 1970

⁹ *Ibid.*

¹⁰ See especially the so-called McDougall Report of 1977, Commission of the European Communities, Report of the Study Group on the Role of Public Finance in European Integration, Brussels, 1977.

deficit financing in each downturn. As a result, an increasing stock of public debt placed an ever growing burden of debt service on governments and reduced the margin of manoeuvre for fiscal policy. Together with the issue of unfunded pension liabilities of the Pay-As-You-Go systems in most Member States (which for the sake of simplicity are not treated in any detail in this paper), the deficit spending and debt accumulation of that period thus raises important questions of inter-generational income distribution.

Chart 1 reveals that even though deficit spending increased the public debt burden in all Member States except Luxembourg, the degree of profligacy differed markedly among them. While some Member States, such as Denmark, Germany or the UK managed to stabilise, or even reduce, their debt-to-GDP ratios in the course of the 1980s, others, in particular Belgium, Italy, Ireland or Greece appeared to have lost control of their public sector borrowing requirements, leading them to accumulate public debts representing more than 100% of GDP.

Chart 1 General government consolidated gross debt of selected EU Member States (1975-1990)

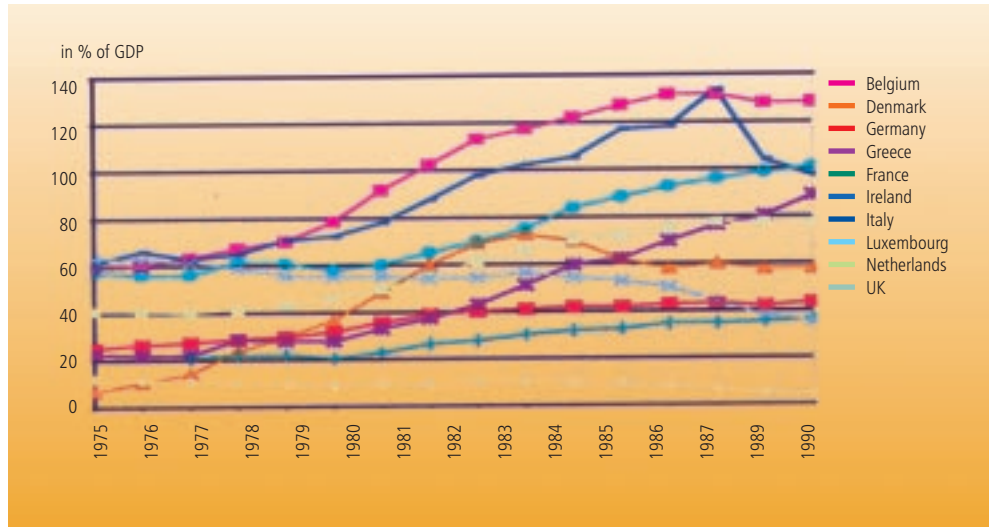
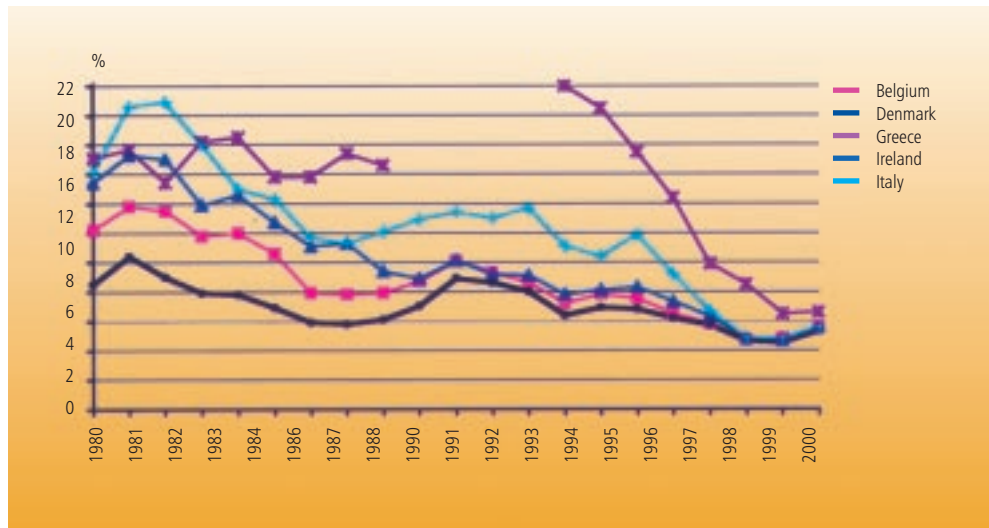


Chart 2 Nominal long-term interest rates of government bonds of selected EU Member States (1980-2000)



The results soon became obvious: fiscal stimuli to sustain demand, combined with restrictive monetary policies to contain inflation, pushed up real interest rates, thereby reducing much-needed investment. Servicing public debt placed an increasing burden on budgetary policy, especially of the more profligate Member States, due to higher interest rates as financial markets demanded increasing risk premia (reflected in the spread of those Member States' bond yields over the German Bund benchmark – see Chart 2). Moreover, social welfare measures to mitigate the effects unemployment (e.g. increasing replacement ratios, early retirement schemes, etc.) and enhance social security reduced the labour supply, which set European economies on a permanently lower growth path.

Most European governments focused their measures to managed demand entirely on domestic concerns and the weight and priorities accorded to other economic policy objectives, such as stable prices, exchange rate fixity or balanced budgets differed markedly among them. These divergencies between the Member States' economic policy responses produced inconsistencies and imbalances within the Community: as inflation rates diverged, exchange rate stability among Community currencies became ever more elusive. Even after the European Monetary System (EMS) was established in 1979, divergent macroeconomic policies produced growing macroeconomic imbalances, and the only “safety valve” to bring about the necessary real exchange rate adjustments was the recourse to frequent realignments within the EMS.

2.2. Overcoming the dilemma of the ‘inconsistent quartet’

It could be argued that such developments only reflect the proper functioning of the market mechanism: exchange rate fluctuations are a “natural” adjustment mechanism to correct imbalances, high interest rates and risk premia only punish the profligate country itself, and the need to service an increasing stock of public debt will diminish the degrees of freedom for national fiscal policies. However, within an integrating economic entity such as the Common Market, divergent policies of that kind would, sooner or later, lead to irreconcilable inconsistencies. This notion, termed “inconsistent trinity” by Mundell¹¹ – or “inconsistent quartet” by Padoa-Schioppa¹² who also included free trade and applied it to the Community – relates to the insight that perfect capital mobility, the maintenance of a fixed exchange rate system, and the conduct of an autonomous monetary policy cannot co-exist in the long-term, especially if the underlying economic policies diverge. Sooner or later, either of the elements will come under pressure or be eroded in one way or another. The implications for the Common Market were clear: in order to avoid a “roll-back” of the progress achieved in the Community on the free circulation of goods and services (free trade) and the removal of capital controls (perfect capital mobility), the Member States would either have to abolish fixed exchange rates or renounce autonomous monetary policies. Either of the two exits from the

¹¹ Mundell, Robert “A theory of optimum currency areas” *American Economic Review*, Vol. 51, 4, September 1961

¹² Padoa-Schioppa, Tommaso “Capital Mobility: Why is the Treaty Not Implemented” Address to the ‘Second Symposium of European Banks’, Milan, June 1982

inconsistency dilemma can be found in the Community's history: the frequent devaluations of, *inter alia*, the French Franc (before 1983), the Italian Lira or the Irish Punt during the 1980s implied a loss of exchange rate stability; and the emergence of the DM-bloc where the central banks of the Netherlands, Belgium, Denmark, Austria, and (after 1983) France acted as policy-takers with regard to the German Bundesbank's decisions, reflects the loss of monetary policy autonomy.

To the extent that a country's exchange rate could be understood as an all-encompassing variable reflecting the markets' assessment of the appropriateness of domestic macroeconomic policies in general, the achievement of exchange rate stability within the Community necessarily entailed a reorientation of domestic policies towards price stability and sustainable public finances. The most dramatic example for such a reorientation was probably the French government's "U-turn" in 1982/83 towards a policy of budgetary "*rigueur*" and adoption of the Deutschmark as an external exchange rate anchor under the label of a "*franc fort*"-policy.

The dilemma of the "inconsistent quartet" became ever more pressing and obvious as the Member States embarked on the "Single Market Project" with the objective to remove the remaining obstacles to the "four freedoms" within the Community, by 31 December 1992, including the full liberalisation of capital movements by 1 July 1990. What was originally initiated as a review of the arrangements for the EMS, soon turned into a discussion of the more fundamental issues of the Community's economic and monetary order and led to the recognition that the envisaged completion of the Single Market needs to be complemented by the introduction of the single currency. The Hanover European Council in 1988 explicitly defined EMU as an objective of the Community. The Delors Committee was given the task to elaborate a blueprint which should set out how to establish, in a gradual process, an economic and monetary union, to define the institutions and rules that were needed for its proper functioning and to identify which changes to the Treaties were necessary to that end.

The drafters of the resulting 1990 Delors Report produced a diagnose of the Community's economic ills that was similar to that of the Werner Report: a danger of serious economic imbalances with detrimental effects on growth and employment and on the functioning of the Single Market. These imbalances derived from the increasing divergence of European economies, as measured, in nominal terms, by the wide dispersion of Member States' price and cost performances, their budgetary positions and debt-to-GDP ratios and balances of payments, with the resulting lack of price and exchange rate stability¹³.

However, the conclusions drawn for the design of EMU were somewhat different. The irrevocable fixing of exchange rates and the introduction of a single currency remained the ultimate goals, and their attainment necessitated the establishment of a common central bank in charge of a single monetary policy. In the less clearly defined field of "economic union", a far-reaching centralisation of policy responsibilities was – in contrast to the Werner Report – seen as neither warranted nor desirable. Great emphasis was placed on the

¹³ For a more in-depth presentation of measures of 'nominal convergence', see, *inter alia*, European Commission, Annual Economic Report 1990/1991, Study No. 4 "Economic convergence in the Community", Office for Official Publications of the European Community, Luxembourg, 1990

application of the subsidiarity principle, which implied that also in the final stage of EMU, many decisions, especially the economically relevant activities by public authorities, that have an impact on general macroeconomic conditions, e.g. relating to wages, production, savings and investment, would continue to be taken at the national, regional or even local level. The provision of important public goods, such as social security, education, internal security or defence – all of which have a substantial budgetary impact – would remain the responsibility of national, or subnational, public authorities. However, it had to be ensured that decentralised economic policies would produce responsible and mutually consistent outcomes, in order to safeguard the functioning of the monetary union.

3. Designing fiscal rules for EMU

3.1. Why binding rules for fiscal policies?

In abstract terms, the issue of ensuring policy consistency only arises when independent policy-makers act in an interdependent environment in which their objective(s) and/or the effectiveness of their instruments are affected by each other's decisions. Whenever such externalities are present, policy outcomes could be improved if these spillovers between different policies are taken into account. Naturally, whenever policy decisions are fully centralised – as would be the case if there were a common, EU-level fiscal policy – the question of policy consistency does not arise, since potential externalities can then be fully internalised. As the literature on strategic interaction and policy coordination¹⁴ explains, achieving consistent policy outcomes depends on a multiplicity of variables, such as the number of actors, their objectives or the perceived pay-off structures. Operational aspects, such as the number of games, the availability of information or the credibility of enforcement mechanisms also determine whether coordination aimed at achieving policy consistency is feasible, and indeed desirable.

How do these theoretical insights apply to national fiscal policies under the specific conditions arising from monetary union? First, in a monetary union, undisciplined fiscal policy in one country can produce adverse spillovers on partner countries and on the single monetary policy. Such spillovers would primarily operate via effects on the common interest rate, the common exchange rate and the outlook for price stability and financial stability in the euro area. Therefore, a prime objective of policy coordination is to limit this kind of externality, by effectively discouraging excessive fiscal laxity. A further relevant implication of EMU relates to the loss of a market-based disciplining device on

¹⁴ Such as D. Currie and P. Levine, *Rules, Reputation and Macroeconomic Policy Co-ordination*, Cambridge University Press, Cambridge, 1993; R.C. Bryant, "International Cooperation in the Making of National Macroeconomic Policies: Where Do We Stand?", in P.B. Kenen (ed.), *Understanding Interdependence. The Macroeconomics of the Open Economy*, Princeton University Press, Princeton, 1995; T. Persson and G. Tabellini, "Double-Edged Incentives: Institutions and Policy Coordination", in G. Grossman and K. Rogoff (eds.), *Handbook of International Economics*, 1995.

national fiscal policy in the form of *devaluation* risk premia on national currencies. This, in turn, might invite “free-rider” behaviour on the part of individual Member States. Therefore, the fiscal rules have to be designed in a way that underlines individual responsibility of the Member States for their policy action, in order to retain the disciplining effects of risk premia on excessive government debt.

On the basis of these considerations, how should a fiscal policy framework for EMU be designed? We can identify two main perspectives on the policy consistency problem, namely a “regime approach” and an “optimisation approach”. This dichotomy not only helps to understand the underlying rationale of the Treaty framework for fiscal policies that we have today, but may also shed a light on ongoing and topical discussions about the role of fiscal policies three years into the establishment of EMU (see Section 5 further below).

- “*Regime*”: Emphasis is placed on common institutions, jointly agreed rules and principles as well as shared objectives, which in fact restrict – but do not totally eliminate – individual policy-makers’ discretionary choices. Interaction is continuous, and the specific design of the regime aims to set right incentives for individual actors so as to steer their policy choices in a desirable direction. The main focus lies not only on avoiding individual policy behaviour that is harmful to the collectivity, but also more generally, on limiting instances of “government failure.” In its purely preventive and dissuasive nature, this form has also been termed “negative coordination”¹⁵ or “narrow coordination”¹⁶. The choice of appropriate rules may even go so far that it might obviate the need for any explicit co-ordination (as referred to under the “optimisation approach” below). In other words, if all decision-makers in each of the policy fields “keep their houses in order” and stick to the agreed rules, then coordination can become superfluous¹⁷.

- “*Optimisation*”: Policy-makers engage in explicit policy coordination and seek to adapt their individual policy decisions so as to achieve an optimal outcome under a given set of circumstances. Thereby, discretion is an absolutely essential element. The “optimisation approach” thereby goes beyond the mere avoidance of harmful behaviour on the part of individual policy-makers, i.e. it is more than “negative coordination” or “narrow coordination.” In fact, it aims at a joint maximisation of a particular variable, or the provision of a “public good” that is common to all participants. However, this kind of “positive coordination”¹⁸ or “broad coordination”¹⁹, faces significant operational problems. These relate to the aggregation of information and preferences of the various participants, the definition of a common objective function or the need to agree on a common model of how different policy instruments impact on economic variables²⁰. In order to cope with the aforementioned externalities, a

¹⁵ Buti, M. & Sapir, A. EMU in the Early Years: Differences and Credibility, paper presented at a workshop on “The functioning of EMU: Challenges of the early years”, organised by the European Commission, Directorate General Economic and Financial Affairs on 21/22 March 2001.

¹⁶ von Hagen, J. & Mundschenk, S., The functioning of economic policy coordination, paper presented at a workshop on “The functioning of EMU: Challenges of the early years”, organised by the European Commission, Directorate General Economic and Financial Affairs on 21/22 March 2001.

¹⁷ Giavazzi, Francesco et al. Defining a Macroeconomic Framework for the Euro Area, CEPR paper Monitoring the European Central Bank 3, London: CEPR, 2001

¹⁸ Buti, M. & Sapir, A. op. cit..

¹⁹ von Hagen, J. & Mundschenk, S., op.cit.

²⁰ see, inter alia, von Hagen, op. cit.

first-best solution would be to internalise them, by integrating, or harmonising, the policy decisions of individual policy-makers, possibly along the lines of the far-reaching ‘communitarisation’ of budgetary and other economic policies, as suggested by the 1970 Werner Plan.

In view of the practical difficulties of the “optimisation approach” and drawing the lessons from the analytical errors and policy mistakes of the 1970s and the early 1980s – such as the time-inconsistency problems of discretionary policy-making, the drafters of the Maastricht Treaty focused on designing a stable and predictable rules-based framework: a set of sound and credible rules that would allow to cope with the aforementioned externalities and set the right incentives for Member States to conduct their fiscal policies in a mutually consistent manner under the conditions of EMU.

In accordance with the subsidiarity principle referred to above, it could be argued that the first-best solution to the establishment of a rules-based framework for fiscal policies in EMU could have been the introduction of the respective fiscal rules at national level, without recourse to policy-instruments at EU level, e.g. a national balanced budget rule or a national law prohibiting excessive borrowing²¹. However, this may have raised problems not only in the political realm, such as insurmountable concerns for national sovereignty or difficulties to convey the need for, and substance, of such rules to public opinion. Moreover, the monitoring of such domestic institutional/constitutional reforms from the Community level would have been operationally more difficult than, say, centrally established nominal debt and deficit target, which are easier to collect, evaluate and communicate, and in this way foster the credibility of the rules-based fiscal policy framework²². Moreover, in certain Member States, where weak domestic institutions (such as unstable coalition governments; strong influence of pressure groups) had led to the fiscal profligacy of the 1970s and 1980s, a strong external disciplining influence was needed in order to reverse entrenched domestic positions and adjust fiscal behaviour to the necessities of EMU.

More generally, one might consider that a rules-based approach to fiscal policy is desirable, regardless of whether a country is part of a monetary union. In fact, the often harmful long-term effects of the 1970s-style discretionary fiscal fine-tuning policy had already led to a rethink on the need for rules as a means to limit the discretion of fiscal policy-makers and provide clear yardsticks for responsible policy choices²³. There are many examples from industrialised countries where “the law [was made] the guardian of economic wisdom”²⁴. The fiscal responsibility laws in New Zealand, the constitutional obligations to produce balanced budgets in all US Federal States (except Vermont), or the “Golden Rule” of the German Basic Law which prohibits the government from borrowing more than it spends on investment, all follow this reasoning.

²¹ see Beetsma, R. Does EMU Need a Stability Pact?, in Brunila, A., Buti, M., and Franco, D.: *The Stability and Growth Pact: The Architecture of Fiscal Policy in EMU*; Palgrave Publishers Ltd, Basingstoke, 2001

²² see Canzoneri, M. B. & Dibe, B.T., *The SGP: Delicate Balance or Albatross ?* in Brunila, A., Buti, M., and Franco, D., op. cit.

²³ see Lucas, R., “Rules, Discretion and the Role of the Economic Advisor” and Fisher, S. (ed.) “Rational Expectations and Economic Policy”, University of Chicago Press, 1980

²⁴ Herdegen, Matthias J., *Price Stability and Budgetary Restraints in the Economic and Monetary Union: The Law as Guardian of Economic Wisdom*, *Common Market Law Review*, Vol. 35 (1):9-32, February 1998, Dordrecht, 1998

However, scope and stringency of such rules would need to be carefully balanced – and this is where the specific conditions of monetary union are critical. In this context, the literature on optimal currency areas (OCA)²⁵ provides an important insight, which could lead to a very different policy prescription. Countries sharing a common currency have – by definition – forfeited the use of autonomous monetary and exchange rate policies as instruments to stabilise domestic output and employment. The task of responding to country-specific disturbances (asymmetric shocks) therefore falls to the macroeconomic policy instrument that is still in the hands of national governments, namely fiscal policy. (In this context, it should be noted that the removal of structural rigidities in product and labour markets would be the first-best solution to the problem of asymmetric shocks, since these structural reforms increase the capacity of the economy to adjust to shocks and to maintain, or regain, competitiveness – thereby alleviating the burden on fiscal policy.) The OCA theory would therefore indicate that a monetary union requires more flexibility for national fiscal policy-making, rather than less. Subjecting national fiscal policies to a “straight-jacket” of tightly defined rules therefore risks undermining the viability of the monetary union in the longer-term.

In view of the above, the design of a rules-based fiscal policy framework for EMU had to reconcile the demands for discipline with sufficient flexibility for national policy-makers. At the same time, a degree of fiscal policy coordination was needed to allow governments to internalise the demand and interest rate externalities and to ensure the appropriate fiscal stance in the Member States and in the euro area as a whole. Therefore, as the Commission put it as early as 1990, “to supply the adequate mix of autonomy, discipline and coordination is the challenge the fiscal regime of the Community has to meet”²⁶.

3.2. The Treaty provisions and the Stability and Growth Pact

The EU has followed this trend and laid down the guiding principles for economic policies as well as monetary and exchange rate policies, namely “stable prices, sound public finances and monetary conditions and a sustainable balance of payments” (Article 4). Thus, the goal of fiscal discipline is no longer one of the many political choices, but instead has achieved a status of “above politics”, namely that of a “constant legal duty”²⁷.

The Treaty not only provides orientations on the policy goals, but also establishes the relevant institutional mechanisms and endows them with the necessary policy instruments. As the summary in Box 1 reveals, the Treaty provisions contain a combination of “soft coordination” instruments in the field of general economic policies (such as the obligation to “regard economic policies as a matter of common concern” or the adoption of recommendations on the conduct of individual Member States’ policies in the framework of multilateral surveillance) and hard constraints in the field of budgetary policy.

²⁵ as pioneered by Mundell, R., *op. cit.*

²⁶ European Commission, 1990, p. 102,

²⁷ Hahn, Hugo J., *The Stability Pact for European Monetary Union: Compliance with Deficit Limit as a Constant Legal Duty*, *Common Market Law Review*, vol. 35 (1):77-100, February 1998, Dordrecht, 1998

Box 1 The provisions for fiscal policy in the Maastricht Treaty

- Article 4, which belongs to the fundamental provisions regarding EMU, lays down guiding principles for economic, monetary and exchange rate policies namely “stable prices, sound public finances and monetary conditions and a sustainable balance of payments.
- The Chapter on “Economic Policy” of the Maastricht Treaty spells out in more detail the –rather loosely-based – framework for the coordination of Member States’ economic in general while also stipulating more stringent provisions for the conduct of national budgetary policies and their multilateral surveillance.
- Article 99 concerns economic policies in general and provides the legal basis for the establishment of a framework of multilateral surveillance. It requires Member States “to regard their economic policies as a matter of common concern.”
- Article 104 is the core provision for the conduct of fiscal policies, which (in conjunction with Protocol No. 5 on the excessive deficit procedure annexed to the Treaty) lays down that Member States shall avoid excessive government deficits. According to these provisions, an excessive deficit exists if (a) the budget deficit is higher than 3 per cent of GDP, unless, either the ratio has declined substantially and

continuously and has reached a level that comes close to 3 per cent, or the excess over the 3 per cent reference is only exceptional and temporary and the deficit remains close to 3 per cent and (b) the ratio of gross government debt to GDP exceeds 60 per cent, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace. The decision as to whether a Member State is in an excessive deficit position lies with the ECOFIN Council. If a country were identified as having an excessive deficit, the Council would need to take legally binding decisions and ultimately resort to sanctions.

Three further rules represent fundamental pillars of the EU’s fiscal order:

- Article 101 prohibits overdraft facilities or any other type of credit facility with the ECB or with national central banks in favour of any public sector institution at the national or the Community level.
- Article 102 contains a prohibition to grant public sector institutions privileged access to financial institutions.
- Article 103 underscores the individual responsibility of the Member States for their public finances: the “no bail-out clause” stipulates that, in the event of insolvency of a public sector institution of a Member State, neither the Community nor any other Member State will be liable.

However, the Treaty rules, taken by themselves, also exhibited certain shortcomings. For one thing, the so-called excessive deficit procedure pursuant to Art. 104 was rather cumbersome, left a considerable margin of discretion as regards the imposition sanctions and had no precise time limits attached to the various steps of the procedure. In essence, this meant that the core enforcement mechanism upon which the credibility of the fiscal regime was built, was in fact lacking solidity. By contrast, the convergence criteria, which were the

precondition for entry into EMU, represented a far more credible constraint on national fiscal policies sine they were backed up by the threat of exclusion from the first round of EMU entrants. Therefore, it is probably fair to argue that the decisive influences on Member States' fiscal policies in the period leading up to the introduction of the euro derived less from the general economic and budgetary policy provisions of the Treaty. Rather, the policy re-adjustment towards fiscal discipline was induced by, and focused, on the numerical values of the convergence criteria which furthermore had the crucial advantage of being precise and transparent. As such they were easy to measure and could be used in political discourse and public debate.

The evident success of the EMU entry criteria in instilling fiscal discipline (see Section 4 below) was, however, to be more than a one-off effort. A mechanism was required to further specify and clarify the Treaty provisions for fiscal discipline, to ensure lasting compliance of fiscal policies with the requirement of budgetary prudence and to install a monitoring system for fiscal developments with a view to releasing early warnings in the event of budgetary slippage.

Not least at the behest of the German government²⁸ the European Council in Amsterdam in 1997 decided to provide clarification of the Treaty's budgetary rules by adopting the Stability and Growth Pact (SGP), which lays down the rules for fiscal policy co-ordination and defines the conditions under which to apply the excessive deficit procedure in Stage Three of EMU (see Box X). Much has been written about the rules and implementation, the advantages and

²⁸see also Stark, J. *Genesis of a Pact*, ? in Brunila, A., Buti, M., and Franco, D., op. cit.

Box 2 The provisions of the Stability and Growth Pact

Council Regulation (EC) No. 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies includes the following provisions:

Article 3

1. Each participating Member State shall submit to the Council and Commission information necessary for the purpose of multilateral surveillance at regular intervals [...] in the form of a stability programme, which provides an essential basis for price stability and for strong sustainable growth conducive to employment creation.
2. A stability programme shall present the following information:

- a) the medium-term objective for the budgetary position of close to balance or in surplus and the adjustment path towards this objective for the general government surplus/deficit and the expected path of the general government debt ratio;
- b) the main assumptions about expected economic developments and important economic variables which are relevant to the realisation of the stability programme such as government investment expenditure, real gross domestic product (GDP) growth, employment and inflation;
- c) a description of budgetary and other economic policy measures being taken and/or proposed to achieve the objectives of the programme, and, in the case of the main budgetary measures, an

assessment of their quantitative effects on the budget;

d) an analysis of how changes in the main economic assumptions would affect the budgetary and debt position.

3. The information about paths for the general government surplus/deficit ratio and debt ratio and the main economic assumptions referred to in paragraph 2 (a) and (b) shall be on an annual basis and shall cover, as well as the current and preceding year, at least the following three years.

Article 5

1. Based on assessments by the Commission and the [Economic and Financial Committee], the Council shall, within the framework of multilateral surveillance [...], examine whether the medium-term budget objective in the stability programme provides for a safety margin to ensure the avoidance of an excessive deficit, whether the economic assumptions on which the programme is based are realistic and whether the measures being taken and/or proposed are sufficient to achieve the targeted adjustment path towards the medium-term budgetary objective.

Article 6

2. In the event that the Council identifies significant divergence of the budgetary position from the medium-term budgetary objective, or the adjustment path towards it, it shall, with a view to giving early warning in order to prevent the occurrence of an excessive deficit, address [...] a recommendation to the Member State concerned to take the necessary adjustment measures.

Council Regulation (EC) No. 1467/1997 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedures:

Article 11

Whenever the Council decides to apply sanctions to a participating Member State [...] a non-interest-bearing deposit shall, as a rule, be required.

Article 12

1. When the excessive deficit results from non-compliance with the criterion relating to the government deficit ratio [...], the amount of the first deposit shall comprise a fixed component equal to 0,2 % of GDP, and a variable component equal to one tenth of the difference between the deficit as a percentage of GDP in the preceding year and the reference value of 3 % of GDP.

2. Each following year, until the decision on the existence of an excessive deficit is abrogated, the Council shall assess whether the participating Member State concerned has taken effective action in response to the Council notice [...]. In this annual assessment the Council shall decide, in accordance with Article 104c (11), and without prejudice to Article 13 of this Regulation, to intensify the sanctions, unless the participating Member State concerned has complied with the Council notice. If an additional deposit is decided, it shall be equal to one tenth of the difference between the deficit as a percentage of GDP in the preceding year and the reference value of 3 % of GDP.

3. Any single deposit referred to in paragraphs 1 and 2 shall not exceed the upper limit of 0,5 % of GDP.

disadvantages and the overall impact of the SGP²⁹. In view of this increasingly rich literature, we intend to limit this presentation to identifying the more systemic and structural elements in the current rules-based framework.

In keeping with the “regime approach” described above, the rules of the SGP represent a mix of preventive and dissuasive elements³⁰.

Preventive measures, laid down largely in the “Council Regulation on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies”³¹ include the regular monitoring of budgetary developments on the basis of the Stability Programmes submitted by the Member States on an annual basis, which are jointly examined by the Member States, the ECB and the European Commission. In the event that a Member State’s budgetary policy produces slippages from the pre-announced targets and deviations from a prudent course of fiscal policy, early warnings and policy recommendations can be issued.

Addressing the need for a credible enforcement mechanisms to ensure compliance, the SGP’s dissuasive elements are laid down in the “Council Regulation on speeding up and clarifying the implementation of the excessive deficit procedure”³². As the title of the regulation implies, the objective is to give “teeth” to the otherwise rather cumbersome, and potentially not very effective Treaty procedure which aims at actively discouraging excessive deficits. Thereby the main disciplining device is the threat of sanctions, which may be imposed on a Member State running excessive deficits (despite warnings and recommendations to correct it), initially in the form of a non-interest-bearing deposit quantified in relation to the “culprit” country’s GDP, which may be converted into a fine should the excessive deficit persist for more than two years.

Most importantly, the SGP stipulates a medium-term objective of budgetary positions “close to balance or in surplus” to which the Member States commit themselves. Thereby, “over the medium-term” should be understood as the length of the business cycle³³. The economic rationale behind this objective is to allow Member States to deal with normal cyclical fluctuations while keeping their general government deficit-to-GDP ratios below 3%. Recent studies, inter alia, by the European Commission³⁴ have shown, on the basis of data from business cycles of the past-war period, that this would be a “safe” budgetary position for most Member States, allowing them to let automatic stabilisers play and still retain an additional safety margin of 0.5–1% of GDP before reaching the 3% upper deficit limit. This budgetary “buffer” might be necessary to cover

²⁹ see especially Brunila, A., Buti, M., and Franco, D., *op. cit.*; also Buti, M. & Sapir, A. (eds.) *Economic policy in EMU: A study by the European Commission services*, OUP, Oxford, 1998; or Eiffinger, S. & de Haan, J., *European Monetary and Fiscal Policy*, OUP, Oxford, 1998; or European Central Bank, *The implementation of the Stability and Growth Pact*, ECB Monthly Bulletin, May 1999

³⁰ see also Cabral, A. J., *Main aspects of the Working of the SGP ?* in Brunila, A., Buti, M., and Franco, D., *op. cit.*, or European Commission, *How the SGP works*, in *Public Finances in EMU Report 2000*, *op. cit.*, pp. 47-49

³¹ Council Regulation (EC) No 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies

³² Council Regulation (EC) No 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure

³³ Interpretation of the Monetary Committee contained in the Opinion of the Monetary Committee on the content and format of stability and convergence programmes, Document MC/II/482 final of 16 September 1998, endorsed by the Ecofin Council of 12 October 1998, published as an annex to the conclusions of the Council.

³⁴ *European Commission, Setting the Medium-term budget targets*, in *Public Finances in EMU Report 2000*, *op. cit.*, pp. 51-56

unforeseen fiscal developments not directly linked to the workings of automatic stabilisers, such as the risks of unexpected shortfalls in revenue, spending overruns or interest rate shocks.

The medium-term target could thus be seen as manifesting the desired combination of discipline and flexibility: On the side of discipline, breaching the 3% limit becomes highly unlikely due to a sufficient safety margin, on the flexibility side, automatic stabilisers are allowed to play since the target is set for the medium-term, covering the entire business cycle. Provided the target is not jeopardised, there is room for fiscal policy measures in line with national political preferences or as absorption device in case of asymmetric shocks. Moreover, in the event of severe recessions (negative GDP growth rates of more than – 2%) there is an escape clause.

To what extent the Treaty rule and SGP have in fact succeed in instilling fiscal discipline over the past 10 years will be explored in Section 4 below. A first assessment of the delicate combination of strictness and flexibility will be provided in Section 5, when addressing the rather topical issue of both academic and political criticisms of the rules that have arisen recently. In that section, we will also explore to what extent, if at all, the rules-based device of SGP makes possible forms of policy coordination in the terms of the “optimisation approach” introduced above.

4. Checking against the evidence: Fiscal developments since Maastricht

4.1. Major improvements of budget balances...

Over the course of the 1990s, fiscal strategies of Member States were mainly shaped by the fiscal rules and procedures as laid down in the relevant provisions of the Treaty, and specifically by the convergence criteria on public finances. These provisions have proven successful in guiding public finances and fostering the process of fiscal consolidation and sustainable convergence of Member States' fiscal positions.

The average government budget balances in the EU as a whole have been improving significantly since 1993, namely from a deficit of 6.2 percent to almost balance in 2000. Most importantly, the bulk of this achievement can be attributed to an improvement of the primary balances of Member States, which, on average, increased from minus 0.6 percent of GDP in 1993 to 3.8 percent in 2000. Not less impressive is the composition of the factors that brought about the improvement of this variable which is under close control of governments and, thus, can be seen as reflecting rather fairly their actual commitment to budgetary consolidation. While, mainly during the early phase of increased consolidation efforts, part of these achievements were due to tax increases, especially in some countries with particularly high debt-GDP ratios, the focus of consolidation switched later on clearly to expenditure restraint. As a result, the progress in consolidation has become more sustainable over time and improved the outlook for these achievements to last.

Table 1. Primary balances in selected high debt countries and EU-15 (1991-2000)

As percentage of GDP	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Belgium	4,0	3,2	3,8	4,6	4,9	5,0	6,1	6,6	6,5	7,0
Greece	-2,1	-1,1	-1,0	4,0	2,6	4,6	4,2	5,4	5,7	6,4
Italy	0,2	2,0	2,8	2,1	3,9	4,4	6,7	5,2	5,0	5,0
EU-15	0,7	0,2	-0,6	-0,1	0,3	1,3	2,6	3,0	3,4	3,8

Chart 4

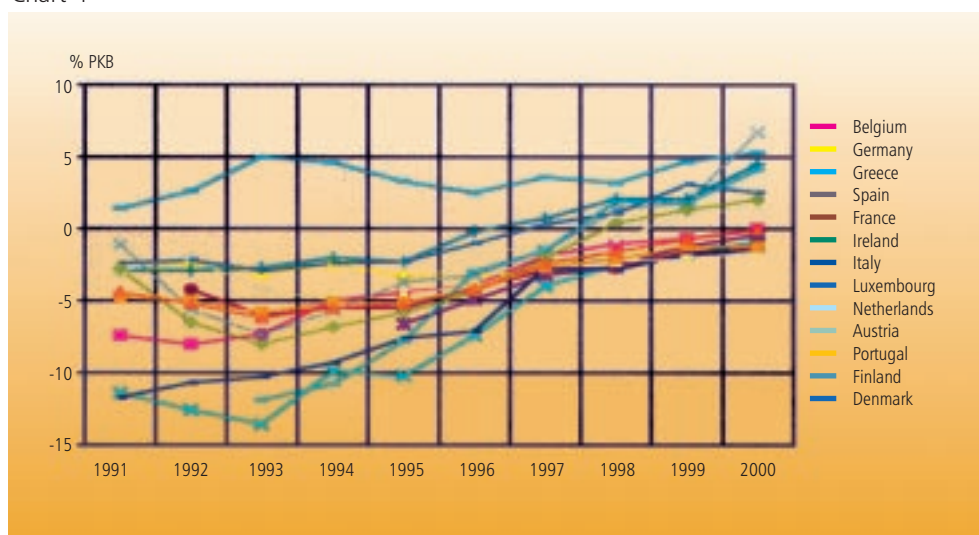


Table 2. General government budget balances of EU Member States (1991-2000)

As a percentage of GDP	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Belgium	-7.4	-8.0	-7.3	-5.0	-4.4	-3.9	-1.9	-1.0	-0.7	0.0
Germany	-3.0	-2.5	-3.1	-2.4	-3.3	-3.4	-2.7	-2.1	-1.4	-1.0
Greece	-11.4	-12.6	-13.6	-9.9	-10.2	-7.4	-4.0	-2.5	-1.8	-0.9
Spain	.	.	.	.	-6.6	-4.9	-3.2	-2.6	-1.2	-0.4
France	.	-4.2	-6.0	-5.5	-5.5	-4.1	-2.9	-2.7	-1.6	-1.4
Ireland	-2.9	-2.9	-2.7	-2.0	-2.3	-0.2	0.7	2.1	2.1	4.5
Italy	-11.7	-10.7	-10.3	-9.3	-7.6	-7.1	-2.7	-2.8	-1.8	-1.5
Luxembourg	1.4	2.6	5.0	4.6	3.3	2.5	3.6	3.2	4.7	5.3
Netherlands	.	.	.	.	-4.2	-1.8	-1.1	-0.7	1.0	1.5
Austria	-3.0	-2.0	-4.2	-5.0	-5.2	-3.8	-1.7	-2.2	-2.1	-1.5
Portugal	.	.	.	.	-4.5	-3.9	-2.7	-2.3	-2.1	-1.7
Finland	-1.1	-5.6	-7.3	-5.7	-3.7	-3.2	-1.5	1.3	1.8	6.7
Euro area	-4.8	-5.0	-5.8	-5.1	-5.1	-4.3	-2.6	-2.1	-1.2	-1.2
Denmark	-2.4	-2.2	-2.9	-2.4	-2.3	-1.0	0.3	1.1	3.1	4.1
Sweden	.	.	-11.9	-10.8	-7.8	-3.0	-1.5	1.9	1.8	2.0
United Kingdom	-2.8	-6.5	-8.0	-6.8	-5.8	-4.4	-2.0	0.4	1.3	-1.2
EU-15	-4.4	-5.2	-6.2	-5.5	-5.2	-4.2	-2.4	-1.6	-0.7	-0.1

Despite the undeniable great efforts undertaken by Member States themselves, one should, however, not ignore that a substantial part of the improvements achieved in reducing public deficits was due to falling interest rates during the second half of the 1990s and their, for many Member States, generally low level by historical standards. Indeed, the fall in interest rates implied substantial reductions in interest expenditures on government debt. Therefore, in order to reduce the still significant interest rate risks of high public debt, further progress is needed in reducing government debt through a decisive continuation of budgetary consolidation.

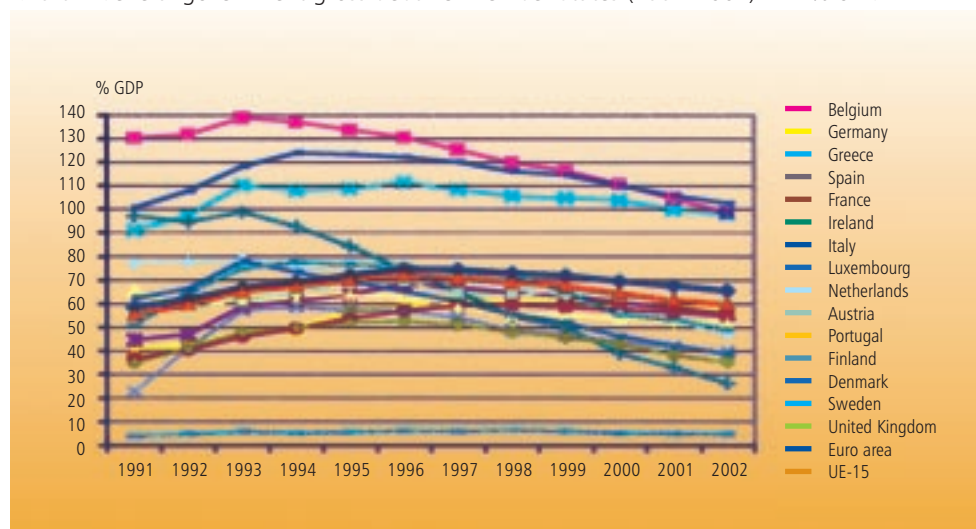
4.2. ... and debt-to-GDP ratios ...

As concerns the development of government debt-to-GDP, the ratio in EU countries declined for the fourth consecutive year in 2000, reaching 64.4 percent as compared to 72.2 percent in 1996. Following last year's updated stability and convergence programmes, the EU-wide government debt-to-GDP ratio is projected to fall below the Maastricht Treaty threshold of 60 percent in 2002 and is expected to reach 56.3 percent by 2004. Even though the current economic conditions and challenges in the wake of the terrorist attacks in the United States might make it more difficult to actually achieve these levels, the overall trend of falling debt-to-GDP ratios should remain intact.

Looking at individual high-debt countries, especially the debt levels in Belgium and Ireland dropped significantly during the period under investigation. While the debt ratio in Belgium declined from 130.4 percent in 1991 to 110.8 percent in 2000, it is expected to reach 92.9 percent in 2004. The Irish ratio fell significantly by 58.4 percentage points to 38.9 percent (2000 vs. 1991) and is projected to hit 24 percent in 2003. Greece and Italy observed a falling trend since 1996 and 1994, respectively. However, in 2004 Italy is still projected to have a government debt-to-GDP ratio of 94.9 percent, the highest ratio of all EU Member States.

The major driving force behind the progress achieved in the consolidation of public debt in EU Member States was the substantial improvement of primary balances, particularly in Belgium, Greece, Ireland, Sweden and the United

Chart 4 General government gross debt EU Member States (1991-2002) – in % of GDP



Kingdom. At the same time, the debt ratio inertia³⁵ slowed the reduction of the debt ratio, since the implicit interest rate on government debt remained above the GDP growth rate. However, in 2000, the difference declined appreciably as compared with previous years, due to the relatively favourable growth conditions in that year and the decline in the implicit interest rate.

Finally, deficit-debt adjustments had an impact on the development of government debt. While these effects helped to reduce the debt ratio in the run-up to EMU, they slightly increased again in 1999 and 2000. Deficit-debt adjustments cover all factors that impact on the debt ratio except for government deficits and the effect of changes in GDP. As concerns factors with a debt-increasing impact, mainly three aspects are of relevance: First, policy decisions to accumulate financial assets; second, the revaluation of foreign currency-denominated debt; and third, capital injections into public enterprises.

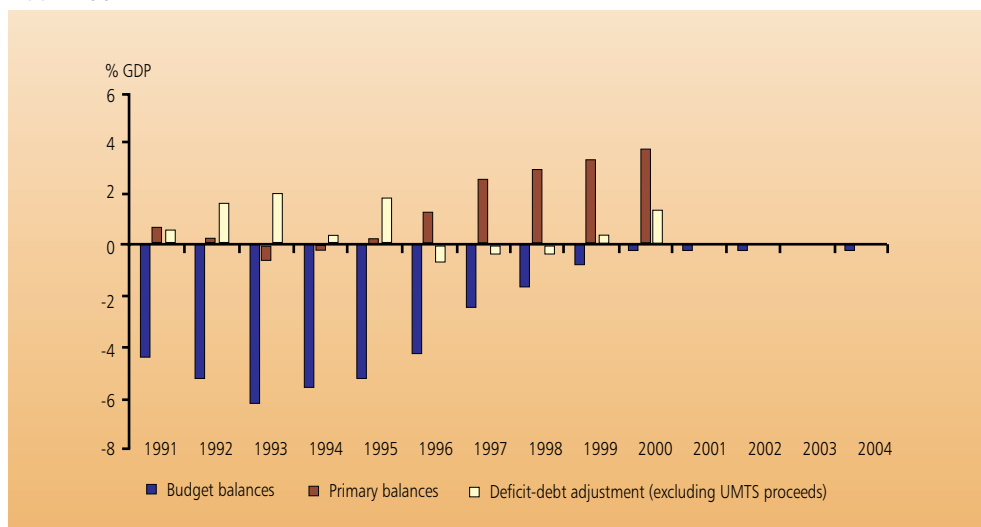
The last two factors indicate that both the amount of foreign currency-denominated debt and the engagement of governments in public enterprises may bear, depending on their size, significant risks for the development of the debt-to-GDP ratio and, therefore, require careful attention especially from the point of view of sound public finances, too.

As for deficit-debt adjustments with a debt-decreasing effect, the most relevant ones are privatisation receipts, which favourably influenced the debt ratio in the run-up to EMU and continued to do so in recent years.

In summing up, it should be noted that also the reduction of debt-to-GDP ratios has made significant progress. However, especially countries with high debt-to-GDP ratios had to create substantial primary surpluses in order to bring their debt ratios on a falling path and they still have a long way to go before reaching debt ratios below 60% of GDP. It goes without saying that this limited, and still limits, their fiscal room for manoeuvre. Therefore, one conclusion to be drawn from this experience would be that governments should do their utmost to avoid the accumulation of unhealthy debt positions, even though, at times, the

³⁵ The debt ratio inertia, also known as the snowball effect or interest and growth dynamics, captures the impact of differences between the implicit interest rate and the GDP growth on the debt ratio.

Chart 5 General government budget balances, primary balances and deficit-debt adjustment in 1991-2004



temptation to pursue less stringent fiscal policies might be rather high, especially for countries that are confronted with substantial adjustment requirements in terms of public infrastructure.

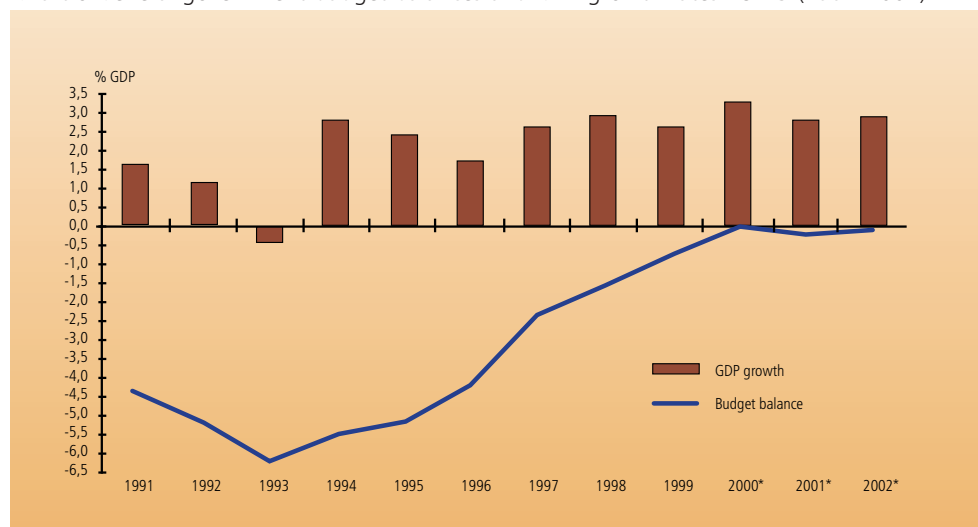
4.3. ...but at what price?

It has been argued that the radical, but so far successful, process of fiscal consolidation in Europe in the second half of the 1990s has come at a high price, in terms of forgone output and higher-than-necessary unemployment. The fiscal retrenchment that was imposed on governments by the Maastricht convergence criteria subdued growth rates, thereby keeping cyclical unemployment – with all its associated economic and social costs – “unnecessarily” high. Moreover, the narrow focus on reducing debt and deficit ratios prevented Europe from playing an active part in sustaining activity in the world economy during the emerging market crises of 1997 and 1998. Below-trend growth in the core economies of the Community, subdued domestic consumption and drastic cuts in public spending meant that the United States was alone in shouldering the burden of sustaining world growth and acting as an “importer of last resort”.

In response, it should be pointed out that a return to sound public finances was long overdue. Therefore, a policy of fiscal consolidation in European countries was a worthwhile policy goal *per se*, that is, regardless of whether a country wished to qualify for EMU. Moreover, the macroeconomic impact of fiscal consolidation may not in any case be negative as suggested by traditional Keynesian theory. Indeed, when taking into account non-Keynesian effects, a reduction in government expenditure may even increase overall aggregate demand if its direct effects are outweighed by positive confidence/wealth effects in the private sector³⁶. First, lower interest rates in the vein of falling

³⁶ See e.g. Alesina, A. et al. (1999), Fiscal policy, profits, and investment, NBER Working Paper # 7207, Cambridge MA; Bhattacharya, R. (1999), Private sector consumption behaviour and non-Keynesian effects of fiscal policy, IMF Working Paper 99/112, Washington DC.

Chart 6 General government budget balances and GDP growth rates EU-15 (1991-2002)



financing requirements of the public sector and expectations of future decreases in taxation as a result of perceived fiscal consolidation may stimulate private economic activity. In addition, reductions in public expenditures may generate a public wage compression that, if transferred to the private sector, can reduce firms' production costs and raise their profitability. Finally, putting budgetary positions on a stable footing creates, by reducing interest expenditure, fiscal leeway and enables governments to redirect expenditures to more productive use.

Against the background of these arguments, empirical evidence suggests that fiscal consolidation does in fact lead to positive effects on economic growth, especially in those EU countries that have high levels of government debt and a large public sector, thereby confirming the effectiveness of non-Keynesian channels³⁷. The data show that during the period 1996-2000, which is characterised by significant progress in the consolidation of public debt, growth turned out to be robust, peaking in 2000 at a rate of approximately 3.3 percent.

5. Successful so far – but capable of addressing future challenges?

While the preceding section presented convincing evidence for the functioning of the fiscal rules as enshrined in the Maastricht Treaty and the SGP as guiding and constraining instruments for national fiscal policies, the recent economic downturn has led to some public debate regarding the assessment of the existing fiscal policy regime. More fundamentally, the appropriateness of this fiscal framework has been called into question, with some observers voicing concerns that existing rules are too rigid as they are difficult to comply with due to budgetary uncertainties or that they disregard some important economic considerations. In the following, we aim to address these concerns and review various suggestions for improvements of the current framework that have surfaced during this ongoing debate.

With regard to the role of fiscal policy as a stabilisation device, concern has been voiced that the fiscal rules of the Treaty and the SGP do not provide Member States with sufficient room for stabilising their economies and correcting macroeconomic disequilibria, ultimately inhibiting economic growth. Since Member States are deprived of monetary and exchange rate policy as tools of adjustment, it is argued, they should not be restrained in their conduct of fiscal policy. In view of this, the *ECONOMIST* drew a radical conclusion: “since the stability pact [...] risks doing such serious harm, it would be far better and cleaner simply to get rid of it altogether”³⁸.

However, it should be noted that, by complying with the SGP requirement of reaching medium-term budgetary positions of close to balance or in surplus, Member States could let their automatic stabilisers play freely and thereby contribute to stabilising their economy without violating the 3% of GDP deficit

³⁷ Alesina et al. (1998), *The Political Economy of Fiscal Adjustments*. Brookings Papers on Economic Activity #1, Brookings Institution, pp. 197-266.

³⁸ *The Economist* of 25 August 2001, op. cit.

ceiling. As pointed out before, the "safe" position of close to balance or in surplus is defined with precisely this automatic stabilisation functions in mind. In addition, Member States are free to pursue discretionary policy measures provided they have created the necessary room for manoeuvre. The application of the SGP rules under a "steady state"-scenario would thus not raise problems. However, at present, some Member States have not yet reached budgetary positions of close to balance or in surplus and therefore still need to continue their consolidation efforts so as to create the necessary safety margins before using their automatic stabilisers to the full³⁹.

A further criticism of the current rules-based framework relates to an insight of the OCA theory, namely that there has to be an effective mechanism to define an optimal fiscal stance at aggregate level for the monetary union, *vis-à-vis* the single monetary policy. The Treaty provisions and the SGP, with their focus on "negative coordination" lack the capacity to respond effectively, if need be, to economic shocks that affect all Member States alike. Once all euro area Member States' budgets are "close to balance or in surplus", the current "regime" disposes only of rather "soft" policy instrument to give guidance on national budgetary policies (e.g. via the Broad Economic Policy Guidelines, opinions and recommendations). As a result, it might prove impossible, to provide the common "public good" of macrostabilisation at the level of the euro area.

In theory, the first-best solution to the problem would be the transfer of the relevant competency to the Community level, as had been envisaged by the Werner Plan. Short of a full 'communitarisation' of fiscal policy, how could a fiscal policy stance that is optimal for the collectivity be designed? Should there be – as has recently been suggested⁴⁰ – a common "Economic Policy Charter"⁴¹ on the basis of which a coordinated fiscal policy stance could be defined?

In practice, however, a number of difficulties would be likely to arise if such an approach were to be pursued. First, the euro area finance ministers would have to agree on the precise amount of fiscal expansion or retrenchment to be assumed by each Member State in its national budget. Second, each national budget would have to be approved by the respective national parliaments with no guarantee that the latter would not vote amendments which would be inconsistent with the centrally agreed targets. And third, even after budgets have been adopted, a common agreement would have to be reached on how to react in the event that economic developments were not to coincide with the forecasts on which the budgets are based. For these reasons, attempts to define a common euro area fiscal stance, while well intentioned, would be likely to result in less rather than more certainty about the course of fiscal policy within the euro area. Moreover, there is no particular reason to believe that a euro area fiscal policy stance agreed *ex ante* would be superior to that which would result *ex post* from the conduct of appropriate fiscal policies at the national level. On the contrary, if the euro area Member States pursue their commitment to

³⁹ European Commission (2001), *European Economy – Public Finances in EMU 2001*, Brussels.

⁴⁰ e.g. in Pisany-Ferry, J. & Jacquet, P., *Economic policy co-ordination in the euro-zone: What has been achieved? What should be done?* Essay series of the Centre for European Reform, London., 2001

⁴¹ Such a "Charter" or common economic policy philosophy would approximate the 'common model' referred to under the "optimisation approach" which determines how the various instruments of economic policy impact on different variables.

balanced budgets over the medium term, while allowing budgets to offset cyclical fluctuations in the short-term, the resulting fiscal stance for the euro area as a whole will also be broadly appropriate.

6. Conclusion

The fiscal policies of EU Member States cannot be looked at in isolation from the overall economic and political integration process. While the Rome Treaty with its objective to establish an “internal market characterised by the abolition, as between Member States, of obstacles to the free movement of goods, persons, services and capital”⁴² did not provide for any specific provisions in the field of fiscal policies, the successful steps towards deeper economic integration soon manifested the dilemma inherent in the “inconsistent quartet”. The EU’s solution to this inconsistency was the move to EMU – the success of which rests on consistent macroeconomic policies, and specifically sound budgetary policies. The EMU blueprint laid down in the Maastricht Treaty establishes a policy regime based on unambiguous and transparent rules (e.g. SGP, central bank independence), clear commitments to common objectives (sound public finances and price stability), and a framework for policy coordination (multilateral surveillance, stability programmes), backed up by credible enforcement mechanisms (sanctions).

Evidence from the decade prior to the introduction of the euro and the experiences of the first three years of EMU have shown that the fiscal policy regime has indeed managed to impose a “hard constraint”, in some cases breaking deeply entrenched behavioural patterns of domestic policy-makers. Naturally, it would be premature to judge the optimality of the current framework for the EMU in its ‘steady state’ already at this stage. However, the fact that the SGP represents a solid orientation and guiding pillar for domestic fiscal policies during the current downturn manifests the robustness and saliency of the regime, which is based on its in-built combination of flexibility and constraint. Ultimately, the effectiveness of the fiscal policy framework builds on the general acknowledgement of the benefits of the “sound money, sound finances”-paradigm⁴³ which represents its conceptual foundation.

⁴² Article 3.1(c) of the Treaty establishing the European Community

⁴³ Dyson, K. *The Politics of the Euro-Zone: Stability or Breakdown*, OUP, Oxford, 2000

Costs and benefits of ERM II: The Danish experience

Hugo Frey Jensen

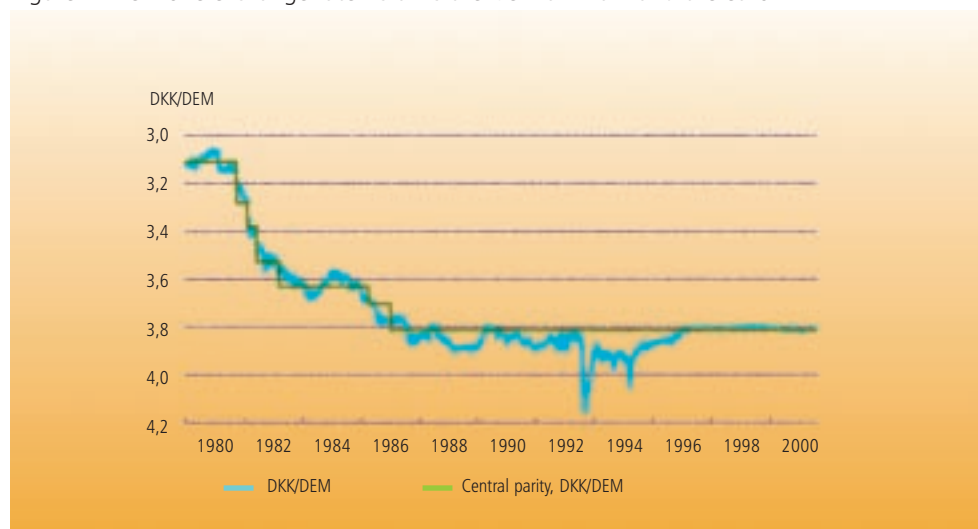
Introduction

The costs and benefits of joining the ERM II can be approached from different perspectives. The literature on the optimal choice of monetary regime is extensive. However, it is not the intention of this paper to present a survey of the advantages and disadvantages of ERM II from a theoretical perspective based on the economic literature. The reasons for not pursuing this line of departure are twofold. Firstly, the value added of such a survey would be limited. Secondly, it is our experience that generalised analyses of the Danish monetary regime based on standard textbook models often leave out specific and decisive Danish circumstances.

The analysis of the costs and benefits of joining ERM II in this paper is based on the factual circumstances that characterise the Danish economy such as the monetary transmission mechanism, wage formation, the role of fiscal policy, the openness to foreign trade and monetary policy instruments.

ERM II came into operation on 1 January 1999 and Denmark became a member immediately with a narrow fluctuation band of $\pm 2,25$ per cent around a central parity rate at 746,038 kroner per 100 euro. The favourable convergence position of the Danish economy made it possible to conclude an agreement on a

Figure 1 The krone exchange rate vis-a-vis the German mark and the euro.



narrow band. The standard fluctuation band in ERM II is +/- 15 per cent. However, membership of ERM II was not a major change of the Danish monetary regime. As a matter of fact Denmark has a very long tradition for a fixed exchange rate policy. The central parity vis-à-vis the euro corresponds exactly to the former central rate vis-à-vis the D-mark which has been unchanged since early 1987, cf. figure 1. Furthermore, exchange rate realignments ceased to be a self-initiated Danish policy instrument already in 1982.

The firm commitment to a fixed exchange rate policy originates from a very poor performance of macroeconomic policy and, consequently, a poor performance of the Danish economy in the 1970's. Against a background of high inflation, excessive budget deficits, permanent deficits on the current account of the balance of payments, frequent devaluations of the krone and high nominal interest rates, the Danish authorities made a successful U-turn to a stability oriented macroeconomic regime in the early 1980's. The fixed exchange rate policy was, and still is, an important element in the macroeconomic framework in Denmark. See Christensen and Topp (1997) for a more detailed review of the change in Danish economic policy in the aforementioned period.

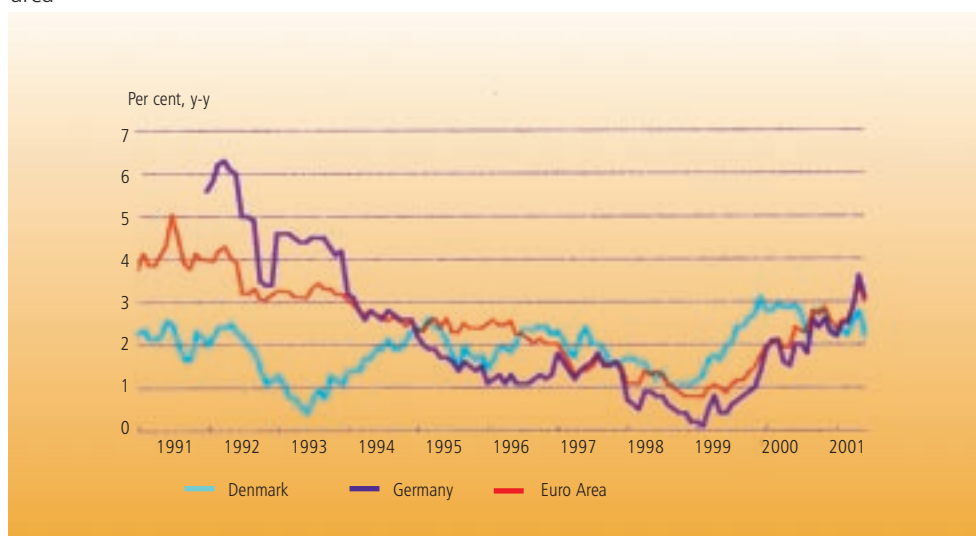
The paper is organised as follows. The first part covers the structural macroeconomic facts of importance for the fixed exchange rate policy. The second part deals with the technical and tactical aspects of monetary policy implementation in ERM II. The paper concludes that a fixed nominal exchange rate vis-à-vis the euro is beneficial for a small open economy such as Denmark. It is important to emphasise that the exchange rate policy is a **fixed** exchange rate policy, not a fixed but adjustable exchange rate. Taken literally this can only be true with euro area membership. However, in a Danish policy context it means that all macroeconomic policies are conducted with a view to ensure a fixed exchange rate. There is no contingency plan if things go wrong.

The two key conditions for success are a strong commitment by the authorities to abstain from making "home made" shocks (which normally are much more important than exogenous external shocks) and an unconditional willingness to subordinate monetary policy to the exchange rate strategy.

Price stability

A first test of the benefits of a monetary regime is to see if it delivers on the final goal. For a central bank the key issue is price stability and the Danish monetary regime passes the test. Inflation measured as the annual percentage increase in the harmonised consumer price index (HICP) has been stable around 2 per cent in Denmark since the early 1990's, cf. figure 2. For the period as a whole this has been achieved without loss of income relative to our major trading partners, Germany, Sweden and UK. The transition to a low inflation economy is not an isolated Danish phenomenon. Most OECD countries have achieved the same in the last decade independently of their monetary policy regimes. Consequently, the Danish inflation performance can not be taken as a general proof of the superiority of a fixed exchange rate regime. However, the persistence of low inflation illustrates that the Danish monetary regime delivers low inflationary expectations.

Figure 2: Increase in harmonised index of consumer prices in Denmark, Germany and the euro area



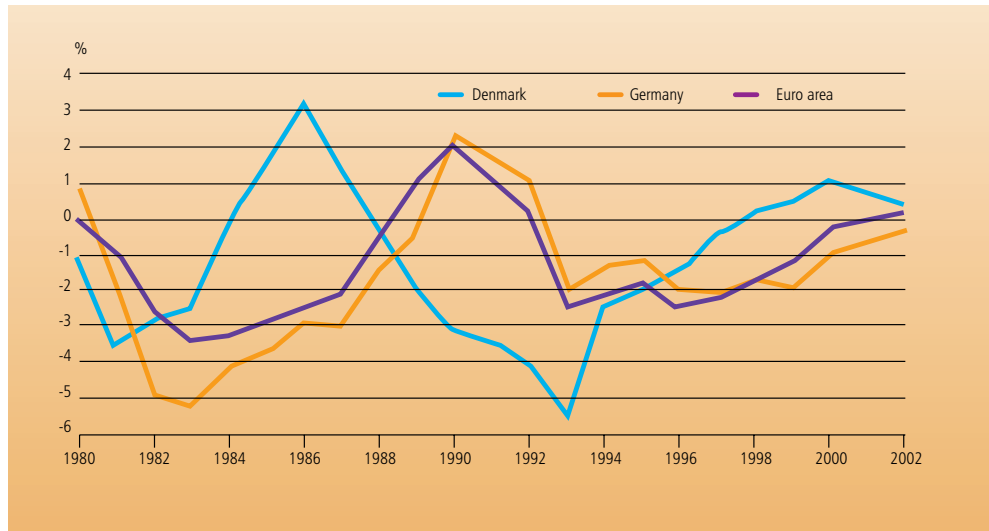
Many countries had difficulties with fixed exchange rates in the 1990's and a new monetary policy paradigm on inflation targeting evolved. In its most simple form the basic model behind this regime comprises a central bank with a price stability objective, one policy instrument – monetary policy, an exchange rate that evolves according to purchasing power parity and consequently acts as an efficient shock absorber. In such a world it is impossible to see a role for a fixed exchange rate policy. It is optimal to focus directly on the ultimate objective – price stability and to adjust monetary policy according to optimal inflation forecasts. This short presentation is somewhat unfair to the economic literature on inflation targeting as well as the central banks pursuing such a strategy. However, it helps to understand one of the few disadvantages of the fixed exchange rate policy, we have experienced in recent years: Despite the obvious factual success it has become increasingly difficult to explain to academic circles and external observers, why such a policy is pursued.

However, the structural macroeconomic environment in Denmark (and probably also in other economies) differs markedly from the aforementioned simple model and can alter the balance in favour of a fixed exchange rate policy.

Monetary policy and the business cycle

A fixed exchange rate policy implies that the stance of monetary policy from time to time is out of line with domestic short-term cyclical needs and potentially a destabilising factor. When key monetary policy interest rates are closely linked to German interest rates, and since 1999 euro area interest rates, there is no room for independent domestic stabilisation by means of monetary policy. This problem appears to be particularly severe in Denmark, where the business cycle – at least according to visual inspection – seems to be negatively correlated with the cyclical conditions in Germany and the euro area, cf. figure 3. However, it is also possible to draw a completely opposite conclusion from the deviation in the cyclical patterns: Cyclical divergence is immaterial for the success of a fixed exchange rate policy.

Figure 3 Output gap in Denmark, Germany and the euro area

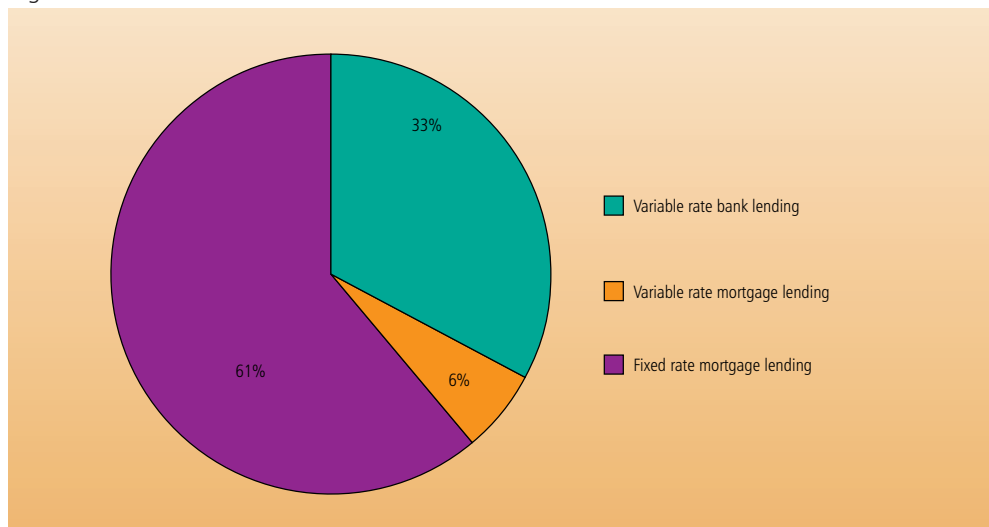


Note: 2001 and 2002 are projections.
Source: OECD Economic Outlook

The monetary policy transmission mechanism is of crucial importance in the choice between business cycle stabilisation or exchange rate stabilisation. The direct effect from changes in short-term interest rates to domestic demand is comparatively small in Denmark. The terms for mortgage financing, which is the most important transmission channel to the household sector, are predominantly based on fixed 20 years or 30 years mortgage bond yields. At end-2000 long term fixed rate mortgage lending covered more than 60 per cent of total domestic bank and mortgage credit bank lending to the entire private sector (households and business), cf. figure 4.

Variable mortgage lending at 1-year interest rates has gained in importance in recent years but is still at a very low level. Simulations with Denmark's Nationalbank's macroeconomic model, MONA, show that a 1 percentage point decrease in the long term interest rate increases output by 1 per cent after 3 years, whereas a similar change in short term rates only increases output by

Figure 4 Financial structure in Denmark. End-2000



0,25 per cent. The effective exchange rate is kept constant in the simulations. The direct effect on output and inflation from changes in the short-term interest rate is small due to the Danish financial structure. Consequently, the most important contribution to output and inflation stabilisation from monetary policy will stem from the response of the effective exchange rate of the krone to changes in short term interest rates. Thus, the export sector and the import competing sector of the Danish economy will have to carry the main burden if monetary policy is used to stabilise the business cycle directly. An optimal policy would distribute a larger part of the stabilisation costs to the more sheltered sectors of the economy e.g. construction. Furthermore, governmental or semi-governmental infrastructure projects are easier to manage in a symmetric way in response to the business cycle. The competing sectors of the economy are probably easier to destruct than to expand.

The basic text book model only includes one policy instrument for short-term stabilisation – monetary policy. This is a standard formulation in the literature and also in line with practice in most industrialised countries. Discretionary fiscal policy came into disrepute after the abuse of the instrument in the 1960's and the 1970's which led to stagflation, large budget deficits and high public debt in many countries. Denmark has also suffered from this experience, but discretionary fiscal policy is still used to stabilise the economy.

It is important to underline that the frequency of discretionary fiscal measures is low and far below the frequency of monetary policy changes in countries with other monetary regimes. The government does not meet every two weeks to consider an adjustment in e.g. the VAT rate following the latest business cycle information. In the past decade discretionary fiscal stabilisation measures outside the normal central government budgetary calendar have been introduced on three occasions: temporary expansive measures in 1993 and contractive measures in 1997 and 1998. Furthermore, the appropriate macroeconomic impulse from the government budget to output is also taken into consideration in the annual budget negotiations. As it is the case in most countries it is also politically easier to increase public expenditure and reduce taxes than the opposite in Denmark. However, it is not our assessment that the reliance on a fixed exchange rate and occasional discretionary fiscal policy measures by itself has exacerbated this inherent problem.

Quite the contrary, the fixed exchange rate policy has been instrumental in the significant improvement in Danish economic policy that has taken place in the last 10-15 years. The Danish government supported by a large majority in the Danish parliament is committed to use fiscal policy if inflationary developments are out of line with the exchange rate policy. It has been publicly announced that fiscal policy will be adjusted if inflation deviates from ECB's definition of price stability (0-2 pct. increase in the harmonised index of consumer prices - HICP). Furthermore and equally important, the fixed exchange rate policy has brought structural reforms of the tax and benefit systems and the labour market to the policy forefront as the necessary tools to ensure low unemployment and growth in real income. The various structural reforms of the past decade and the low inflationary environment have paved the way for a substantial fall in unemployment in recent years in combination with moderate nominal wage increases, cf. figure 5.

Figure 5 Nominal hourly earnings growth and unemployment

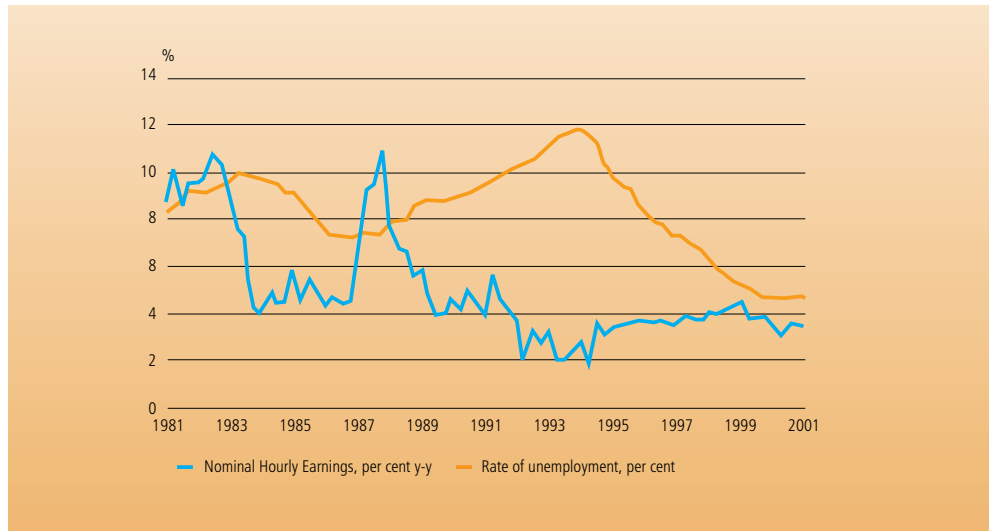
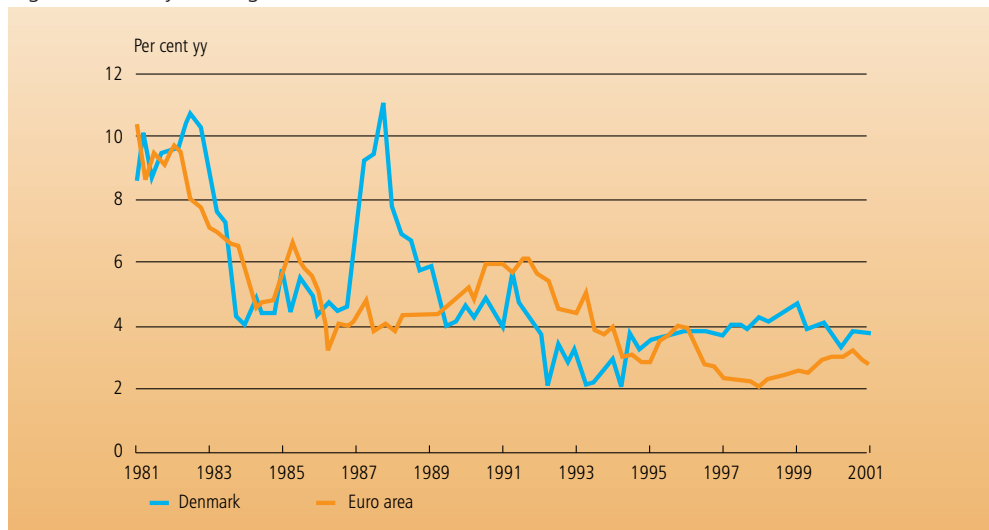


Figure 6: Hourly earnings increase in Denmark and in the Euro Area.



The fixed exchange rate policy has not only been instrumental in establishing sound macroeconomic policies on behalf of the Danish governments but has also led to improvements in wage formation and behaviour of social partners. Despite the substantial fall in unemployment since 1993 wage increases have more or less remained in line with wage increases in the euro area and among Denmark’s major trading partners, cf. figure 6. This is in stark contrast to wage formation in the 1980’s when a period of strong growth resulted in nominal wage increases above 10 per cent.

Asymmetric shocks, home made shocks and exchange rate policy in Denmark

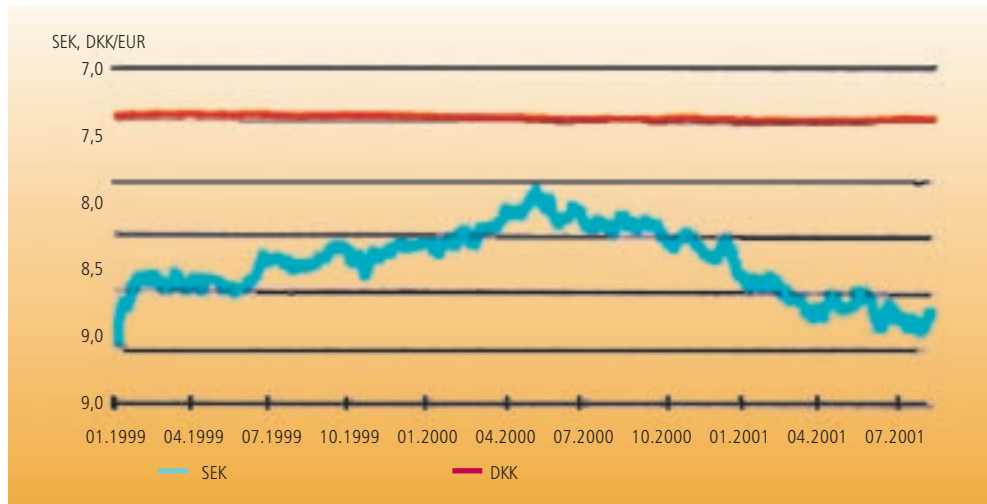
A floating exchange rate is often considered useful in order to insulate an economy from certain shocks in a world with nominal wage rigidity and/or limited labour mobility. A fixed exchange rate policy can lead to excessive and protracted unemployment in such a world and adjustment to asymmetric shocks is – at least in theory – an important argument against a fixed exchange rate policy. However, the importance of this argument requires answers to the following two questions: 1. What causes large positive and large negative output gaps? 2. Is a floating exchange rate an efficient shock absorber?

The Danish economy was in severe slump in 1981, reached a peak in 1986, went back into a period of slow growth bottoming out in 1993 and has grown strongly since and exhausted the negative output gap, cf. figure 3. The business cycle was also out of line with Germany as well as the entire euro area. The business cycle in itself and the deviation to the German business cycle cannot be explained by exogenous external factors. Firstly, the demand for Danish exports did not deviate from the trend to an extent that can explain the cyclical swings in the period under observation. Secondly, the terms of trade moved more or less in line with the terms of trade for other EU-countries ruling out external price shocks as an explanation, cf. Danish Ministry of Finance (2001). Hence, the roots of Danish output fluctuations must be sought among domestic factors.

The trough in 1981 had its origin in the very poor macroeconomic policies of the 1970's that can be summarised as traditional Keynesian demand stimulus to the oil price shocks. In the beginning of the 1980's Denmark was a high inflation country with a low propensity to save. A major factor was a much too preferential tax treatment of interest rate expenditures in combination with high inflation. Interest expenditures were deductible at the highest marginal income tax rate (between 40 per cent and 70 per cent dependent on income levels). The sharp fall in nominal interest rates following the announcement of the fixed exchange rate policy in 1982 in combination with other austerity measures was not accompanied by a corresponding immediate reduction in inflationary expectations. This led to a decline in expected ex ante real after tax interest rates that triggered a boom in house prices and private consumption and, furthermore, laid the foundation for the protracted slump in the following years. The preferential tax treatment of interest rate expenditures was reduced as from 1987. A decline in actual inflation in combination with the tax changes led to a sharp increase in ex post after tax real interest rates that triggered the proceeding depression in the housing market and a strong increase in the private savings ratio.

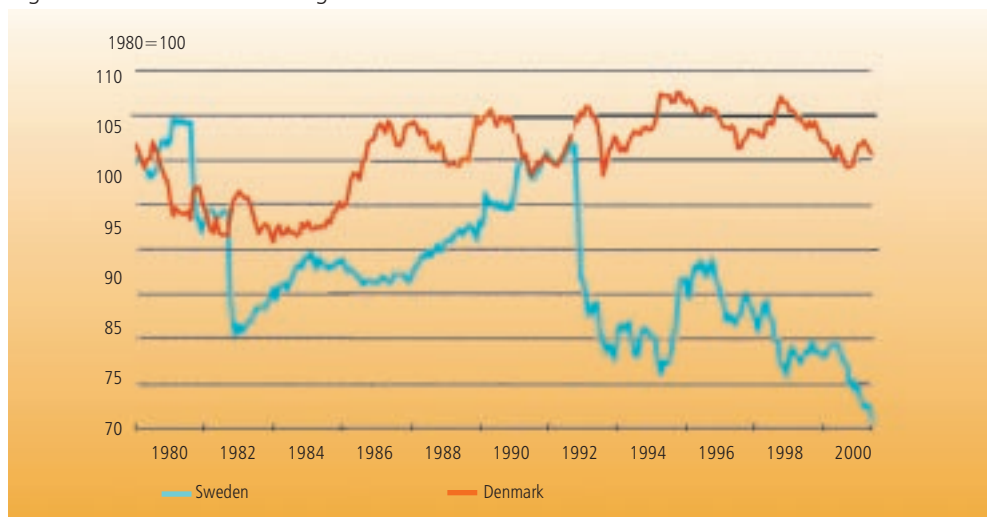
The Danish experience is that “home made” domestic shocks stemming from economic policy are more important than exogenous external shocks. What is the role for exchange rate flexibility and independent monetary policy in such an environment? One could argue that the excessive wage increases in 1987, cf. figure 5, made a case for a devaluation of the krone in a situation with downwards nominal wage rigidity. However, such a response would have been the umpteenth “once and for all” devaluation and a bail out of the social partners that would have sent Danish economic policy straight back into the vicious circle of the 1970's.

Figure 7 Swedish krona and Danish krone vis-a-vis the euro



The choice of exchange rate regime is not a choice between a fixed nominal exchange rate and a floating exchange rate that evolves according to purchasing power parity. A floating exchange rate often moves relatively far away from any reasonable estimate of purchasing power parity and thus acts as a shock creator rather than a shock absorber, cf. Buiter (2000). The strength of the dollar in the mid-1980's and the present weakness of the euro are well known examples. The importance of such unwarranted disturbances is most severe for small open economies such as Denmark. The exchange rate movements depicted in figure 7 and figure 8 indicate that Sweden – a small open economy with a floating exchange rate and low inflation – receives much more noise from exchange rate fluctuations than Denmark. The fixed exchange rate policy can not ensure neither a stable nominal effective exchange rate nor a stable real effective exchange rate. However, the weight to the euro in the effective Danish exchange rate is slightly below 60 per cent. Thereby, the fixed exchange rate policy yields a nominal hedge in a very important market for the Danish economy. This planning stability is beneficial to the business climate. A fixed exchange rate policy based on the nominal effective exchange rate would not offer such a hedge against any specific currency.

Figure 8 Real effective exchange rate in Sweden and Denmark



Note: The real effective krone rate is based on consumer prices. Most recent observation is June 2001

In the case of Denmark the fixed exchange rate acts as a shock absorber but not in the traditional sense. Instead, it encourages sound economic policies and employment friendly wage formation.

Monetary policy implementation and ERM II

The krone has remained close to the central parity against the euro since ERM II and the third stage of the European Monetary Union came into operation on 1 January 1999, cf. figure 9.

Figure 9 ERM II band and the Danish krone vis-à-vis the euro

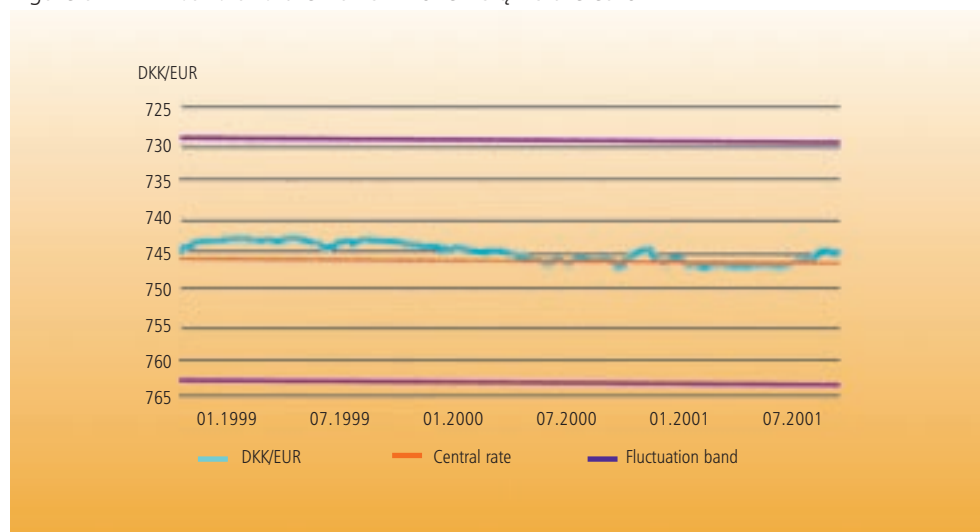
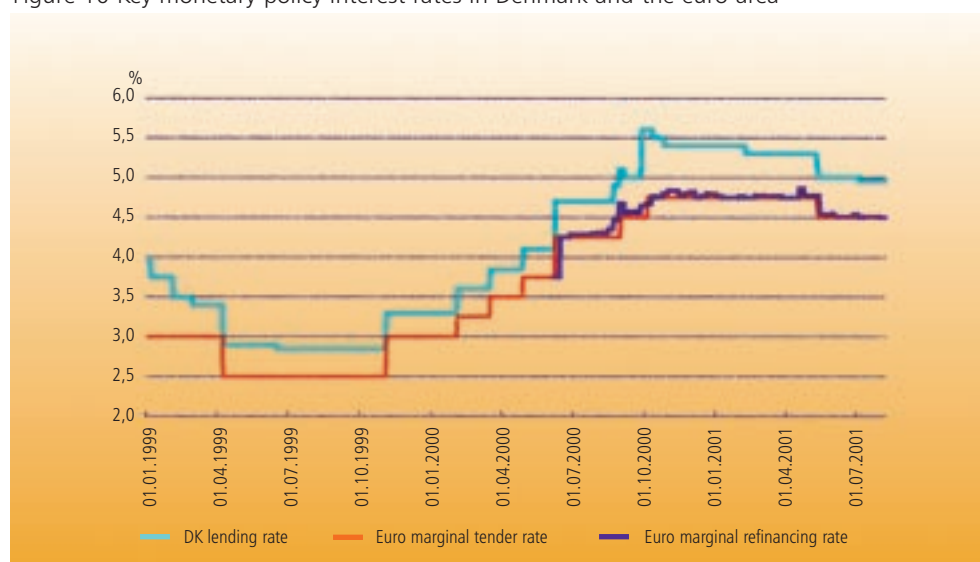


Figure 10 Key monetary policy interest rates in Denmark and the euro area



In order to achieve exchange rate stability, the interest rates of Danmarks Nationalbank are adjusted in step with those of ECB with due consideration to conditions in the foreign exchange market, cf. figure 10. A tendency for the krone to weaken will be met by a widening of the interest rate differential and vice versa. Interventions in the foreign exchange market are used to dampen fluctuations in the krone rate.

It is evident from figure 9 that the exchange rate against the euro is much more stable than allowed by the fluctuation band of $\pm 2,25$ per cent against the euro. In the years preceding the break down of ERM I in 1992-93 many exchange rates including the krone fluctuated widely within the narrow band and obligatory intervention at the margin was not a rare event. The widening of the band to ± 15 per cent in 1993 was not considered meaningful as a basis for the fixed exchange rate policy of Denmark. Consequently, Danmarks Nationalbank embarked on a unilateral policy to stabilise the krone with the central parity as a point of reference – albeit from time to time a distant point of reference. This policy brought the krone to a stable position close to the central parity in early 1997. Since then Danmarks Nationalbank's key interest rates have shadowed the interest rates of the Bundesbank and as of January 1999 the interest rates of ECB. In addition Danish interest rates have been changed unilaterally in periods with upward or downward pressure on the krone and in periods of foreign exchange uncertainty. The most notable incidents in recent years are the autumn of 1998 in connection with the global financial turmoil and the autumn of 2000 immediately after the no vote in the referendum on euro area membership.

It is crucial for the exchange rate policy that Danmarks Nationalbank follows ECB rates automatically without hesitation irrespective of domestic considerations. Furthermore, the short-term interest rate differential has to be increased promptly if the krone has a pronounced tendency to weaken beyond the daily fluctuations. Intervention in the foreign exchange market can not stand-alone; it must be accompanied by increases in interest rates. It is also an integrated part of the foreign exchange defence that the interest rate differential is increased quickly and substantially, but only reduced gradually as delayed response to currency inflows. Such a policy ensures that speculation against the krone is costly and unprofitable.

The predominant role of long-term fixed-rate mortgages in Denmark, cf. figure 4, almost eliminates the tensions associated with raising interest rates in order to defend the exchange rate. Furthermore, the monetary policy instruments used by Danmarks Nationalbank allows for a differentiation of monetary policy signals that can ease the burden on “the man in the street” even further – at least in the short run. Danmarks Nationalbank's lending rate, the decisive signal for money market interest rates, can for a short period be raised more aggressively than the discount rate, the decisive rate for the general borrowing and deposit conditions at commercial banks. See Christensen and Topp (1997) for a detailed account of the Danish monetary policy instruments and various liquidity measures that can be implemented in the case of serious foreign exchange unrest.

The fixed exchange rate policy and Danmarks Nationalbank's unconditional willingness to support the exchange rate are firmly imbedded among participants in the foreign exchange market as well as among Danish exporters

and importers. The large commercial banks' speculative behaviour in the foreign exchange market acts as a stabiliser. If the krone lies on the weak side of the parity, the commercial banks will position themselves in support of the krone and they will furthermore advise their customers to purchase krone e.g. sell export proceeds in foreign currency. The reverse is the case if the krone is on the strong side of the central parity. All this takes place within a narrow range around the central parity.

Conclusion

It is clear from preceding sections that ERM II is not very visible in the day-to-day management of the fixed exchange rate policy. Danmarks Nationalbank seeks to stabilise the krone within a much narrower range than the +/- 2,25 per cent fluctuation band. The ERM II band serves as a safety net. It provides international support in a worst case scenario. Probably more important; by entering the ERM II agreement in 1998 the Danish government strengthened its commitment to pursue an economic policy in accordance with the requirements set by the fixed exchange rate policy.

A stability oriented macroeconomic framework conducive to growth and employment can no doubt be achieved in many different ways. In the case of Denmark the fixed exchange rate policy and ERM (I and II) membership have been instrumental for the establishment of such a framework. There are many country specific circumstances that make life either easy or difficult under a fixed exchange rate regime. However, I think there are two fairly general lessons to be learnt. Firstly, monetary policy must be unconditionally subordinated to the exchange rate. Secondly, ERM II membership and a fixed exchange rate policy are neither means to achieve lower interest rates the easy way, nor means to postpone structural domestic adjustments with the support of other EU-countries. The primary responsibility for establishment of a stability oriented macroeconomic framework lies with the individual country itself. ERM II membership can act as a catalyst for such a process.

References

- Buiter, Willem H. (2000): "Optimal currency areas: Why does the exchange rate regime matter?" *CEPR Discussion Paper no. 2366*
- Christensen and Topp (1997): "Monetary policy in Denmark since 1992", in *Monetary policy in the Nordic countries: Experiences since 1992*, BIS, Policy papers no. 2, pp. 5-23
- Danish Ministry of Finance (2001): "Why Were the Nordic Countries and the UK Out of Phase with Continental Europe". *Forthcoming working paper*.
- Danmarks Nationalbank (1999): *Pengepolitik i Danmark*. København
- Lyngesen, Hanne (1999): Pengepolitiske strategier i praksis. *Nationaløkonomisk tidsskrift*, bd. 137, nr. 3, pp. 237-255

Consequences of EMU Accession for the Polish Labour Market

Marek Góra

1. Introduction

Labour market statistics put Poland among the countries with a definitely high level of unemployment. The current unemployment rate of about 16% is a problem which spills over into many areas outside the labour market. The solving of this problem is one of the most important challenges Poland has to face. But its effective solution depends on correctly diagnosing the situation and, in particular, the direct and indirect causes of the adverse situation in the labour market we are facing in Poland.

In discussions such diagnosis is pushed into the background. We thus have a lot of noise around the issue of unemployment, but its fighting is not exactly effective. A necessary but obviously insufficient condition of successfully adjusting the labour market is some critical thinking on its operation in Poland.

An element of such thinking, obviously not the only one, is a comparison of the growth rates over the last ten years in Poland and in some other countries which undergo similar transformations, but do not have as high a rate of unemployment. There are many other reasons, but a situation in which the economy with the highest growth rate in the region also has the highest unemployment level is slightly odd. We can see that this is clearly not the growth rate, but other factors which have pushed unemployment so high. The fluctuations of the growth rate, in particular its recent weakening, have added to other causes of unemployment, but have not created it. Soon after 1990 unemployment rose to double figures and has remained there since. Its fluctuations have never brought it down to levels which, say, could be considered moderate.

The reform of this market is a must. Without it even a fast growth will not succeed in creating conditions to sustainably bring unemployment down to single figures. Labour market reform is one the challenges and preconditions of Poland's smooth transition to the European structures. We must succeed not so much in reducing unemployment, but in carrying out a profound labour market reform. The consequences of Poland's EMU accession for the labour market will be either good, if we first succeed in reforming the labour market on our own, or difficult to foresee: good, but hardly affecting the labour market or the

economy, or possibly even dangerous if the gross inefficiencies of the Polish labour market are confronted with a modern economic environment.

2. Polish Labour Market

The Polish labour market quickly generated double figure unemployment and kept it from dropping to single figures throughout the decade. The question is why?

In order to answer it a combination of factors needs to be pinned down. They will be briefly discussed below.

Growth in Labour Productivity

The growth of labour productivity is one of the most spectacular successes of the economy. It was much stronger than GDP growth, which, after all, was also very fast¹. On the one hand, it happened thanks to tapping into the huge reserves connected with labour hoarding (disguised unemployment) in Poland's economy in the 1980s, definitely in excess of what could be observed in other countries². On the other hand, it was caused by a significant inflow of capital and associated modern technologies in the 1990s.

Over-registration

The criteria which define unemployment are treated very liberally in Poland. Thus, unemployment registers include a large number of people who are not unemployed. The biggest group of them are people who do not meet the criterion of actively looking for work. Add to them a group of people who have unregistered jobs (informal economy) and people who could not or would not take up work, even if it was readily available. This means that the actual problem of unemployment is slightly less severe than it would follow from statistics taken at their face value. This finds some corroboration in the fact that the percentage of the unemployed with benefit entitlements is very low. For fiscal reasons due care is taken to prevent the persons who do not meet the criterion of being unemployed from receiving unemployment benefits. Paradoxically, they are not struck off the unemployment register for this reason. You can thus not be unemployed and yet remain in the register. However, you do not then receive benefits. But there are many other reasons for which this can still be an attractive option for some.

The scale of overregistration is hard to estimate. Attempts to do such estimation indicate that this can be about 25% of those registered.³ The problem in this case are not statistics alone. The situation that the registers include many people who are not in fact unemployed is a very serious obstacle to fighting unemployment, because fighting unemployment may prove less

¹ In 1999 and 2000 the average growth rate of labour productivity was 7% per annum. See e.g. OECD (2001).

² See Góra and Rutkowski (...)

³ See Góra (1996)

effective in such conditions. The funding available for fighting unemployment is thus scattered over a higher number of people.

On the other hand, the fact that Poland has much overregistration of the unemployed does not make the problem of unemployment any less serious. It only increases the cost of fighting it. Even having allowed for overregistration, we still have double figure unemployment and its actual causes must be dealt with.

Tax Wedge

High taxes and high quasi-taxes, such as social insurance contributions, jointly produce a very significant tax wedge, which in turn is conducive to high unemployment⁴. An important part of this wedge are precisely social insurance contributions. A relatively generous (compared to wages), and also inefficient, social insurance system has become one of the main causes of high unemployment in Poland. The good news is that the system has already been scrapped. The bad one is that the effects of its past operation still persist and will continue to do so for many years to come⁵.

Insufficient labour market flexibility

It has been pointed out, with reason, that Poland's existing labour market regulations are inadequate and make the labour market unnecessarily rigid, thereby adding to unemployment generation. Labour law reform is necessary in Poland. But let us not delude ourselves. The reform of labour law per se will not suffice to make the labour market more flexible. Two additional problems must be tackled. The first one is the labour services institutional infrastructure, i.e. the operation of employment offices, which apart from being overburdened by overregistration, among other things, do not have their tasks adequately defined. Also, active and passive labour market policies conducted by employment offices need to be thoroughly restructured. The second problem is low labour supply flexibility. This is a huge problem, difficult to combat. It adds to the effects caused by the restructuring of the economy.

Growth in Labour Supply

Poland is unique by European standards in exhibiting a strong growth in labour supply. This is a big opportunity for the country's development, because one of the factors of production, labour, is available in massive quantities. Thanks to this a faster economic growth can be achieved. But what is an opportunity is also a risk, as the rigid labour market denies access to new employees. This is socially harmful as well as economically ineffective. But let me also emphasise here that any forms of policy towards limiting labour supply in a bid to counteract the existing labour market problems are also economically and socially harmful.

⁴ See e.g. Layard et al. (1991).

⁵ See Góra (2001).

Fluctuations of Growth

The recent clear slowdown is often blamed for Poland's high unemployment. However, this reasoning is only partly correct. Certainly, a slower growth rate has contributed to rising unemployment, but the unemployment growth started from an already high level. The output gap is responsible for about $\frac{1}{3}$ of Poland's unemployment rate⁶. The rest of it follows from the factors which have already been mentioned. Robust growth will certainly contribute to improvements in the labour market, but will not take unemployment down to single figures or lay the groundwork for its sustainable reduction.

3. Prospects

Labour market forecasts in Poland are dominated by doom and gloom. The assumption is that unemployment will be growing and its reduction is possible only upon reaching a growth rate above 6%⁷. But this is not inevitable. The celebrated rate of 6%, oft repeated in economic discussions, presupposes that nothing will be done to address the real causes of unemployment. After all, there will always be a growth rate which will "soak up" most of the unemployed. But to depend on this for the development prospects of the labour market is a very minimalist approach. In fact, this is tantamount to resigning oneself to a high and lasting unemployment in Poland. Unemployment in Poland is so high precisely for the reason that a fairly decent growth of 3 – 4% is not enough to reduce it, although in many other countries it is. But in Poland this is effectively hampered by the gross inefficiencies of the labour market.

Labour market reform should cover all the aspects of Poland's labour market operation mentioned in the previous section. After all, each of them has had a major share in generating unemployment. Let us pause here to summarise the agenda: one should tidy up unemployment registers; one should try, by all means, to reduce labour costs and, more generally, the tax wedge; increased labour market flexibility ought to be promoted.

Only the second of the above-mentioned objectives, i.e. reduction of the tax wedge, has been initiated. It consists in reducing future pension system liabilities and changing the economic nature of pension contributions from tax liabilities to savings. Unfortunately, the effects of the changes will only be felt by the economy in some years from now. The remaining issues mentioned above are urgently awaiting their turn to be dealt with. This will be important, inasmuch as potential effects can in their case be achieved within a much shorter time horizon.

Faster economic growth will certainly contribute to a better labour market. But it is not sufficient to solve the problem of unemployment. One can analyse how a fast economic growth will result in an unemployment drop. But the argument can actually be reversed and one could start thinking about things which could actually be done to limit unemployment at a given level of economic growth. The second way of putting the issue is more effective and its results (in contrast to growth "stimulation") are more durable.

⁶ This is a very rough estimate. It is based on the assumption that the equilibrium unemployment rate in Poland is about 10-12%. See Góra (...).

⁷ Cf. e.g. Kwiatkowski et al. (2001).

4. EMU Accession

Two base scenarios of the consequences of Poland's EMU accession are conceivable from the labour market point of view. The first one pertains to the situation after Poland has successfully reformed the labour market prior to EMU accession and is thus on the road to sustainably reducing unemployment. The second one, on the other hand, implies that such reform has not yet been carried out or, perhaps, has not been carried out sufficiently to trigger the desirable changes. In either case the expected impact on the labour market will be rather indirect than direct.

Optimum Utilisation of Factors of Production

In the former case the labour market will be conducive to economic development as well as to the utilisation of the whole economy's new development potential resulting from EMU accession. In particular, it will be possible to flexibly adjust labour and capital, and given that capital is so easily transferable across the Eurozone, it will also be more readily available in Poland. In the latter case the adjustment will be much less flexible, which will limit the prospects of benefiting from such situation for economic expansion purposes.

In both cases EMU accession in being sustainable growth friendly will contribute to reducing labour market problems. But again, an already reformed labour market will benefit from EMU accession more than a market similar to the one we see now.

Labour Force Migration

EMU membership means easier than ever transfer of production factors, including labour migration. In this connection many countries, Germany and Austria in particular, are concerned about the possibility of a massive inflow of Polish workers. In fact, Poland is perceived as a particular threat, due to its sheer size and labour supply growth rate.

But when we think a little deeper of the nature of the problem, we can see, that, paradoxically, the countries which are opposed to the inflow of workers from Poland are acting against their own interest. On the other hand, fighting for the freedom of Polish nationals to take up work, while making perfect sense from the equal rights point of view, is partly inconsistent with Poland's own economic interest. This paradox can be accounted for by labour market rigidities both in Poland and other countries of Europe. These markets do not absorb new employees. The German and the Austrian old age pension systems are in serious financial trouble.⁸ The number of those who pay contributions is low and falling. The number of old age pensioners though is high and steadily rising. The current shape of the pension systems in those countries does not allow to solve the problem. The only rescue, short of a thorough pension system reform, in those countries would be precisely a considerable external inflow of workers. Incidentally, they migrate to those countries anyway but in not being eligible for legal employment they undertake odd, unregistered jobs, which do not increase

pension system receipts. This is loss pure and simple for the countries which protect themselves from employee migration.

From the Polish point of view, in turn, it is the outflow of workers abroad which is an evident loss. The most important part of the loss would obviously be forfeiting the output of the labour which would not be employed in Poland. Arguably, if people have no work, they should perhaps be allowed to go, because their potential output is not being created anyway. This may well be, but instead of pushing people out to work abroad, isn't it better to carry out a labour market reform which will allow them to work in Poland? Poland's GDP would grow faster thanks to this and, additionally, it would be easier to fight inflation. Vast labour supply means less wage pressure, which helps ease inflation.

5. Conclusions

In sum, the direct impact of EMU accession on Poland's labour market does not need to be big. Problems in connection with labour market inefficiencies must be solved irrespective of EMU accession. On the other hand, their solving will allow reaping bigger benefits from EMU accession alone.

References

- Góra, Marek and Michał Rutkowski, 1990, "The Demand for Labour and the Disguised Unemployment in Poland in the 1980s", *Communist Economies* 2, No.3, pp.325-334.
- Góra, Marek, 1996, *The Labour Market in Poland: 1990-1995. Empirical and Methodological Studies*, Szkoła Główna Handlowa, Warsaw
- Góra, Marek, 1998, "Le chômage structurel en Pologne – Steady-state unemployment in Poland", *Revue d'Etudes Comparatives East-Ouest*, No.2, Vol. 29, pp: 41-48.
- Kwiatkowski, Eugeniusz, Aleksandra Rogut i Tomasz Tokarski 2002: Prognoza popytu na pracę i stopy bezrobocia w Polsce do 2005 r. oparte na analizie współczynnika pracochłonności. W: Wzrost gospodarczy, restrukturyzacja, bezrobocie w Polsce. Uniwersytet Łódzki (w druku).
- Layard, Richard, Steven Nickell and Richard Jackman (1991), *Unemployment*, Oxford.
- OECD (2001), *Economic Survey: Poland*, OECD, Paris.

⁸ In the case of Germany the level of subsidising pension payouts is already as much as 20% of their value.

Measuring Exposure to Asymmetric Shocks: Implications for Poland's EMU Accession

*Jakub Borowski**

Introduction

Poland's EMU accession should be preceded by a cost and benefit analysis of the accession process. As envisaged by the theory of monetary integration, the basic cost component of setting up a common currency area is the loss of autonomy in monetary and exchange rate policy. The cost is the higher, the higher is the economy's exposure to asymmetric shocks. This paper addresses the issue of assessing such exposure in Polish conditions.

The paper is organised as follows. The first section presents a typology of asymmetric shocks, which may occur in countries participating in a monetary union. The typology also includes a presentation of standard adjustment mechanisms to cope with potential shocks. The second section contains brief information on the time series used in the study.

The third section contains an analysis of the degree of business cycle convergence in both Poland and EMU. This is a summary measure of asymmetric shock exposure. The analysis is carried out in three steps. Step one focuses on the pattern of cyclical convergence over time assessed by means of a rolling correlation coefficient between cyclical components of pro- and anticyclical macroeconomic variables. The purpose of step two is to establish the maximum length of time in which the synchronicity of business cycles in Poland and the Eurozone was moderately strong. In step three a comparative analysis is performed of the convergence of selected European economies and Poland with those of the Eurozone and Germany.

The fourth section contains an analysis of the intensity of intraindustry linkages between Poland and EMU, which is a precondition of sustainable convergence in countries making up a common currency area. The basic criterion was the share of intraindustry trade in total trade as determined by

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means of the standard and adjusted Grubel-Lloyd Index. Intraindustry trade intensity was also measured for particular commodity groups and with respect to trade between Poland and its main East European trade partners.

The last section presents a summary of the evidence and conclusions.

I Typology of Asymmetric Shocks and Assessment of their Risk

In accordance with the theory of optimum currency areas (OCA) a decision to set up a common currency area should be taken only in cases when a long-term balance of costs and benefits of relinquishing domestic currency is positive. The cost and benefit analysis should thus include a qualitative and quantitative evaluation of monetary integration costs, which are identified first of all with the loss of autonomy of monetary and exchange rate policy. The cost is the higher, the higher is the economy's asymmetric shock exposure. Assuming that the countries which launch a common currency constitute the basic units of monetary union, the shocks in question can be defined as disturbances of economic processes exerting a differential impact on basic real categories (output, employment, unemployment rate) in member states of the union. OCA focuses on the negative shocks which result in output's declining below its potential level. To mitigate the shocks, once they occur, a monetary union non-member country can always resort to the shock absorbing qualities of monetary policy, in particular exchange rate policy. This option is particularly important in the presence of nominal wages' downward rigidities. The stickiness of wages implies that the real wage decline which is required to bring down the real exchange rate and to close the output gap is necessitated, when it is long overdue, by higher unemployment. If domestic currency depreciation is the response to a demand shock, the initial decline in output and rise in unemployment rate are less dramatic than in a situation when the exchange rate instrument is no longer available¹. The fixing of the nominal exchange rate no longer allows to adjust the real rate by modifying its nominal level and should thus be perceived as the main cost of monetary integration.

In order to answer the question about the magnitude of cost of Poland's surrendering its monetary (exchange rate) autonomy the economy's asymmetric shock exposure needs to be examined. It is advisable to precede such analysis with an overview of basic shock types (figure 1). This will provide a benchmark for discussion in the third and fourth section of the study. The typology covers the sources and types of asymmetric shocks and adjustment processes which allow to restore equilibrium in the economy. The key to the typology presented here is the distinction between classical asymmetric shocks

¹ The long-term effectiveness of the policy in terms of closing the output gap largely depends on the extent in which economic agents are guided by exchange rate illusion. This, in turn, is determined by the openness of the economy and institutional conditions of the labour market. In default of such illusion the process of closing the output gap takes longer than under the non-depreciated variant and is accompanied by higher inflation. In the case of a supply shock exchange rate adjustment is an even less effective instrument, as it strengthens the inflationary impulse evoked by the shock. Studies and simulations conducted with the use of macroeconomic models for selected EMU countries have shown that restoring the real exchange rate to the level prior to the shock usually takes several years [EC Commission, 1990]. In other words, in the long run nominal exchange rate depreciation is not identical with the real drop of its level.

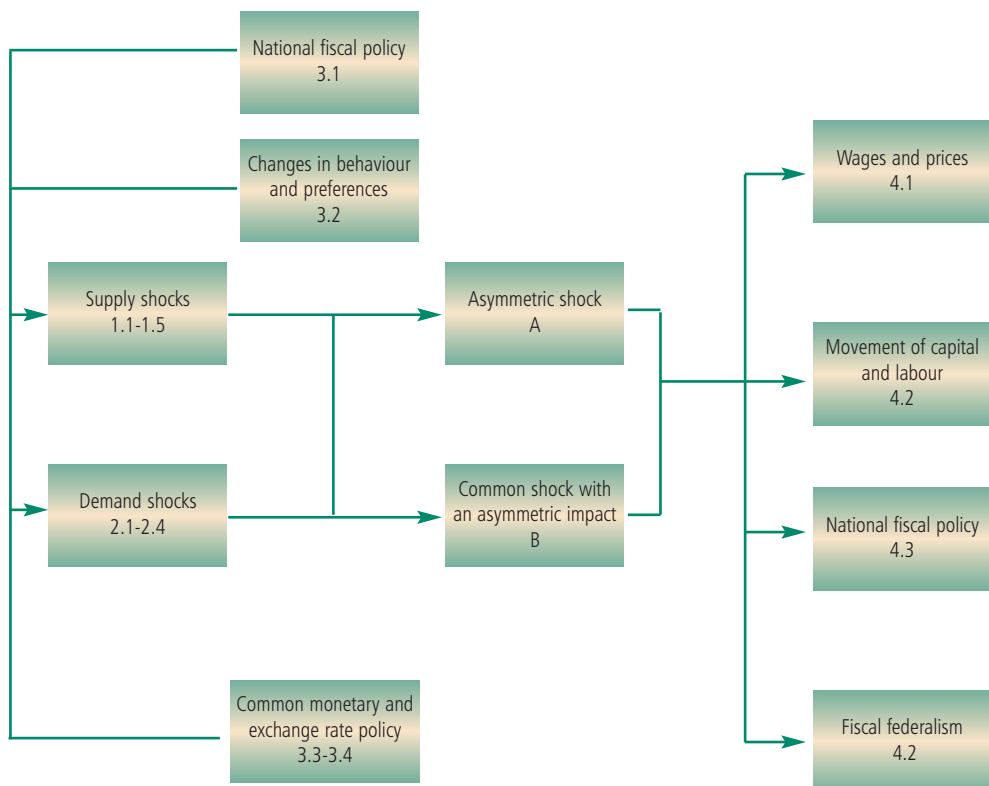
(type A – not perceivable in the remaining countries of a monetary union) and shocks common to all the member countries which due to differences in macro- and microeconomic circumstances have a different impact on economic processes in particular countries (type B).

Supply and demand shocks are two basic types of shocks which can generate asymmetric effects in monetary union member countries². Supply shocks, affecting directly the production side of an economy, originate from:

- 1.1. climatic changes, which (depending on market flexibility and degree of the economy’s openness) may result in different price movements and attendant output and employment fluctuations (type A or B),
- 1.2. changes in marginal productivity of capital brought about by technological progress and resulting in different growth rates of potential output and insufficient adequacy of the common monetary policy for particular monetary union countries; the actual type of shock (A or B) will depend in this case on the rate of technological progress spillover, importance of the economy to the union as a whole and response of the factors of production (capital and labour),
- 1.3. changes in prices of raw material inputs (A or B); the type of the shock will depend on the extent of economies’ exposure to external sources

² The following typology of origins of asymmetric shocks must not be viewed as complete, not only due to the considerable number of possible variants, but also due to the possibility of adopting other criteria of such division. A criterion can be shock persistence (permanent or temporary shock) or if a given shock comes from outside the monetary union (external asymmetric shock) or it originated from within (internal shock).

Figure 1. Sources and types of asymmetric shocks and adjustment processes in a country participating in a monetary union



of raw materials and quality of domestic markets, in particular the labour market³,

- 1.4. medium and long-term demographic trends (A or B); a condition of their effective neutralisation is a flexible labour market and freedom of, as well as propensity for, external migration,
- 1.5. wage shocks (A or B), whose impact on economic processes in particular countries of the union will depend on the institutional infrastructure of the labour market⁴.

Among demand shocks the following are particularly noteworthy:

- 2.1. shifts in investment demand, the most volatile component of final demand (A or B); standard models of the business cycle imply that such movements generate output and employment fluctuations⁵. The extent to which the shocks will be symmetric will depend first of all on the intensity of trade linkages between the economies of monetary union, degree of convergence of expectations concerning the future evolution of the business cycle and degree of capacity utilisation,
- 2.2. external (i.e. with respect to non-member economies) openness of the economy (A or B)⁶,
- 2.3. geographical patterns of trade with countries outside the union (A or B)⁷,
- 2.4. different macroeconomic risk allotted to main trade partners. Combined with the preconditions presented in item 2.2 and 2.3 it defines the risk of an asymmetric shock triggered off by inappropriate macroeconomic policy in the countries (A or B)⁸.

Asymmetric shocks, both on the supply and demand side, may originate from the following sources:

- 3.1. changes in the degree of fiscal policy restrictiveness in particular countries (type A), which can trigger off a response on the supply side of the economy (e.g. growth in labour supply as a result of tax rate cuts), and - if demand impulses are transmitted through import channels (*spillover effects*) – rising demand in other union countries (type B)⁹
- The scale of an asymmetric shock is then determined by the degree to which the impact of the demand impulse (both in the country which the

³ De Grauwe [1997], on following the idea of Bruno and Sachs [1985] and Calmfors and Diffin [1999], demonstrates that a response to a supply shock in the form of wage pressure is strongest in countries in which the extent of wage bargaining centralisation is moderate. In such countries the unions face the classical prisoner's dilemma which induces an active stance in negotiations. In the case of high or low centralisation the wage pressure is weaker, because the unions allow for its economy-wide inflationary implications (strong centralisation) or danger of reducing the price competitiveness of the company (company level bargaining).

⁴ In some EMU countries exchange rate policy was used in the past to ease the pain of growing unit labour costs. But economists typically agree that the irrevocable fixing of the exchange rates and, subsequently, the launching of a single currency lead to more wage discipline in the countries which make up an economic union. For more see Borowski [1999 b],

⁵ Two basic business cycle models based on the investment impulse as a source of cyclical movements are the multiplier-accelerator model and the inventory cycle model. For more extensive discussion see Sachs and Larrain [1993] and Czarny [2000].

⁶ Bayoumi and Eichengreen [1997] use the average share of bilateral exports in the GDP as a measure of two countries' relative sensitivity to this type of shock. This parameter has a negative and statistically significant impact on the volatility of a bilateral exchange rate and, by the same token, constitutes a factor determining the risk of asymmetric shock occurrence.

⁷ Dornbush *et al.* [1998] present figures which illustrate EU countries' exposure to asymmetric shocks caused by the factors discussed under item 2.2 and 2.3.

⁸ One example of such shock was the Russian crisis of 1988, whose negative impact was larger in Poland than in EMU countries. For more see Borowski [2000].

⁹ In contrast to wage shocks, the setting up of a monetary union is conducive to more lax fiscal policy. Once bilateral exchange rates have been scrapped, the current account balance no longer disciplines fiscal policy.

shock comes from and in affected countries) will be offset by the negative impact of interest rates on final demand¹⁰,

- 3.2. changes in behaviour and preferences (A or B), such as fluctuations in the propensity to save, changes in consumer preferences and launching of new technologies. They produce shifts in demand between particular groups of products and services,
- 3.3. common exchange rate policy (type B), which can generate asymmetric demand shocks; their scale in particular union countries will depend on the flexibility of their labour markets and external openness of their economies¹¹,
- 3.4. common monetary policy (type B), whose asymmetric impact depends on the flexibility of domestic labour market and structural characteristics of the economy and financial sector. These determine the operation of the credit and interest rate channel of the monetary transmission mechanism in particular union countries¹².

The operation of adjustment mechanisms which enable partial or full accommodation to the above-discussed asymmetric shocks is one of the main topics in the theory of monetary integration¹³. The standard ways of shock adjustment which allow to bring the economy back to equilibrium are: price and wage adjustments (4.1), free movement of labour and capital from a negative shock affected country (region) to a positive shock affected area (4.2), using domestic fiscal policy as a demand stabiliser (4.3) and using transfers under the common budget of monetary union countries (4.4). The less effective is the working of such mechanisms, the less symmetric are the shocks. It is worth emphasising that in the case of Poland no accommodation mechanism can be used effectively to cope with shocks. Wage flexibility and intrinsic as well as

¹⁰ Gros and Thygesen [1998] present the results of simulations conducted in the period prior to EMU establishment according to which the impact of fiscal expansion on Germany (i.e. after taking into consideration the impact of rising interest rates on demand) on output is positive in Germany and negative (although close to zero) in the remaining EMU countries covered by the analysis. Such response model should hold for EMU, whose monetary policy has received a formal mandate to ensure the stability of prices, although the scale of such response is certainly bound to change. Moreover, asymmetric fiscal shocks lead to inflationary divergences, as pointed out by Dornbush *et al* [1998]. The hypothesis of the asymmetric impact of fiscal shocks can also be made with respect to their impact on demand structure in particular union countries, although this calls for empirical verification.

¹¹ One measure of sensitivity to this type of shocks can be output elasticity with respect to movements in the exchange rate of common currency. Studies conducted by Dornbush *et al* [1998] for selected EU countries (elasticity with respect to the \$/DM rate) point to considerable differences in this regard.

¹² The most important of these factors are the share of vulnerable sectors (construction, manufacturing of capital goods and consumer durables) in the GDP, structure of sources of funding (capital market versus banking system), financial sector competitiveness (defining the speed and scale of market interest rate response to changes in central bank rates), structure of balance sheets in households and companies (contributing to the impact of interest rate changes on the magnitude of wealth and income effect), extent of domestic banking system segmentation (strength of bank-client relationships), availability of securities which can serve as collateral for loans. Dornbush *et al* [1998] indicate that as a result of the operation of these factors the time lags of the transmission mechanism significantly differ in selected EU countries. Mojon [2000] argues that the launching of EMU's common market policy (less interest rate volatility) and rising competitiveness of national financial sectors (increased importance of non-credit sources of funding) should add to the impact of ECB rates on market rates. But De Haan *et al* [2001] argue that this has not happened yet.

¹² The poor working of these mechanisms shall be perceived as the cost of monetary integration first of all in the context of the shocks discussed in item 3.3 and 3.4. In these cases the loss of monetary policy autonomy should not be perceived as cost of creating a monetary union.

¹³ Bayoumi and Eichengreen [1997] present a formal proof of the relationship between the convergence of business cycles with exposure to asymmetric shocks. In an equation estimated on a panel of 16 countries the volatility of the nominal exchange rate (as measured by the standard deviation of its relative movements) is explained by a standard deviation of GDP growth rate differentials, which constitute a proxy for business cycle convergence. The estimator is statistically significant and positive.

extrinsic workforce mobility are low and institutionally bound [Borowski, 2000]. Due to a considerable structural budget deficit the use of fiscal policy to stabilise demand under a shock would also be limited. There is no fiscal federalism (not even in the EU) which could play a potentially effective adjusting role. All the more one should take a closer look at Poland's asymmetric shock exposure.

This study uses two methods to assess the risk of asymmetric shocks occurring in Poland vis a vis EMU. The first one, to be presented in the third section of the paper, focuses on determining the degree of convergence of business cycles in Poland and in EMU/Germany. It makes an implicit assumption that the extent of cyclical convergence in two countries constitutes a summary measure of asymmetric shock exposure¹⁴.

The second method, to be presented in the fourth section of the paper, originates from the traditional OCA approach which focused on specialisation in the tradable sector. The employment of this methodology to assess the risk of asymmetric shock occurrence is complementary to the analysis of business cycle convergence. The methodology allows to determine if the phenomenon in question is sustainable. The assessment is based on an analysis of intraindustry trade intensity between Poland and EMU as well as EMU member countries.

The results of combining both methodologies help answer the question about Poland's asymmetric shock exposure, thus making the estimation of potential costs of Poland's future integration into EMU possible.

II Data

The data used in the paper comes from various institutions, which in some cases indicates the lack of raw data and necessity to rely on estimates, while in others it follows from the incompleteness of the databases used in the paper.

The time series used in the third part of the paper and relating to the Eurozone (industrial production, GDP, Harmonised Index of Consumer Prices, employment and unemployment rate) are obtained from the statistical section of the ECB monthly bulletin. The OECD is the source of data on the growth rate of the GDP in EU countries (excluding Portugal). In the case of Portugal and Hungary time series made available by national central banks were used. Those covered both source data and banks' own estimates. Data for Poland come from CSO statistical bulletins and A. Kelm's study [1997]. As no data on the quarterly rate of GDP were available to the author in the case of Ireland and Greece, the level of cyclical convergence in those countries was established exclusively on the basis of industrial production data.

The time series for volume of industrial production in EU countries (except Greece, Portugal and Ireland) were taken from Datastream, which contains Eurostat and IMF data. In the remaining cases data from national central banks were used. Data for Poland come from CSO statistical bulletins.

The quarterly data on the growth rate of real GDP and employment cover the period from Q1 1992 to Q4 2000. The series of monthly industrial production

¹⁴ An alternative perspective on long-term economic growth is offered by the real business cycle theory, according to which the basic source of business cycle movements are productivity shocks, as a result of which a long-term growth trend cannot be separated. For a broader discussion of this issue see Blanchard and Fischer [1989]

by volume starts in January 1989 and ends in December 2000. In the case of Greece the trend values were determined on the base of series commencing in January 1994, as no data was available prior to that. The time series for the rate of unemployment and inflation in Poland and the Eurozone cover the period from January 1993 and January 1992, respectively, to December 2000.

The data on trade between Poland and EMU countries used in the fourth section of the paper comes from the CSO database.

III Are Business Cycles in Poland and EMU Synchronised?

There are many methods of assessing business cycle synchronicity. They are employed at the level of the whole economy or on a regional or sector specific basis. The simplest of them are based on analysing correlations between parameters reflecting the cyclical position of countries under analysis. Cohen and Wyplosz [1989] transform real GDP series into sums and differences and treat movements in the sum as symmetric disruption and movements in the difference as asymmetric shocks. Bayoumi and Eichengreen [1997] take the standard deviation of GDP growth rate differentials as a measure of cyclical convergence. They also note in a different paper [1992] that all the above-mentioned methods are subject to error resulting from the inability to distinguish relative demand and supply shocks from responses to those in the form of triggering adjustment mechanisms. What they propose is a decomposition of relative output movements in view of the existence of the three processes. The EU Commission [1990] proposes a model explaining the growth rate of industrial production in 31 sectors of 12 Union countries by sectoral and national variables. The model allows to single out sectors particularly vulnerable to asymmetric shocks. Artis and Zhang [1995] analyse correlations between relative deviations of industrial production growth rates from the long-term trend. Such analysis of a broader group of variables is also employed by the ECB [1999] with respect to EMU countries. This methodology is also adopted in this paper for its transparency and underlying assumptions. However, its application calls for some additional comment.

First of all, its adoption is tantamount to making an assumption that growth is a process in which both the long term trend and short/medium-term (cyclical) deviations from the trend can be distinguished. Such perception of growth follows from combining the neoclassical theory of growth with elements of neo-Keynesian analysis which looks into various rigidities for causes of observable values deviating from the long-term trend¹⁵. Moreover, the above mentioned theory of growth is particularly relevant to Polish conditions, as it envisages, in accordance with the given transition dynamics, faster economic growth in Poland than in the richest EMU countries (catching up process)¹⁶. This provides additional justification for separating a long-term growth trend.

¹⁵ Both the theoretical and empirical foundations of transition period dynamics are presented in Barro and Sala-i-Martin [1995], and – with human capital taken into account – in Barro [1989]

¹⁶ According to Orłowski [2000], one cannot say if Poland's economy of the 1990s exhibited cyclical movements. This follows primarily from a strong impact of structural factors on the shape of the long-term trend (the pattern of restructuring processes), scale of current account deficits (FDI flows) and the inflation level (falling inflationary expectations).

Secondly, in a study like this one must always bear in mind that the concept of „business cycle” must be viewed with caution. As demonstrated by Sachs and Larrain [1993], the average length of a cycle in the American economy, as measured between its two consecutive peaks, was about 5 years in the period of 1945 -1982. More exactly, with respect to Poland’s economy, whose market mechanisms have only been in place since the early 1990s, one should rather talk of short-term deviations of observed values from the trend. Moreover, the trend *per se* is a fairly volatile variable, having been determined on the basis of short time-series¹⁷.

In order to decompose the series into the cyclical and the long-term component the Hodrick-Prescott filter was used¹⁸. It returns the minimum value of the following term:

$$\min_{s_t} \sum_{t=1}^T (y_t - s_t)^2 + \lambda \cdot \sum_{t=2}^{T-1} ((s_{t+1} - s_t) - (s_t - s_{t-1}))^2$$

where:

s_t – long-term trend value,

y_t – observed value,

$(y_t - s_t)$ – cyclical component,

λ - parameter defining the degree of trend smoothness (if , the trend is linear).

Depending on data frequency (monthly, quarterly), the value of parameter applied in the calculations was 14400 and 1600, respectively (standard values). The difference between the observed variable and its trend value¹⁹ was taken as the measure of deviations from the trend. The results are presented in the annex.

In the first step the purpose of the analysis was to establish the evolution of the correlation between cyclical components of standard variables describing a phase of the business cycle phase in Poland and EMU: unemployment rate (anticyclical variable) and annual growth rates for the GDP, industrial production, inflation, employment (procyclical variables). To this end co-efficients of a contemporaneous (i.e. with no lags and leads taken into account) rolling correlation (figures 1 and 2) were constructed, each time calculated on the basis of observations in the previous three years (i.e. 36 monthly observations and 12 monthly observations). For example, the co-efficient of a correlation between cyclical components of the GDP for Q1 1999, which is 0.41, refers to the period 02: 1996 – 01: 1999. The three-year period on which the rolling correlation co-efficients are based allows to determine to what extent their level can be regarded as influenced by the demand shock in connection with the Russian crisis of 1998 and the oil (supply) shock which both economies shared.

¹⁷ As demonstrated by Artis and Zhang [1995] the adoption of other generally employed detrending methods does not alter the results significantly.

¹⁸ If the ratio of both values is adopted, the volatility of the resulting co-efficients goes up slightly, though their level does not significantly diverge from the values obtained with the use of the alternative method.

¹⁹ The clear drop in the correlation co-efficient covering Q4 1994 may result from the use of estimates for annual GDP growth rates in 1992-1994 which distort the scale of cyclical deviations from the trend.

The following conclusions can be drawn from the data presented here. First, there is a rather clear breakdown into variables which illustrate the labour market situation and the remaining variables. Whereas in the case of the latter (GDP, industrial production, inflation) we have in recent years witnessed a rising symmetry of their movements, in the case of the rates of unemployment and employment the corresponding movements have been divergent or do not show a clearly orientated trend. The basic cause of this phenomenon were structural changes which Poland was subject to throughout the decade. In the case of unemployment an important role was also played by a demographic trend observable in recent years. Numerous rigidities of the Polish labour market prevented the absorption of workforce surpluses. It would have certainly impacted the long-term trends and added to the symmetry of cyclical deviations under observation. In this context, a relatively high interdependence of the cyclical components of employment in 1998-2001 seems to be a largely “spurious” correlation determined mainly by demand and supply shocks common to Poland and the Eurozone (although not necessarily of the same magnitude). This correlation may also have been originated by monetary policy, which both in Poland and in the Eurozone focused on counteracting inflationary supply shocks. Similar caveats, less rigorous though, can be made with respect to inflationary processes. Critical to their cyclical convergence was certainly the course of monetary policy in Poland and EMU in the years 1998-2001 and the oil shock, which clearly increased the correlation between cyclical components of inflation in second half-year 2000.

The data on the GDP and industrial production comprise a more optimistic view. A moderately strong correlation between cyclical components of the latter has persisted since the mid-nineties, which results from fast growth in the openness of Poland’s economy and from the growing share of Poland’s trade with EMU in Poland’s total trade [Borowski 1999a]. One should also stress that the correlation did not change in the period when demand and supply shocks were particularly active. This finding is particularly important, as it is precisely industrial production, being the basic component of trade, which constitutes a kind of transmission belt for cyclical movements between economies.

Cyclical movements in GDP can be interpreted by dividing them into three subseries. The first one covers the period up to 1996 (inclusive). During that period there was practically no correlation here, similarly to the case of industrial production. The years 1997 and 1998 brought a growth in Poland-Eurozone business cycle convergence, and in the case of the GDP, which is the broadest measure of economic activity, convergence growth was given additional boost in subsequent years. It is hard to commit oneself on the extent to which the boost was a “spurious” one, as seemingly evidenced by the stable level of cyclical convergence based on industrial production. A “safe bet” assessment of cyclical convergence based on real GDP series must thus be more reliant on the co-efficients observed in 1997 and 1998. These are lower than the corresponding co-efficients based on industrial production, this resulting primarily from structural changes within this aggregate (drop in industrial and agricultural production and rising share of market services and housing in the GDP).

In the second stage of the analysis, this time restricted to cyclical components of industrial production and the GDP, the longest time series was

isolated for which the correlation co-efficient was higher than 0.50, which meant a moderately strong business cycle convergence. The purpose of the analysis was thus to determine the degree to which the observed trends in cyclical convergence are sustainable. The analysis was additionally expanded to the German economy, a leading EMU economy which has the biggest impact on the course of real processes occurring in Eurozone countries (tables 1A and 1B). A moderately strong correlation between cyclical components of industrial production (0.54 for Germany and 0.51 for EMU) persisted for a period of over 7 years, while in the case of the GDP (0.66 and 0.60 respectively) the period was over 6 years²⁰. Neither series seems long enough to be able to say if the observed phenomenon of cyclical convergence is a sustainable one. Moreover, due to the above arguments one should be aware of a relatively high risk of having a “spurious” correlation between cyclical changes of the GDP, for which the value of the co-efficient obtained seems slightly exaggerated.

The correlation co-efficients presented for industrial production at various lags and leads demonstrate that the correlation of its fluctuations adjusted for leads/lags expires after one quarter. With a caveat relating to the quarterly lead this hypothesis can also be made with respect to the GDP’s cyclical components. This means that the co-efficients of a cross-correlation at displacement zero provide a good basis to assess cyclical movements in Poland and EMU.

The last step to take was a comparative analysis of the cyclical convergence of the economies of Poland, selected accession countries and EU member states with EMU and Germany. A comparative analysis is required, because the assessment of asymmetric shock exposure based on the degree of cyclical convergence must be relative, i.e. it must also take into account the intensity of cyclical convergence in other countries, in particular EMU member states. Figures 3 and 4 in the annex present the values of co-efficients of the correlation between cyclical components of GDP and industrial production in selected European countries, on the one hand, and Germany and EMU, on the other. The co-efficients were determined for series covering the years 1994-2000. For the panel of countries under analysis this is the most homogenous period, as it does not take into account the impact of certain one-off phenomena, never to be repeated in the Eurozone countries, which had a strongly asymmetric impact on economic processes in the countries under analysis²¹. Moreover for the growth rate of real GDP the series, due to the relatively large number of observations, allows to smooth out the “spurious” correlation effect which we have most likely witnessed in Poland in recent years.

²⁰ Those were: the ERM crisis in September 1992 (after the crisis some EU countries remained on a growth path and some returned to it faster than others), structural collapse of the Russian economy (its impact on the Finnish economy was stronger than on the remaining EU countries) and of the Hungarian economy in the early nineties.

²¹ Moreover, the fact that the analysis has used relatively short time series means that in many cases it is not possible to reject the hypothesis on the lack of correlation between the analysed aggregates at the significance level equal to 0.01. In the case of rolling correlation co-efficients for industrial production, inflation, unemployment and the GDP the results are statistically significant, respectively, from December 1997, April 1999, February 2000 and Q1 2000. All the co-efficients for employment are statistically insignificant. The correlation co-efficients used in comparative analysis are insignificant in the case of Poland (GDP), Portugal (GDP and industrial production), Greece (industrial production), Ireland (German industrial production), Austria and Holland (German GDP). Information on the statistical significance of contemporaneous and lagging correlation for Poland are presented in tables 1A and 1B in the annex. For more on how to test the significance of the correlation co-efficient cf. Luszczewicz [2001].

The data presented in this paper demonstrate that compared to the remaining economies under analysis the degree of cyclical convergence of Poland's economy with EMU economies and Germany is low for the GDP and moderately strong for industrial production. This makes it reasonable to sustain the earlier conclusions relating to the impact of the structural processes in the Polish economy on the degree of GDP cyclical convergence. Moreover, particularly telling are the slightly stronger cyclical relationships between Poland and Germany than between Poland and EMU. Such correlation pattern, if it persists in future, is rather unwelcome, for in view of the fact that the reaction function of the ECB is based on Eurozone-wide developments, it would be better for Poland, if such proportions were actually reversed.

The analysis so far has shown that the cyclical GDP and industrial production convergence between Poland and EMU/Germany (such convergence being a proxy for asymmetric shock exposure) has clearly increased over the last decade. Due to the structural processes under way, the degree of business cycle synchronicity between Poland and EMU must be assessed first of all on the basis of cyclical movements in industrial production. On the basis of the comparative analysis the synchronicity can be said to be moderately strong. However, due to the short length of the time series used in the analysis there are no guarantees that the currently observed degree of business cycle synchronicity is a sustainable one²². Three issues ought to be underscored in this context.

First of all, to the extent in which the convergence of business cycles between particular countries is endogenous with respect to monetary regimes prevailing in them, it cannot be used as a measure of cyclical convergence. This is emphasised by Artis and Zhang [1995] who analysed cyclical convergence in EU countries, the USA, Japan and Canada both before and within the duration of the ERM. In a world of free capital mobility cooperation within any exchange rate system necessitates a coordination of interest rate policies and imposition of limits on the movements of nominal (as well as real) exchange rates, thereby increasing the symmetry of whatever shocks economies are affected by. This means that Poland's ERM II accession *per se* should contribute to a growth of cyclical convergence between Poland and EMU and thus to reducing concomitant differences between Poland and euro member countries. In fact, the relative degree of cyclical convergence as a measure of asymmetric shock exposure can be determined most adequately only upon Poland's Eurozone accession.

Secondly, the above analysis has revealed some weakness of the labour market adjustment mechanisms operating in Poland. If the current rigidities remain in place, there is a danger that the ECB's future monetary policy will generate asymmetric shocks whose burden will be felt precisely in this area of the economy.

Thirdly, one should be aware that the figures presented under the comparative analysis which illustrate the cyclical convergence of Poland and other countries with the economies of the Eurozone and Germany, can be subject to error resulting from the length of the time series used in the analysis.

²² A similar analysis conducted exclusively for Eurozone countries and based on 10 year rolling correlations (year-on-year) implies for some countries a slightly different picture of cyclical convergence with EMU [ECB Monthly Bulletin, 1999]. Namely, in the case of Italy convergence has in recent years been lower, while Austria has exhibited a higher and Portugal much higher degree of business cycle synchronicity with EMU.

Preference should in this respect be given to analysis based on much longer time series, which could revise the trend values and level of particular correlations²³. However, in order to conduct a comparative analysis for Poland a short series has to be used. This reduces the likelihood of obtaining identical results in the future.

IV Analysis of Intraindustry Linkages

A strong convergence of business cycles is a precondition for low asymmetric shock exposure only when it is sustainable. An assessment of the sustainability of this process is particularly needed in Polish conditions. The use of relatively short time series in the above-presented analysis does not guarantee the persistence of the moderately strong cyclical convergence of Poland's and EMU economies, which results from the analysis. Major factors critical to its sustainability include changes in preferences and behaviour of economic agents, such as changes in consumer taste or the launching of new technologies. The changes, which are rather difficult to foresee, may generate shifts in relative demand in monetary union member countries [Mundell 1961], thus lowering the level of cyclical convergence. To the extent in which the shocks are transmitted between the countries through their trade linkages²⁴ a key to assess the risk of their occurrence is the extent of product specialisation in particular countries comprising a monetary union [Kenen, 1969]. This conclusion is in agreement with economic intuition: the more diversified the export production of a given economy is, the lower the risk of the occurrence of asymmetric demand shocks and the higher business cycle convergence.

Problems of specialisation and concomitant asymmetric shock exposure is one of the most lively debated issues in monetary integration theory. In particular, there is a lack of consensus around the question of the impact of economic integration (scrapping barriers to free trade, more bilateral openness of economies) on the degree of specialisation in the countries which are participating in this process. Two polar views have so far dominated the discussion on this subject. The first one can be identified with the EU Commission's position [1990], according to which there is a clearly inverse relationship between the symmetry of shocks affecting particular sectors of industry and the size of trade barriers constraining their development. In other words, industrial sectors which manufacture products mostly for the domestic market are more susceptible to asymmetric shocks. At the same time the development of international trade is based mainly on economies of scale and imperfect (monopolistic) competition. The result is a relatively high share of trade in similar products (coming from one

²³ Subsequently in our analysis only such determinants of cyclical convergence sustainability are discussed which originate from trade between countries with a common currency. By the same token the significance of other sources of asymmetric shocks discussed in the second section of the paper is left out. Neither does the analysis cover the contagion effect and its impact on the level of cyclical convergence of the Polish and Eurozone economies in the pre-accession period. The risk of such scenario actually happening should disappear once Poland has joined EMU. For broader discussion of the financial contagion effect see the paper by Hernadez and Valdez [2001].

²⁴ A classical example of intraindustry trade are German car exports to France and French car imports to Germany. Issues connected with the phenomenon of intraindustry trade are discussed in some detail by Czarny [2000]

industry), i.e. intraindustry trade, in total trade²⁵. If the share is relatively high, any changes of behaviour and preferences and attendant shifts of demand between products of particular industries should be symmetric. According to this reasoning, economic integration will be conducive to growth in mutual openness of economies participating in this process, which will be accompanied by development of intraindustry trade. In consequence, asymmetric shocks should not be too frequent in EMU countries.

Krugman [1991] challenged this view both theoretically and empirically, by emphasising the importance of external economies of scale²⁶ as a factor leading to geographical concentration of industry²⁷ and, by the same token, also to exposure to asymmetric demand shocks. These economies will fully manifest themselves only upon lifting the trade barriers, which artificially push up transaction costs. The location of particular sectors will then depend on the possibility of tapping into the above-mentioned external economies and will hardly overlap with areas delimited by national borders. Given free movement of production factors and strong correlation between domestic investments and export demand this will lead to growth rate divergences or (and) unemployment rate differences between particular monetary union regions (countries). These divergences can no longer be mitigated by exchange rate policy.

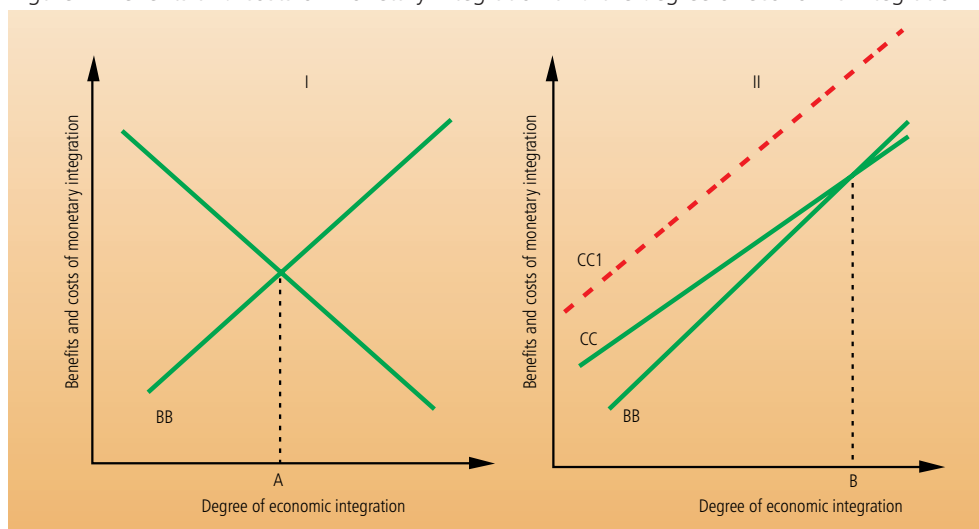
The probability of the above-presented scenarios is of fundamental importance to the cost and benefit analysis of monetary integration. An outline of such cost and benefit analysis is shown in figure 1. It is presented in a manner which also incorporates the differences between the two above-mentioned views. Both in variant I (EU Commission position) and in II (Krugman's view) the fundamental benefits of monetary integration (elimination of transaction costs and uncertainty as

²⁵ The most frequently referred to external economies of scale are specialised suppliers, labour market pooling and knowledge spillovers. For more, see Krugman [2000].

²⁶ Krugman presents various measures of industry specialisation which show that the geographical concentration of basic industrial sectors in the USA is much higher than in EU countries. For example, in 1985 66.3% of automobile industry in the USA was concentrated in the Mid-West while its distribution between the biggest EU countries was much more evenly spread.

²⁷ This methodology leaves out the quality of goods exchanged in intraindustry trade. If goods which are traded under particular industries differ in quality (the so-called vertical intraindustry trade) the risk of asymmetric shocks still exists. As demonstrated by Michalek *et al.* [2000], intraindustry trade between Poland and EU is dominated by vertical trade.

Figure 1. Benefits and costs of monetary integration and the degree of economic integration



to the future path of the real exchange rate) are positively related to the degree of the domestic economy's openness versus the remaining monetary union member states (BB curve). The function of costs (CC curve), which are understood as the level of cyclical divergence, is a falling one under variant I and a rising one under variant II. This means that the degree of openness which is required to balance the costs and benefits of monetary integration (point B) can be much higher under variant II. In the extreme case (CC₁ curve) the balancing of benefits and costs may prove impossible [Aksoy, De Grauwe; 1999].

An empirical resolution of the above reported debate was proposed by Frankel and Rose [1996]. They argued that both the degree of economic integration and business cycle synchronicity are processes which are endogenous with respect to economic and monetary integration. To put it differently, economic and monetary integration is conducive to a higher bilateral openness of economies, which in turn has a positive impact on the level of their cyclical convergence. The latter relationship is also confirmed empirically by the authors. They construct a model in which the cyclical convergence of real variables (GDP, industrial production, employment and unemployment rate) depends on variables of bilateral trade intensity (share of bilateral exports, imports, exports/imports combined in, respectively, total exports, total imports and total trade of both countries). Although the intraindustry trade indices do not directly appear in the estimated equations, the authors make an implicit assumption that the degree of cyclical convergence is determined precisely by intraindustry trade, whose share is gradually pushed up along with the deepening of the integration process. Firdmuc [2001] supplements the equations estimated by Frankel and Rose by indices of intraindustry trade intensity. Their impact on the degree of cyclical convergence is statistically significant and is accompanied by a drop in the value of all the parameters which illustrate the impact of various trade intensity measures (used by Frankel and Rose) on the degree of business cycle synchronicity.

The above discussion conclusively demonstrates that the sustainability of cyclical convergence between Poland and EMU is determined by the share of intraindustry trade in their total trade. What is thus required is a more sophisticated analysis of this group and, in fact, such analysis is conducted with the use of the standard intraindustry trade index proposed by Grubel-Lloyd [1975]. This measure consists in establishing what percentage of trade between two economies is carried out within particular industries (intraindustry trade), and what percentage of trade is conducted between them (interindustry trade). The more intensive intraindustry linkages are, the more symmetric are demand shocks affecting particular industries.²⁸ The analysis assumes that the industries are adequately represented by categories (groups) isolated on the basis of the 3-digit level Standard International Trade Classification (SITC-3)²⁹.

²⁸ This methodology leaves out the quality of goods exchanged in intraindustry trade. If goods which are traded under particular industries differ in quality (the so-called vertical intraindustry trade) the risk of asymmetric shocks still exists. As demonstrated by Michalek et al. [2000], intraindustry trade between Poland and EU is dominated by vertical trade.

²⁹ Grubel and Lloyd [1975] prove that this disaggregation level reflects well the specificity of particular industries. Also, ratios derived on the basis of SITC-3 show little sensitivity to the degree of disaggregation being increased.

The values of the Grubel-Lloyd Index (*IIT*) are determined according to the formula: where:

$$IIT = \frac{\sum_{i=1}^n (X_i + M_i) - \sum_{i=1}^n |X_i - M_i|}{\sum_{i=1}^n (X_i + M_i)} \cdot 100 ; IIT \in [0, 100]$$

X_i- exports of *i*-th group according to SITC-3,
M_i - imports of *i*-th group according to SITC-3,
n – number of commodity groups (industries).

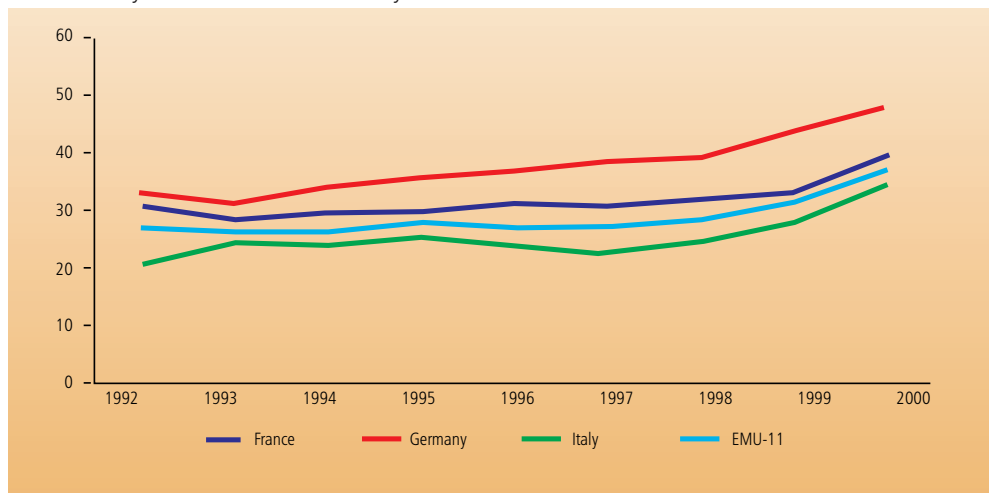
The share of intraindustry trade in Poland's total trade with the biggest EMU economies and the Eurozone (excluding Greece) is presented in figure 2. Data related to the remaining EMU countries are presented in table 2 (the annex). To refine the analysis the G-L value for Poland's trade with Russia and Ukraine is also added (table 3).

The data presented here allow to draw the following conclusions. First, the share of intraindustry trade with leading EMU economies and the whole Eurozone has shown a growing trend since 1992. At the same time the observed values of the G-L index for EMU are, respectively, ten and four times higher than the indices calculated for Russia and the Ukraine. Thus, the hypothesis on the stimulating impact of economic integration on the development of intraindustry trade is fully confirmed in Polish conditions³⁰.

Secondly, the trend towards growing intensity of intraindustry trade clearly accelerated in 1999 and 2000. To a point this certainly resulted from the Russian crisis, which necessitated a geographical reorientation of trade. It was also influenced by monetary tightening, which led to the narrowing, in 2000, of the

³⁰ The low intensity of intraindustry trade between Poland and Russia/Ukraine would point to a high probability of asymmetric shocks originating from trade with those countries and its asymmetric impact as compared with Eurozone. However, an appropriate assessment of this risk calls for an analysis of intraindustry linkages between the Eurozone and Russia/Ukraine.

Figure 2. % share of intraindustry trade in Poland's total trade with selected EMU countries^{a)} measured by the standard Grubel-Lloyd Index on the basis of SITC-3



^{a)} excluding Greece.

Source: own calculations on the basis of CSO data.

trade deficit, whose lion's share was the deficit in trade with EMU. This was because this deficit, which illustrates the magnitude of unbalanced bilateral trade, always drives down the value of the G – L Index.

Thirdly, the data presented in table 2 allow to isolate a group of “peripheral” countries, i.e. the countries which have a relatively low share of intraindustry trade with Poland. These are Finland, Ireland, Portugal and Luxemburg. As these countries also have the lowest share of intraindustry trade with the whole EU [Kaitila, 2001], (which can be treated as a proxy for EMU), this should not be a disquieting factor.

Fourthly, the observed level of intraindustry trade between Poland and EMU is much lower than the G – L indices calculated for most EMU and EU countries. As noted by Kaitila [2001], in 1998 the ratios exceeded 65% in the case of France, Germany and Belgium, 60% in the case of Holland, Austria and Spain and 50% in the case of Italy. But it should be emphasised that the differences follow from the relatively high degree of unbalancing of Poland's trade with the Eurozone. The reason is that the deficit or surplus resulting from bilateral trade by definition reduces the value of the G – L Index. In Polish conditions the trade deficit with EMU countries is a structural one and reflects first of all the necessity to reduce the income gap between Poland and the Eurozone. The elimination of the trade deficit effect allows to determine the theoretical share of intraindustry trade, i.e. the one which we have occurred if bilateral trade was balanced. In order to obtain such measure the adjusted G – L (*IITs*) was used, given by the following equation (table 2 and 3):

$$IIT_s = \frac{\sum_{i=1}^n (X_i + M_i) - \sum_{i=1}^n |X_i - M_i|}{\sum_{i=1}^n (X_i + M_i) - \left| \sum_{i=1}^n X_i - \sum_{i=1}^n M_i \right|} \cdot 100 ; IIT \in [0, 100]$$

where:

X_i - exports of i -th group according to SITC-3,

M_i - imports of i -th group according to SITC-3,

n – number of commodity groups (industries).

The results of the calculations confirm that the reservations as to the adequacy of the standard G-L index in Polish conditions were well-founded. The value of the adjusted G-L index for the whole Eurozone is double that of the standard index. This means that the issue of unbalanced trade between Poland and EMU has significantly biased the values of the standard index. Interestingly, no such significant differential can be detected in the case of Russia and Ukraine. The values of the standard G-L index for these countries can be treated as measures of real asymmetric shock exposure.

The intensity of intraindustry trade linkages can also be analysed at the level of main commodity groups distinguished on the basis of the 1-digit level Standard International Trade Classification (table 4, 5 and 6 of the annex). What is now analysed is intraindustry trade intensity (which continues to be determined on the basis of the 3-level SITC) for each of the ten commodity groups. This analysis has two implications. Firstly, for three commodity groups (5, 6 and 10) the intensity of intraindustry trade is significantly lower than the intensity recorded in the remaining groups. Group 6, whose share in total trade is relatively high, is

particularly interesting. Intraindustry trade in this group remains unbalanced also under the adjusted index, which implies a relatively high probability of asymmetric shocks. Secondly, a considerable difference between the values of the standard and adjusted G-L index in group 8, which is a commodity group involving most advanced technology, confirms the hypothesis about the impact of structural factors on the level of the standard G – L index. Thirdly, the year 2000 rapid growth in intraindustry trade intensity between Poland and EMU resulted primarily from its growth in group 8 (10 percentage points). However, the value of the adjusted index for the group demonstrates that half of this growth ensued from a drop in the trade deficit for this group. This means that when the economy picks up, as it is expected to in the coming years, and the recovery-led investment demand is restored, the observable trend towards a quick growth of intraindustry trade between Poland and the Eurozone can be stopped.

Talking of the importance of intraindustry trade for the sustainability of cyclical convergence between Poland and the Eurozone a question should be asked about the sustainability of the observable trend towards higher trade intensity between the two economies in the coming years. What is particularly pertinent is the question of how this tendency may be supported by macroeconomic policy.

International trade theory points to three preconditions of high intraindustry trade intensity [Krugman, 2000], these being: lifting of barriers to trade expansion (exploitation economies of scale), similar capital labour ratios in trade partner countries (which determines the extent in which such trade can be based on comparative advantages) and similar (and high) level of technological advancement (which determines the share of highly processed and diversified products in total trade).

With respect to trade between Poland and EMU, the first of the above-mentioned conditions can be recognised as satisfied. But the meeting of the other two, closely related, calls for more capital to be available in Poland. This would allow to narrow down the technology gap which separates Poland from the Eurozone and, consequently, to increase intraindustry trade between both economies. A higher accumulation of capital would also result in faster *per capita* GDP growth.

The above findings are also supported by empirical evidence. Basic economic models which seek to establish correlations between the intensity of intraindustry linkages and macroeconomic factors demonstrate that the share of intraindustry trade in total trade between two countries is high, if their economic development (GDP *per capita*) is high, the differences between their economic development are relatively small and barriers to trade low [Micha_ek *et al.*, 2000]. This hypothesis is also confirmed by Kaitila [2000], who points to the *per capita* GDP level and share of FDI in the GDP as factors which determine the intensity of intraindustry trade. In practice, this means that in order to guarantee sustainably low asymmetric shock exposure in the coming years priority ought to be given in Poland's macroeconomic policy to steps taken in order to create a friendly environment for foreign direct investments which constitute the basic source of modern technologies. These steps cover the easing of systemic bottlenecks for economic activity, strengthening the economy's infrastructural fundamentals, making the labour market more flexible and sustaining an appropriate *policy mix*. The lack of such steps may not delay Poland's monetary integration into EMU. But it is sure to raise the long-term costs of its process.

Summary

This paper addresses an issue which is crucial for Poland's future EMU accession: the problem of the costs of its process. In accordance with the theory of monetary integration, these costs are identified with the economy's asymmetric shock exposure. The paper has proposed two methods of its assessment.

The first method consists in determining the degree of cyclical convergence between the economies of Poland and EMU. The analytical results reported here indicate that (except for the variables describing the state of the labour market) the convergence has in recent years systematically gone up. The comparative analysis covering selected EU and accession countries allows one to determine the degree of business cycle synchronicity between Poland and EMU as moderately strong. This would point to low sensitivity of Poland's economy to asymmetric shocks.

The second method aims to establish if the observable level of cyclical convergence between Poland and the Eurozone is sustainable. A key to answering this question is the assessment of intraindustry linkages between Poland and EMU. Such linkages have shown regular expansion in recent decade, mirroring the growing economic integration of Poland with the European Union. Such interpretation of the reasons for the growing share of intraindustry trade is also warranted in the context of a very low intensity of intraindustry trade with Poland's most important East European trade partners. However, Poland's intraindustry linkages with the Eurozone are much weaker than in the case of leading EMU economies, which largely follows from the structural nature of Poland's trade deficit with the Eurozone. Thus, the ensuring of a sustainably low sensitivity of Poland's economy to asymmetric shocks and, by the same token, reducing the costs of monetary integration is conditioned by further growth in the intensity of intraindustry linkages between Poland and EMU. This will only be possible if FDI-friendly macroeconomic policies are conducted in Poland.

References

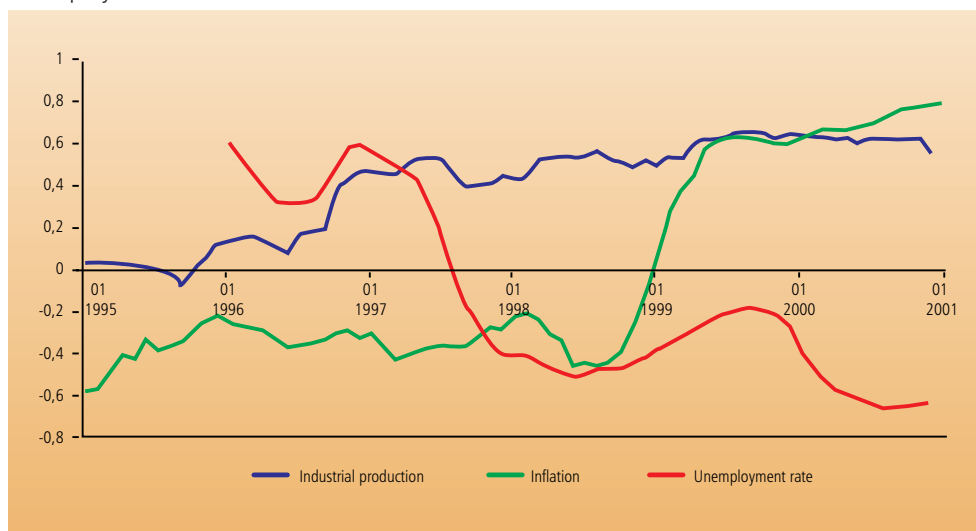
- Aksoy Y., De Grauwe (1999), *Are Central European Countries Part of the European Currency Area*. In: De Grauwe P., Lavrac V., *Inclusion of Central European Countries In the European Monetary Union*. Kluwer.
- Artis M., Zhang W. (1995), *International Business Cycles and The ERM: Is There a European Business Cycle?* CEPR Discussion Paper, No. 1191.
- Barro R. J. (1989), *Economic Growth In a Cross Section of Countries*. NBER Working Paper, No 3120.
- Barro R. J., Sala-i-Martin X. (1995), *Economic Growth*, McGraw-Hill.
- Bayoumi T., Eichengreen B. (1992), *Shocking Aspects of European Monetary Unification*. NBER Working Paper, No. 3949.
- Bayoumi T., Eichengreen B. (1997), *Ever closer to heaven? An optimum-currency area index for European countries*. European Economic Review, No. 41.
- Blanchard O., Fischer S. (1989), *Lectures on Macroeconomics*. MIT Press.
- Borowski J. (1999 a), *How prone is Poland to exogenous asymmetric shocks?* In: *Yearbook of Polish European Studies*, Vol. 3/1999, Warsaw University Centre for Europe, Warsaw 1999.

- Borowski J. (1999 b), *Znaczenie polityki kształtowania płac dla konkurencyjności krajów Europejskiej Unii Walutowej*, [in Polish: *The Impact of Wage Formation Policy to EMU countries*] *Ekonomista*, no 6/1999.
- Borowski J. (2000), *Polska i UGW: optymalny obszar walutowy?* [in Polish: *Poland and EMU: an OCA?*] *Materiały i Studia* no 115, National Bank of Poland, Warsaw, December 2000.
- Bruno M., Sachs J. (1985), *Economics of Worldwide Stagflation*. Oxford, Basil Blackwell.
- Calmfors L., Diffil J. (1989), *Bargaining Structure, Corporatism and Macroeconomic Performance*. *Economic Policy*, No. 6.
- Cohen D., Wyplosz C. (1989), *The European Monetary Union: An Agnostic Evaluation*. CEPR Discussion Paper, No. 306
- Czarny E. (2000), *Międzynarodowy handel wewnątrzgałęziowy jako przedmiot badań ekonomistów* [in Polish: *International Intraindustry Trade as Research Topic for Economists*] *Bank i Kredyt*, no 1-2/2000.
- Czarny B. (2000), *Wzrost gospodarczy*. [in Polish: *Economic Growth*] *Bank i Kredyt*, no 1-2/2000.
- De Grauwe P. (1997), *The Economics of Monetary Integration*. Oxford University Press, New York, 1997.
- De Haan J. Sturm J. E., Toolsena L. A. (2001), *Convergence of Monetary Transmission in EMU. New Evidence*. CESifo Working Paper, No. 465.
- Dornbush R., Favero C., Giavazzi F. (1998), *The immediate challenges for the European Central Bank*. *Economic Policy*, No. 26.
- ECB Monthly Bulletin (1999), *Longer-Term Developments and Cyclical Variations in Key Economic Indicators Across Euro Area Countries*.
- EC Commission (1990), *One Market, One Money. An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union*. *European Economy*, No. 44.
- Eichengreen B. (1991), *Is Europe an Optimum Currency Area?* NBER Working Paper, No. 3579.
- Firdmuc J. (2001), *Optimum Currency Area Theory, Trade Integration and EMU Enlargement*. Mimeo, 2001 Annual Royal Economic Society Conference, University of Durham, April 9-11, 2001.
- Frankel Jeffrey A., Rose Andrew K. (1996), *The Endogeneity of The Optimum Currency Area Criteria*. NBER Working Paper, No 5700.
- Gros D., Thygesen N. (1998), *European Monetary Integration, 2nd Edition*, Addison Wesley Longman, 1998.
- Grubel H. G., Lloyd P. J. (1975), *Intra-Industry Trade: The Theory and Measurement of International Trade in Differentiated Products*. MacMillan Press, London.
- Hernández L. F., Valdéz R. O. (2001), *What Drives Contagion: Trade, Neighborhood, or Financial Links?*, IMF Working Paper, No 29.
- Kelm R. (1999), *Kwartalny szacunek produktu krajowego brutto i popytu finalnego dla lat 1990-1997* [in Polish: *Quarterly Estimate of Gross Domestic Product and Final Demand for 1990-1997*]. *Prace Instytutu Ekonometrii i Statystyki Uniwersytetu Łódzkiego*, nr 125, seria G. University of Łódź.
- Kenen P. (1969), *The Theory of Optimum Currency Areas: An Eclectic View*, in: *Monetary Problems of the International Economy*, edited by R. Mundell and A. Svoboda, University Chicago Press, 1969.

- Krugman P. (1993), *Lessons of Massachusetts for EMU*. In: Torres F., Giavazzi F., *Adjustment and Growth in the European Monetary Union*, Cambridge University Press i CEPR, 241-261.
- Krugman P., Obsfeld M. (2000), *International economics. Theory and Policy*. Addison-Wesley.
- Luszniewicz A. (2001), *Statystyka nie jest trudna. Metody wnioskowania statystycznego*. [in Polish: *Statistics Made Simple. Methods of Statistical Inference*]. Polskie Wydawnictwo Statystyczne, Warsaw
- Michalek Jan J., Śledziwska-Kołodziejska K. (2000), *Analiza i perspektywy rozwoju handlu międzygałęziowego i wewnątrzgałęziowego oraz zmiany strukturalne handlu Polski z Unią Europejską* [in Polish: *Analysis and Development Prospects for Poland's Inter and Intraindustry Trade with the European Union*] In: Kotyński J., *Korzyści i koszty członkostwa Polski w Unii Europejskiej* [in Polish: *Benefits and Costs of Poland's EU Membership*], Foreign Trade Research Institute, 2000.
- Mojon B. (2000), *Financial structure and the interest rate channel of ECB monetary policy*. ECB Working Paper, No. 40.
- Mundell R. (1961), *A Theory of Optimum Currency Areas*, The American Economic Review, Vol. 51, No. 4.
- Orłowski W. (2000), *Czy polityka gospodarcza Polski w latach 1990-tych miała charakter antycykliczny?* [in Polish: *Was Poland's Economic Policy in the 1990s Anticyclical?*] mimeo.
- Sachs J., Larrain F. (1993), *Macroeconomics In The Global Economy*. Prentice-Hall, London.

Annex

Figure 1. Rolling correlation^a of cyclical components of industrial production, inflation^b and unemployment rate in Poland and EMU12

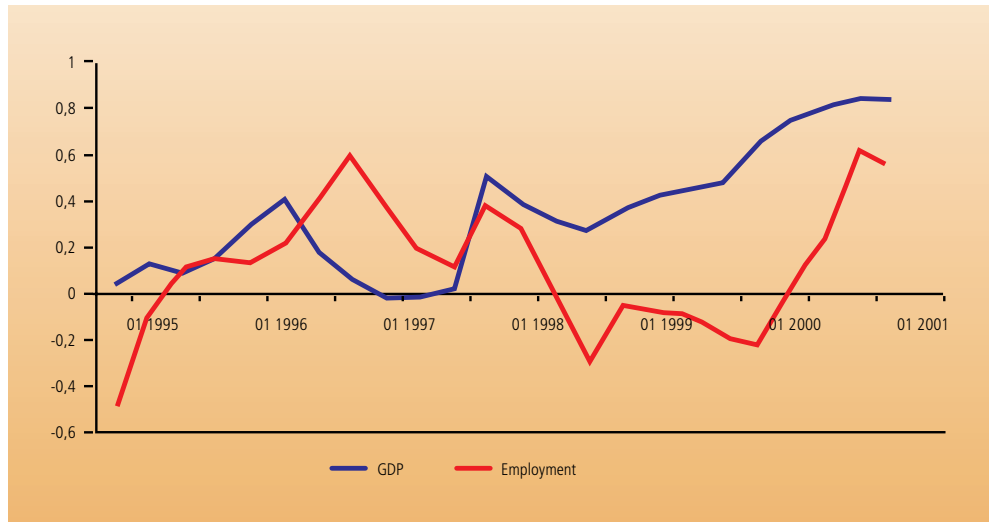


^a Monthly data; base period: 36 months

^b The Harmonised Index of Consumer Prices (HICP) taken as the measure of EMU inflation.

Source: own calculations on the basis of Eurostat, CSO and ECB data

Figure 2. Rolling correlation of cyclical components of GDP and employment in Poland and



^a Quarterly data; base period: 12 quarters.

Source: own calculations based on data from Eurostat, CSO, EBC and A. Kelm's estimates [1997].

Table 1. Co-efficients of correlation between cyclical components of industrial production and GDP in Poland and EMU₁₂

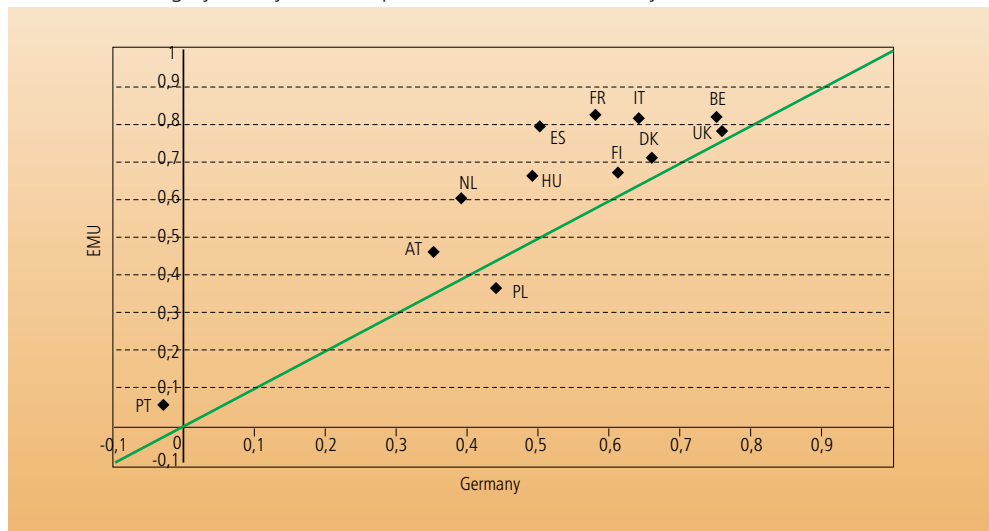
1A. Industrial production, monthly data (06:1993-12:2000)									
Lag/lead ^a	-12	-9	-6	-3	0	+3	+6	+9	+12
PL~ Germany	-0,38	-0,29	0,04	0,32	0,54	0,51	0,34	0,12	-0,19
PL~EMU ₁₂	-0,55	-0,41	-0,10	0,28	0,51	0,55	0,44	0,12	-0,07
1B. GDP, quarterly data (01:1995-04:2000) ^a									
Lag/lead ^a	-4	-3	-2	-1	0	+1	+2	+3	+4
PL~ Germany	-0,37	0,01	0,37	0,66	0,66	0,22	-0,25	-0,68	-0,64
PL~EMU ₁₂	-0,17	-0,01	0,28	0,54	0,60	0,25	-0,25	-0,73	-0,86

^a The italicised and printed in bold type correlation co-efficients are statistically significant at the level of 0.01.

^b The „+” sign denotes lag with respect to EMU.

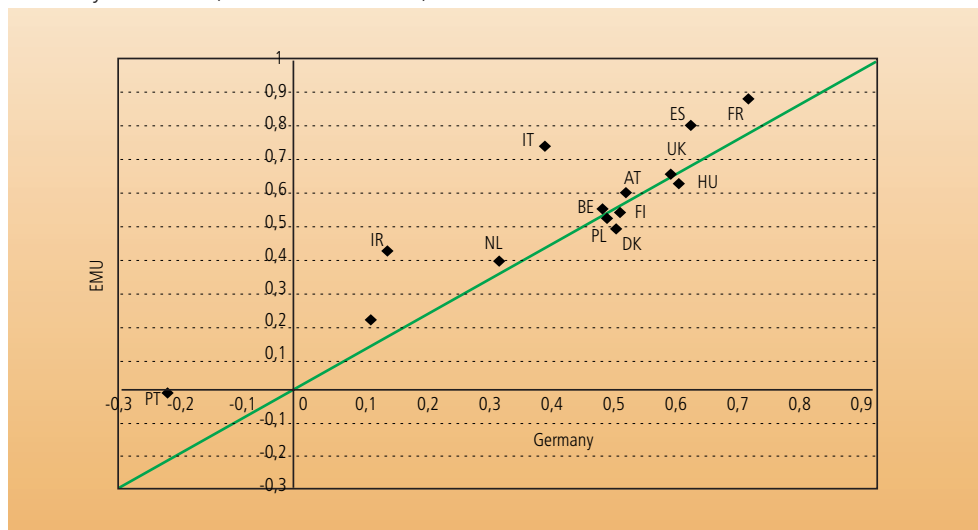
Source: own calculations on the basis of data from CSO, Eurostat, OECD and A. Kelm [1997].

Figure 3. Co-efficients of correlation between cyclical components of GDP in selected EU countries, Poland and Hungary and cyclical components of GDP in Germany and EMU (01:1994 – 04:2000)



Source: own calculations based on data from Eurostat, ECB, OECD, CSO, A. Kelm [1997] and central banks

Figure 4. Co-efficients of correlation between cyclical components of industrial production in selected EU countries, Poland and Hungary and cyclical components of industrial production in Germany and EMU (01:1994 – 12:2000)



Source: own calculations on the basis of data from Eurostat, ECB, OECD, IMF, CSO, A. Kelm [1997] and central banks.

Table 2. % share of intraindustry trade in Poland's total trade with EMU member countries a) as measured by the standard (IIT) and adjusted (IITa) Grubel-Lloyd Index on the basis of SITC-3

SITC 3	Austria		Belgium		Finland		France	
	IIT	IITs	IIT	IITs	IIT	IITs	IIT	IITs
1992	21,9	30,6	25,2	27,7	10,6	13,2	30,7	40,1
1993	19,4	27,3	22,9	24,8	8,8	13,0	28,3	33,3
1994	21,0	25,8	19,5	22,1	8,9	12,2	29,9	36,1
1995	21,9	27,5	20,7	24,2	12,7	16,1	30,2	41,3
1996	21,2	28,5	23,5	30,0	14,8	21,7	31,1	44,8
1997	23,3	32,6	28,3	42,7	14,6	23,3	30,8	49,4
1998	28,9	38,0	29,0	42,2	17,1	35,2	31,9	52,5
1999	35,8	46,5	31,1	42,1	21,8	45,7	33,0	55,5
2000	38,5	47,8	31,0	36,5	16,1	39,0	39,6	57,7
SITC 3	Spain		Holland		Ireland		Luxemburg	
	IIT	IITs	IIT	IITs	IIT	IITs	IIT	IITs
1992	16,6	21,9	26,1	27,8	4,0	5,1	2,9	5,6
1993	14,5	25,2	26,2	26,9	5,6	5,8	5,8	7,8
1994	17,8	26,1	26,4	26,6	5,3	6,2	8,5	9,6
1995	27,0	39,1	28,2	28,5	7,0	13,2	20,2	33,9
1996	22,8	45,9	33,1	36,5	7,5	14,8	14,7	23,4
1997	22,8	52,9	34,0	38,7	10,2	20,7	6,0	20,3
1998	28,2	57,5	35,9	41,7	10,6	23,6	10,4	27,8
1999	33,1	61,8	35,4	38,8	10,3	20,9	18,6	37,5
2000	32,9	55,4	34,8	36,3	11,3	23,5	15,4	29,6

Table 2 cont.

SITC 3	Germany		Portugal		Italy		EMU ₁₁ ^a	
	IIT	IITs	IIT	IITs	IIT	IITs	IIT	IITs
1992	32,9	35,6	7,5	10,6	20,7	26,7	27,0	53,0
1993	31,5	32,0	10,3	18,2	24,5	36,5	26,4	54,5
1994	34,1	34,7	8,1	15,3	24,0	37,5	26,2	52,3
1995	35,7	38,1	9,0	10,9	25,7	41,2	27,5	56,9
1996	37,0	38,6	13,5	15,0	24,1	46,1	27,0	63,5
1997	38,5	42,3	23,8	42,6	22,6	42,6	27,2	68,2
1998	39,1	43,3	27,8	57,0	24,8	45,4	28,6	73,5
1999	44,1	47,8	29,9	63,7	28,1	47,7	31,6	75,5
2000	47,9	49,3	13,6	15,5	34,8	52,9	37,3	79,1

Source: own calculations on the basis of CSO data

^a excluding Greece

Table 3. % share of intraindustry trade in Poland's total trade with Russia and Ukraine, as measured by the standard (IIT) and adjusted (IITa) Grubel-Lloyd Index on the basis of SITC-3

SITC 3	Rosja		Ukraina	
	IIT	IITs	IIT	IITs
1992	6,7	9,6	17,2	18,2
1993	5,8	8,7	14,0	14,5
1994	7,0	9,0	12,2	14,4
1995	6,3	8,0	8,8	15,7
1996	6,4	8,1	7,7	12,9
1997	4,9	5,5	7,3	14,2
1998	5,3	6,6	8,2	15,9
1999	4,5	10,8	10,2	15,8
2000	3,1	9,7	11,1	14,9

Source: own calculations based on CSO data.

Table 4. % share of intraindustry trade in Poland's total trade with EMU countries^{a)}, as measured by the standard Grubel-Lloyd Index on the basis of SITC-3 for particular commodity groups

No of Commodity Group ^{b)}	1992	1993	1994	1995	1996	1997	1998	1999	2000
001-099	28,6	28,7	32,4	32,2	28,2	32,8	31,7	31,8	33,5
100-199	12,1	27,1	39,0	23,5	19,4	30,9	17,3	23,1	26,5
200-299	27,9	30,1	29,0	33,8	26,1	27,6	33,8	32,2	35,2
300-399	7,1	10,1	9,2	11,3	7,1	9,1	10,3	10,4	25,2
400-499	10,5	10,4	7,1	9,3	8,6	8,0	6,1	7,7	3,4
500-599	34,3	22,7	21,9	21,7	19,4	18,2	16,2	14,5	17,7
600-699	27,6	23,2	26,5	28,9	26,8	27,5	29,2	32,5	36,1
700-799	24,6	30,6	27,7	28,0	29,7	29,1	32,0	35,9	45,5
800-899	34,1	30,0	29,6	31,8	33,9	34,7	36,5	41,1	41,7
900-999	63,0	6,3	5,6	6,7	7,8	7,7	1,4	11,7	8,3

Source: own calculations based on CSO data.

^{a)} excluding Greece.

^{b)} 001-099: Food and Live Animals

100-199: Beverages and Tobacco

200-299: Crude Materials. Inedible. Except Fuels

300-399: Mineral Fuels. Lubricants and Related Materials

400-499: Animal and Vegetable Oils. Fats and Waxes

500-599: Chemicals and Related Products

600-699: Manufactured Goods Classified Chiefly by Materials

700-799: Machinery and Transport Equipment

800-899: Miscellaneous Manufactured Articles

900-999: Others

Table 5. % share of intraindustry trade in Poland's total trade with EMU countries^{a)} as measured by the adjusted Grubel-Lloyd Index on the basis of SITC-3 classification in particular commodity groups

No of Commodity Group ^{b)}	1992	1993	1994	1995	1996	1997	1998	1999	2000
001-099	36,7	42,4	41,3	42,8	45,9	53,4	54,8	51,6	57,1
100-199	100,0	100,0	84,9	100,0	46,9	85,9	50,1	93,9	91,1
200-299	28,4	35,7	38,1	47,8	47,6	45,1	54,5	48,5	54,2
300-399	8,8	20,0	17,0	23,0	11,6	12,4	12,0	10,5	25,8
400-499	96,5	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
500-599	83,3	90,2	93,8	79,9	83,9	87,3	87,1	88,4	89,1
600-699	57,6	59,9	58,3	65,5	69,2	73,1	80,8	84,1	84,3
700-799	74,9	84,9	74,0	75,7	85,1	87,9	89,9	87,2	92,2
800-899	82,5	50,1	46,1	47,7	52,6	60,0	60,6	65,2	61,2
900-999	100,0	29,3	30,7	22,1	25,4	17,0	99,9	100,0	100,0

Source: own calculations based on CSO data.

^{a)} excluding Greece.

Table 6. % share of trade in particular SITC-1 commodity groups in Poland's total trade with EMU countries ^{a)}

No of Commodity Group ^{b)}	1992	1993	1994	1995	1996	1997	1998	1999	2000
001-099	10,4	9,9	8,1	7,0	6,5	5,4	5,1	4,7	4,6
100-199	0,5	0,3	0,4	0,3	0,4	0,4	0,3	0,4	0,3
200-299	4,4	3,2	3,1	3,0	2,7	2,4	2,0	1,9	2,0
300-399	5,9	5,1	4,8	3,5	2,8	2,9	2,4	2,1	2,5
400-499	0,6	0,5	0,6	0,5	0,4	0,4	0,5	0,4	0,3
500-599	13,5	13,0	13,7	14,4	14,0	14,2	13,5	14,2	14,6
600-699	22,5	23,4	25,7	27,2	25,5	24,7	24,6	24,9	24,7
700-799	31,3	32,5	31,8	32,7	36,8	38,9	40,0	40,6	40,9
800-899	10,6	11,9	11,7	11,0	10,8	10,5	10,3	10,7	10,1
900-999	0,1	0,2	0,3	0,2	0,1	0,1	1,4	0,1	0,1
Total^{c)}	100	100	100	100	100	100	100	100	100

Source: own calculations on the basis of CSO data.

^{a)} excluding Greece

^{b)} 001-099: Food and Live Animals

100-199: Beverages and Tobacco

200-299: Crude Materials. Inedible. Except Fuels

300-399: Mineral Fuels. Lubricants and Related Materials

400-499: Animal and Vegetable Oils. Fats and Waxes

500-599: Chemicals and Related Products

600-699: Manufactured Goods Classified Chiefly by Materials

700-799: Machinery and Transport Equipment

800-899: Miscellaneous Manufactured Articles

900-999: Others

^{c)} Figures may not add up to 100 due to rounding.

Seigniorage Revenues upon EMU Accession – Costs or Benefits?

Dobiesław Tymoczko

Introduction¹

The purpose of this paper is to present the impact of Poland's EMU accession on the NBP's seigniorage income streams. In the first part of the paper some theoretical concepts of seigniorage are presented. The second part discusses the factors which have impacted the amount of Poland's seigniorage in recent years. The third part of the paper discusses the process of seigniorage formation and distribution at the European Central Bank (ECB). The fourth part of the paper discusses the estimated impact of EMU accession on Poland's seigniorage level. In the conclusions of the paper the issue of future seigniorage income trends is touched upon.

1. Theoretical Concepts of Seigniorage

Seigniorage is a monetary authority's income from money creation. It constitutes the interest rate margin derived by the central bank by way of earning income from interest bearing assets without paying interest on the liabilities which are constituent parts of the monetary base, because banks' current accounts do not, as a rule, bear interest and neither does, by definition, cash.

From the government's point of view seigniorage takes the form of contribution out of the central bank's profits. This is how seigniorage is going to be construed in the remaining sections of the paper. In theory, however, at least several approaches can be distinguished to the issue of seigniorage generation and estimation. Some of them are discussed below.

1.1. Seigniorage and Inflation Tax

Seigniorage is often identified with inflation tax. It is thus identified with the monetary authority's income earned due to the currency's diminishing

¹ The author would like to thank Andrzej Sławiński for his assistance in writing this paper.

purchasing power. In a situation like this the central bank's seigniorage income depends on the monetary base and rate of inflation:

$$S = MO \times p = (C + R) \times p$$

where:

S – seigniorage,

MO – reserve money,

p – inflation,

C – cash in circulation,

R – banks' liquid reserves kept with central bank.

1.2. Seigniorage as Opportunity Cost

As forsaking interest income is the opportunity cost of keeping cash, seigniorage can sometimes be seen to be treated as the cost of holding constituents of the monetary base. Seigniorage then depends on the amount of monetary base and the interest rate level.

$$S = MO \times i = (C + R) \times i$$

where:

S – seigniorage,

MO – reserve money,

i – interest rate,

C – cash in circulation,

R – banks' liquid reserves kept with central bank

If inflation is brought back to our discussion, the monetary base level should be deflated and seigniorage would take the form²:

$$S = \frac{MO}{P} \times i = [(C + R)/P] \times i$$

where:

P – deflator (price level)

Berthold Herrendorf finds that in an environment of low real interest rates and low inflation the above formula is a seigniorage value approximator, provided that open market operations have earlier been conducted with the use of non-government sector securities. Under such scenario the whole increment of monetary base follows from the purchase of private sector securities. But these are extremely rare occurrences. As a rule, central banks run open market operations by way of buying government sector securities. Seigniorage then takes the following form³:

² B. Herrendorf „Time consistent collection of optimal seigniorage: a unifying framework” Journal of Economic Surveys 1997, Vol. 11, No. 1, p. 9

³ B. Herrendorf, op.cit., s. 8

$$S = \frac{\Delta MO}{P}$$

In this case all the monetary base increment follows from the central bank's purchase of governmental securities. A similar approach to the problem of seigniorage calculation is presented by Daniel Gros⁴.

1.3. Manfred Neumann's Definition

If we assume that open market operations are conducted with the use of not only governmental securities, but also private sector securities, more factors need to be included in the seigniorage calculation formula. It must also take into account the breakdown into private sector domestic assets and foreign assets held by the central bank. In the case of foreign assets there is no need to make a distinction between government sector and private sector securities. Hence, the calculation of seigniorage must take into account interest income streams on the earlier purchased debt securities issued by the non-government sector and by foreign entities. The formula for calculating seigniorage is thus the one proposed by Manfred Neumann⁵:

$$S = \frac{\Delta MO}{P} + (i^p \times A^p + i^f \times A^f) / P$$

where:

ΔMO – monetary base increment,

P – deflator (price level),

A^p – domestic assets of non-government sector,

A^f – foreign assets – domestic currency denominated,

i^p – domestic interest rate,

i^f – interest rate on foreign assets.

The first term of the right hand side of the equation reflects the increment of monetary base resulting from the purchase of governmental securities. The second term of Neumann's formula constitutes the growth of reserve money resulting from the central bank's purchase of foreign currencies or private sector securities, both asset components generating interest income. The above formula was used for calculating seigniorage in Poland⁶.

1.4. Seigniorage as Interest Margin

A central bank's profit can be assumed to be the difference between asset income and liability expense. In a model situation the central bank holds non-

⁴ D. Gros „Seigniorage and EMU – The fiscal implications of price stability and financial market integration” European Journal of Political Economy 1993, No. 9, p. 581-601.

⁵ M. J. M. Neumann „A Comparative Study of Seigniorage: Japan and Germany” Bank of Japan Monetary and Economic Studies, 1996, Vol.14 No.1, s. 104-142

⁶ J. Cukrowski, J. Janecki „Financing Budget Deficits by Seigniorage Revenues: the Case of Poland 1990 – 1997”, CASE Studies & Analyses No. 155, Warsaw 1998

interest-bearing liabilities. The bank's out of profit contribution to the budget can thus be said to be equal to interest on its assets:

$$X = i(A^g + A^p)$$

where:

X – central bank's profit,

i – interest rate,

A^g – government sector issued assets,

A^p – private sector issued assets⁷.

This can be used as a formula for calculating the central bank's profit in a country which does not exhibit excess liquidity in its banking system which would force the central bank to borrow the surplus liquidity from the banks, but this would be connected with corollary interest expenses. Should such costs nevertheless arise, which is the case in Poland, the formula for calculating profit must be modified:

$$X = i(A^g + A^p) - iL^{bc}$$

where:

L^{bc} – stock of the central bank's debt resulting from operations to soak up excess liquidity.

It is evident that in assuming that seigniorage is identical with the contribution of the central bank's profit to the budget one leaves out the consequences of the fact that the central bank holds a T-securities portfolio. Interest on T-bonds paid to the central bank increase general government spending, but simultaneously increase central bank profits paid to the government. The assumption which leaves out these streams when assessing seigniorage in Poland is legitimate under circumstances in which, as it happens in Poland, the central bank does not additionally increase sources of liquidity by purchasing T-securities.

In practice, there is one more reason why seigniorage can be identified with the central bank's profits. From the perspective of public finances the actual seigniorage level hardly matters. What makes a difference is how much the central bank will actually pay to the budget, this being the amount by which government receipts increase and the fiscal balance changes. And according to the Eurostat definition it is precisely only the amount of actual transfers from the central bank to the budget which impacts the budget deficit in terms of the Maastricht Treaty criteria⁸.

Actually, the calculation of central bank profits is not as easy as has been roughly outlined above. One serious complication is for instance the leaving out of exchange rate differences⁹.

⁷ B. Herrendorf, op. cit., p. 6

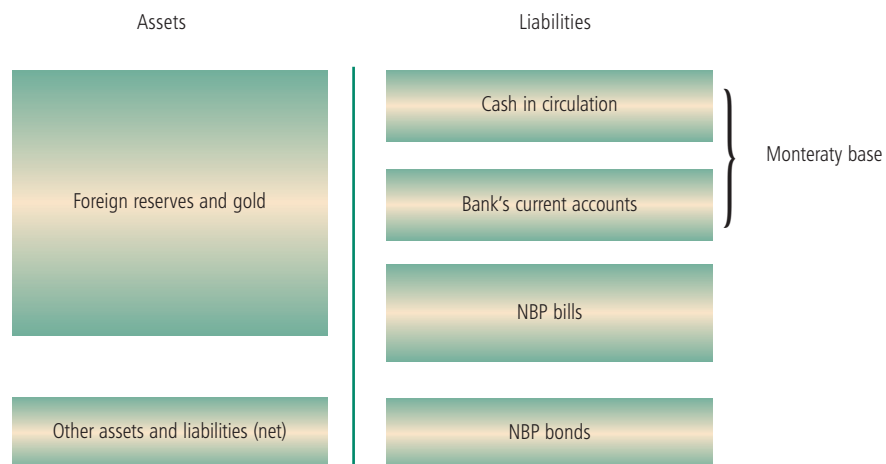
⁸ see D. Gros, op. cit., p. 596

⁹ V. Grilli „Exchange rates and seigniorage” *European Economic Review* 33 (1989), pp 580-587. More on seigniorage calculation methodology: W. Maliszewski „Pomiar senioratu – przegląd metod i wyników empirycznych” *CASE Studia i Analizy* 228, Warsaw 2001

2. Seigniorage in Poland

What factors impact NBP profits? The central bank's income is derived mainly from interest on foreign reserves. These yield a few billion zloties in annual income. Under excess liquidity, which has been the case since the mid-nineties, the NBP performs no open market operations to add liquidity to the banking system. Consequently, it has no revenues on this. Evidently, under excess liquidity when the central bank buys no securities (including governmental paper) one is justified in identifying seigniorage with central bank profits transferred to the budget. Admittedly, the NBP holds T-securities in its portfolio, but their amount is negligible compared to the amount of foreign reserves. In a situation like this foreign reserves can be assumed to provide a basis for issuing reserve money in Poland. Thus, to assess seigniorage under this scenario foreign interest rates should primarily be used. To more precisely determine what factors impact Poland's amount of seigniorage, let's examine the NBP's balance sheet.

Figure 1. NBP's balance sheet



Source: own studies

Seigniorage in Poland can thus be seen to depend not merely on the amount of income streams from central bank held assets. It is also significantly impacted by any interest which is paid by the central bank on NBP issued debt securities – T-bills and bonds.¹⁰

3. Seigniorage in the Eurozone

Central banks in the eurozone collect seigniorage by diverse channels. To better understand this process let us first try to go through the changes in central

¹⁰ Por. A. Sławiński, D. Tymoczko „Czynniki wpływające na wielkość renty menniczej w Polsce” CASE Studia i Analizy 229, Warsaw 2001. Estimates on seigniorage in Poland are provided in J. Cukrowski, J. Janecki „Wpływ polityki banku centralnego na wielkość dochodów budżetu z renty emisyjnej” CASE Studia i Analizy 227, Warsaw 2001

banks which take place on their accession to the eurozone. To this end let us isolate three factors which impact seigniorage in member states.

- a) share in the ECB's capital,
- b) transfer of foreign reserve assets to the ECB,
- c) monetary income.

3.1. Share in the ECB's Capital

On establishing the European Central Bank all monetary union countries purchased shares in its capital. The ECB's capital was created in accordance with the principles contained in article 29 of the Statute of the European System of Central Banks and the European Central Bank (Statute of the ESBS and the ECB). Each national central bank became an ECB shareholder in proportion to:

– 50% of the share of its respective Member State in the population of the Community in the penultimate year preceding the establishment of the ESBC;

– 50% of the share of its respective Member State in the Community's gross domestic product at market prices as recorded in the last five years preceding the penultimate year before the establishment of the ESBC.

On establishing the ECB the shares of particular states in its capital were as follows:

Table 1. Shares in ECB's capital of countries entering the eurozone in 1999

	%	mln EUR
Germany	24,5	1.224,7
France	16,8	841,7
Italy	14,9	744,8
Spain	8,9	444,7
Holland	4,3	213,9
Belgium	2,9	143,3
Austria	2,4	118,0
Portugal	1,9	96,2
Finnland	1,4	69,9
Ireland	0,8	42,5
Luxemburg	0,1	7,5
Eurozone states	78,9	3.946,9

Source: European Central Bank, Annual Report 2000

Shares in the ECB have also been purchased by those EU central banks whose states were not eurozone members in 1999. Capital subscription for such states was 5% of the capital which would have been due, if those states had been part of the eurozone. The shares in the ECB's capital of the 1999 non-eurozone members were as follows :

Table 2. Shares in ECB's capital of 1999 non-eurozone members

	%	mIn EUR
Denmark	1,7	4,2
Greece	2,1	5,1
Sweden	2,7	6,7
England	14,7	36,7
Non-euro-zone members	21,1	52,7

Source: *European Central Bank, Annual Report 2000*

The ECB's paid-up capital in 1999 stood at almost 4 billion euros.

Sharing in the capital is the basis for distributing the profits which are generated not at the level of particular central banks, but at the ECB level. ECB profits are thus distributed the same way as a classical dividend. It is worth emphasizing at this juncture that the adoption of a single currency does not mean that particular national central banks have ceased to generate or distribute profits on their own. They still generate these and contribute them to the budgets of particular states, irrespective of the ECB's out-of-profit payouts. Shares in the capital are also critical to establishing the scale of foreign reserve asset transfers from national central banks to the ECB and in the distribution of the so-called *monetary income*.

3.2. Transfer of Foreign Reserve Assets

In addition to capital the central banks of the eleven countries, in accordance with art. 30 of the ESBC and ECB's statute, have contributed to the ECB part of their foreign reserve assets. The contributions of each national central bank were fixed in proportion to its share in the capital of the ECB and stood in 1999 at:

Table 3. Foreign reserve assets contributed to the ECB in 1999

Foreign reserve assets contributed to ECB (million EUR)	
Germany	12.246,8
France	8.416,9
Italy	7.447,5
Spain	4.446,8
Holland	2.139,0
Belgium	1.432,9
Austria	1.179,7
Portugal	961,6
Finnland	698,5
Ireland	424,8
Luxemburg	74,6
Total	39.469,0

Source: *European Central Bank, Annual Report 2000*

The table shows that the transfer of foreign reserve assets to the ECB was equivalent to ten times a given country's share in the ECB's capital, although it did not cover the countries staying out of the eurozone.

Between 2 and 5 January 2001 the Bank of Greece contributed to the ECB the equivalent of 1.3 billion euros in foreign reserve assets. The foreign reserve assets were contributed in USD and yens in the same proportion as the one in which the contributions had been made by other central banks in early 1999¹¹.

The ECB's Governing Board decided under art. 30.3 of the Statute of the ESBC and ECB that those transfers would be treated by the national banks as a euro denominated loan extended to the ECB and remunerated at the level of basic refinancing operations, with zero interest on gold.

3.3. „*Monetary income*”

In addition to the transfer of foreign reserve assets national central banks are obliged to transfer for joint distribution the so-called *monetary income*. In accordance with art. 32.2 of the Statute of the ESBC and ECB the amount of each national central bank's monetary income is equal to its annual income derived from its assets held against the notes in circulation and deposit liabilities to credit institutions. These assets are earmarked by national central banks in accordance with guidelines established by the Governing Council. The issue of reserve money is thus the source of monetary income. Art. 32.4 states more precisely that the amount of each central bank's monetary income shall be reduced by an amount equivalent to any interest paid by that central bank to credit institutions which keep the obligatory reserve with the central bank. The sum of the monetary income contributed by national central banks shall be allocated to the national central banks in proportion to their paid-up shares in the capital of the ECB. Put differently, national central banks ought to identify assets on their balance sheet created in connection with the issuing of the monetary base. Income from those assets was to be remitted to a joint pool to be subsequently distributed among all the central banks from the eurozone.

As this provision has given rise to controversies from the very start, art. 32.3 states that if, after the creation of the eurozone, the balance sheet structures of the national central banks do not permit the application of regulations on determining monetary income, the Governing Council may decide that monetary income shall be measured according to an alternative method for a period of not more than five years. Additionally, art. 51 of the Statute of the ESBC and ECB specifies that if the Governing Council decides that the such manner of determining monetary income results in significant changes in the national central banks' relative income positions, the amount of income to be distributed shall be reduced by a uniform percentage which shall not exceed 60% in the first financial year after the start of the third stage and which shall decrease by at least 12 percentage points in each subsequent financial year.

As has already been said, foreign reserve assets are contributed to the ECB in proportion to the number of shares held by member states. Profits from the

¹¹ ECB Annual Report 2000, p. 182

foreign reserve assets contributed to the ECB shall be distributed in the same proportion. This solution does not distort the income and profit structure of the national central banks.

Is monetary income distribution as uncontroversial as ECB profit distribution? It is not. If the share of the monetary base of a particular national central bank in the monetary base of the whole area is bigger than its share in the ECB's capital, then such country loses on monetary income redistribution. That's why, as emphasized by Hans-Werner Sinn and Holger Feist, in a situation in which the share of the monetary base of a given central bank in the monetary base of the whole area is lower than its share in the ECB's capital, such country gains on monetary income redistribution¹²

Are there any other factors which would result in an unfair, for some countries, monetary income redistribution? First of all art. 32.2 of the Statute of the ESBC and ECB makes it possible for national central banks to freely earmark assets whose income would be part of monetary income. Thus, there has been a temptation for central banks to earmark assets yielding lowest income. A relatively small amount of funds would then be included in the joint pool on the expectation that the income would be higher after redistribution at the ECB. There were concerns that the national banks would try to contribute to the joint pool as little as possible.

As such concerns arose, even prior to the setting up of the ECB, proposals were made for shares in the capital to be purchased not in accordance with the key contained in the Statute of the ESBC and ECB, but rather in the amount reflecting the share of a given country's monetary base in the total monetary base for a given area¹³. But the proposals were not accepted, although they would have certainly contributed to a less controversial modality of seigniorage redistribution.

The ECB has also recognised that the systemic regulations contained in the Statute of the ESBC and ECB may distort the structure of income at particular national central banks. On 3 November 1998 the ECB decided that the monetary income resulting from cash issue would not be redistributed until the euro is put in circulation. The decision was sustained on 14 December 2000¹⁴. It was additionally found that the remaining part of the monetary income would be defined by way of multiplying a separately defined monetary base of the central banks (which no longer included cash) by a reference rate, uniform for all countries, equal to the last rate at which the main refinancing operation was conducted. Thus specified, monetary income would be redistributed in accordance with the shares of the individual states in the ECB's capital. Cash issue income can be transferred to the ECB, but only in the case when the ECB has had a loss. This solution means that monetary income redistribution does not practically arise as yet, given that the income from the assets underlying the issue of an independently defined monetary base is allocated for the payment of interest on obligatory reserves. It is thus known that the problem of monetary

¹² H. W. Sinn, H. Feist „Eurowinners and Eurolosers: The Distribution of Seigniorage Wealth in EMU” NBER Working Paper 6072, Cambridge, Mass. 1997

¹³ H. W. Sinn, H. Feist, op. cit.

¹⁴ Decision of the European Central Bank of 3 November 1998 as amended by Decision of 14 December 2000 on the allocation of monetary income of the national central banks of participating Member States and losses of the ECB for the financial years 1999 to 2001, Official Journal of the European Communities OJ L 336 30.12.2000 p. 119, (ECB/2000/19)

income redistribution will have to be revisited prior to putting the euro in circulation, i.e. prior to 2002.

Evidently, the effect written about by Sinn and Feist could materialise only if monetary income was calculated and allocated in accordance with the principles formulated in the Statute of the ESBC and ECB. However, because the amending regulations of the Statute of the ESBC and ECB are transitional, the arguments propounded by Sinn/Feist and Smaghi/Gros¹⁵ should be recognised as correct. We will use their method (slightly modified) in order to assess accession's impact on seigniorage in Poland. It is correct to use the method also because the solutions which practically eliminate monetary base redistribution are to be in force only until year-end 2001, so Poland will certainly not be covered by them. The future manner of monetary income redistribution is as yet unknown. Thus, one should rather base one's conclusions on the Statute of the ESBC and ECB than try to guesstimate the hypothetical form of future redistribution.

From time to time proposals are made of a different seigniorage redistribution in the eurozone. The approach of Lorenzo Bini Smaghi and Daniel Gros¹⁶, whose initial idea is to be found in an earlier D. Gros's study¹⁷ would allow the national banks to continue to retain their income from the assets they held on the setting up of EMU. But any revenues from assets obtained already after the setting up of the union would be taken over by the ECB. Put differently, the ECB would receive any income derived from monetary base increments. It is also proposed to consider the idea of transferring all seigniorage to the common union budget. This solution could be a step towards creating a fiscal union¹⁸.

4. The NBP's Seigniorage after Accession

The impact of particular countries' EMU accession on their seigniorage income streams has been assessed many times. Daniel Gros's 1993 survey demonstrated that seigniorage in the South European countries we are most often compared with was going to decrease. The most significant drop in seigniorage under one of the accession scenarios should have taken place in Greece – by about 3% GDP. Portugal and Spain would supposedly have lower losses – 1.2 to 1.3% GDP. According to Daniel Gros's estimates, Germany too was to have less seigniorage income¹⁹. But the survey had been conducted before the issue of seigniorage distribution under monetary union was fully settled. In a later survey carried out by Daniel Gros, that time already in collaboration with Lorenzo Bini Smaghi, Portugal scored differently, though Germany continued to be a country to forfeit part of its seigniorage income due to the introduction of the common currency²⁰. The Smaghi and Gros studies

¹⁵ Cf. L. B. Smaghi, D. Gros „Open Issues in European Central Banking” The Centre for European Policy Studies 2000

¹⁶ L. B. Smaghi, D. Gros, op. cit.

¹⁷ D. Gros, op. cit.

¹⁸ L. B. Smaghi, D. Gros, op. cit.

¹⁹ D. Gros, op. cit , p. 592

²⁰ L. B. Smaghi, D. Gros, op. cit.

were based on a methodology which had already been employed by Sinn and Feist²¹. The methodology had been accepted on the basis the ESBC i ECB statute.

How does one account for the different survey results? First of all, the later a survey was conducted, the more information was available on real flows between the national central banks and the European Central Bank. The share of particular states in the capital of the ECB could be quantified more exactly and more precise assumptions could be made with respect to the reserve ratios.

In each case the authors of particular surveys based their analysis on reserve money as the main variable determining the level of seigniorage. Let us thus take a closer look at the common parts of two surveys (Sinn & Feist and Smaghi & Gross). We shall try, on their basis, to assess the potential impact of Poland's EMU accession on the level of seigniorage.

To start with, one should perhaps note that after the EMU accession of a country with a relatively high inflation and high interest rates seigniorage should go down. This will probably come as a result of Poland's inflation and interest rate adjustment to the pace of inflation and interest rates in the eurozone. This statement would certainly hold for countries with a structural liquidity deficit in the banking system. Does it also hold for Poland, namely a country whose banking system has liquid reserve surpluses? We shall try to verify this hypothesis later in our discussion.

Let us begin by identifying the most important factors which will impact the level of Poland's seigniorage in the run-up to EMU accession:

- a) declining cost of open market operations resulting from interest rate reductions,
- b) reduction of reserve ratios,
- c) increasing of NBP expenses as a result of remunerating obligatory reserve accounts,
- d) transfer of part of the NBP's foreign reserve assets to the ECB,
- e) purchase of shares in the ECB's capital,
- f) distribution of *monetary income* in proportion to Poland's sharing in the capital of the ECB.

Some of these changes will take place even prior to Poland's EMU accession. Certainly, interest rates in Poland are bound to fall. Even if no operational liquidity shortfall is achieved, as envisaged in *The Monetary Policy Guidelines for the Year 2001*, interest on open market operations will no longer be as heavy a burden for the NBP as at present. The reserve ratios will behave in a similar fashion. In a bid to improve the competitiveness of domestic banks the NBP may wish to make obligatory reserve accounts interest bearing. Changes which will occur only on accession will include the purchase of shares in the ECB's capital, transfer of part of the foreign reserve assets to the ECB and monetary income distribution. Below, we will estimate the impact of only these three changes on the level of Poland's seigniorage .

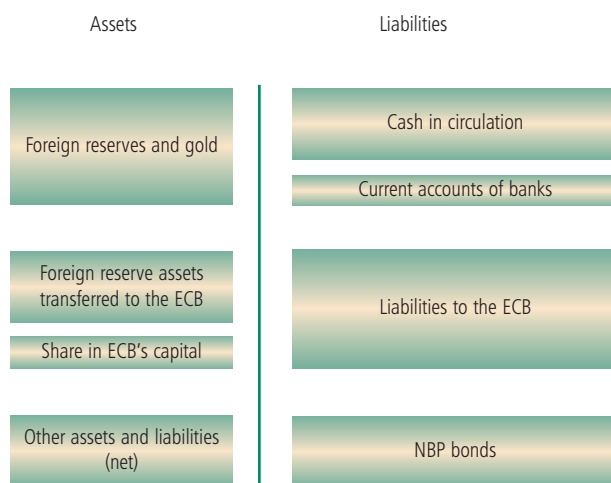
It is worth while to take a closer look, at this juncture, at the issue of Poland's share in the ECB's capital and the attendant transfers of part of foreign reserve assets. Estimates made on the basis of 1998 GDP figures and the population of Poland and the Community demonstrate that if Poland were to be

²¹ H. W. Sinn, H. Feist, op. cit.

admitted to the Community as the sole new country, then its share in the Community's population would stand at 9.4%, while its GDP share at 1.8%. Under the hypothetical scenario Poland's share in the ECB key would stand at 5.6%, hence the transfer of foreign reserve assets would be about EUR 2.6 billion²².

To take a closer look at the changes which the ECB's accession may hold, let us consider the probable balance sheet of the NBP.

Figure 2. NBP balance sheet after EMU accession



Source: Own research

Most foreign reserve assets, in accordance with art. 3.2 of the Statute of the ESBC and ECB, will remain with the NBP. It can be roughly assumed that foreign reserve assets transferred to the ECB will earn the NBP the same profit as the rest of reserves. The share in the ECB's capital will determine not merely the share of the monetary income we are entitled to, but also the share in the ECB's profit. Roughly, it can be assumed that the funds constituting the NBP's share in the ECB's capital will bring the same income as previously held foreign reserve assets. Liabilities on successively maturing T-bills will be converted to liabilities vis a vis the ECB (sometimes described as liabilities vis a vis TARGET²³). Such liabilities shall bear interest²⁴, so the cost to the NBP should not change. The NBP's liabilities shall retain liabilities on bonds issued in 1999, unless accession happens after 2009 when the last NBP bonds mature.

The above assumptions entail that the methods proposed by Sinn/Feist and Smaghi/Gros can be used to estimate the impact of Poland's EMU accession on the level of seigniorage. Let us recall that they found that if the share of a given country's reserve money in the whole zone's reserve money exceeds the share in the ECB's capital, then the country in question will forfeit part of its seigniorage. But if the share of a given country's monetary base in the total mass

²² S. Jakubiec „Spodziewana wysokość wpłat NBP do kapitału Europejskiego Banku Centralnego”, mimeo

²³ TARGET stands for *Trans-European Automated Real-time Gross settlement Express Transfer system*.

²⁴ See e.g. ECB Annual Report 2000, page 184

of reserve money for the whole zone is lower than its share in the ECB's capital, then such country's seigniorage income will be relatively higher.

In formulating this conclusion we must not forget interest on the obligatory reserve in the eurozone. As a given country's monetary income is decreased by the sum equal to interest on the obligatory reserve, this reserve money component can be left out. This is because if we assume that the assets which are the coverage of the issue of this part of the monetary base provide income similar to the expense on interest paid to the banks, the income and expense on both items cancel each other out. In accordance with the current temporary regulations monetary income is calculated with the use of the interest rate employed in main refinancing operations, i.e. exactly the one used for the obligatory reserve. Thus, there is an even simpler way to assess accession's impact on seigniorage. If we leave out – for the above-given reasons – commercial bank accounts with the central bank, then our analysis may focus exclusively on cash. If the share of a given central bank's cash circulation in the cash circulation of the whole area is higher than its share in the ECB's capital, then the country loses on monetary income redistribution. But if the share of a given central bank's cash circulation in the cash circulation of the whole area is lower than its share in the capital, then the country gains on monetary income redistribution. The modified Sinn/Feist and Smaghi/Gros "rule" would thus look as follows:

Figure 3. Central banks' benefits and losses on monetary income redistribution (cash circulation only)

$$\frac{\text{A country's cash circulation}}{\text{Eurozone's cash circulation}} > \text{Share in EBC capital} \Rightarrow \text{LOSS}$$

In order to estimate accession's impact on the level of seigniorage in Poland it needs to be determined if the level of cash circulation in Poland compared to the cash circulation for the whole of the eurozone is lower or higher than the NBP's share in the ECB's capital.

In the year 2000 the item „notes in circulation” on the Eurosystem's consolidated balance sheet stood at EUR 371 370 million. At the same time Poland's cash circulation (PLN 38 564 million) was equivalent to EUR 10 005 million. The hypothetical share of Poland's cash circulation in the Eurosystem's cash circulation would be 2.69%. If we adopted the modified Sinn and Feist and Smaghi and Gros method in order to estimate EMU accession's impact, Poland's entry in the Eurosystem would increase the NBP's seigniorage income under the earlier assumption that Poland's share in the ECB's capital would be 5.6%.

If we look at Poland's share in the eurozone's GDP (1.78%), we can clearly see that the outcome of the above analysis was heavily impacted by Poland's share in the Community's population, which is 9.35%. If shares in the ECB's capital were estimated, for instance, only in proportion to the zone's GDP, then Poland in having much fewer shares would forfeit part of its seigniorage due the introduction of the euro.

5. Concluding Remarks

Finally a question needs to be asked as to how long seigniorage in the eurozone will be distributed the same way as today. This is also a question about the future shape of the European Central Bank. What changes can take place which will impact the size and distribution of seigniorage? It seems that at some point open market operations and current deposits of commercial banks will be centralised with the ECB, so all seigniorage will be generated in one place. Seigniorage distribution will then depend merely of the shares of particular national central banks in the ECB's capital, so it will be no more than a dividend paid to the shareholders. Neither can it be ruled out that over time the monetary union will be transformed into a fiscal union and then the generation and distribution of seigniorage will look the same as at present at the domestic level.

Also, the level of seigniorage itself can be expected to steadily decline, because businesses' demand for components of the monetary base of circulation will decline too.²⁵

References

- Cukrowski J., Janecki J., „*Financing Budget Deficits by Seigniorage Revenues: the Case of Poland 1990 – 1997*”, CASE Studies & Analyses No. 155, Warsaw 1998
- Cukrowski J., Janecki J., „*Wpływ polityki banku centralnego na wielkość dochodów budżetu z renty emisyjnej*”, CASE Studia i Analizy 227, Warsaw 2001
- „*Decision of the European Central Bank of 3 November 1998 as amended by Decision of 14 December 2000 on the allocation of monetary income of the national central banks of participating Member States and losses of the ECB for the financial years 1999 to 2001*”, Official Journal of the European Communities OJ L 336 30.12.2000 p. 119, (ECB/2000/19)
- ECB Annual Report 2000*
- Goodhart C. A. E., „*Can Central Banking Survive the IT Revolution?*”, Financial Markets Group Special Papers: sp0125, August 2000
- Grilli V., „*Exchange rates and seigniorage*”, European Economic Review 33 (1989), page 580-587
- Gros D., „*Seigniorage and EMU – The fiscal implications of price stability and financial market integration*”, European Journal of Political Economy, No. 9, 1993, page 581-601.
- Herrendorf B., „*Time consistent collection of optimal seigniorage: a unifying framework*”, Journal of Economic Surveys 1997, Vol. 11, No. 1, page 1-46
- Jakubiec S., *Spodziewana wysokość wpłat NBP do kapitału Europejskiego Banku Centralnego*, mimeo, Warsaw 2001
- Maliszewski W., „*Pomiar senioratu – przegląd metod i wyników empirycznych*”, CASE Studia i Analizy 228, Warsaw 2001

²⁵ Cf. C. A. E. Goodhart „Can Central Banking Survive the IT Revolution?” Financial Markets Group Special Papers: sp0125, August 2000

- Neumann M. J. M., „*A Comparative Study of Seigniorage: Japan and Germany*”, *Bank of Japan Monetary and Economic Studies*, 1996, Vol.14 No.1, page 104-142
- Sinn H. W., Feist H., „*Eurowinners and Eurolosers: The Distribution of Seigniorage Wealth in EMU*”, *NBER Working Paper 6072*, Cambridge, Mass. 1997
- Sławiński A., Tymoczko D., „*Czynniki wpływające na wielkość renty menniczej w Polsce*”, *CASE Studia i Analizy 229*, Warsaw 2001
- Smaghi L. B., Gros D., „*Open Issues in European Central Banking*”, *The Centre for European Policy Studies 2000*

Poland's Way to the Euro

The NBP's Conference in Falenty on 22-23 October 2001

(Technical Report)

Poland belongs to a group of states having a golden opportunity to accede the European Union as early as 2004. Historically, the country has a unique chance of sustainably joining the West European economic structures and making a big leap forward. This move will entail our country's commitment to adopting the euro and joining the area of common monetary policy. In fact, Poland will become EMU¹ member (albeit with a derogation) already upon gaining EU membership. This means that upon the satisfaction of the Maastricht criteria only the timing of euro adoption will be for our authorities to decide (but not whether to adopt or not). This opens up a discussion on the costs and benefits in connection with the process and its optimum routing and pace. The purpose of the conference organised by the NBP in 2001 was to present the relevant scholarship and bring closer positions on the overarching issue of Poland's road to the euro.

The conference was opened by Leszek Balcerowicz, President of the National Bank of Poland. His address highlighted three basic problem areas critical to the Conference.

The first area focuses around the choice of the optimum exchange rate strategy in the run-up to joining the eurozone. These issues are gaining special prominence of the light of candidate states' diverse experience in terms to their respective exchange rate regimes: from the currency board to the floating regime. The experience leads to formulating certain conclusions relating to the choice of the exchange rate policy in the run-up to ERMII. What is central to this problem area is first of all the establishment of an appropriate central rate (parity) as well as choice of the optimum date for exchange rate fixing.

Poland's fiscal and structural policy constitutes another problem area, extremely relevant to the health of the economy both before and after euro adoption. Monetary policy, including interest rate policy, can be no substitute for structural reforms, which determine long-term growth fundamentals.

The third area critical to joining the eurozone covers the issues connected with the Balassa-Samuelson effect. Its impact on the ability to

¹ Economic and Monetary Union.

meet the Maastricht inflation criterion (MIC) and its implications for joining the eurozone, call for empirical studies.

President Balcerowicz stressed that the purpose of the Conference should be to speed up the solving of the above-mentioned problems and to formulate practical recommendations relating both to the way and speed of Poland's joining the eurozone.

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The participants of the Conference agreed that Poland as a future member of the European Union should ultimately adopt its common currency. This is justified by the economic and political benefits which can be derived by Poland from the adoption of the euro. It also follows from new members' obligatory EMU membership (initially with a derogation). Although the conference title might suggest a one-sided (accession country's) view of this issue, much room was left to arguments put forward by the Union side. It was emphasised that enlargement was a historical challenge for EU countries too. That's why EU opinions were particularly carefully listened to.

The subject-matter of the conference was thus the choice of the optimum pathway and timing of reaching the objective. As stressed by President Balcerowicz in his opening address, floating rate countries like Poland, Hungary and the Czech Republic (unlike currency board countries) have full discretion in their choice of the exchange rate in the run-up to ERMII. The choice should be informed by an analysis of alternative proposals in terms of their benefits and costs, as well as threats. The benefits and costs depend on the status of Poland's convergence with EU economies.

The spectrum of possible solutions in terms of exchange rate policy is quite broad: from the floating rate, through managed float, fixed exchange rate, currency board to unilateral euroisation. After joining the EU the choice will cover the timing of ERMII accession and the form of participation in it.

Conference participants differed in their opinions as to the choice of the optimum exchange rate regime in the run-up to the euro. Some of the participants favoured unilateral euroisation.

The idea of unilaterally adopting one of the principal world currencies as domestic currency had already been proposed for some countries and presented as a more sustainable solution than the standard hard peg or even currency board. A. S. Bratkowski and J. Rostowski modified this idea for Poland on the assumption that unilateral euroisation was to constitute merely a temporary phase, to be followed by full-fledged EU membership. In presenting the paper J. Rostowski pointed to a number of advantages of unilateral euroisation, including increased access to foreign savings and possibility of lower interest rates.

Poland's fastest lane to the eurozone consisting in unilateral euroisation sparked lively debate.

During the discussion S. Gomułka stated that unilateral euroisation would allow Poland to use its strong foreign position – with most corporate debt accounted for by branches of foreign companies, low level of short-term debt and ample scope for increasing external debt. For a few years after unilateral

euroisation Poland could contract debt in relative safety using external savings to fund its development.

But it was also argued that among others due to the operation of the Balassa-Samuelson effect inflation could stay in excess of EU levels for a long time. It was also pointed out that short-term interest rate convergence need not mean analogous trends in long-term interest rates. Other arguments spoke of the danger of engineering a consumer and investment boom, caused by an inflow of capital in the period of preparations for unilateral euroisation (which would take 1 – 2 years according to the proponents of the concept) and after the adoption of the euro – until the country's debt and credit risk have significantly mounted. It was argued that lack of instruments of influencing the exchange rate and the level of short-term interest rates would considerably push up macroeconomic risk to an unforeseeable level. One risk would be that the monetary authorities of a unilaterally euroised state would no longer be able play the role of a lender of last resort, i.e. they would not be able to extend refinancing credit to banks, if they did not have a central bank' foreign reserve coverage.

The discussion benefited from presentations by representatives of the European Commission and eurozone central banks. They focused not only euroisation-related economic, but also institutional-legal and political issues. It was stressed that ultimately all EU countries would become full-fledged EMU members, except the UK and Denmark (countries with an opt-out). After EU accession Union institutions would be able to work for Poland's development with no requirement of unilaterally introducing the euro. In responding to the concerns formulated during the discussion J. Rostowski focused on a few basic issues. He noted that the apparent incompatibility of euroisation with the Treaty of Maastricht, as pointed to by discussion participants, followed from an incorrect interpretation of the Treaty and was no longer sustained by the Union side. He also noted that Poland was more economically integrated with EMU than half of its members (including the four biggest ones). The problem of having no lender of last resort should not be relevant to domestic banks, because most banks had foreign strategic investors who would provide the refinancing. In fact, the central bank itself could be the lender – a credit line could be negotiated and a liquidity fund ought to be created based on the reserves remaining after the purchasing of money values, so banking system risk should not go up either. He noted that the concerns, as raised, could not undermine the expected bonus from unilateral euroisation coming in the shape of lower inflation or interest rates.

It was emphasised that the introduction of a currency board or unilateral euroisation was not merely a „contingency plan” to be used in a situation of overcoming an economic disequilibrium. Two opposing viewpoints emerged from the discussion on Poland's unilateral euroisation. However, both sides were of the opinion that only full-fledged EMU participation could be recognised as a completely stable hard peg.

* * *

The arguments put forward in the discussion on the need of exchange regime evolution and, in some cases, extended to the circumstances of joining ERMII can be broken down into several groups.

The first group of arguments focused around the concept of an optimum currency area (OCA), nature of asymmetric shocks and convergence. **The second group** of issues, directly connected with the first one, focused around the assessment of the relevance of autonomous monetary policy to shock absorption and its credibility in various exchange rate regimes. **The third group** covered the issues of interest rate levels and their impact on growth. To a certain extent the issues led to the **fourth group** of arguments which spoke of the risk of capital inflow stops and financial crash. In what follows let us present, one by one, the most important arguments which belong to the groups just enumerated.

With respect to the first issue, i.e. assessment of the extent to which Poland constitutes an OCA, opinions should be noted which point to a rather high business cycle correlation between Poland (and more broadly Central European countries) and the European Union. J. Borowski noted a growing strength of intra-industry linkages between the economies of Poland and the EU, which reflected considerable progress in integration, constituted an important factor in the convergence of cycles and made Poland's economy more immune to asymmetric external shocks.

A relatively high correlation of the business cycle and advanced growth of intraindustry trade imply a relatively small risk of major external asymmetric shocks or cycle divergences whose consequences would have to be absorbed by exchange rate volatility. It thus seems that Poland to a high degree meets the criteria of an OCA with EMU. After all, as stressed by F. Corricelli, there are also major differences (asymmetries) between EU regions.

What is also very important in assessing the impact of asymmetric shocks on a currency area is the extent of mobility of production factors (including labour) and labour market flexibility. Many conference participants stressed at this juncture the relevance of the necessary labour market liberalisation in Poland (increasing labour mobility and wage flexibility) to the prospects of adopting a fast lane approach to the euro (limiting its potential downside). The issue of labour movement liberalisation between Poland and the Union was not discussed.

H. F. Jensen discussed the experience of Denmark's participation in ERMII, to which the Danish krone is pegged. According to him such arrangement was only possible in circumstances in which monetary policy (subordinated to the exchange rate) had a negligible impact on the shape of the Danish financial system. H. F. Jensen pointed out that Denmark's economic shocks came from internal economic policy (were "home-made"). The fixed rate constituted a major factor in ordering the economic policy and elimination of policy-induced shocks, while the main anticyclical responsibilities were shouldered by fiscal policy. It was argued that the **fixed rate was no substitute for structural reforms**. The subsequent discussion threw up the issue of the importance and sources of shocks in the Polish economy.

The question was also raised if the differences between monetary transmission mechanisms in particular countries did not possibly constitute a source of asymmetric shocks in EMU. It was found that despite considerable

differences in transmission mechanisms between particular countries, the effects of such divergences were difficult to assess. The opinion was also voiced that ERMII and EMU accession might constitute a factor conducive to the approximation of transmission mechanisms.

Talking of Maastricht criteria convergence D. Gros pointed to the possibility of Poland's euro adoption in a few years' horizon. Much attention was paid to real convergence, uneven growth rates and the Balassa-Samuelson effect. These issues provided a starting point for the discussion on the possibility of sustainable convergence of the inflation rates under a fixed exchange rate and the need to modify the Maastricht criteria.

The usefulness of a float (second group of arguments) as a shock absorber was subject to diverse or even totally opposing views of conference participants. An anticyclical monetary policy in a floating regime is usually anything but credible and ultimately leads to rising inflation. A few papers expressed the view that monetary policy in a floating system was often pro-cyclical, which meant that countries which declared a floating rate showed "a fear of floating". However, monetary policy in a floating regime was usually assigned a direct inflation target rather than the objective of smoothing down the real cycle or mitigating real external shocks. Certain comments should also be noted on potential, export-adverse consequences of business cycle stabilization policies (and, correspondingly, price stabilization policies) under a transmission mechanism using primarily the exchange rate channel. The effect intended to be achieved through higher interest rates is then produced mainly through appreciation and leads to undermining the competitiveness of the export sector. This issue was raised by H.F.Jensen, who made it into a case for maintaining a fixed exchange rate in Denmark.

The choice of the exchange rate regime optimal for Poland should take into account the probable nature of potential shocks (internal or external), extent to which Poland and the EU constitute an optimum currency area and the strength of the interest rate channel in the transmission mechanism. A choice of the exchange rate regime is also a choice between the categories which can become a monetary policy target; real product changes, exchange rate or inflation rate.

Conference participants did not always share the view that the choice between the fixed rate and the direct inflation targeting (DIT) accompanied by a floating rate always had to be a purely either/or choice. K. Lutkowski's paper called for complementing the DIT strategy with a policy whose purpose would be to retain the economy's competitiveness by maintaining some exchange rate controls (by way of establishing a "soft" fluctuation band). At the same time K.Lutkowski expressed the view that in the long-run the objectives would not be inconsistent, although he also took note of potential conflicts between the inflation-bashing monetary policy and the exchange rate policy.

The requirement of taking into account the impact of monetary and exchange rate policy on real economy through interest rates was taken up by the third above-mentioned group of issues and arguments. F. Coricelli found, based on Poland's example, that the floating exchange rate went hand in hand with high interest rates which encumbered the economy. However, there were voices in the discussion that high interest rates did not result from a floating exchange rate but rather from a monetary policy geared toward quick disinflation. To corroborate this proposition the much lower interest rates in the Czech Republic

and Hungary were adduced (although until recently the exchange rate in Hungary was closely controlled by the central bank, while in the Czech Republic has a floating rate). This brings to the fore the question if the magnitude of destabilisation risk in various exchange rate regimes is comparable. We are thus turning to the fourth of the above-mentioned groups of issues.

R. Hausmann noted the importance of a certain feature of an economy which consisted in the inability to borrow long-term in one's own currency ("original sin"). This feature had the consequence that domestic entities borrowed either in foreign currency, which resulted in currency mismatches between their liabilities and receivables, or in domestic currency, which precluded long-term borrowing and resulted in mismatches of debt and investment returns. The mismatches led to a risk of, respectively, currency or financial crises which could come as self-fulfilling prophecies. R. Hausmann stated that the unhedged FX liabilities resulted from hard pegs, but also admitted that there were many countries with a floating regime borrowing unhedged funds from abroad.

Hausmann also demonstrated that irrespective of the mismatched structure of liabilities and receivables a sudden capital inflow stop might occur under any exchange rate regime, which could lead to a financial crisis, rising interest rates, budget deficits, inflation and depreciation. Apparently, a self-fulfilling prophecy mechanism would operate in this case. But it was tentatively suggested in discussion that perhaps a floating regime might be precisely the mechanism which could allow to avoid sudden capital stops. However, many papers and interventions shared the underlying assumption that a floating rate might be highly volatile and considerably diverge from long-term equilibrium. The view constituted a strong case for the already mentioned opinions on the desirability of exchange rate controls. Also, concerns were formulated about the sheer practicality of an effective market rate adjustment policy conducted by the central bank through reducing exchange rate misalignment with the hypothetical equilibrium level. Fears were also voiced that this could lead to continued but ultimately misguided interventions. Such concerns were even more pronounced with respect to the fixing of the point of equilibrium by the central bank.

One particular aspect of this discussion was also the issue of the potentially stabilising effect of ERMII participation. While some conference participants showed their faith in such stabilising impact, others demonstrated that sudden capital inflow stops and resulting turmoil were a possibility also under ERMII, as exemplified by D. Gros with the case of Spain. It was repeatedly pointed out that EMU accession prospects might trigger appreciation pressures leading to an overvalued currency and the necessity of its subsequent devaluation already under ERM2. This underscores the central importance of the manner in which the zloty's central parity vis a vis the euro will be established under ERM2, including the timing of its announcement and the role which can be assigned in this context to freely operating market forces.

The issue of potential zloty exchange rate destabilisation under ERMII is connected with the issue of choosing the optimum date for joining ERMII. Late ERMII accession was favoured only by E. Pietrzak in his paper. The issue of assessing the risks associated with particular exchange rate regimes brings to mind the issue of economy overheating (which could accompany the adoption of any form of hard peg) and subsequent recession (boom-bust). A speculative

bubble in the asset market can be considered a special case of this phenomenon. However, it was not ruled out that a floating regime could exhibit similar problems too. It was noted that critical to avoiding serious financial market turmoil was the maintaining of the internal discipline of the domestic financial sector and the degree of its integration with the world market.

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It follows from declarations that new Union members will try to adopt the single currency as soon as possible. This made the issue of meeting the Maastricht criteria by candidate countries a crucial one. The meeting of the criteria by new member countries is a guarantee of the euro remaining a strong currency and the eurozone a stable and competitive currency area. In discussing whether the Maastricht criteria were appropriate for candidate countries the participants focused on two basic issues: **inflation and exchange rate**.

The conference has provided a forum for the discussion of the basic factors which will hinder a relatively quick satisfaction of the Maastricht criteria. Its participants pointed to the possible operation of the so-called *boxer's diet effect* (*before a fight*). It would be possible to quickly repress the inflation ratio to the required level. But if this did not follow from real adjustment, then upon the country's eurozone accession the artificially suppressed inflation would rebound.

The main problem in connection with the satisfaction of the inflation criterion of EMU membership is the occurrence of the so-called Balassa-Samuelson effect, which captures price formation phenomena in fast growing economies. In such countries international competition necessitates and their relative technical backwardness or economic reforms enable a growth of labour productivity in the tradables sector. This phenomenon results in wage growth pressures which are also transferred to the non-tradables sector, not subject to fast productivity growth. This regularity results in inflation rising in the non-tradables sectors of such countries, which (with the same inflation in their tradables sector as in highly developed economies) breeds higher average inflation than in the countries with slower economic growth.

In his presentation W. Orłowski stated that accession countries faced the necessary process of closing the income gap with respect to EU countries. Consequently, accession states would generate a faster GDP growth rate in order to exceed the Union average. So the Balassa-Samuelson effect should be assumed to be at work. In the short run a difficult choice had to be made. If we wanted to repress inflation quickly, we would have to abandon accelerated GDP growth. This sparked a discussion on the possibilities of overcoming this difficult situation.

One of the options under discussion was the relaxation of the criteria for candidate countries in view of the impact of the Balassa-Samuelson effect on the evolution of price formation in those countries. But this was immediately followed by the comment that the scale of this phenomenon was difficult to isolate and estimate. G. Fagan pointed out in his paper that even at that stage the inflation level in EMU differed from country to country. This was caused by factors which could be divided into two basic groups: **idiosyncratic factors** (e.g. resulting from differences in indirect taxes, uneven susceptibility of a country to external shocks) and **fundamental factors** (resulting from the

Balassa-Samuelson effect, rising market integration and business cycle fluctuations in the economy.) Moreover, it would be difficult to uniquely divide goods into tradables and non-tradables, as in each tradable a non-tradable component could be detected.

The discussion led to the conclusion that the importance of the Balassa-Samuelson effect must not be overestimated, let alone make one revise Treaty provisions. On the adequacy of the convergence criteria it was said that the renegotiation of the Treaty of Maastricht would be politically impossible.

R. Koenig emphasised in his paper that the Maastricht criteria should be treated as a macroeconomic policy anchor and a kind of code of good practices.

In view of the above the basic challenge faced by candidate states is to answer the question: **How to meet the criteria (especially the inflation criterion) without compromising economic growth acceleration?** The conference papers and discussion suggested two basic recipes for achieving such purpose: **labour market reform and further privatisation and demonopolising** of the economy.

Labour market reform carries many (not merely social) benefits in the form of a falling unemployment rate. M. Góra in his presentation stressed that growth in labour market flexibility might bring concrete positive effects for the whole economy. Payroll taxes, resulting in rising labour costs to the employer and the rigidities of the minimum wage preclude the hiring of new, mainly young employees and less qualified people. This pushes up actual unemployment to levels higher than it would otherwise climb to if such barriers were scrapped. Higher unemployment is not merely a social cost. It also inflates budget deficits through increased spending on benefits and social assistance. On the other hand, unemployment results in potential opportunity losses to the Treasury resulting from the fact that the unemployed do not pay taxes and constitute an unrealised economic potential.

Labour market deregulation, including the limitation of the role of the minimum wage and reducing wage surcharges, will reduce wage growth pressures. Thus, labour market deregulation contributes to the softening the Balassa-Samuelson effect in the economy.

A further privatisation and demonopolising of major economy sectors, e.g. energy and telecom lead to growth in the productivity of such sectors and reduce inflation pressures. Similar effects come from privatisation.

The implementation of the structural reform recipe may largely contribute to lowering the cost of disinflation consisting in a slower growth rate.

CONCLUSIONS

The conference **confirmed Poland's commitment to adopting the euro.**

The standard strategy of adopting the euro by meeting the Maastricht criteria, and thus also ERMII participation, gained strong support. At the same time most conference participants agreed that the adoption of the euro as soon

as possible (and according to some participants, by way of unilateral euroisation) and Poland's inclusion in the single European financial market would bring major benefits to the economy and accelerate economic growth.

Irrespective of the choice of the exchange rate regime, structural reforms constitute important part of the country's macroeconomic policy. They are indispensable in supporting monetary and fiscal policy on the road to meeting the convergence criteria.

The Maastricht criteria and ERMI principles provide sufficient elbow room for candidate states to meet their conditions.

Poland and EMU countries constitute an optimum currency area (OCA) to a high degree. In the light of the views formulated during the conference the floating exchange rate seems to have limited application as an absorber of both external asymmetric shocks and effects of business cycle divergences.

The floating exchange rate allows to mitigate the currency crisis risk and allows to neutralise the Balassa-Samuelson effect through nominal appreciation of domestic currency.

A precondition of avoiding exchange rate turmoil after joining ERMII is a correct analysis of strategies in the run-up to joining ERMII.

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