Euro adoption and the transfer problem: the case of the Visegrad countries

by Jan-Alexander Bethge[♦] and Renate Ohr, University of Göttingen*

– Preliminary draft, May 2006 –

Abstract

Ever since EU eastern enlargement became imminent, Euro adoption on the part of the accession countries has been a central subject in economic policy discussions. The timing issue which is at the centre of the debate is not only a major challenge for EMU, but also an interesting benchmark case for exchange rate policies in emerging economies. Following Frankel (1999) we doubt that early Euro zone entry is a panacea to the elimination of all risks of destabilizing speculation and balance-of-payments crisis. More specifically, we discuss the modern transfer problem, i.e. the perils of external non-adjustment to international debt service resulting from persistent current-account deficits. Ultimately, the modern transfer problem is all about the evaluation of the trade-off between the benefits of international borrowing and the costs of subsequent (non-)adjustment. Clearly, this amends cost-benefit considerations from the literature on optimum currency areas. On this account we bring up the concept of current-account sustainability as a complementary approach to the determination of equilibrium exchange rates and discuss the preferable research agenda. From a policy perspective, a non-structural case-study approach is warranted including two consecutive steps of inquiry, namely (1) an assessment of numerical sustainability benchmarks of the current account starting from a simple debt-dynamics term and (2) an analysis of the sources and effects of actual current-account deficits.

[♦]jbethge@uni-göttingen.de,

*renate.ohr@wi-wiss.uni-goettingen.de

1

1. Introduction

Ever since EU eastern enlargement became imminent, Euro adoption on the part of the accession countries has been a vibrantly discussed policy issue. For the first time EU accession would come along with EMU membership under the terms of stage three – albeit with a derogation –, and the new members would be obliged, even if only informally, to adopt the Euro at one time or another. But when? The timing issue is at the centre of the debate. It presents not only a major challenge for EMU, but also an interesting benchmark case for exchange rate policies in emerging economies. Should these countries abandon monetary autonomy and associate with an international key-currency area such as the Euro-zone as soon as possible in order to "tie their hands" and, thereby, reap the gains of importing monetary credibility? Or do real and nominal convergence trade off for one another?

At the outset of the debate several authors forcefully raised the claim that all accession countries may only benefit from early Euro adoption. The underlying reasoning may be summarized as follows:[1] First of all, crucial integration parameters are already being met, as the lion's share of all accession countries' external trade accounts for the EU-15 and none of the Euro candidates is particularly large. Secondly, both volatile capital flows and a high exchange-rate pass through establish a strong case against monetary autonomy (e.g., an inflation target under a managed float). Thirdly, portfolio diversification will be fostered not only within the internal market, but even further via monetary unification. This, in turn, renders flexible exchange rates unnecessary – or even disadvantageous – as shock absorbers. Finally, as the Maastricht criteria for nominal convergence impose a cost on the accession countries' growth performance in the presence of significant Balassa-Samuelson (BS) effects, monetary stability trades off for real convergence primarily during the run-up to the Euro, but not thereafter. Therefore, it is being claimed that all accession countries may strive for the Euro as soon as possible, including an ultra-hard Euro peg in advance of Euro-zone entry. This scenario is what we refer to as early Euro adoption.

By now, the Baltic countries and Slovenia perfectly comply to this logic, but should the "Visegrad countries" (i.e., the Czech Republic, Hungary, Poland, and Slovakia), which have taken a more cautious attitude towards Euro zone entry in the meantime, really follow in their footsteps? The overall *motif* of our work is to challenge this view and its underlying paradigm in line with Jeffrey Frankel's proposition that no single currency regime is right for all countries or at all times (Frankel, 1999). Considering a closely related claim, namely that the world will break up into ever larger currency blocks, Frankel argued that monetary co-operation and integration crucially hinge

---

[1] See, for instance, Buiter & Grafe (2002).

upon credibility and political legitimacy, that both of these factors have highly time-varying properties, and that *no single currency regime is capable of eliminating all risks of destabilizing speculation and balance-of-payments crises*. Following these deliberations we will examine a possible qualification to the above line of reasoning.

A potentially severe shortcoming of this paradigm is that it does not account for the protracted and sometimes large current-account deficits, which are typical of many emerging economies (due to international borrowing) and can also be observed in the case of the Visegrad countries.[2] Yet, in the literature "large" current-account deficits have been identified as a major source of macroeconomic instability and costly balance-of-payments crises, notably in low and middle income countries. Indeed, it has been argued, first by Paul Krugman (1999), that recent balance-of-payments crises in emerging economies, above all in South-East Asia, "may be history's most spectacular example of the classic 'transfer problem' debated by Keynes and Ohlin in the 1920s" (p. 463), because one of the most striking features of these episodes was the violence of current-account reversals.

The transfer problem was originally addressed to intergovernmental capital transfers (such as German reparations' payments during the interwar period) in a world of low international capital mobility and little international borrowing and asset diversification (due to the widespread adoption of capital controls since the late 1920s). In this setting, aggregate domestic savings and investment correlate intimately (the well known Feldstein-Horioka finding) and the target or sustainable current-account balance shall be close or even equal to zero. Hence, the transfer problem reduces to the question of how current-account equalization may (or may not) be frustrated in the aftermath of autonomous capital transfers. The classical view – as represented by Keynes (1929) in the famous debate on German war reparations – is that the transfer problem is avoided, if the terms of trade of the debtor country depreciated enough to trigger sufficient export growth (classical transfer effect).[3] Otherwise, foreign exchange reserves would face a cutback, at first gradual, then eventually progressive. In this perspective, the crux of the transfer problem is to prevent an insulated devaluation crisis. Of course, this seems to be practically irrelevant regarding the prospects of monetary unification.

---

[2] Notable exceptions from this rule are China, which has long relied on extensive capital controls and is only beginning to abolish them, and several OPEC countries along with other major exporters of raw materials, such as Namibia and South Africa (see Edwards, 2004: 14 f.).

[3] Thus, Keynes concluded that the major obstacle to the German reparations' problem was the explicit ban of a nominal devaluation of the Mark by the Dawes committee as "transfer protection" (Keynes, 1929: 6 f.).

However, things are more complex nowadays, thanks to financial globalization. In the very end, the transfer problem is still the same old story, namely how the resource transfer (i.e., increase in net exports) necessary to balance net foreign claims on domestic wealth (accruing from chronic current-account deficits) is realized. Yet, in a world of high capital mobility and ample international borrowing and asset diversification, where domestic aggregate savings and investment do no longer correlate tightly, the sustainable current-account deficit of developing countries is not readily observable for policy makers and foreign investors and external debt payments may be financed for a while by countervailing capital flows. In this context, non-adjustment to international debt accumulation will probably not result in a long-lasting downturn of reserves. On the contrary, a rather quick meltdown of reserves or a noticeable rise in domestic inflation may just as well trigger an abrupt turnaround of the capital account – i.e., a sudden stop or, even worse, capital flight – and eventually unleash a banking crisis and/or a "decapitation of the entrepreneurial class" (Krugman, 1999: 464). This means that, if net exports did not rise sufficiently, the necessary current-account reversal would ultimately be enforced by some fierce import compressing recession owing to an abrupt halt or even turnaround of net capital inflows. Since international credit relations are highly sensitive to shifts in market sentiment (due to multiple equilibria), such capital-account reversals have potentially strong spill-over effects to other countries. In this perspective, the crux of the transfer problem is to prevent a sudden stop or even capital flight. Obviously, this looks much more relevant regarding the prospects of monetary unification.

Actually, a current-account deficit that is deemed too "large", i.e. one that is not sustainable in the medium to long run, is often interpreted as the quantity counterpart of an overvalued exchange rate. Since "getting parities right" presents one of the key policy challenges of monetary unification, it may just as well be indispensable to complementarily assess current-account sustainability. Conversely, an unsustainable current-account deficit may well give rise to a sharp reversal of the capital account and flexible exchange rates may then be needed as a shock absorber.[4] However, basically any country running a current-account deficit may be judged either as an "oasis of prosperity" or as "living beyond its means". How can we determine which judgment applies? The literature on current-account sustainability points out that there is no rough-and-ready rule (Edwards, 2001) – just as there is none for the appraisal of equilibrium exchange rates.[5]

---

[4] In particular, flexible exchange rates may act as effective shock absorbers due to stabilizing exchange-rate overshooting (Dornbusch, 1976).

[5] A basic reason is that there are two different sides of the long-term sustainability of a chronic current-account deficit (Mann, 2002): From an international perspective it all depends on global portfolio preferences, since a current-account deficit needs to be financed by an equivalent net inflow of foreign savings, i.e. a sustained capital-account surplus. From a domestic perspective it all depends on the capacity to honour net foreign liabilities accruing

Against this background the paper at hand discusses the assessment of current-account sustainability as a complementary device to the appraisement of stabilizing central parities (for ERM II participation) and conversion rates. We would argue that the comparative advantage of such sustainability analyses is that they are relatively well suited to directly address the timing issue. Ultimately, the modern transfer problem is all about the evaluation of the trade-off between the benefits of international borrowing and the costs of subsequent (non-)adjustment. Clearly, this amends cost-benefit considerations of the literature on optimum currency areas.

The rest of the paper is structured as follows: Chapter 2 reviews current-account developments of the Visegrad countries (and four benchmark countries) during the last decade in order to reconsider the incidence of the transfer problem in these economies' recent economic history. Chapter 3 discusses the preferable research agenda for the assessment of current-account sustainability and briefly lays out a framework to numerically assess long-term benchmarks of current-account sustainability. Chapter 4 highlights two aspects of current-account sustainability which relate to the perceived creditworthiness of debtor countries. Section 4.1. deals with international portfolio diversification as a shock absorber which is gaining weight as flexible exchange rates are suspended. Section 4.2. addresses the perils of exchange-rate based stabilization and the corresponding problem of real appreciation owing to additional net capital imports. Chapter 5 summarizes.

2. Current-account developments during the last decade: some facets

Just like emerging economies in Asia and Latin America, the Visegrad countries exhibit chronic and sometimes large current-account deficits. Table 1 (see Appendix A.1.) shows the current-account balances of the Visegrad countries (as a percentage of GDP) on a yearly basis from 1995 until 2005. Four Euro-zone participants are frequently cited as "natural" benchmark cases for the Central and Eastern European Countries (CEEC), namely Greece, Portugal, and Spain along with Ireland. We added their current-account data and the aggregate measures for the Euro zone and the OECD. The results from Table 1 suggest that the average current-account deficit (indicated by µ) of the Visegrad countries is comparatively large by Euro zone and OECD standards – with Hungary as frontrunner –, but so are those of Greece and Portugal. This is also true in

from protracted current-account deficits, i.e. on the evolution of net exports and on the evolution of aggregate domestic savings and investment.

view of current-account volatility (indicated by σ)[6] – this time with Slovakia far ahead, but Portugal and Spain following suit. Ireland, in contrast, looks more like an outlier with an average current-account surplus and a relatively low volatility measure.

It may be argued that these figures are misleading, as they obscure structural breaks within the observation period which could make a difference. 1999, in particular, might be considered as an important date in this respect, as the Euro was launched early that year, with Ireland, Portugal and Spain as immediate participants, and Greece following by 2001.[7] In addition, the Visegrad countries started to prepare for EU accession by 1999 adjusting their institutional framework to the *Acquis Communautaire*, after the EU had confirmed accession talks in 1997 and 1998, respectively.[8] Therefore, we also calculated post 1999 values for mean current-account balances (denoted μ '99 ff.) and current-account volatility (denoted σ '99 ff.). These numbers show that average current-account deficits were markedly larger in Greece, Portugal and Spain after 1999 than over the entire observation period indicating, indeed, a direct link between Euro adoption and external deficit financing. With the notable exception of Hungary, differences are not as clear in view of the Visegrad countries.[9] At the same time current-account volatility was considerably lower since 1999 than over the entire observation period in all countries, except maybe for Poland.

A striking feature from Table 1 is that – again with the notable exception of Hungary – each of the Visegrad countries has already experienced a major current-account reversal. The best known episode is the Koruna crisis in 1997-98, when the Czech current-account declined by more than 4 percentage points within one year, but then started to rise again. So the Koruna crisis exactly

---

[6] For simplicity, we calculated σ from the standard deviation of each time series. Alternatively, we could have used the coefficient of variation which would have given us percentage deviations from the mean. Yet, this is not necessarily a better measure, since it is not clear *à priori*, whether volatility increases with the absolute level of current-account deficits.

[7] An obvious link between Euro adoption and the evolution of current-account balances is that for countries adhering to the Euro Standard (previously the Deutschmark Standard) currency risks are being eliminated to a significant extent. Hence, these economies should find it easier to finance large current-account deficits after joining the Euro area due to a fall in risk premia.

[8] The adoption of important elements of the *Acquis* – such as central-bank independence, the ban of central-bank credits to the public sector, and the abolition of administrative capital controls – might just as well act as a "pull factor" to international capital flows by enhancing foreign investors' confidence and, thereby, lowering perceived country risk (see, for example, Calvo et al., 1996).

[9] While the Czech and Slovakian Koruna and the Zloty are more or less freely floating, the Hungarian central bank is pursuing a target zone keeping the Forint within a band of ± 15% (see, for example, Sachverständigenrat, 2004: 100), currently around a central parity of 282,36 HUF/€ (see: http://english.mnb.hu/Engine.aspx?page=mnben_1_ jegybankrol&ContentID=2326). Arguably, this might, at least in part, account for Hungary's higher average current-account deficit, if international investors perceived the Forint as less risky over the short run due to greater exchange-rate stability. However, "Standard & Poor's" recent downgrade of Hungary's long-term creditworthiness from A to A- (wit a negative outlook) might well have changed this situation.

matches Edwards' (2004: 16) "Reversal A" definition. Admittedly, the Slovakian experience looks much more spectacular. Within the observation period there were two major reversals of the Slovakian current-account deficit: The first one occurred in 1998-99 and also conforms to the "Reversal A" type. Certainly, the second is even more impressive with the current-account deficit declining by more than 7 percentage points in 2002-03. Poland, in turn, faced a more long-lasting cut-back of its current-account deficit from 1999 until 2003. In the first three years the decline measured up to around 5 percentage points. This does not fit the "Reversal B" definition by Edwards (which reads: "a reduction in the current account deficit of at least 6 percent of GDP in a three year period", ibid.), but nevertheless marks a distinct experience. Among our benchmark countries only Portugal was facing a reversal comparable to that of Poland when the current-account deficit turned around by 5 percentage points between 2000 and 2003.

As already mentioned at the outset, these current-account reversals may well be interpreted as a modern reincarnation of the classical transfer problem. Accordingly, a capital-account reversal owing to a sudden stop ought to come along with a severe import compression. Figure 1 (see Appendix A.2.) shows the annual growth rates of import and export volumes of all four countries which experienced a major current-account reversal. At a first glance, the overall import and export growth looks quite volatile during the last decade in the Czech Republic, but even more in Poland and the Slovak Republic. Inspecting the reversal episodes there were severe import compressions in Slovakia in 1999 as well as in Poland in 1999 and in 2001 indicating, indeed, some kind of sudden stops around these times. The Koruna crisis was not characterized by an equivalent drop of import growth. However, export growth fell from more than 15 percent in 1995 to roughly 5 percent in 1996, the year before the speculative attack on the Koruna was launched, and did not revive thereafter.[10] Since a sudden stop may also show up in an export recession, if export investment was highly leveraged from abroad, the Koruna crisis may just as well be interpreted as a sudden stop. In contrast, the second reversal episode of the Slovak Republic was characterized by a strong export boom indicating that the classical transfer effect was at work in the 2002/03 Slovak reversal.

What about Portugal? First of all, Portuguese import and export growth does not exhibit a degree of volatility high enough to resemble the experiences reviewed so far. At the risk of oversimplifying, the Portuguese experience may, nevertheless, be compared to the Czech Koruna crisis, since there was a considerable drop of both imports and exports in 2001, and this is clearly at odds with the expectation of trade creating effects of the Euro.

Taken together, current-account reversals in the Visegrad countries mirror rather distinct experiences. Yet, it seems as if reversals were at times associated with a critical sudden stop, indicating that the Visegrad countries were, indeed, confronted with the transfer problem during the past ten years. Accordingly, the Visegrad countries' import and export growth exhibited sharp variations during this period, so policy makers should not put all their trust in a smoothly functioning transfer effect, especially in view of the Portuguese experience. Moreover, we might expect current-account deficits to widen even more after the adoption of the Euro, so it might be wise to examine current-account sustainability before monetary unification to avoid sorrows thereafter.

3. On external sustainability

Various rules of thumb on sustainable current-account deficits have turned out to be inadequate. This is true, for instance, not only for the notorious 5% rule (i.e., current-account deficits exceeding 5% of GDP are unsustainable), but also for the "new view" of the current account, i.e. only twin deficits are a matter of policy concern,[11] as became obvious, at the latest, in 1994, when Mexico was hit by the "Pesos crisis". Ever since, economists have established a special research area in order to specify sustainable benchmark levels of current-account deficits.[12] Analogously to fiscal sustainability this is understood as a baseline for sound balance-of-payments policies: The basic idea is that a sustainable current-account deficit allows the exploitation of the benefits of international borrowing while, at the same time, risks of a balance-of-payments crisis are kept at minimal levels.

Despite early skepticism, sustainability analyses have gained increasing attention not only at international institutions (such as the IMF, the World Bank, and the OECD), but also among academics and within the private banking industry.[13] In their pioneering work Gian Maria Milesi-Ferretti and Assaf Razin defined current-account sustainability by three consecutive criteria (Milesi-Ferretti & Razin, 1996b):

---

[10] Of course, this interpretation should be taken with due caution, since it does not take absolute import and export levels into account.

[11] A good overview over this „new view" – which has its theoretical roots in early models of the intertemporal approach to the balance of payments and is frequently labeled as Lawson's doctrine (after the former British chancellor Nigel Lawson) – is given by Corden (1994: 90-94) with special emphasis on policy implications. A comprehensive critique of the Lawson's doctrine is available from Reisen (1998), and Edwards (2001).

[12] To our knowledge Sebastian Edwards was one of the earliest contributors (see Edwards, 1995: 314-317; Edwards et al., 1996). The bulk of initial research on current-account sustainability, however, was conducted at the research department of the International Monetary Fund, notably by Gian Maria Milesi-Ferretti and colleagues.

[13] An important stimulus has been the recent blow-up of the US current-account deficit and the related question of whether the world is on the cusp of a major international crisis.

1. *Intertemporal solvency*: Solvency ensures that debtors are able to honor net financial obligations out of their future income, i.e. the present value of future earnings should, at least, be equal to current debts. Consequently, a debtor country will be solvent if it meets its intertemporal constraint, i.e. current net liabilities are balanced by the present discounted value of future trade surpluses.

2. *Willingness to lend*: This requirement refers to the availability of foreign funds in the presence of borrowing costs.[14] Borrowing costs simply put a constraint on external financing – thereby eliminating the mere chance of playing "Ponzi games" –, since additional foreign funds will be available only at the cost of an increase in interest rates. This, in turn, may aggravate solvency problems via the price channel.

3. *Willingness to (re-)pay*: External funds are constrained not only by borrowing costs, but also in response to capital market failures, most notably the problem of asymmetric information in credit markets. From a creditor's view the fundamental problem is that (a) she cannot confidently appraise the riskiness of a loan and (b) the interest she charges may itself accentuate default risks either by adverse selection (prudent borrowers are discouraged by rising interest rates) or by moral hazard (borrowers are inclined to take higher investment risks in response to rising carrying charges). One obvious solution to this dilemma is to restrict credit offers to those borrowers with a good reputation (credit rationing at a given interest). Then, the availability of foreign funds crucially depends on the perceived creditworthiness of debtor countries.

This last point is of particular significance. The bottom line of any assessment of current-account sustainability will be a *judgment about national creditworthiness*. Of course, such an appraisal inevitably includes highly subjective elements. One way to circumvent this problem has been sought in estimating sophisticated econometric models in order to quantify the equilibrium path of a country's current account. The results are then used as a benchmark for the determination of "excessive" current-account deficits. However, this line of research has been criticized mainly for two reasons. First of all, even though an increasing sense of realism has by now been incorporated into the underlying intertemporal models, they are still subject to substantial qualifications (e.g. due to the assumption of perfect capital mobility and/or efficient financial markets). Accordingly, estimates based on these models are biased towards systematically overestimating sus-

---

[14] Investors will diversify their wealth according to risks and returns of different non-homogenous assets, i.e. they will aim at spreading their country portfolio in the international context. Thus, they will only be willing to lend more to a single country, i.e. to rebalance their portfolio, if they get compensated with a higher return. This gives rise to borrowing costs.

tainable benchmark levels, specifically in the case of developing countries (Edwards, 2001). Secondly, "excessive" current-account deficits by the standards of intertemporal steady-state models do not necessarily call for countervailing policy measures. Or in the words of Helmut Reisen (1998: 303): "It is a common fallacy to confuse unsustainability with undesirability." In particular, "excessive" current-account deficits may just as well reflect transitory current-account dynamics, for example, in response to policy measures, such as the abolition of capital controls, which are likely to trigger an influx of foreign capital.[15]

What we need to achieve then, from a policy perspective, is a much broader picture in which *long-term* sustainability of the current account is only one piece of information, yet an important one. In particular, sustainability benchmarks provide information about the likely magnitude of current-account adjustment in the future and, therefore, about the foreseeable scale of the transfer *effect*. Beyond that the sources and macroeconomic effects of a given current-account deficit will always be of similar interest, if we want to evaluate whether a debtor country is an "oasis of prosperity" or "living beyond its means", i.e. facing the transfer *problem*. That's why the assessment of current-account or external sustainability appears to be bound to a non-structural case-study approach.

Consider the impact of sustainability benchmarks on the timing of Euro adoption. Should the candidate countries delay Euro zone entry because of presently "excessive" current-account deficits? Or, alternatively, is early Euro adoption likely to trigger the modern transfer problem, if actual current-account deficits exceeded their sustainability benchmarks? The first answer would probably be yes, specifically for sizeable differences. But second thoughts might call this conclusion into question. For example, the U.S. current-account deficit from the 1990s is usually distinguished from the present one and the Reagan-Volcker deficits from the 1980s with regard to the underlying economic and policy fundamentals (Mann, 2002: 135 f.): While the former coincided with budgetary consolidation, low interest rates, large-scale investment activity (due to the "new economy" boom), strong productivity growth, and a decline in private savings, the latter were accompanied by fiscal expansion and monetary contraction occurring in the aftermath of adverse economic shocks (i.e., the second oil price shock and the bust of the "new economy" boom). Consequently, the 1990s deficit was treated with "benign neglect", whereas present discussions of the "unsustainable" U.S. twin deficits focus on the question of how much the Dollar would have to devalue in order to equalize global imbalances, just as discussions in the 1980s did. The bot-

---

[15] Note, that the current-account deficits are likely to overshoot their long-term levels in response to international portfolio rebalancing (Edwards, 2001: 17-20).

tom line is that current-account sustainability includes the sustainability of current and intended economic policies.

> "An alternative way of asking whether current-account imbalances are sustainable is to determine whether a continuation of the current policy stance is going to require a 'drastic' policy shift (such as a sudden tightening of monetary and fiscal policy, causing a large recession) or lead to a 'crisis' (such as an exchange-rate collapse, resulting in an inability to service external obligations)." (Milesi-Ferretti & Razin, 1996b: 5)

Accordingly, the essence of the modern transfer problem is to evaluate the trade-off between the benefits of net capital imports and the costs of subsequent (non-)adjustment *with respect to the adjustment and crisis-prevention capacity of actual or intended policies* (e.g., the choice of the exchange-rate regime). As the costs are most likely to increase not only with the size of unsustainable current-account deficits (Freund & Warnock, 2005), but also with the time span over which unsustainable deficits are being perpetuated (Edwards, 2004),[16] sustainability benchmarks offer an important first guideline. This has to be complemented, however, by an in-depth cost-benefit analysis of the sources and macroeconomic effects of actual current-account deficits, some of which will be discussed in the next section. To put it another way, *long-term* sustainability benchmarks may capture the solvency and willingness-to-lend criteria, but in order to gauge the willingness-to-(re-)pay criterion the risks of *actual* current-account deficits have to be taken into consideration.

The rest of this section lays out and discusses a research agenda for the assessment of current-account sustainability in the spirit of Edwards (1995; 2001; Edwards et al., 1996), Milesi-Ferretti & Razin (1996a; 1998), and Reisen (1998).

A natural first step to examine the possibility of national bankruptcy in the case of a debtor country is to determine its solvency. As already mentioned, the familiar intertemporal constraint for a debtor country reads: The initial value of net foreign liabilities must be balanced by the present value of future net exports.[17] This constraint, however, is not only very mild – in the end, all it depends upon is sufficient optimism about the future evolution of the trade balance –, it also lacks operational content. For example, what is going to be the upper limit of debt accumulation, given that "Ponzi games" are not an option? And to what extent are domestic expenditures (i.e.,

---

[16] Both papers operationalize the costs of sharp current-account reversals in terms of growth losses.

[17] In the basic infinite time-horizon intertemporal current-account model this is formally given by the following condition (see, for example, Obstfeld & Rogoff, 1996): $-(1+r^*)F_{t-1} = \sum_s \frac{1}{(1+r^*)^{s-t}}(Y_s - C_s - I_s - G_s)$, with F_{t-1} denoting initial net foreign liabilities, r^* the real world interest rate, Y_s GDP, C_s aggregate private consumption expenditures, I_s aggregate private investment, and G_s aggregate government expenditures. The right-hand side expresses the discounted value of future net exports.

absorption) going to be confined by the capacity of debt service?[18] These are highly relevant questions for the assessment of solvency, be it in the case of a personal bank loan or in the case of a country's foreign liabilities.

A sensible solution is to start from the sustainable *long-term* capital-account surplus which is, of course, the accounting companion of a sustainable current-account deficit. At the risk of over-simplification, this may be represented by:

(3.1.) $\Delta d = \gamma \cdot d$

> d : ratio of net foreign liabilities to GDP
>
> γ : steady-state growth rate of GDP

Following standard portfolio models of international finance, global investors will diversify their savings throughout the world according to country-specific risks and returns (mean-variance approach). If they aim at "holding the market", i.e. keep their country portfolios unchanged, net foreign demand for domestic assets will determine a sustainable ratio of external indebtedness (d). In a growing world economy this target level multiplies by the growth rate and this, in turn, yields the sustainable capital-account deficit, i.e. the long-term inflow of foreign savings. Actually, γ should be interpreted as the relative growth capacity, i.e. the growth differential, vis-à-vis the rest of the world, not as a country's absolute growth capacity.[19]

Monetary authorities may want to withdraw a certain amount of net capital inflows from private credit markets for the accumulation of foreign exchange reserves. By definition, the sustainable current-account deficit will be lowered by this amount.[20] Therefore the sustainable current-account deficit derives from the following identity:

(3.2.) $\gamma \cdot d - \Delta fx = ca[= -nx + r \cdot d]$

> fx : ratio of foreign exchange reserves to GDP
>
> ca : current-account deficit in percentage of GDP
>
> nx : trade balance in percentage of GDP
>
> r : real world interest rate

---

[18] Another question in that direction is, of course: When will debtor countries experience a reversal from trade deficits to trade surpluses (timing)?

[19] An alternative way would be to use the growth of a country's gross domestic wealth relative to global wealth.

[20] Obviously, this statement hinges on the assumption that complete sterilization is intended and practicable. Only if this premise holds, there will be no effects of reserve accumulation on the monetary base and, hence, on domestic liquidity.

Relative growth also bears two indirect effects on a debtor country's sustainable current-account deficit: First of all, foreign exchange reserves will increase in accordance with the excess of relative import growth over relative output growth $\left(\Delta fx = \dfrac{\eta - \gamma}{1 + \gamma} fx\right)$.[21] A simple reason is that monetary authorities may want to hedge international liquidity risks. Secondly, the real exchange rate will appreciate due to the well established Balassa-Samuelson (BS) effect, and this, in turn, exerts a positive wealth effect both on net foreign debt and foreign exchange reserves. Hence, the sustainable current-account deficit is given by:

(3.3) $ca = (\gamma + \rho) \cdot d - \psi \cdot fx$,   where $\psi = \dfrac{\rho + \eta - \gamma}{1 + \gamma}$

ρ : rate of real appreciation

η : real annual import growth

Equation (3.3.) simultaneously captures the intertemporal solvency criterion and the willingness-to-lend criterion of current-account sustainability in a growing world economy. However, all attempts of numerically specifying equation (3.3.) for a given country (or set of countries) in order to estimate sustainable current-account deficits face one major difficulty. Two benchmark levels have to be determined simultaneously, namely the sustainable long-term current-account deficit and the sustainable net foreign liability position.

One way out, typically sought in earlier studies, was to set an arbitrary flat rate for the sustainable ratio of net foreign liabilities to GDP (e.g., $d = 0,5$). Of course, this path is not quite appealing, as such a uniform benchmark value is most unlikely to apply to different countries. Catherine Mann (2002: 145 f.) discusses various alternatives to estimate the sustainable external debt ratio or sustainable current-account surpluses. Yet, each method has severe limitations and drawbacks. The record of financial innovations, in particular, poses the most serious challenge.

On the whole, long-term sustainability benchmarks of the current account provide information about the likely magnitude of future current-account adjustment. This is of particular interest for the timing of Euro adoption as large deviations from benchmark values would indicate solvency problems and financing problems ("willingness to lend") both of which require a drastic policy reversal in the future in order to prevent the transfer problem, i.e. a capital-account reversal. Un-

---

[21] Accordingly, relative import growth vis-à-vis the rest of the world lowers the sustainable current-account deficit gradually over the course of time. An important reason may be that the income elasticity of imports exceeds that of exports (see, for example, Mann, 2002: 137-139, on U.S. "income asymmetry"). This point should be of considerable interest to our question, as relative import growth demands a trend depreciation of the real exchange rate in order to maintain the trade balance at some target level.

der the aegis of the Euro this would be highly problematic, as nominal exchange-rate variations would no longer be available as an expenditure-switching device and fiscal policy would have to bear the burden of expenditure reduction alone. Yet, the assessment of current-account sustainability must also account for the perceived creditworthiness of debtor countries (the willingness-to-(re-)pay criterion) by examining the sources and macroeconomic effects of actual deficits.

4. Pitfalls of premature Euro adoption

4.1. The transfer problem now and then

During the last decade or so a popular question in international finance has been whether the present era of financial globalization resembles some of the main experiences of the classical Gold Standard. In one important respect, however, there is a major difference, as several authors have already stressed.[22] Before 1914 international financial relations were predominantly characterized by long-term capital flows between the principal colonial powers and their (former) dependencies. These cross-border flows resulted in comparatively large *net* foreign asset positions both in creditor and in debtor countries, i.e. in the built-up of considerable one-way claims on foreign wealth. In this regard international capital-market integration is very different today. The world's largest debtor country, the USA, is at the same time the world's largest creditor country in terms of *gross* asset positions. This is not only a prominent case at hand; the last three decades have witnessed a massive boost of gross asset positions (which – in a sample of OECD countries excluding all transition countries – roughly quadrupled between 1980 and 2000 according to Obstfeld & Taylor), while net foreign asset positions were rather stagnant during the very same period of time. Thus, modern financial globalization shows up in a sustained accumulation of reciprocal claims on foreign wealth, i.e. "diversification swaps". Moreover, international capital flows are overwhelmingly "North-North" in direction, i.e. between developed countries, while centre-periphery ("North-South") flows remain fairly low (the "Lucas Paradox"). It has been widely recognized that nowadays participation in international capital markets appears to be positively associated with the stage of economic development. On the whole, international diversification swaps make up the lion's share in international financial transactions, while traditional development financing seems to play only a very limited role, especially when compared to the Gold Standard.[23]

---

[22] For a comprehensive review see Obstfeld and Taylor (2004: 231-249).

[23] The flipside of this picture is that productivity and per-capita-income levels are more divergent today than around a century ago (Obstfeld & Taylor, 2004: 241 f.).

These specific features of modern capital-market integration are, of course, important both for balance-of-payments trends and external adjustment. Among others, Maurice Obstfeld (2004) underscored the need not only for a largely revised notion of external balance, but also for an updated understanding of the external adjustment process "in the brave new world of huge two-way diversification flows" (p. 9). Nominal exchange-rate movements, in particular, may well trigger potentially large-scale redistributions of international wealth via "valuation effects", if domestic residents held nominal claims on external wealth and foreigners held nominal claims on domestic wealth. This point has been widely acknowledged, for example, in recent discussions of the US current-account deficit.

How relevant is this to our cases? To evaluate the empirical significance of diversification swaps vis-à-vis development financing Obstfeld (2004: 11-13) also proposed a simple measure. His idea was to adapt the Grubel-Lloyd index measuring the extent of intra-industry trade in goods to international trade in assets.

> "I conceive of one-way asset trade, or 'development' finance, as the export of currently available goods in return for the promise of future goods (or the reverse), giving rise to a imbalance on the current-account. I conceive of two-way asset trade, or 'diversification' trade, as the mutual exchange of differentiated claims to future output, that is, claims on future output available in different states of nature. The analogy is not exact, but is, I believe, suggestive and useful." (Obstfeld, 2004: 12)

The modified Grubel-Lloyd index, henceforth labeled as Grubel-Lloyd-Obstfeld (GLO) index, is then defined as follows:

$$ GLO = 1 - \frac{\sum_i \left| A_i - L_i \right|}{\sum_i (A_i + L_i)}, $$

with A denominating a country's aggregate foreign assets and L denominating its aggregate foreign liabilities within each of i asset classes. This index would be equal to one, if a country's foreign assets were fully matched by its foreign liabilities, i.e. if its net foreign asset position was zero (pure diversification swaps). Conversely, it would be equal to zero, if a country had accumulated no foreign assets, but only foreign liabilities – or vice versa (pure development financing).[24]

In order to net out private international diversification swaps Obstfeld also estimated non-reserve positions, indicating the GLO index net of foreign exchange reserves. Obviously, this item is of

---

[24] Of course, the GLO index does not indicate whether a country is an international creditor or debtor. Furthermore, if it approached one or zero, even considerable changes in net foreign leverage would be systematically underreported by the GLO index.

particular relevance with regard to Euro adoption, since the stock of foreign reserves will then be handed over from national central banks to the ECB.

The Obstfeld results for the Visegrad countries, if available, are reproduced in Table 2 (see Appendix A.1.).[25] We added those of our benchmark countries Greece, Ireland, Portugal, and Spain. As you can see, the figures of the Visegrad countries are substantially lower than those of Ireland, Portugal, and Spain in both the "GLO" and the "Non-reserve GLO" column. Only the Czech Republic comes close to the figures of the latter, but merely with respect to the overall extent of international asset diversification. Meanwhile, the net-of-reserves numbers fall short of the overall numbers by far in all Visegrad countries (for which data are available), indicating that in these economies official reserves' accumulation is still a dominant force behind international diversification trades. Hungary and Poland, in particular, exhibit very low degrees of international financial integration when compared to our benchmark countries.

It would be very appealing to calculate these figures for different periods in order to see developments throughout time, especially in view of the Euro zone members. Then we would get an idea of how monetary unification does or does not foster international portfolio diversification. Nevertheless, we can already draw two preliminary conclusions. First of all, international portfolio diversification is not looking like a promising shock absorber for the Visegrad countries concerning these figures, especially not within the Euro zone, since international asset diversification of the private sector seems to be rather elementary. This is also true in view of the relation of asset trade to GDP which points to comparatively thin and underdeveloped financial markets. Thus, the authorities of the Visegrad countries might be well advised to rely on more traditional instruments of external adjustment like flexible exchange rates, because otherwise transfer problems might become overwhelming. Secondly, the Visegrad countries have approached different degrees of financial development and international financial integration, as measured by the non-reserve GLO index and the ratio of gross asset trade to GDP. This may be a first hint that the road to the Euro is of rather different length and severity for each of the four Visegrad countries, in particular, if financial development had to be considered as a crucial integration parameter.

4.2. *Perils of exchange-rate based stabilization*

Early Euro adoption in the Visegrad countries may well be seen as just another attempt of exchange-rate based stabilization or, alternatively, of importing monetary credibility. Earlier ex-

---

[25] Obstfeld is not particularly explicit about the timeframe of these measures. So we can only guess that the review period is 2003, i.e. the final year of the survey (by Lane & Milesi-Ferretti) to which Obstfeld himself refers.

periments in this direction are instructive, as they witnessed rather mixed results, often ending in a combined banking and devaluation crisis (the so-called twin crises). The most recent Argentine currency crash is a good example in this respect.

Naturally, the present situation of the Visegrad countries is not anywhere near pre 1991 conditions in Argentina. Inflation differentials towards the Euro zone are extremely moderate by these standards. Moreover, the Maastricht criteria guarantee a sufficient degree of nominal convergence before Euro-zone entry is going to be put into effect. Therefore, inflation inertia owing to persistent inflationary expectations should not be much of a problem. And, in general, considerable credibility advantages can be attributed to Euro adoption, i.e. symmetric monetary unification, as compared to a currency-board arrangement, i.e. asymmetric monetary unification.[26]

Nevertheless, we would argue that there might be considerable risks of early Euro adoption even under these comparatively favorable preconditions. An immediate result of early Euro adoption in the Visegrad countries would be the discharge of currency risk leading to a significant decline in risk premia, i.e. credit costs. This gives reasons to expect an increase in net capital inflows, since domestic agents will find it easier to borrow from abroad and international investors might perceive domestic assets as less risky and, thereupon, alleviate credit rationing. Probably the most important reason for the relaxation of international credit constraints in the aftermath of Euro adoption is that credit risks of "partial euroization" or, alternatively, "liability euroization" are going to be eliminated then.[27]

There is a sizeable literature covering the macroeconomic risks of an investors' flush with emerging market assets, especially under fixed exchange rates.[28] Here are the usual suspects: A domestic credit boom may easily feed into a consumption boom and this, in turn, breeds the potential of a large-scale banking crisis due to strong spillover effects of a bank run.[29] This scenario is most likely to occur, if exchange-rate stabilization, financial deregulation and capital-account liberalization are implemented more or less coincidentally. The basic reason is that under these conditions capital inflows are being more or less fully mediated through the banking system in the presence

---

[26] See, for instance, Buiter & Grafe (2002: 52 f., 57).

[27] This is also one of the central arguments in favor of unilateral monetary unification, e.g. via a currency-board arrangement, in the case of small developing countries (see Calvo, 2002). Typically, these economies find it difficult to borrow in international financial markets in their own currency (due to "original sin" or "debt intolerance"). If the bulk of revenues of domestic debtors, notably from the non-tradables' sector, is denominated in domestic currency, while their liabilities are denominated in foreign currency, this will leave their balance sheets highly vulnerable to nominal devaluations. Conversely, a credible fix of the exchange rate would eliminate the risks of liability dollarization. We would add that, above all, *short-term* risks are being eliminated by this step.

[28] A comprehensive review is available from Calvo et al. (1996).

[29] For a good empirical account on these links see Gavin & Hausmann (1996).

of still underdeveloped financial markets. Eventually, the deterioration of the banking sector's balance sheets may trigger a contagious bank run. On this account, financial development would be a crucial parameter for the timing of Euro adoption in the Visegrad countries, and this is probably true.

Meanwhile, we focus on the classical transfer effect arising from an increase in net capital imports. This issue has recently received renewed research interest. One line of research examines the real exchange-rate effects of variations in net foreign indebtedness. This transfer effect (i.e., the link between net foreign liability [wealth] accumulation and real depreciation [appreciation]) was re-established theoretically by the intertemporal approach to the balance of payments and has already been investigated empirically, notably by Philip Lane and Gian Maria Milesi-Ferretti.[30] Their main results may be summarized as follows: The transfer effect is substantial and highly significant in developing and emerging economies, but much weaker and rather insignificant in industrial countries.[31] The relative price of non-tradables ("internal" terms of trade) is found to be the main transmission channel for the operation of the transfer effect.[32] Moreover, the magnitude of the transfer effect systematically varies with country and time specific characteristics. For example, it increases in country size and decreases in GDP per capita. Lane & Milesi-Ferretti (2004: 841) conclude that in the presence of nominal rigidities exchange-rate flexibility may be preferable to debtor countries, as the classical transfer effect could then be accomplished more swiftly.

However, Milesi-Ferretti & Lane confine themselves to a long-term stock perspective of international development financing abstracting from external adjustment to financial flows over the debt cycle. Yet, this could be even more relevant for the timing of Euro adoption in the Visegrad countries. A noticeable rise in net inflows of foreign funds will probably lead to a real appreciation.[33] Under floating exchange rates additional capital imports trigger a nominal appreciation due to an increased demand for domestic currency, while inflation can be kept at low levels. In a monetary union, in contrast, real appreciation will be entirely channeled through a rise in domestic inflation, i.e. through positive inflation differentials vis-à-vis the Euro zone. Such inflation

---

[30] See Lane & Milesi-Ferretti (2004) and the references cited therein.

[31] In contrast, BS effects are found to be far more important for real exchange-rate variations in high income countries than in low and middle income countries.

[32] This supports Keynes' (1929) classical proposition that the crux of the transfer problem is domestic resource mobilization to the production of tradables.

[33] The influx of foreign savings will be conferred to the real exchange rate through one of two alternative transmission channels: Either a part of foreign funds will be spent on non-tradables, thereby leading to an increase of the "internal" terms of trade. Or the inflow of foreign savings is only partly sterilized, thereby widening the monetary base and increasing domestic prices.

differentials may well originate from asset price inflation, e.g. from a marked rise in real-estate or stock prices, and they carry two alternative macroeconomic risks: Either asset-price inflation might spill over to consumer-price inflation creating the potential of local inflation inertia or it might lead to critical asset-price bubbles. Both lower the perceived creditworthiness of the particular country (or set of countries) and, thereby, affect the willingness-to-(re-)pay criterion of current-account sustainability negatively.

Moreover, real appreciation may just as well frustrate the classical transfer effect by crowding out investment activity in export or import substituting industries due to a loss in international competitiveness. According to Reisen (1998: 314), the magnitude of real appreciation will typically be greater the higher the proportion of leveraged consumption expenditures, because leveraged consumption will fall to a certain extent on non-tradables and this will show up in a rise of the "internal" terms of trade. Accordingly, if net inflows of foreign savings lead to a marked rise in the real exchange rate, the magnitude of the classical transfer effect necessary to balance external debt service will probably become ever greater.

Figure 2 (see Appendix A.2.) shows the evolution of both real and nominal effective exchange rates of the Visegrad countries from 1995 until 2005.[34] As you can see from this figure Hungary and Slovakia experienced a marked real appreciation during the last five years, but at the same time their nominal effective exchange rates remained comparatively firm. Since consumer price indices are used as deflator, the real appreciation of the Forint and the Slovak Koruna indicate that nominal exchange-rate stability in these countries apparently came at the cost of a widening of liquidity due to incomplete sterilization and a rise of inflation. In contrast, the evolution of Poland's nominal and real effective exchange rates shows a considerable degree of conformity, indicating that real exchange-rate variations are to a large extent determined by swings in the nominal exchange rate. Though less spectacular, this seems to apply also to the Czech Republic.

A preliminary conclusion is that in the case of the Visegrad countries nominal exchange-rate stability seems to trade off for real appreciation. With respect to the transfer problem this would have to be interpreted as establishing conflicting goals.

5. Summary

The paper at hand discusses the relative merits of early Euro adoption from the perspective of the Visegrad countries and in due consideration of the modern transfer problem. Following

---

[34] We chose effective exchange rates vis-à-vis the 25 most important trading partners. In effect, those for 12 and 34 trading partners do not look much different.

Frankel (1999) we doubt that Euro zone entry is a silver bullet to the elimination of all risks of destabilizing speculation and balance-of-payments crisis. More specifically, we addressed the perils of external non-adjustment to international debt service resulting from persistent current-account deficits. The main issue of the modern transfer problem is that the resource transfer (i.e. rise in net exports) necessary to balance external debt payments might be enforced by sharp and potentially contagious current-account reversals owing to a sudden stop or, even worse, capital flight. Indeed, nearly all Visegrad countries experienced major current-account reversals during the past decade, albeit with varying behavior.

On this account we brought up the concept of current-account sustainability as a complementary approach to the determination of equilibrium exchange rates and discussed the preferable research agenda. We argued that, from a policy perspective, a non-structural case-study approach is warranted including two consecutive steps of inquiry, namely (1) an assessment of numerical sustainability benchmarks of the current account starting from a simple debt-dynamics term and (2) an analysis of the sources and effects of actual current-account deficits. Step 1 is confronted with considerable methodic difficulties, above all the estimation of sustainable external debt positions.

Some of our main conclusions, even if utterly preliminary, are:

1. There is no rough-and-ready rule of current-account sustainability. An important criterion for current-account sustainability is the magnitude of real appreciation associated with additional net inflows of foreign savings. It is by now widely accepted that the structure of capital imports is a major determinant in this respect. Another important factor, especially in view of monetary unification, seems to be the capacity of domestic financial markets to absorb capital inflows without unleashing a major asset-price inflation and, hence, the stage of financial development.

2. As current-account deficits are probably going to increase after Euro-zone entry, current-account unsustainability in advance is most likely to be even more precarious, as the transfer problem will then be more acute given that both real import and export growth show considerable variations and nominal exchange-rate stability trades off for real appreciation.

3. Presumably, the road to the Euro will be of rather different length and severity for each of the four Visegrad countries, if current-account sustainability and the transfer problem are duly taken into consideration.

Appendix A.1.

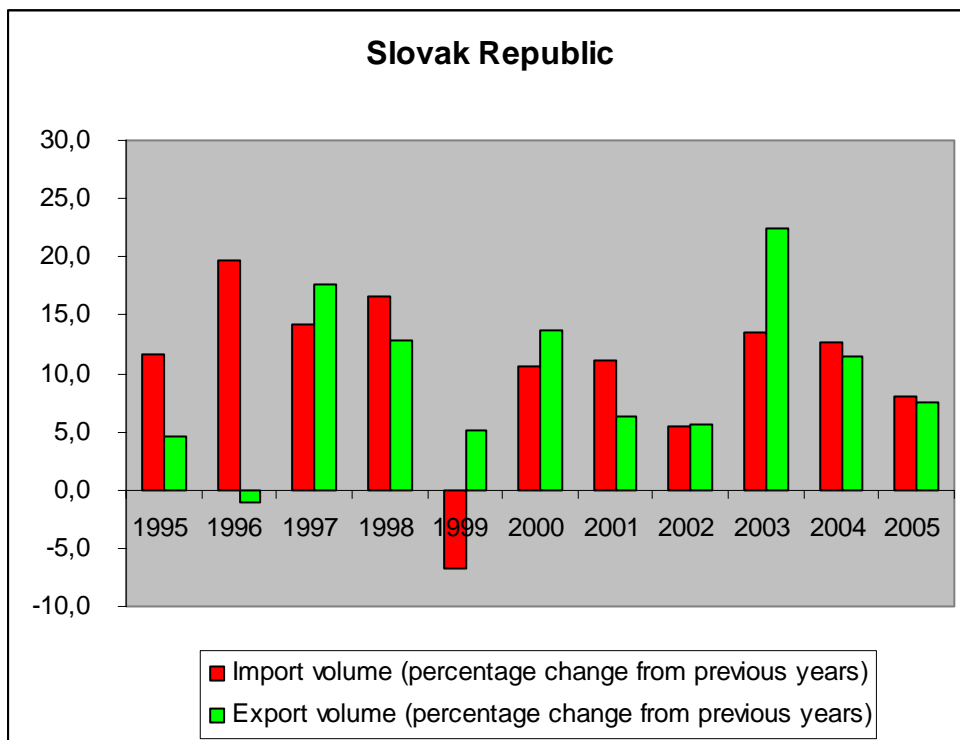| Table 1.: **current account balances as a percentage of GDP**															
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	μ	σ	μ '99 ff.	σ '99 ff.
Czech Republic	-2,5	-6,7	-6,3	-2,1	-2,5	-4,9	-5,4	-5,6	-6,3	-5,2	-4,0	-4,7	1,60	-4,8	1,16
Hungary	-3,4	-3,9	-4,4	-7,2	-7,8	-8,6	-6,2	-7,1	-8,7	-8,8	-8,4	-6,8	1,93	-8,0	0,91
Poland	0,6	-2,2	-3,8	-4,1	-7,6	-6,0	-2,9	-2,6	-2,2	-4,3	-1,5	-3,3	2,12	-3,9	2,06
Slovak Republic	2,6	-9,4	-8,5	-8,9	-4,8	-3,6	-8,4	-8,0	-0,9	-3,6	-6,7	-5,5	3,65	-5,1	2,50
Greece	-3,8	-5,2	-4,4	-3,1	-6,2	-8,7	-8,1	-7,5	-7,2	-6,3	-7,0	-6,1	1,72	-7,3	0,84
Ireland	2,6	2,7	2,4	0,8	0,3	-0,4	-0,6	-1,0	0,0	-0,8	-1,5	0,4	1,45	-0,6	0,55
Portugal	-0,1	-3,6	-5,5	-6,6	-8,1	-10,2	-9,1	-6,5	-5,3	-7,5	-9,3	-6,5	2,76	-8,0	1,61
Spain	-0,3	-0,4	-0,1	-1,2	-2,9	-4,0	-3,9	-3,3	-3,6	-5,3	-7,7	-3,0	2,24	-4,4	1,53
Euro area	0,6	1,0	1,4	0,9	0,3	-0,7	0,1	0,7	0,3	0,5	-0,2	0,4	0,54	0,1	0,41
Total OECD	0,1	0,0	0,1	-0,1	-0,7	-1,3	-1,1	-1,2	-1,1	-1,3	-1,8	-0,8	0,65	-1,2	0,31

Source: OECD Economic Outlook No. 78, database

Table 2: GLO indices			
	GLO	**Non-reserve GLO**	**Asset trade/GDP**
Czech Republic	0.83	0.55	0.83
Hungary	0.5	0.33	0.48
Poland	0.58	0.3	0.48
Slovakia	n.a.	n.a.	n.a.
Greece	0.64	0.62	0.81
Ireland	0.93	0.93	8.49
Portugal	0.85	0.83	1.99
Spain	0.84	0.83	1.40

Source: Obstfeld, 2004

Appendix A.2.

Figure 1: **import and export volume as a percentage change from previous years**

Czech Republic

■ Import volume (percentage change from previous years)
■ Export volume (percentage change from previous years)

Slovak Republic

■ Import volume (percentage change from previous years)
■ Export volume (percentage change from previous years)

Poland

Import volume (percentage change from previous years)
Export volume (percentage change from previous years)

Portugal

Import volume (percentage change from previous years)
Export volume (percentage change from previous years)

Source: OECD Economic Outlook No. 78, database

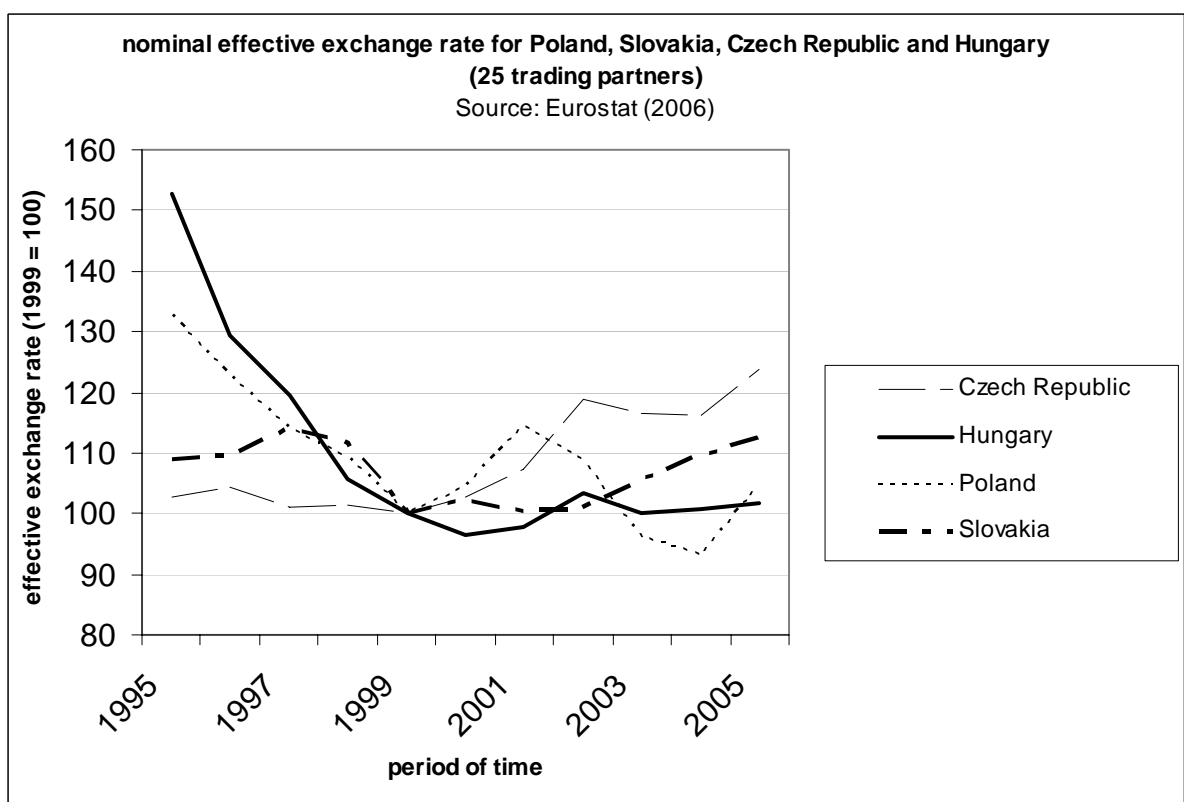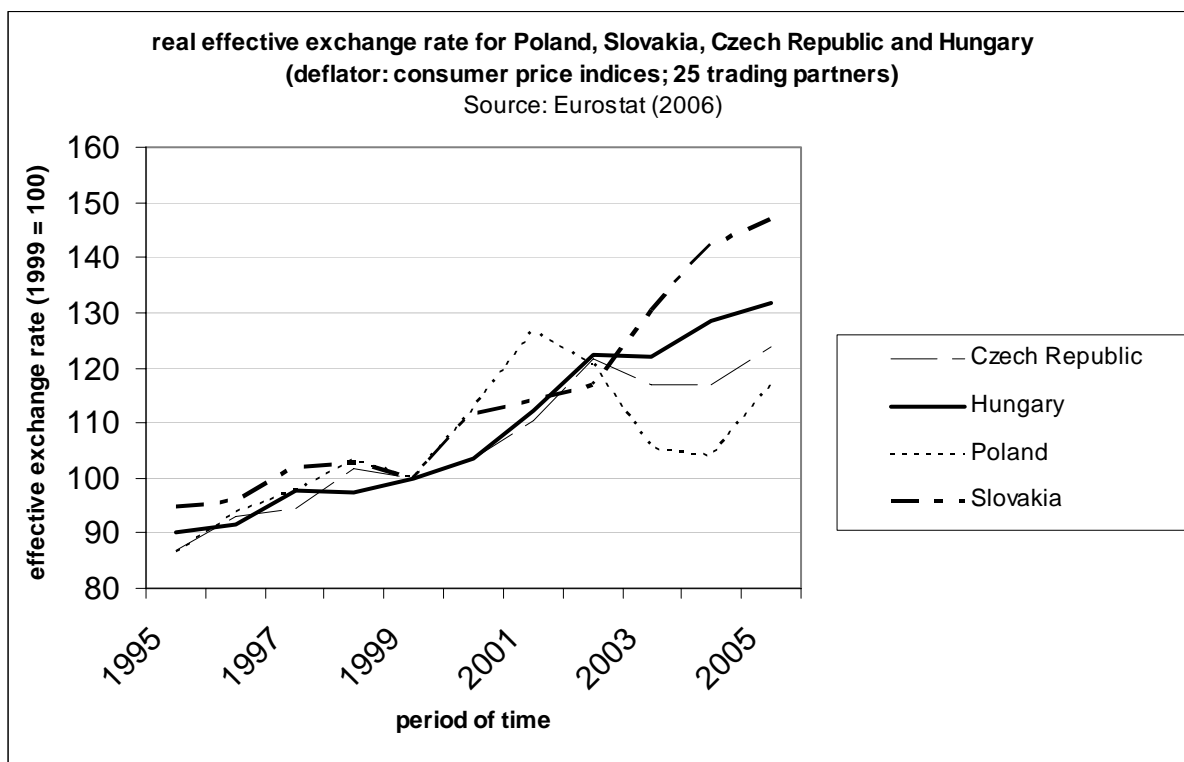Figure 2: **real and nominal effective exchange rates for the Visegrad countries**

real effective exchange rate for Poland, Slovakia, Czech Republic and Hungary (deflator: consumer price indices; 25 trading partners)
Source: Eurostat (2006)

nominal effective exchange rate for Poland, Slovakia, Czech Republic and Hungary (25 trading partners)
Source: Eurostat (2006)

References

Buiter, W. & C. Grafe (2002). "Anchor, float or abandon ship: Exchange rate regimes for the accession countries." <u>EIB Papers</u> 7(2): 51-71.

Calvo, G. A. (2002). "On dollarization." <u>Economics of Transition</u> 10(2): 393-403.

Calvo, G. A., L. Leiderman & C. M. Reinhart (1996). "Inflows of Capital to Developing Countries in the 1990s." <u>Journal of Economic Perspectives</u> 10(2): 123-139.

Corden, W. M. (1994). <u>Economic Policy, Exchange Rates and the International System</u>. Oxford, Oxford University Press.

Dornbusch, R. (1976). "Expectations and Exchange Rate Dynamics." <u>Journal of Political Economy</u> 84(6): 1161-1176.

Edwards, S. (1995). <u>Crisis and Reform in Latin America. From Despair to Hope</u>. Oxford etc., Oxford University Press.

Edwards, S. (2001). "Does the Current Account Matter?" <u>NBER Working Paper, # 8275</u>. Cambridge (MA).

Edwards, S. (2004). "Thirty Years of Current Account Imbalances, Current Account Reversals, and Sudden Stops." <u>IMF Staff Papers</u> 51(Special Issue): 1-49.

Edwards, S., R. Steiner & F. Losada (1996). "Capital Inflows, the Real Exchange Rate and the Mexican Crisis of 1994". <u>Stabilization and Reforms in Latin America: Where do we stand?</u> H. Sautter & R. Schinke, Eds. Frankfurt (Main) & Madrid, Veuvert & Iberoamericana: 69-118.

Frankel, J. A. (1999). <u>No single currency regime is right for all countries or at all times</u>. Essays in International Finance, 215. Princeton (NJ), Princeton University.

Freund, C. & F. Warnock (2005). "Current Account Deficits in Industrial Countries: The Bigger They are, the Harder They Fall?" <u>NBER Working Paper, # 11823</u>. Cambridge (MA).

Gavin, M. & R. Hausmann (1996). "The Roots of Banking Crises: The Macroeconomic Context". <u>IADB Working Papers, # 318</u>. Washington (DC).

Keynes, J. M. (1929). "The German Transfer Problem." <u>The Economic Journal</u> 39(153): 1-7.

Krugman, P. (1999). "Balance Sheets, the Transfer Problem, and Financial Crises." <u>International Tax and Public Finance</u> 6(4): 459-472.

Lane, P. R. & G. M. Milesi-Ferretti (2004). "The Transfer Problem Revisited: Net Foreign Assets and Real Exchange Rates." <u>The Review of Economics and Statistics</u> 86(4): 841-857.

Mann, C. L. (2002). "Perspectives on the U.S. Current Account Deficit and Sustainability." <u>Journal of Economic Perspectives</u> 16(3): 131-152.

Milesi-Ferretti, G. M. & A. Razin (1996a). "Current Account Sustainability: Selected East Asian and Latin American Experiences". NBER Working Paper, # 5791. Cambridge (MA).

Milesi-Ferretti, G. M. & A. Razin (1996b). Current-Account Sustainability. Princeton Studies in International Finance, 81. Princeton (NJ), Princeton University.

Milesi-Ferretti, G. M. & A. Razin (1998). "Sharp Reductions in Current Account Deficits: An Empirical Analysis." European Economic Review 42(3-5): 897-908.

Obstfeld, M. (2004). "External Adjustment". NBER Working Paper, # 10843. Cambridge (MA.).

Obstfeld, M. & K. Rogoff (1996). Foundations of International Macroeconomics. Cambridge (MA) & London, MIT Press.

Obstfeld, M. & A. M. Taylor (2004). Global Capital Markets. Integration, Crisis, and Growth. Cambridge etc., Cambridge University Press.

Reisen, H. (1998). "Net capital inflows: How much to accept, how much to resist". Managing Capital Flows and Exchange Rates: Perspectives from the Pacific Basin. R. Glick, Ed. Cambridge etc., Cambridge University Press: 289-321.

Sachverständigenrat (2004). Erfolge im Ausland - Herausforderungen im Inland. Jahresgutachten 2004/05. Statistisches Bundesamt, Wiesbaden.