



## **The Tenth Dubrovnik Economic Conference**

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Towards the Euro in Hungary: A Bumpy Road to  
Heaven?

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**Towards the Euro in Hungary:  
A Bumpy Road to Heaven?  
by  
Attila Csajbók and Ágnes Csermely\***

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The views expressed are those of the authors and do not necessarily reflect the official views of the Magyar Nemzeti Bank

## I. Introduction

In Hungary there is no extensive public debate about the costs and the benefits of euro adoption. The reason for this benign neglect is that Hungary legally can not opt out from the monetary union. As a new member state of the EU, introduction of the euro will not be an option but an obligation. Nevertheless, policymakers have some discretion regarding the timing of eurozone entry.

Timing can be a delicate issue in the context of readiness for common currency. However, there is a widespread belief that in terms of real convergence, Hungary is at least as integrated to the eurozone as the peripheral countries of the Union, and these countries are considered as success stories, where euro adoption facilitated faster convergence. So, the timing issue has boiled down to the question of meeting the Maastricht criteria.

In some accession countries the Maastricht criteria require significant changes in the objectives and framework of monetary policy. In Hungary it is rather regarded as a smooth transition, since monetary policy has been conducted in a shadow ERM II framework for more than 3 years and fiscal policy should comply with the Stability and Growth Pact, independently from their ambitions regarding Eurozone membership. Consequently, if policymakers don't opt for a larger monetary detour<sup>1</sup>, the additional costs of the euro seems to be negligible. The Excessive Deficit Procedure plays the role of the stick, while the euro as a legal tender represents the carrot in this process. For less developed countries it seems to be a rather juicy carrot, as it makes the process less costly, as market participants might attribute more credibility to the adjustment process in the context of euro adoption than the country deserves based on its track record. It also helps to anchor inflation expectations, ultimately reducing the costs of disinflation.

Despite this optimistic view about euro adoption, so far the convergence process has proved to be rather bumpy. Besides other reasons, it was related to the premature announcements regarding the targeted date of euro adoption in an attempt to gear fiscal discipline as well as to capitalise on interest rate convergence in financing the government debt. However, permanent deviations from the announced adjustment path and a rescheduling of the target dates resulted in excessive exchange rate and interest rate volatility and large shifts in the investors' risk assessment.

In the following, we elaborate on the key elements of the attractiveness of the euro. The literature based on OCA says that the common currency is desirable, if it doesn't amplify the volatility of the business cycles. We go along this line of reasoning by investigating the structural characteristics, trade integration and cyclical synchronisation of the Hungarian economy. We also emphasise the potential impact of the euro on long-term growth rates. Assessing the magnitude of the impact is a controversial issue, as we have to rely on reduced form empirical estimates without strict theoretical underpinnings. However, we try to highlight some channels, which might be particularly important for a less developed small open economy.

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<sup>1</sup> In Hungary the exchange rate policy is common responsibility of fiscal and monetary policy, both authorities have a veto over changing the parameters of the current regime. Limiting exchange rate fluctuations and real exchange rate volatility seems to be a policy priority as opposed to a more independent monetary policy. Moreover, exchange rate policy is a common concern of member states within the EU.

Relinquishing the exchange rate means that the country has to give up a potential policy tool, which could be used for macroeconomic stabilisation. On the other hand, for a small open economy the exchange rate also constitutes an idiosyncratic source of shocks. In order to gauge the costs of abandoning independent monetary policy, we have to evaluate the efficiency of the Hungarian monetary policy in terms of its shock absorbing capacity. Since the beginning of transition exchange rate policy in Hungary has been conducted in one or other form of implicit real exchange rate targeting, while reaction to output fluctuations can not be detected. At the same time, global investor sentiment also had major effects on the evolution of exchange rates and interest rates.

The most important asymmetric shocks, which exchange rate policy reacted to, had a fiscal origin, and fiscal dominance characterised macroeconomic policies during the whole period. Fiscal policy has influenced monetary conditions through its impact on convergence expectations as well. Deviations from the announced convergence path and updates of the programs contributed to excessive exchange rate volatility and high risk-premia. In Section V, we sketch the story of the changing convergence expectations in Hungary.

As the story confirms, being ready for an irrevocably fixed exchange rate takes more than an integrated real sector. Qualifying for a sustainable fixed exchange rate does require macroeconomic policies fully subordinated to monetary stability. In order to evaluate the perspectives of euro adoption from a nominal convergence point of view, we try to assess how far is the actual fiscal situation from complying with the Stability and Growth Pact. In light of the results, it is not surprising that the official target date for eurozone entry is not fully credible among market participants.

## II. Long-term growth

In assessing the potential benefits of participating in a currency union, the academic literature on optimum currency areas primarily considers the reduction in transaction costs and its impact on foreign trade. More trade might contribute to higher growth, via factors playing a role in endogenous growth theories, such as technology transfer, adaptation of know-how and intensifying competition.

According to the results of Grossman and Helpman (1991a), foreign trade expansion influences a small country's growth through two channels. First, through the expansion of trade, the adaptation of 'knowledge' accumulated abroad (technology, know-how, management, organisational skills, etc.) may increase. This raises the productivity of the research and development sector, through which innovation expands and the growth rate rises. Second, an indirect impact may also play a role – higher imports of human capital intensive consumer goods reduce the relative prices of these in the domestic market. As a result, a part of the human capital employed in the consumer goods producing sector flows into the research and development sector, which, in turn, also raises the rate of domestic economic growth.

Combining endogenous growth theory and 'new trade theory', however, has failed to show a clearly positive relationship between trade and growth. Rivera-Batiz and Romer (1991) demonstrated that the relationship between the extent of barriers to trade (appearing as customs duties in the model) and growth is not monotonous. The impact on economic growth of the decline in trade barriers (for example, in a currency union) may be either positive or negative, depending on the level of barriers in the period prior to currency union.

Due to a lack of theoretical consensus, the emphasis has been placed primarily on empirical research into the issue of currency union, foreign trade and growth. Several empirical studies have attempted to measure the impact of currency unions on foreign trade expansion and the effect of foreign trade on growth. These attempts have followed basically two methodological strategies.

The first strategy was to study the relationship between exchange rate volatility and the volume of foreign trade using time series-based econometric methods. Sekkat (1997) provides a comprehensive survey of the empirical work aimed at examining the issue. Based on the survey, he draws the conclusion that there is no clear evidence of a negative relationship between exchange rate volatility and the volume of foreign trade. However Calvo and Reinhart (2000) also find that for emerging countries there exists a statistically significant and strong negative relationship between exchange rate volatility and foreign trade turnover. Their results contrast with those involving developed countries, which the authors attribute to the relative underdevelopment of emerging-country foreign currency derivatives markets and the absence of financial instruments serving to hedge exchange rate risk.

The second strategy, which has proved to be more fruitful, was the use of the so-called 'gravity' trade models. The classical form of this was complemented with a dummy variable representing the effect of a currency union. Rose (2002) attempts to summarise the results of empirical papers in this vein. For this purpose, he uses the meta-analysis approach in which he analyses the estimates of 18 papers on the subject written by various authors and employing different statistical methods (a total of 365 point estimates in the various

specifications). The conclusion of his meta-analysis is that the effect is statistically significant and robust – according to the ‘aggregate’ evidence of the relevant papers, currency union roughly doubles the volume of bilateral trade.

In order to adapt the gravity models to eurozone, Rose and van Wincoop (2001) complemented the standard model controlling for multilateral trade barriers. The theory behind gravity-based models (see, for example, Anderson and van Wincoop (2001)) clearly shows that trade between a pair of countries is determined by the ratio of the bilateral trade barrier to the average multilateral trade barrier.<sup>2</sup> If a country forms a currency union with another country (or group of countries) with whom it previously conducted a significant share of its foreign trade, then the average multilateral trade barrier decreases considerably, as well as the bilateral trade barriers. As a result, the relative reduction in the bilateral trade barrier will not be significant and, consequently, bilateral trade will not rise as strongly as it could in a currency union with a country with which it originally traded relatively little. Using the trade barrier model, Rose and van Wincoop delivered a much lower figure for the effect of a currency union in the case of the EMU-11 than Rose's original 200% trade expansion figure. The new estimates showed a 58% expansion of trade within the EMU-11, corresponding to a 10% long-term rise in welfare (measured as household consumption) as a result of introducing the common currency.

The model by Rose and van Wincoop (2001), which takes into account multilateral influences, was adapted to Hungary by Csajbok and Csermely(2003). According to their calculations, within an EMU enlarged with Hungary, bilateral trade (i.e. trade between Hungary and the earlier EMU member countries) would expand by 75% over the long term, and the average welfare of EMU enlarged with Hungary would see a 6.5% increase over the long term. However, the average welfare gain would not be evenly distributed among the member countries – as Hungary's accession obviously would raise its own foreign trade by far the most, the welfare gain for Hungary, at 16.7% over the long term, would also be the highest. Defining ‘long term’ as 20 years, and assuming that GDP rises at the same rate as household consumption (welfare), all this equals to an annual growth surplus of 0.76%. It should be added that the model used only provides information about the expected long-term expansion of trade, and hence we have no picture of the dynamics of the estimated gains over time.

## **II. 1. Benefits from importing monetary stability**

Gravity models and time series studies provide reduced form estimates, which are useful to assess the magnitude of the impact of currency union on the volume of foreign trade and growth potential, but not able to reveal the channels through which the results are delivered. However, if two countries are in asymmetrical positions with regard to their size, credit rating, inflation record and monetary policy credibility, one can identify several factors, which might contribute to the growth enhancing impact of currency union.<sup>3</sup>

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<sup>2</sup> The role of the relative size of bilateral and multilateral trade barriers becomes clearly evident from the theoretical deduction of ‘gravity’ models. Despite this fact, the ‘gravity’ models estimated in practice often ignore this factor, and they exclusively attempt to measure the trade-creating effect of the absolute reduction in the bilateral barrier.

<sup>3</sup> Some of these impacts might be additional to the Rose – Wincoop type estimates as the latter primarily focuses on endogenous growth factors.

Hungary is going to join to an area of *monetary stability*. Even if the prerequisites of euro adoption include some measures of macroeconomic stability, it is qualitatively different from an established low inflation environment in terms of predictability, volatility of expectations, length of nominal contracts etc. While for an independent country with bad track record it takes ages to gain monetary credibility, joining the eurozone the economy get access to all the welfare gains of monetary stability as a windfall gain. Consequently, all the benefits that monetary stability delivers will be available earlier for the country.

Joining an area of monetary stability, country's exposure to *financial contagion* will also decrease. It means that Hungary will have be given a more favourable credit rating and may escape the costs of higher exchange rate volatility. The resulting benefits will become evident through numerous channels.

First, domestic real interest rates will be lower due to the reduction in exchange rate risk. Taking into account the experiences of current EMU member countries<sup>4</sup> and yield curve information, the size of a reduction in real interest rates due to joining the eurozone might amount to 150–300 basis points. Sustainable and low real interest rates can accelerate the catching up process and in this way it contributes to social welfare.

However, loser monetary conditions might have an adverse impact on output fluctuation as well. The cyclical position of the country may be diverted if the lower real interest rates create too lax monetary conditions in a rapidly catching up country, causing output to grow above potential. The other threat is asset price inflation due to increased borrowing enabled by the low real interest rates. Drastic corrections lead to financial uncertainty and instability, with real economic repercussions.

However, for a small, open emerging country, maintaining the independent currency may not only represent costs in the form of risk premium. Capital flows may also be more volatile in emerging countries relative to developed countries – steady inflows lasting for years may be replaced by sudden outflows, even independent of domestic economic conditions. *This, in turn, affects business cycles – cyclical fluctuations may be much more pronounced than in more developed countries or in those that give up their own currency.*

A further channel characteristic to less developed economies is that the structure and financial development of the economy may aggravate the effects of exchange rate fluctuations.<sup>5</sup> According to the *original sin* theory, emerging countries with good economic prospects and open financial markets represent an attractive target for foreign investors, and so ample amounts of short-term foreign currency funds are available, while their access to funds denominated in their own currency or long-term finance abroad is limited or expensive.<sup>6</sup> As a consequence, the corporate sector and the state accumulate foreign currency debt without natural hedging, which causes large financial losses in the event of currency depreciation or devaluation.

A further consequence of volatile exchange rate and capital flows, and the resulting higher cyclical fluctuations is that, in formulating their risk perception of a country, investors

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<sup>4</sup> In Portugal, the ex post real interest rate fell 4% between mid-1997 and end-1998.<sup>4</sup> Spanish ex post real rates experienced a 2.5% fall in the same period

<sup>5</sup> Calvo and Reinhart (2000) analysed the effects of currency crises in 39 countries between 1975–1999. This revealed that post-crisis declines in GDP amounted to 2% on average in emerging countries, in contrast with only 0.2% in developed countries.

<sup>6</sup> Eichengreen and Hausmann (1999).

attribute a greater importance to developments in net debt and the current account balance than in the case of developed countries. A mounting current account deficit may cause devaluation expectations to develop and long-term foreign funding to dry up, which may necessitate economic policy adjustments (fiscal adjustment, devaluation), aimed at reducing their current account deficit through the radical curtailment of domestic demand. In order to avoid such situations, economic policy attempts to sustain a current account deficit judged by investors as favourable. Restraining external borrowing eventually retards economic growth.

As an effect of a common currency, capital flows among member states will, in principle, become as smooth as are capital flows among regions within countries of large geographical dimensions. The expected easing of current account deficit constraint is well illustrated by empirical studies, which examined capital flows among the regions or provinces of a few large countries. With the creation of monetary union, the mobility of capital is likely to be higher, as exchange rate risk, being an important risk factor, disappears. As other factors also affect capital flows, it is not easy to isolate the expected effects of a common currency from other (regulatory, cultural, etc.) effects. The academic literature measures the expected effect by examining the interaction between savings and fixed investment, and by assuming that the common currency will create a similar relationship. The most frequently cited work is the study by Bayoumi and Rose (1993) which analysed the interaction between savings and fixed investment in the United Kingdom using various approaches. Other studies analysed the cases of Canada, Japan and the United States.<sup>7</sup> These studies concur in their conclusion that the relationship between savings and fixed investment is much looser and among the regions within a country than on a country level. In other words, the current account balance of regions does not represent a serious hurdle to capital flows. From this it follows that the magnitude of capital flows among the participating countries will be significantly higher than earlier as a result of monetary integration. Stating it differently, member countries' current account deficits are much less of an impediment to capital flows within a currency union.

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<sup>7</sup> Thomas (1993), Bayoumi (1997), Dekle (1996), Sinn (1992), Iwamoto et al (2000) and Wincoop (2001).



### **III. Volatility of cyclical fluctuation**

Welfare is influenced not only by the level and the rate of GDP growth, but their stability as well. For this reason, it is important to examine whether joining the eurozone will increase or mitigate the volatility of business cycles. Participation in the eurozone entails the importation of a monetary policy that takes into consideration economic developments within the entire eurozone, while giving up a potential policy tool, which could be used for macroeconomic stabilisation. The key question is whether Hungary and the eurozone form an optimum currency area, that is whether the monetary policy of the eurozone is capable of adequately substituting independent Hungarian monetary policy in smoothing out cyclical fluctuations.

In order to assess the impact of abandoning the national currency on business cycle volatility, we investigate two aspects of the problem. First, we try to characterise the exposure of the Hungarian economy to asymmetric shocks on the basis of the so-called OCA properties.<sup>8</sup> As we argue below, the incidence of asymmetric shocks is no more likely in Hungary than in current less-developed members of the eurozone.

Then we address the issue whether the independent monetary policy was indeed an effective policy device to smooth cyclical fluctuations. Recent experience shows that emerging market financial crises as well as global investor sentiment have had major effects on the evolution of exchange rates and interest rates in Hungary. Nevertheless, we can not say that the Hungarian authorities had no control over exchange rate policy, but fiscal dominance was prevalent in the whole period. Relinquishing the exchange rate requires more co-ordinated policies preventing escalation of macroeconomic imbalances.

Abandoning independent monetary policy will entail a smaller loss in welfare provided there exist effective market mechanisms and economic policy instruments capable of taking monetary policy's place in the management of the asymmetric shocks that may arise. In the last part of this section we investigate the shock absorbing capacity of fiscal policy. Taking into account the actual determinations and the structural features of the budget, the transition from the so-called fiscal dominance situation to fiscal policy fully subordinated to exchange rate policy might be a lengthy process.

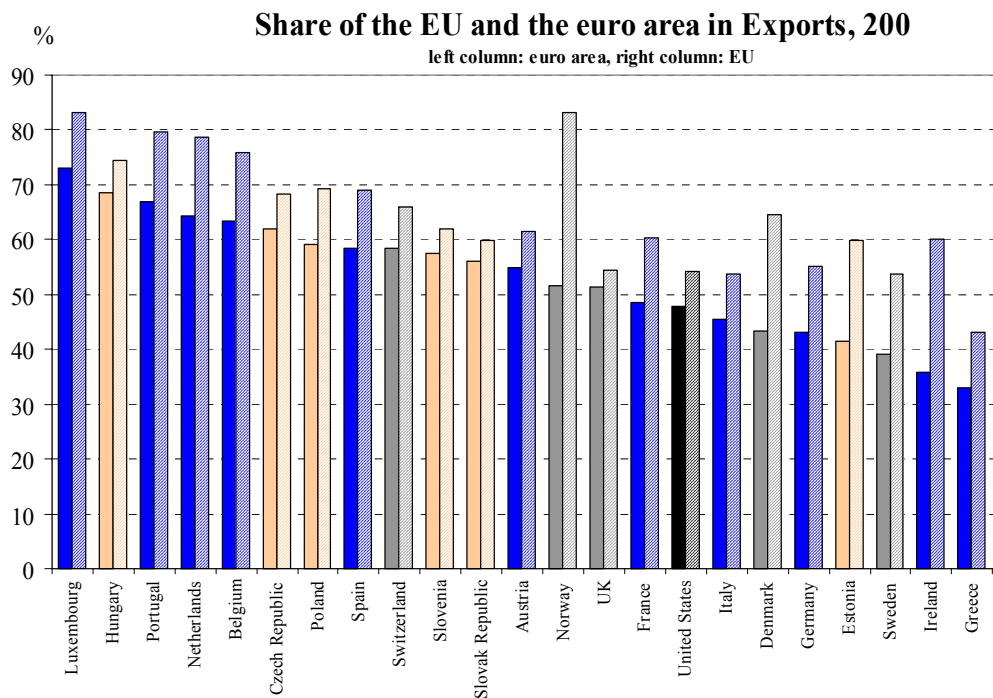
#### **III. 1. Exposure to asymmetric shocks.**

The literature on OCA suggests that a final fixing of exchange rates cannot be optimal unless there is only a small likelihood that the participating countries are exposed to asymmetric shocks. To assess the probability of asymmetric shocks, we compare the production structure of the Hungarian economy, the depth of foreign trade and production integration with those of the eurozone member countries. Then we investigate cyclical movements across countries, which provide useful information on the extent to which the countries examined have behaved as optimal currency areas in the recent past.

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<sup>8</sup> The theoretical foundations of currency unions have been developed in the literature on optimum currency areas (OCA) pioneered by Mundell (1961), and developed by McKinnon (1963), Kenen (1969), Tavlas (1993), Bayoumi and Eichengreen(1996) and others.

Chart 1.



The probability of asymmetric shocks occurring depends primarily on the similarity, the degree of integration and diversification of production structures. Csajbók and Csermely (2002) investigate the OCA characteristics of the Hungarian economy. They find that Hungary's openness and trade integration with the eurozone is already high both in terms of quantitative measures such as the share of eurozone trade in GDP (*Chart 1*), and on the basis of more qualitative indicators such as the share of intra-industry trade or the penetration of high value-added markets. Fidrmuc (2004) also finds that the importance of intra-industry trade in Hungary, Poland and Slovenia is as high as in some EMU members.

The structure of the Hungarian economy, that is the shares of different sectors in employment and GDP, is broadly similar to the eurozone average. Since the beginning of transition the Hungarian economy has made significant progress in structural convergence towards the eurozone. There still exists a certain degree of asymmetry in a few specific industries within manufacturing, but this does not exceed the asymmetry experienced by the current smaller euro-area members.

Csajbók and Csermely (2002) also find that the flexibility of labour and goods markets is also in line with that of the eurozone countries. Wage adjustments in Hungary are relatively flexible and performed within a similar institutional framework to that in the EMU, while price adjustments are frequent without major rigidities. Just as the other EU member states, Hungary faces low labour mobility and permanent regional differences. International mobility is hindered by linguistic and cultural barriers, restricted mobility of social insurance, pension schemes and other social benefits, and temporary restriction on the free flow of labour in respect of certain members. In addition, even national mobility is low, attributable to a number of factors including regional differences in housing costs.

Structural similarities, especially when there is a high proportion of intra-industry trade, assist synchronisation in the future. If markets are linked by intra-industry trade, it is unlikely that an asymmetric shock will only affect one particular country. On the other

hand, provided there is a sufficiently diversified economic structure, the shocks affecting one particular industry would not require the adjustment of the exchange rate. Consequently, the structure of the real economy seems to be well prepared for the common currency. Low labour mobility is not viewed as an obstacle to Hungary's entry into the monetary union, as even for the present eurozone member states the free flow of labour plays a negligible role in adjustment to shocks.

### III. 2. Cyclical alignment in the past

Several studies have dealt with the cyclical alignment of the Hungarian economy and other accession-country economies. Although the methods of measurement and the chosen time series have varied, the studies have unequivocally found that Hungary is not far from the European average regarding the co-movement of business cycles.<sup>9</sup>

Another approach to measure the synchronisation of business cycles among CEECs and the eurozone is the bivariate Blanchard–Quah-type SVAR decomposition of supply and demand shocks based on output and inflation data. Once supply and demand shocks were identified separately for individual CEECs and Germany or the eurozone, synchronisation was assessed by the correlation between the shocks at home and in Germany/the eurozone. Before summarising the results from the studies in this vein, we have to call attention to the concerns about the SVAR methodology. First, imposing long-run identifying restrictions for six to ten years of data available for the CEECs is problematic. Moreover, this methodology doesn't distinguish between various sources of demand shocks. Pooling aggregate demand and monetary policy shocks masks that the behaviour of monetary policy might have affected the observed symmetry of demand shocks. Consequently, the results give limited information on future co-movements within the eurozone.

Recent research using the SVAR approach has found that among CEECs Hungary can be viewed as the economy showing the highest degree of symmetry with the eurozone. Based on SVAR estimates of quarterly GDP and GDP deflator series by Fidrmuc and Korhonen (2001), the Hungarian supply correlation coefficient equals 0.46 relative to the eurozone, while the demand correlation coefficient is 0.25. This puts Hungary directly after the four largest euro-area member nations in respect of symmetry. Estimates by Frankel, Nickel and Schmidt (1999) also based on GDP and its deflator suggest that of the accession countries, only Hungarian demand and supply shocks are positively correlated with those of both Germany and France. Csajbók and Csermely (2002) defines the European demand and supply shocks as the principal component of the country series, which might provide a better representation of the shocks common to several countries simultaneously (*Chart 2*). They find that it is primarily Hungary's demand correlation that exhibits symmetry of a magnitude that corresponds to that of many current euro-area member nations. At the same time, the inference suggested by the country's supply correlation is that the exchange rate of the home currency is needed as a shock absorber. Nevertheless, the situation appears to be more promising from the perspective of accession, because the results seem

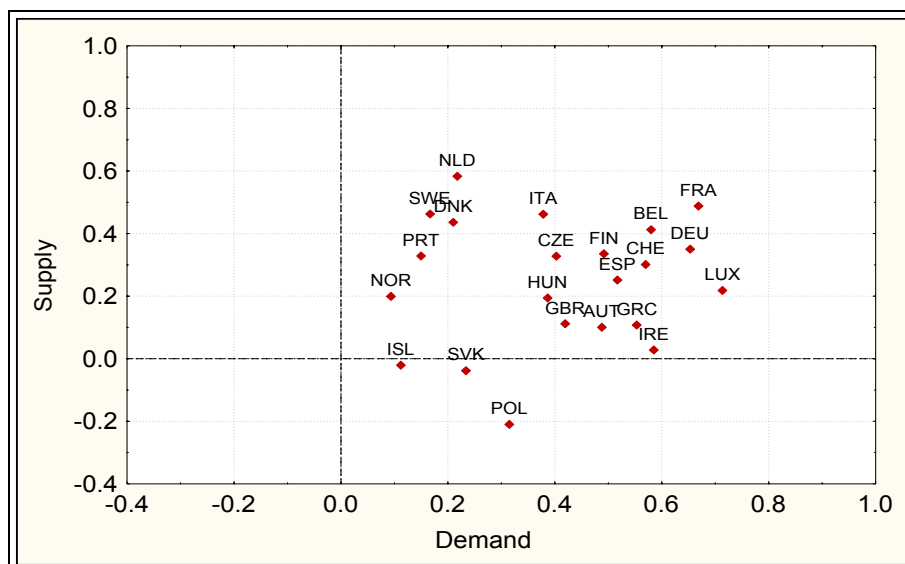
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<sup>9</sup> IMF (2000), European Commission (2001a), Fidrmuc and Korhonen (2001), Frankel, Nickel and Schmidt (1999), Boone and Maurel (1999).

simply to reflect the characteristics of the transition and catching-up process noted earlier, thus an increase in the symmetry of supply shocks is to be expected in the future.

Chart 2

**Correlations of demand and supply shocks with the eurozone\***  
(1992 Q1 – 2000 Q4)



\*First principal component of the member countries' shock series.  
Source: Csajbók and Csermely (2002)

A recent study by Darvas and Szapáry (2004) uses detrended time series as cyclical measures in order to assess the degree of business cycle synchronisation in CEECs vis-à-vis the euro zone cycle. A novelty of their approach is that they extend the analysis to the major expenditure and sectoral components of GDP, which might help to identify the sources of asymmetric shocks hit these economies.

Using the GDP as the proxy for business cycle they find that among the CEECs, Hungary, Poland and Slovenia exhibit increasing and significant synchronisation with the eurozone. In these countries the turning points of the cycle occur almost simultaneously, having zero or close to zero time gaps in the most recent period. In terms of volatility of the cycles they find that these countries exhibit larger fluctuations than the eurozone on average, however the decline in volatility is also evident for most of the CEECs over the last ten years. Hungary and Slovenia show the smallest volatility of cycles among CEECs, with amplitudes lower than in many current eurozone members. Another aspect of cyclical harmonisation is the persistence of the disturbances. The authors reveal increasing persistence in the cycles of CEECs, which they attribute to the diminishing role of country specific shocks.

Turning to sectoral decomposition, industrial production and exports exhibit high level of correlation, comparable to that of the EMU members in the three leading CEECs countries, while there is less synchronisation in the services sector. A more worrisome phenomenon, however, that private consumption exhibits negative correlation with the EMU aggregate, and the movement has been toward greater asynchronicity. Among others, they attribute the lack of co-movement to the asymmetric shocks these countries were

exposed to and the way in which private consumption reacted to them. The transition recession in the early 1990s was accompanied by sharp reductions in consumption partly due to the increasing propensity to save for precautionary motives. Later on the pent-up consumption demand fuelled sometimes by loose fiscal policy and high wage increases, led to a strong growth in consumption followed by sudden reversals.

Investments also exhibit low correlation, although Poland and Hungary show some moves toward greater synchronisation. Not surprisingly, the volatility of investment in the CEECs is higher than in the other countries, as investments have been very much influenced by the pace of the reforms, in particular privatisation and the associated FDI.

These underlying divergences in the cyclical patterns warn us not to give up monetary policy independence prematurely. Although we can argue that the lack of correlation is partly due to transitional factors fading out over time. However, the incidence of shocks with fiscal origins must diminish as well in order to support cyclical harmonisation with the eurozone.

### **III. 3. Shock absorbing capacity of monetary policy.**

According to the traditional theory of currency areas, the exchange rate moves to the extent and in the direction justified by economic fundamentals, thereby assisting the economy in adjusting to various asymmetric shocks. According to empirical evidence, however, the role of the exchange rate in neutralising shocks is actually weaker. This is especially true for small, open and less developed countries. In these countries, foreign investors' willingness to take risk depends strongly on the general risk perception of financial assets. This, in turn, leads to fluctuations in capital flows and, consequently, to exchange rate volatility, often independent of domestic economic fundamentals. Moreover, the foreign currency markets of many small countries are not deep and liquid enough, which may also cause excessive exchange rate volatility. The exchange rate, therefore, may also become a source of destabilising shocks, instead of counteracting the effects of real shocks, thereby forcing economic agents to make unnecessary adjustments (see Buiter 2000).

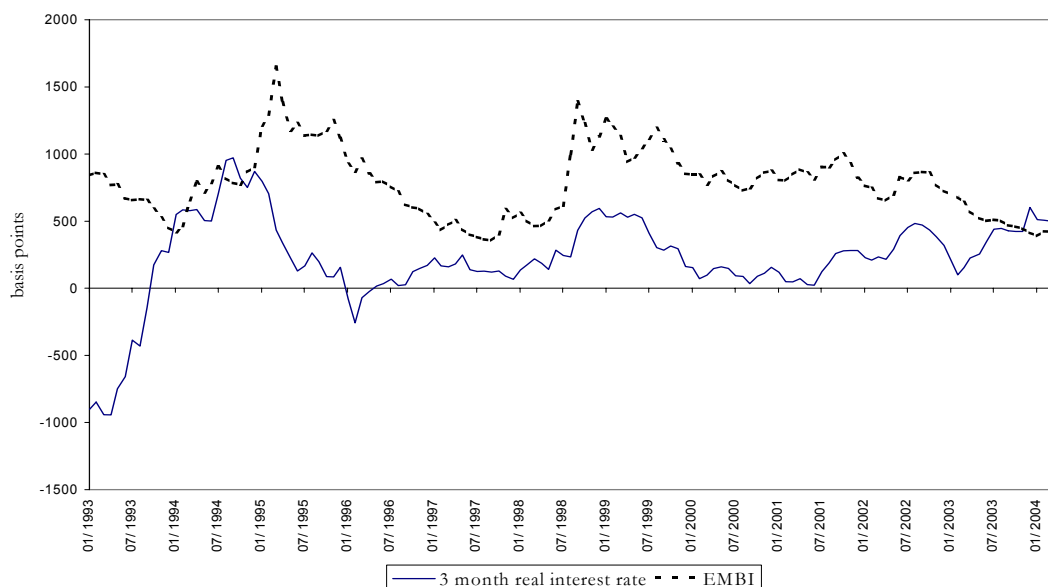
Following the Clarida and Gali (1994) and Gerlach and Smets (1995) the SVAR methodology has been applied to assess the importance of the various shocks in explaining movements in the real exchange rate and the role of the exchange rate in propagation of disturbances the question of exchange rate efficiency. In the context Hungary, one has to refrain from applying sophisticated methods for evaluating the relevance of the exchange rate, since both the economy and the monetary policy framework have undergone significant structural changes during the short period when data are available. In the following we try to assess the efficiency of the Hungarian exchange rate policy on the basis of stylised facts.

In most of the period under investigation the Hungarian central bank pursued some sort of exchange rate targeting. Until 1995 it took the form of an adjustable exchange rate peg, then between 1995-2001 a crawling peg regime was operated, then the bank widened the exchange rate band to 30%, and introduced a shadow ERMII regime.

In the tight exchange rate management regimes, changes in risk premium compensated for shifts in risk assessment. As illustrated on *Chart 3*, despite the major improvement in Hungary's credit rating in past years, foreign investors entering the Hungarian financial market still react sensitively to unfavourable emerging market events and to shocks from developed capital markets. The risk premium on Hungarian bonds moved closely together with emerging market spreads.

Chart.3

**The EMBI spread and the real interest rate on 3-month government bonds**



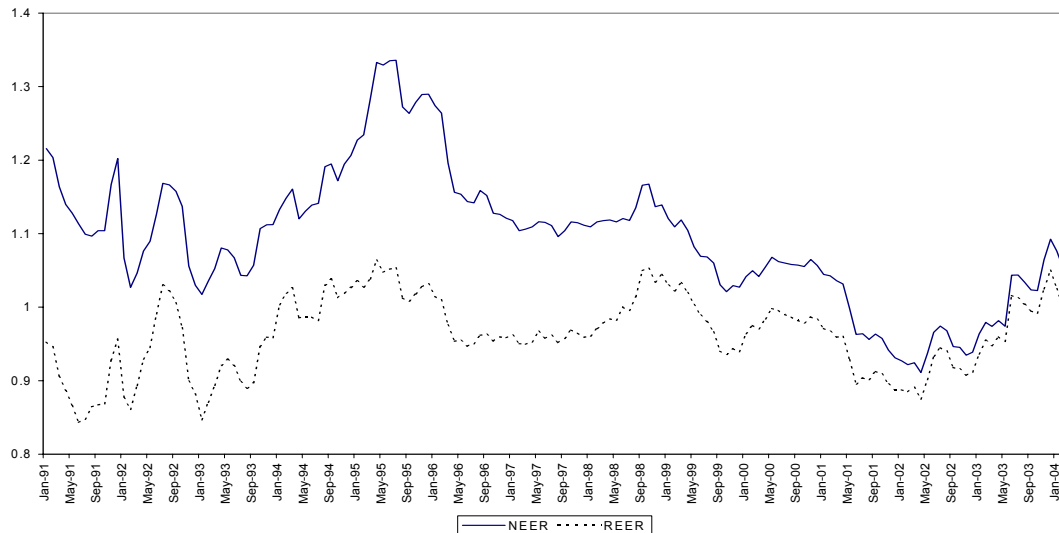
Source: MNB

In the shadow ERM II regime financial contagion have caused significant fluctuations both in the exchange rate and the interest rate. During the period since May 2001 the Hungarian forint has been victim to the collapse of investor confidence towards higher-risk assets several times: For example in 2001 there were three occasions when capital outflows occurred independent from domestic fundamentals (Argentina, Turkey and Poland, 09/11.). On each of these occasions the forint depreciated by more than 4%, followed by a slow recovery taking several weeks. Later on, due to the deterioration of Hungarian fundamentals it became more difficult to disentangle domestic and external influences.

Despite exchange rate targeting, the nominal effective rates fluctuated widely, partly due to changes in cross rates, but overwhelmingly to policy induced changes of the central parity. Searching for the rationale behind changes in central parity, we observe the remarkable stability of the real exchange rate especially during the tight exchange rate management period (*Chart 4*). Stability of the real exchange rate might reflect the policy reaction function aiming at an implicit real exchange rate target. Indeed, this motive was deeply embedded in objective function of the central bank, however its manifestation was different in the subsequent regimes.

Chart 4

**Annual depreciation of the nominal and the CPI-based real effective exchange rates, 1991–2003**



Source: NBH

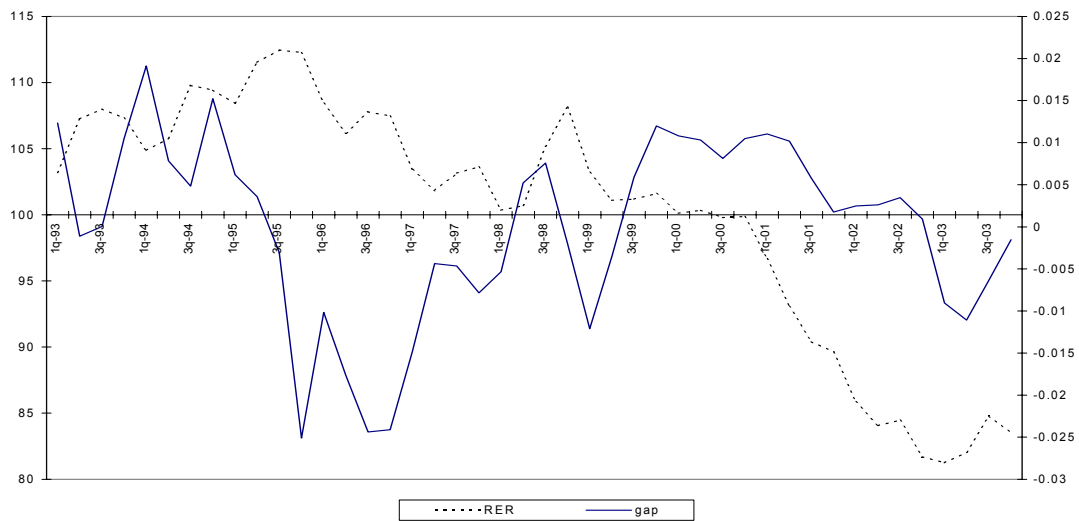
In the early 1990s, the pegged exchange rate represented a nominal anchor for the economy. However, it wasn't credible, and the lack of nominal discipline made the expected devaluation unavoidable. Later on, in the crawling peg regime, devaluations became more forward looking, providing a nominal anchor for the gradual disinflation path. However, some backward looking elements prevailed, as past shocks to inflation resulted in maintaining higher devaluation rate in the forthcoming periods. On the other hand, MNB statements reveal some cases<sup>10</sup> when exchange rate realignment aimed at not only restoring, but improving competitiveness. However, any change in the exchange rate passed through rapidly to consumer prices, thereby absorbing any increase in competitiveness caused by devaluation. Behaviour of the real exchange rate seems to support the views of McKinnon (1963), who claimed that the more open a country is, the less capable it is of influencing its real exchange rate on a permanent basis by changing the nominal exchange rate.

Comparing the movements in the real exchange rate of the forint and the cyclical component of the GDP, the correlation coefficient is not significantly different from zero (*Chart 5*). Neither the real interest rate was aligned with cyclical fluctuations (*Chart 6*). It suggests that the independent monetary policy hasn't been an effective instrument in stabilising output fluctuations or it wasn't the primary objective of monetary policy.

<sup>10</sup> E.g. Aug. 18, 1994., March 9, 1995, Jun 4, 2003.

Chart 5

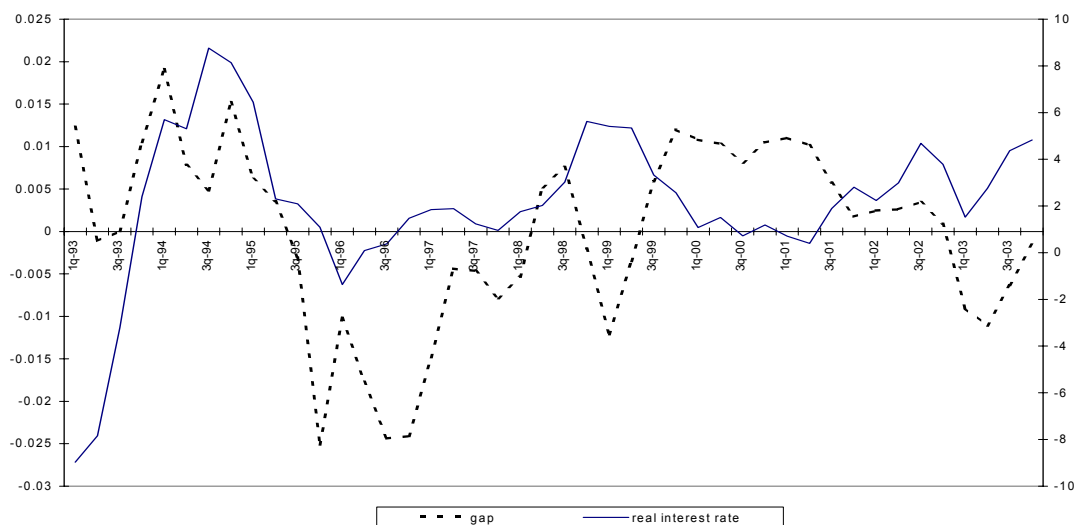
**Real effective exchange rate and the output gap\*, 1993–2003**



\* Deviation from HP trend  
Source: MNB

Chart 6

**3-month real interest rate and the output gap\*, 1993–2003**



\* Deviation from HP trend  
Source: MNB

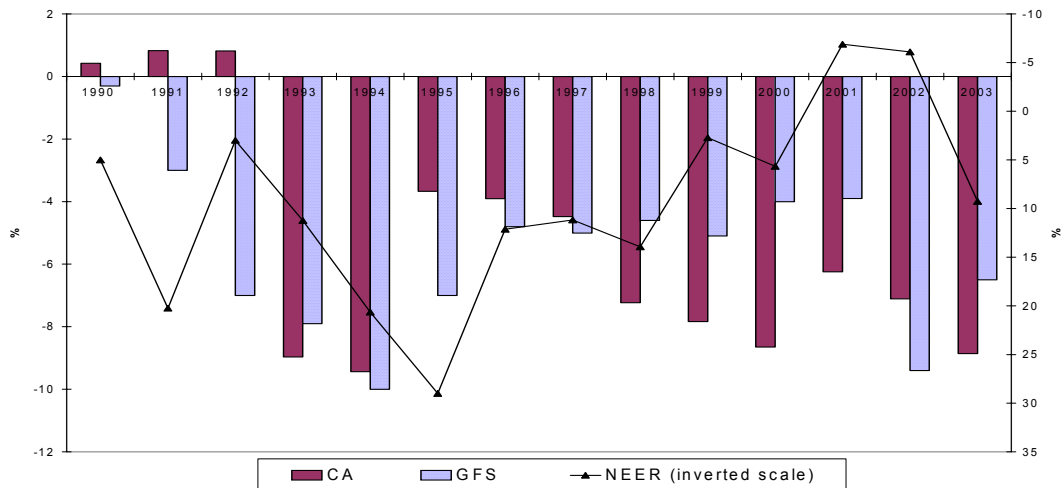
Another remarkable feature of the Hungarian exchange rate policy is the co-movement of fiscal position and the nominal exchange rate. Increasing fiscal imbalances resulted in twin deficits in 1994-5 and in 2002-3 periods (*Chart 7*). It was followed by a depreciation of the forint and accelerating inflation. In both cases surprise inflation contributed to the drop in domestic absorption by reducing real value of wealth and incomes (*Chart 8*). Moreover it has also played a role in fiscal consolidation, as some types of government expenditures are not fully indexed, and the real burden of the fixed-interest domestic debt also eased. It is difficult to assess to what extent the devaluation was administered by the authorities or



forced by the deterioration in investors' risk assessment. Nevertheless, we can conclude the devaluation proved to be an efficient instrument in lowering the current account deficit and the fiscal imbalance. However, the impact was not transmitted through higher competitiveness but mainly through the surprise inflation it triggered.

Chart 7

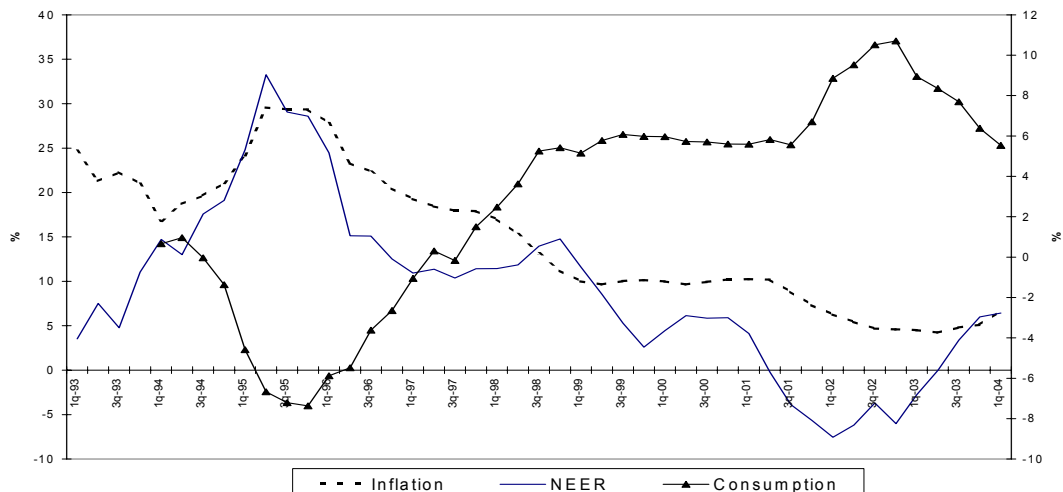
**The GFS deficit the current account and annual depreciation of the forint, 1993–2003**



Source: MNB

Chart 8

**The GFS deficit the current account and annual depreciation of the forint, 1993–2003**



Source: MNB

We found some evidence that fiscal policy has contributed to asymmetric shocks in the last decade. The observed co-movement between the nominal exchange rate and the twin deficits also suggests that fiscal dominance might be a serious impediment to monetary

stability. Consequently, we have to address the question when the fiscal policy will indeed be subordinated to exchange rate stability. It is especially important in the context of a currency union, when fiscal policy has a primary role in mitigating adverse effects of the potential asymmetric shock.

### **III. 4. Shock absorbing capacity of fiscal policy**

Stability and Growth Pact (SGP) defines the requirements regarding the conduct of fiscal policy in EU. It sets a medium term budgetary objective of close to balance or in surplus in order to allow for normal cyclical fluctuations, while keeping the deficit within the 3% reference value. At deficit levels higher than 3% of GDP, the Excessive Deficit Procedure (EDP) prevents exploiting fiscal stabilisers, because the government under EDP has to adhere to the negotiated adjustment path. Consequently, establishing the shock absorbing capacity of fiscal policies requires structural fiscal deficit reduced to close to balance level.

In order to define the optimal level of structural deficits<sup>11</sup> several studies has investigated the operation of automatic stabilisers in accession countries<sup>12</sup> and found that sensitivity to the cycle is relatively small. Low sensitivity arises from the fact, that fiscal revenues and expenditures are predominantly linked to wages and consumption, and the expenditures are less variable relative to the cycle, partly due to the high level of structural unemployment. According to Orbán and Szapáry (2004), the minimal benchmark structural deficit, i.e. the maximum deficit to be respected over the cycle without running the risk of breaching the 3% limit, is higher in the CEECs than in the EU. Taking into account the observed output fluctuations in the past, for Hungary they estimate 1,4% of the GDP, as the minimum benchmark deficit.

However, low cyclical sensitivity of the budget doesn't mean that a lower safety margin is acceptable.<sup>13</sup> Manoeuvring room for the automatic stabilisers without breaching the 3% limit is not equivalent with the effective operation of the stabilisation oriented fiscal policy. The low cyclical sensitivity implies that discretionary measures should play a more pronounced role. Indeed, analysing budgetary processes in Hungary, Csajbók and Csermely (2002) found that discretionary measures, especially those aimed at smoothing investment activity, played the most important role in stabilisation policy in the last decade in Hungary.

It should be noted that the EU prefers aggregate demand management via the automatic stabilisers to that via discretionary measures. Discretionary measures are to be implemented with delay and they tend to have more permanent budgetary effects, reducing the manoeuvring room of fiscal policy in the future. Consequently, embarking on structural reforms aiming at increasing the role of automatic stabilisers would be beneficial both for

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<sup>11</sup> The enforceability of the SGP is problematic, since no fines or penalties are attached to small but permanent structural deficits. It creates a manoeuvring for discretion in determining the optimal level of structural deficit.

<sup>12</sup> Orbán and Szapáry 2004, Coricelli and Ergolani (2002), IMF 2004.

<sup>13</sup> There are other arguments in favor of higher structural deficits in CEECs. Coricelli and Ergolani(2002) argues that higher investment into infrastructure justifies higher deficit levels. Others argue that deficits arising from structural reforms should be exempted when assessing budgetary positions.

the efficiency of fiscal smoothing and SGP compatibility. However, as Gali and Perotti (2003) show, procyclicality of fiscal policy has declined in most of the EU countries since the adoption of the euro. The reduction in redistribution levels, especially the less benevolent unemployment schemes, and restructuring of revenues from direct to indirect taxes has contributed to the decline in automatic stabilisers.

As Darvas and Szapáry (2004) show, the output fluctuations tend to be higher in these countries. Moreover the efficiency of fiscal stabilisation is less effective in open economies, because a part of the fiscal impulse falls upon foreign goods and results in current account volatility. Consequently, warranting adequate shock absorbing capacity in terms of output fluctuation requires close to balance or rather low deficit. High indebtedness of the country (in the proximity of the 60% ceiling) also calls for lower deficits, especially when taking into account future liabilities.

In addition, low enforceability of budgetary plans also justifies more ambitious deficit targets. Gleich (2003) compares the institutional efficiency of fiscal policy in CEECs. He finds that Hungary is among the worst countries regarding budgetary discipline due to the notorious and one-sided slippages in the budget. There are several reasons for this fiscal disobedience. Kiss (2004) claims that the forecasting and planning procedures are to blame, as open-ended expenditures are obstinately underestimated. Regarding revenues, the forecast error is not systematic, except for the tax collection efficiency. There are weaknesses in the implementation phase as well. According to the current budgetary rules, deviations from the plan amounting to 3% of the GDP can be accepted without renegotiating the budget. Large share of decentralisation of fiscal expenditures to local governments and budgetary institutions also deteriorates the fiscal discipline, since these bodies have relative large independence in setting their budgets but do not have appropriate incentives for prudent fiscal behaviour.

These unfavourable features of the budgetary processes call for structural adjustment in order to facilitate smoother functioning of stabilisation-oriented policies. However, at the current juncture reaching the structural deficit level compatible with the SGP also poses serious difficulties. Hungarian authorities have announced a consolidation track reducing the deficit below 3% until 2008 in the Convergence Program. In 2004 the ESA deficit is around to 5% of the GDP, and, according to MNB calculations, previous measures<sup>14</sup> imply appr. 2,5% further expansion in 2005-8. Reduction in bond yields will ease the budget by 0.3-1.3% of the GDP, as the interest rate convergence has occurred faster than in other countries previously joining the union (Inflation Report 2004/2). Consequently, measures amounting to cca. 4,5% of the GDP have to be approved in the forthcoming years in order to meet the Maastricht criterion for fiscal policy and qualify for eurozone membership.

If all the measures are on the expenditure side, it would imply almost three times the average adjustment other countries made before entering the eurozone. Reinforcing the credibility of such an ambitious program requires detailed plans related to the directions of fiscal consolidation. So far, no information has been disclosed about the ways and means of fiscal adjustment, although the government has stressed that consolidation should support tax competitiveness of the economy and reduce the level of redistribution as well.

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<sup>14</sup> The referred measures include reduction in social contribution and gradual implementation of 13<sup>th</sup> month pensions, NATO related expenditures and some additional costs postponed from the previous year. MNB estimates.

The proposed reduction in tax rates would require further cuts in expenditures in order to compensate for the lost revenues<sup>15</sup>.

Feasibility and consistency of the fiscal plans are of crucial importance. Recent experiences in Hungary clearly demonstrate, that failing to deliver the previously announced convergence plans might cause volatile capital flows accompanied by large fluctuations in the exchange rate and high risk premium. In the last part of the paper we give a short overview of the developments that led to the swings in convergence expectations in Hungary.

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<sup>15</sup> Non-Keynesian effects accompanying brave and sustainable fiscal packages might ease the burden of the adjustment. See Alesina 1999.

## IV. Changes in market sentiment about the speed of convergence

Financial markets form their own expectations about eurozone entry dates of accession countries, which in turn get priced in asset prices such as long-term bond yields and the exchange rate. Target dates for euro adoption, either officially announced or just implied by national authorities can be an important ingredient in the markets' expectation formation process. Market participants may not take such official target dates at face value though, much depends on the credibility of the authorities' commitment to meet the Maastricht criteria on time. If the commitment is solid, there is much to gain from announcing (or even just hinting) a target date:

- Expectations that nominal interest rates will converge to the eurozone level soon exert downward pressure on long yields, reducing the costs of financing the budget deficit.
- A credible early target date may make the promises about the future adjustment of fiscal policy required to meet the Maastricht criterion more credible despite the bad track record of the government. As a by-product, setting a target date will lower the cost of current fiscal imbalances in terms of the risk premium.
- Expectations about a future relaxation of the current account constraint under monetary union and the irrevocable fixing of the exchange rate are likely to reduce the cost of current external imbalances in terms of the risk premium.

Nevertheless, even if the authorities' commitment to fast convergence is not solid, announcing an early target date may still bring some short-term benefits, as long as markets believe the announced target date. However, such an announcement is a double-edged sword: when markets do realise that convergence is not taking place as quickly as promised, the revision of entry date expectations may be large and may result in a sharp depreciation and a jump in long-term yields.<sup>16</sup> After such a revision, it is more difficult to set a second credible date as there is lasting damage to the authorities' convergence reputation. In this sense there is a kind of time inconsistency in communicating overly ambitious target dates: short-term gains may lead to long-term losses.

In some respect, Hungary's experience in the past couple of years is a good illustration of this story. From 2001 to 2004 there was a complete turnaround of eurozone entry date expectations starting from a quickly improving phase, then turning more pessimistic in mid-2002 and envisaging an ever further entry date since then. Throughout most of this period neither the government nor the central bank had an explicit target entry date, but there were hints about 'possible' or 'feasible' dates (2006, 2007) which may have oriented markets. This 'orientation' started when commitment to a fast convergence seemed strong. Nevertheless, it did not stop after the commitment became questionable and it may have slowed the market's reaction to the prospect of a slower convergence. The first official announcement of a target date (2008, in August 2003) actually came when market sentiment about the prospects of early entry was already deteriorating. The newly set target

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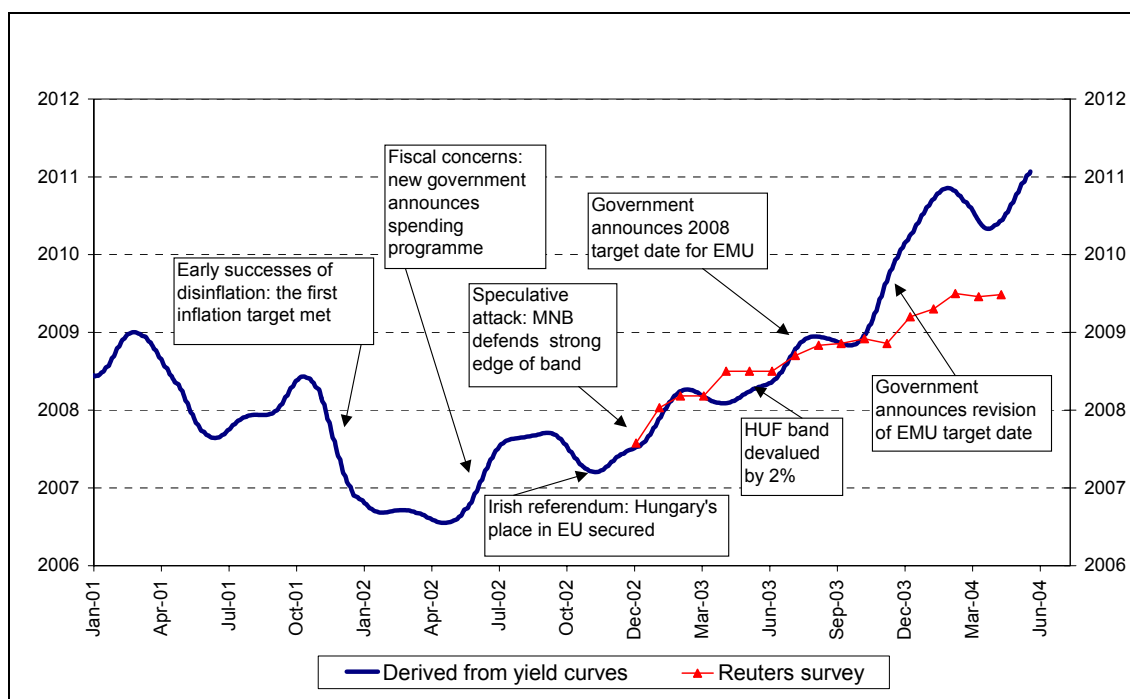
<sup>16</sup> Csajbók and Rezessy (2004) use a simple method based on risk-premia-augmented UIP to quantify the effects of a 3-year outward shift of Hungary's eurozone entry date. According to their results, immediate spot depreciation may amount to 6% while 10-year yields may rise by 75-105 basispoints.

date did not enjoy much credibility from the beginning, and soon had to be replaced by a second, more realistic one (2010, in May 2004).

It is worth looking into the Hungarian experience in more detail. A necessary ingredient for such an analysis is a sufficiently long time series of market participants' eurozone entry date expectations. Information on the markets' view about the most likely eurozone entry date is available both directly and indirectly. Direct evidence is offered by regular polls conducted by Reuters.<sup>17</sup> Unfortunately, these polls were started at the beginning of 2003, therefore they do not cover the whole period we are interested in.

Chart 9

### Expected eurozone entry dates for Hungary



Source: Reuters, MNB.

It is possible, however, to gauge eurozone entry date expectations indirectly, making use of information in the price of financial market instruments.<sup>18</sup> One way to do so is to compare implied forward interest rates derived from zero-coupon yield curves in Hungary and in the eurozone. This approach makes use of the fact that after adopting the euro, Hungarian nominal interest rates will differ from eurozone nominal rates by only a small default risk premium. Since implied forward rates are indicative of the markets' expectation of future short interest rates, the observed differential of one-year implied forwards in, say, 2009 depends on the probability the market attaches to scenarios in which Hungary is already a

<sup>17</sup> Reuters publishes these surveys every month since January, 2003. In the surveys 10-15, mostly local macroeconomic analysts are asked about their expectations regarding Hungary's eurozone entry date. In addition, since August 2003, Reuters is publishing surveys covering the whole Central European region polling 35-40, mostly London-based analysts.

<sup>18</sup> For more detail about this method see Favero, Giavazzi, Iacone and Tabellini (1997).

full member of the EMU by that year. The higher this probability, the lower is the implied forward differential for that particular year.

By calculating these probabilities for each future year, one can come up with an implied expected EMU entry date for any days in the sample. *Chart 9* depicts the H-P trend of the daily series of expected entry dates implied by the yield curves as well as the average expected dates from Reuter's monthly polls (from January 2003). The issue of the timing of Hungary's eurozone entry started to get attention in public debate in 2001. Prior to this date, entry date expectations were probably not yet formed, therefore we did not include earlier years in our narrative analysis.

2001 was the year when the central bank introduced an inflation targeting regime and argued that the path of inflation targets should be set so that they allow the earliest possible (meaning, at that time, 2006 or 2007) eurozone entry. In the last months of 2001, the expected entry date started to decline rapidly from the previously high levels. Inflation dropped significantly in the last quarter of 2001, safely below the first year-end target set by the MNB. Although this was only partly attributable to the new monetary regime, it may have convinced market participants that the early euro agenda can be taken seriously.

The optimism of markets reached its peak in the first half of 2002 with an expected entry date below 2008. In May, 2002 this favourable trend turned around and in the following months the trend of expected dates shifted out almost by a full year. This was the time when doubts about the sustainability of fiscal trends arose. The government made a commitment to decrease fiscal deficits at a rapid pace, but at the same time approved a multi-year social welfare package in 2002, which implied increasing fiscal expenditures for their whole 4-years term<sup>19</sup>. time made a commitment to decrease fiscal deficits at a rapid pace. Such ambiguous signals may have raised concerns among foreign investors.

The government and the central bank jointly declared in the August 2002 Pre-accession Economic Program (PEP)<sup>20</sup> that both fiscal and monetary policies have set the medium term targets of meeting the Maastricht criteria by 2005, which allows for Eurozone entry in 2007. Although the fiscal path envisaged in the 2002 PEP reflected the commitment of the Hungarian government to an early entry into the eurozone (*Chart 10*), later on it became uncertain whether fiscal policy would meet the Maastricht criteria on time. The budget deficit in 2002, measured according to EU standards, widened to a staggering 9.2 % of GDP.

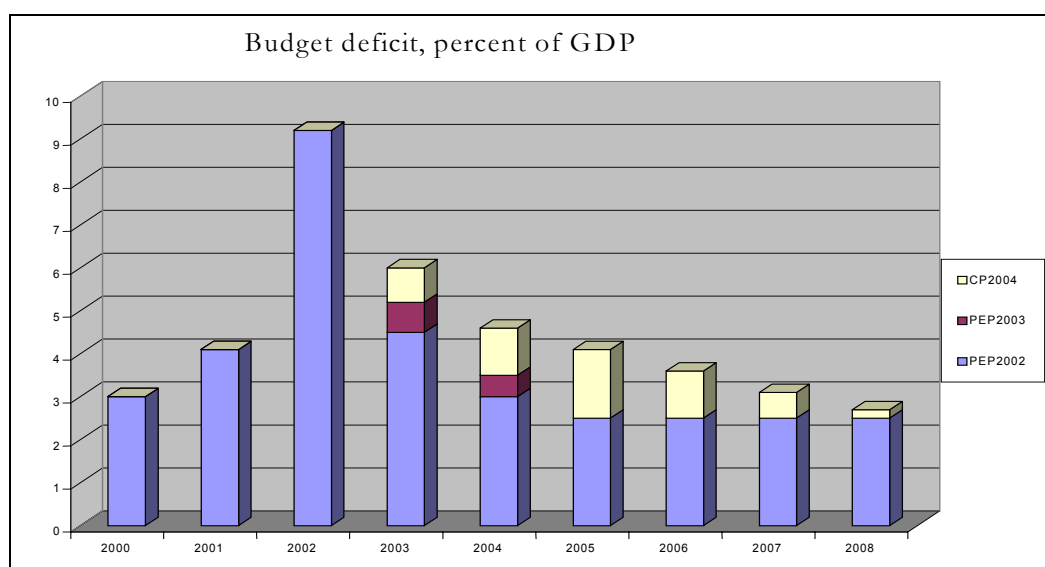
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<sup>19</sup> The share of public sector wage bill and social transfers increased by 2 percentage point of the GDP. The announced tax reliefs amounted to 1% of GDP.

<sup>20</sup> Upon EU accession the PEP will be the basis of the Convergence Programme, in which the new EU members have to set the path of convergence with the Maastricht criteria.

Chart 10

### Fiscal consolidation paths in medium-term economic programmes



Source: Ministry of Finance

The positive outcome of the Irish referendum and the successful closing of the negotiations with EU at the end of 2002 cleared the last obstacle from the way of Hungary's EU accession. The resulting 'EU-phoria' brought about a bout of optimism among market participants and the expected entry date came closer by half a year. Nevertheless this episode proved to be temporary and soon gave way for further deterioration.

An interesting feature of developments in market sentiment was that for a long period market participants benignly ignored or underestimated the apparent deviations from the fiscal and inflationary paths set in the 2002 PEP. Survey information shows that most macro analysts maintained the view that both fiscal deficit and inflation would return to the path announced in the PEP, but they assumed that tighter monetary conditions are required to deliver the results. However, realising that the authorities are not willing to bear the costs of further monetary tightening, their favourable risk assessment had been reversed, causing significant interest rate and exchange rate volatility.

There were two marked events hinting for market participants that the announced convergence strategy might get derailed. The first was in January 2003, when expectations about the future strengthening of the currency invited large speculative flows trying to force out a revaluation of the exchange rate band. The central bank defeated the attack by cutting the effective interest rate by 6 percent. Although the speculative attack was defeated, defending the band also meant that the inflation targets consistent with a quick eurozone entry were given up. This was taken as a revealed preference of the authorities and suggested to the markets that convergence may be slower than that laid down in the PEP.

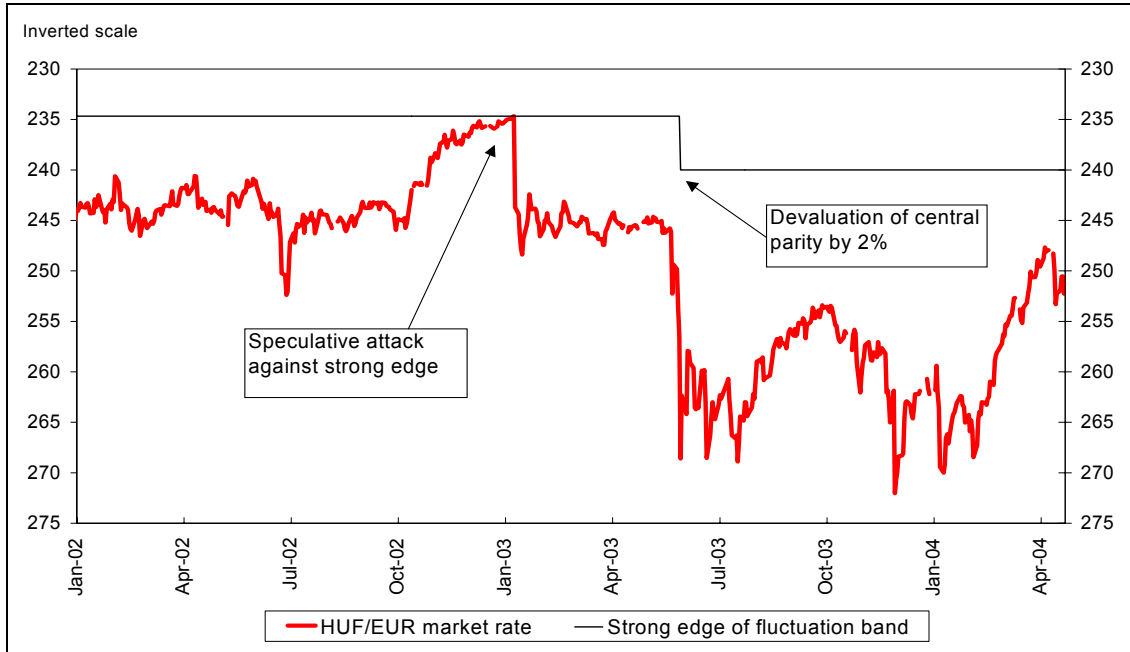
The second indication occurred in June 2003, when authorities devalued the central parity of the exchange rate band by 2,26%. The communicated intention of the move was to prevent further speculation for future appreciation of the currency, however markets recognised it also as a shift in preferences of monetary policy aiming to support a weaker



ERM II central parity. The market reaction was a sharp depreciation of the currency and a jump in long term rates. The central bank had to raise rates by altogether 300 basispoints to stabilise the situation (Charts 11 and 12).

Chart 11

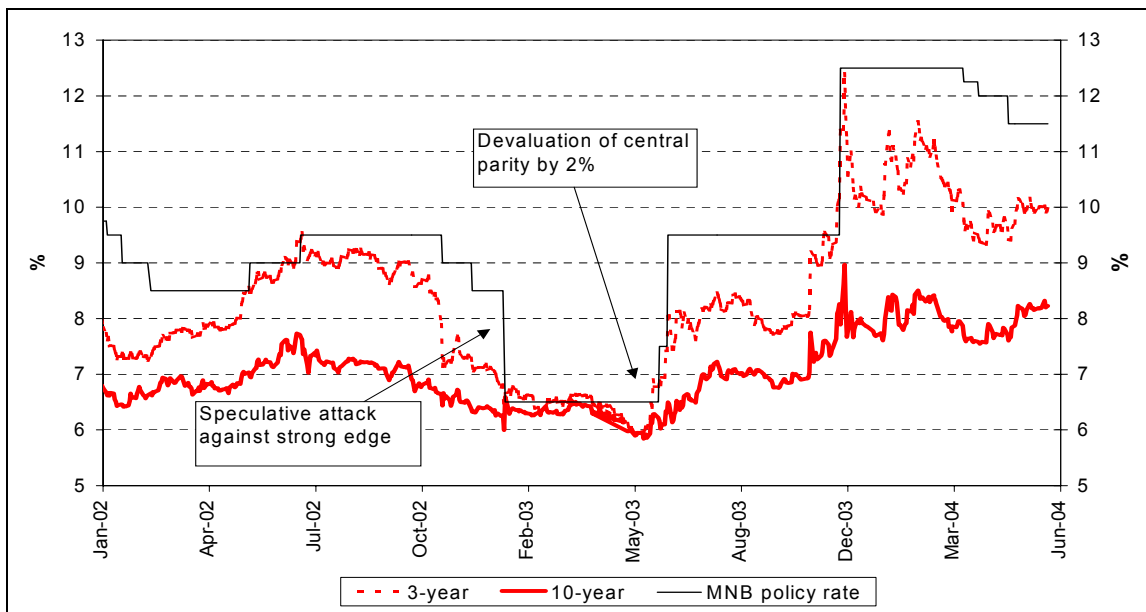
**HUF/EUR exchange rate and the strong edge of the fluctuation band**



Source: MNB

Chart 12

**Market interest rates and the policy rate of the MNB**



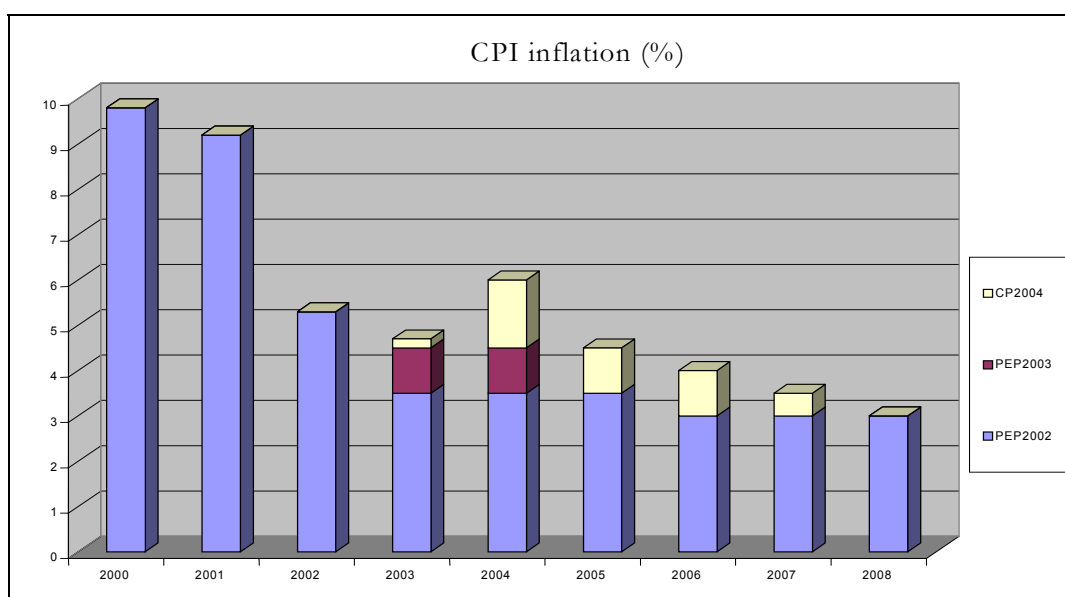
Source: MNB

The government communicated to the market that the necessary fiscal adjustment would take place in 2003, bringing the country back to the pre-set path. However, limited room for manoeuvre and melting political support forced the government to postpone the targeted euro entry rate by one year in the updated Pre-accession Economic Programme in August 2003. Both the disinflation and the fiscal adjustment path were revised. The government tried to gain some credibility by explicitly announcing an official target date of EMU-entry (2008), which so far was only implicit in earlier PEPs. Moreover, it was also announced that Hungary will start negotiations about ERM II membership immediately after EU entry. None of these communications helped. The EMU target date was lacking credibility from the day it was announced. The prospect of a quick ERM II membership in such an unstable situation only amplified speculation on the would-be central parity and increased the depreciation pressure on the currency.

Despite the consolidation efforts of the government, the fiscal slippage in 2003 amounted to 1,5% of the GDP. Moreover, further impediments to fast convergence are emerging. The budget consolidation in 2004 is about to take place at the expense of higher inflation, as indirect taxes and regulated prices were increased significantly in order to boost fiscal revenues (*Chart 13*). As a result, the government had to revise the previous fiscal consolidation plan in its first Convergence Programme submitted to the EU in May 2004. At the same time and in line with the Convergence Programme, a new EMU target date of 2010 was announced and the government hinted that it is not rushing into ERM II either.

Chart 13

**Disinflation paths envisaged in medium-term economic programmes**



*Source: Ministry of Finance*

The lesson from the Hungarian experience is that in order to avoid sudden, potentially destabilising revisions, the authorities have to make sure that market expectations about the speed of convergence are not overly optimistic and are largely in line with the genuine consolidation path envisaged by policymakers. Due to the forward-looking nature of financial markets, revisions of entry date expectations affect the spot exchange rate and

long-term yields. If the revision is large, these effects can be significant and may create a challenge in the disinflation process and financial stability.

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