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## *Experience with inflation targeting in Hungary*

I would like to recall to start with some of the basic principles regarding to the purpose and conduct of monetary policy which, while fully accepted by the profession, are perhaps less familiar to the general public.

The Magyar Nemzeti Bank (MNB) – just like the central bank of any developed country – is obliged by law to ensure and maintain price stability. It is fairly easy to see the reason for this obligation: inflation hinders the healthy development of the economy, i.e. it is a harmful phenomenon. The most harmful element of high inflation is that it causes an unintentional redistribution of incomes: it typically erodes the savings and incomes of those who live on salaries and pensions, and thus has a particularly adverse effect on the elderly population. High inflation also involves higher price volatility, which increases uncertainty. The volatility of inflation interferes with the information content of prices which forms the basis of any properly functioning market economy. This distorts the assessment of demand and supply

conditions, preventing the efficient utilisation of resources. High inflation rate goes hand in hand with high nominal interest rates, as a result of which borrowers' nominal cost of debt repayment will increase as a proportion of their disposable income. This results in shorter maturities of loan agreements and consequently reduces the depth of financial intermediation. Another problem is that the uncertainty generated by inflation means that economic relationships (such as business contracts) tend to become shorter, which is unfavourable for economic activity.

Although the fact that inflation results in significant social costs is now generally accepted in the economic profession, the commitment to low inflation continues to be a great challenge for economic policy. The reason for this is a problem that we refer to as 'time inconsistency'. Time inconsistency stems from the assumption that the central bank is capable of surprising economic agents with higher-than-expected inflation. Since this surprise inflation is able to increase output and decrease unemployment *temporarily* (by redistributing income to corporate earnings away from those whose livelihood comes from salaries and pensions), there is sometimes a politically-motivated inclination to oblige the central bank to boost inflation. Since economic agents are aware that

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political interests may be behind the generation of surprise inflation, they adjust their expectations from the very start, resulting in inflation rates which exceed the social optimum while leaving the level of output unchanged. This conflict is especially intense during periods of disinflation, since disinflation may involve temporary costs in the short run, while the advantages arising from low inflation only materialize over the longer term.

The key to solving the time inconsistency problem and the occasional inclination of decision-makers to generate inflation is credible commitment. In both the economic literature and in actual policy thinking it is a generally accepted view that the political cycles typical in democracies, and the main goal of politicians to get elected, make it difficult to build a credible commitment to price stability and to maintain such stability. This is why monetary policy decision-making has been placed in the hands of an independent body (the central bank council), the members of which are thinking in longer time horizons without regard to political cycles when making decisions about maintaining price stability. The independence of the central bank is the guarantee for avoiding conflicts between commitment to price stability and other goals. This is why it is important that society entrust responsibility for monetary policy to decision-makers who think in terms of a longer time horizon, rather than short-term economic or political interests.

It is a generally accepted view both in the economic profession and in central banking practice that monetary policy can best contribute to long-term economic growth by maintaining price stability. Long-term economic growth is determined by the evolution of potential output which is determined by factors exogenous to monetary policy (such as technological development, accumulation of human capital or demographic trends). This means that monetary policy is not able to raise

output in a sustained manner above its potential or natural level. Nor is monetary policy able to offset market deficiencies restraining potential growth which are rooted basically in the real economy or are of a structural nature (such as labour market rigidities, distortionary taxes, budgetary inefficiencies). Moreover, monetary policy is not able for maintaining a country's external balance over the long term if it is undermined by excessive government spending. A depreciation of the exchange rate may halt the deterioration in the balance of payments in the short term, but if there is no real adjustment in fiscal policy, price and wage inflation will soon adjust to the depreciation, eroding the beneficial effect of depreciation on the external balance.

## POSSIBLE MONETARY STRATEGIES

It is a fundamental premise and a general expectation that monetary policy should provide a nominal anchor that guides the expectations of economic agents and serves as of point of reference for making economic calculations. In the 1970s and 1980s, several developed countries implemented policy regimes that targeted monetary aggregates, which assumed a stable correlation between money supply and inflation. International experience, however, has shown that this correlation is rather weak and can change over time. Despite this, the German Bundesbank operated such a regime for a long period of time prior to the introduction of the euro. Although the targets for the monetary aggregate were frequently missed, the Bundesbank was able to maintain a permanently low inflationary environment. One explanation for this apparent contradiction may be that the expectations of economic agents were guided by the Bundesbank's anti-inflation reputation rather than the monetary aggregate targets. As the old saying went, 'Not

*all Germans believe in God, but all Germans believe in the Bundesbank*'. Due to the loose and unpredictable correlation between money supply and inflation, most developed countries eventually abandoned the policy regimes targeting monetary aggregates.

Another possible strategy is a system based on exchange rate targeting, when the central bank explicitly commits itself to an exchange rate level or an exchange rate band *vis-a-vis* a strong international currency. This commitment must be very strong to provide a stable anchor for expectations. The strongest version of such a commitment is a currency board stipulated by law (or perhaps even by the country's constitution). But having a fixed exchange rate as a nominal anchor can cause several problems. First, the monetary policy 'imported' with a fixed exchange rate is not necessarily the optimum solution for the country which applies the fixed exchange rate, especially if there are considerable differences in economic structures, or if country-specific cost or supply shocks occur. Fluctuations in the markets' risk assessment may also represent a significant challenge for a country that fixes its exchange rate. Second, in such a system, adjustment to external shocks affecting the real economy is only possible through changes in relative prices and wages. If prices and/or wages are 'sticky', this will be a lengthier and more painful process than adjustment through the nominal exchange rate. This phenomenon is well illustrated by the example of Lithuania, where the rising world oil prices resulted in inflationary pressure within the framework of the currency board system that prevented the country's accession to the euro area. Finally, lack of support from fiscal policy may undermine the credibility of the fixed exchange rate to such a degree that the system can no longer be maintained and it collapses. In such cases, credibility can only be restored at considerable cost (see the case of Argentina).

Due to the aforementioned deficiencies of the regimes based on targeting monetary aggregates or the exchange rate, more and more countries have been switching over to using the system of inflation targeting. In an inflation targeting system, the central bank has no 'indirect targets' in the classical sense, such as the exchange rate or a monetary aggregate; instead, a direct, quantitative inflation target is set by the monetary authority. The inflation forecast can, however, be regarded as interim targets, in the sense that monetary policy influences the inflation rate expected in the future (within 1–2 years) by using the tools available to the central bank (the policy interest rate in most countries) in an attempt to keep inflation close to the target. In a somewhat simplified terms, an inflation targeting central bank's decision-making rule is that if the forecast exceeds the inflation target, monetary conditions are tightened, whereas if the forecast is below the target, then conditions are eased. The inflation forecast is prepared taking into account a wide range of leading economic indicators. This is also an aspect which distinguishes the inflation targeting system from the other regimes discussed above, since those regimes focus on a primary indicator, the evolution of which serves as the basis for the central bank to make its decisions. The system of inflation targeting is thus more flexible and allows more room for discretion by taking into account all of relevant economic developments.

In a successful inflation targeting system, the inflation target is able to anchor inflation expectations. As a result, pricing becomes increasingly forward-looking, and economic agents can prepare for long-term price stability. Because expectations play a key role in the operation of the system, and the measures taken by the central bank do not have a direct and immediate effect on inflation (as they work only with a certain lag and a certain degree of uncertainty), the role of communication and

transparency is of greater importance compared to the other regimes. This includes both verbal communication and written documents, such as inflation reports, through which the general public can learn how the central bank views the development of the economy. By relying on these reports, economic agents are able to formulate expectations about the future actions of the central bank. Using these documents, the monetary authorities can provide information to serve as the basis for their decisions, which is vital for strengthening the credibility of the central bank.

Another advantage of inflation targeting is that the central bank does not explicitly need to make a commitment to an economic variable (monetary aggregates, exchange rate), over which it only has indirect and limited influence. Thus, it does not continuously have to risk its credibility. Instead, a medium-term goal is defined, from which temporary deviations are accepted. This can be significant if the inflationary process is affected by shocks that, due

to the 1 to 2-year lag in the impact of monetary policy actions, the monetary policy is not able to and does not necessarily intend to fully offset (such as increases in oil prices or VAT rates). This allows the monetary policy to be more flexible, and there is more time for it to recognise and evaluate changes in economic developments. Furthermore, potential monetary policy errors will not automatically lead to a loss of credibility of the system. Despite this seemingly 'soft' commitment, the regime still addresses the problem of time inconsistency, since the inflation targeter central bank's only goal is price stability, and this target is transparent and accountable.

### THE EXPERIENCE OF INFLATION TARGETING IN HUNGARY

In Hungary, the inflation targeting regime began operating in June 2001, after the previous crawling-peg devaluation system proved

Figure 1

#### EVOLUTION OF THE CONSUMER PRICE INDEX AND CORE INFLATION IN HUNGARY

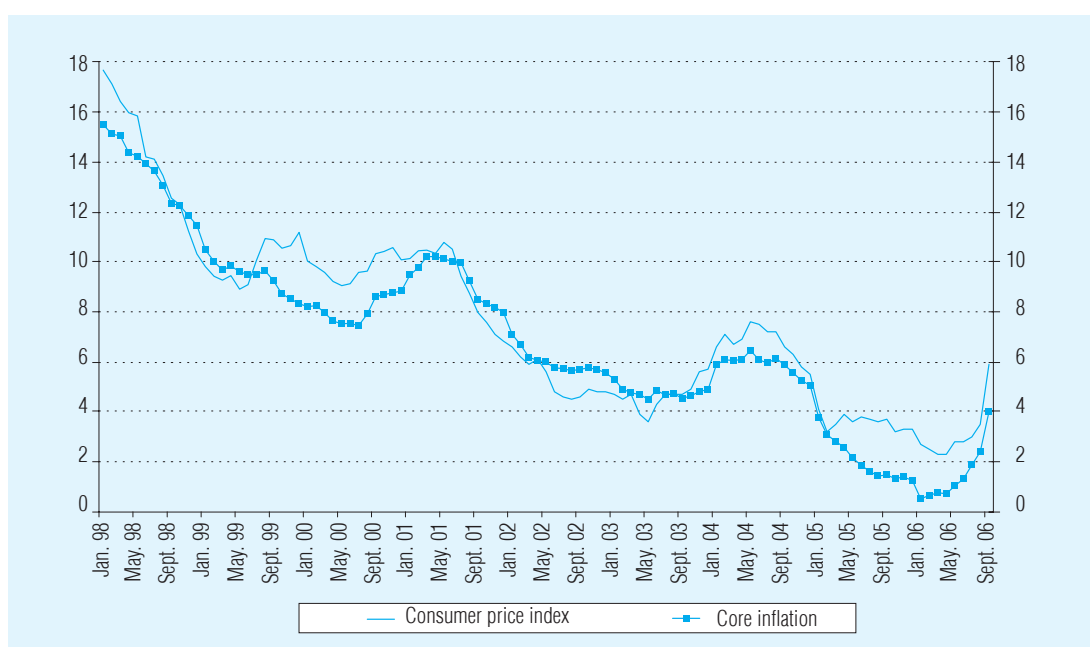
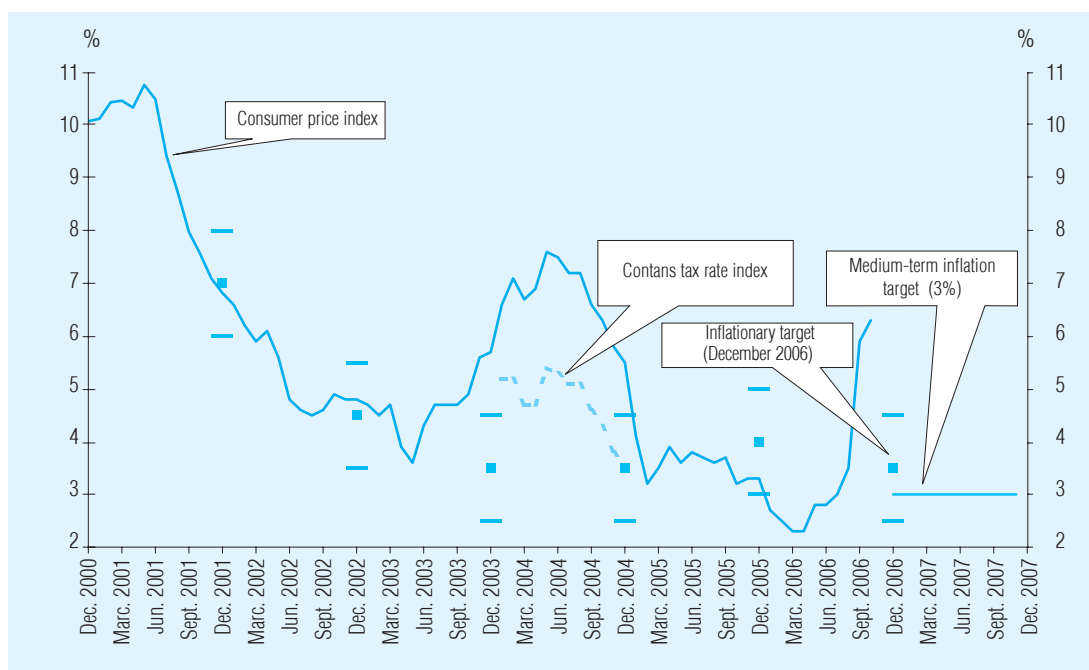


Figure 2

## INFLATION TARGETS AND THEIR EVOLUTION



unsuitable for further reducing inflation that had become stuck at around 10 per cent. When the new regime was introduced, inflation targets of 7 per cent and 4.5 per cent were set by the MNB for December 2001 and 2002, respectively. Afterwards, annual inflation rates for at least two years in advance were defined each year until the end of 2006. Once inflation has dropped to around 3 per cent, the MNB will switch over to using continuous inflation targets from 2007 onwards. The mid-term goal, which is 3 per cent, was jointly set by the MNB and the Government in August 2005.

Following introduction of the inflation targeting regime, the inflation rate, which had previously stagnated at a high level, began to decline (see Figure 1). Due to the stricter monetary conditions, but also to the favourable development of external factors, inflation dropped by 4 percentage points by the end of 2001 compared to the peak rate registered in May, and approached the target value of 6.8 per cent. By late 2002, inflation had further

decreased to 4.8 per cent, closely approaching the target (see Figure 2). Achievement of the 2001 year-end target cannot entirely be regarded as the result of inflation targeting, since the end of 2001 was outside of the time horizon of monetary policy effectiveness and there was also a fall in the price of pork. Nonetheless, the initial credibility of the new regime was enhanced by the fact that the target was achieved and, in this respect, the timing of the introduction of this system proved to be favourable.

As the Hungarian economy is very open, the exchange rate plays a major role in the impact of monetary policy on the real economy and on inflation. Following the widening of the Hungarian forint's fluctuation band, the exchange rate appreciated by some 11.6 per cent from May 2001 to December 2002, as significant amounts of capital flew into the country despite a lowering of domestic interest rates. On the basis of unit labour costs, the appreciation was somewhat higher,

amounting to 14 per cent. The MNB was criticised on several occasions during that period for allowing such a large degree of exchange rate appreciation. Critics were worried about the adverse impact of the appreciation on exports and the external balance of the economy. The disinflationary effect of a stronger exchange rate was highly uncertain at that time. Many disputed the effect of a stronger exchange rate on inflation, or believed that the sacrifice of the real economy required for disinflation achieved in this manner was excessive. Accurate assessment of the impact of appreciation on the real economy was rendered even more difficult by the fact that, as a result of the convergence process, the Hungarian economy is moving on a long-term equilibrium path of real appreciation. In such an environment, a possible overvaluation of the real exchange rate can only be assessed in comparison to an equilibrium appreciation path – which cannot be directly observed – rather than in comparison to an earlier level. However, it is important to note that the effect of the sustained nominal appreciation on exports was, as expected, mitigated by the rapid growth in domestic productivity, helping the corporate sector to adjust relatively flexibly to the stronger forint. Nevertheless, it cannot be proven and will remain an open issue whether a slower appreciation and disinflation could have anchored inflation expectations so quickly, and whether it would have involved less real cost for the economy over the medium term.

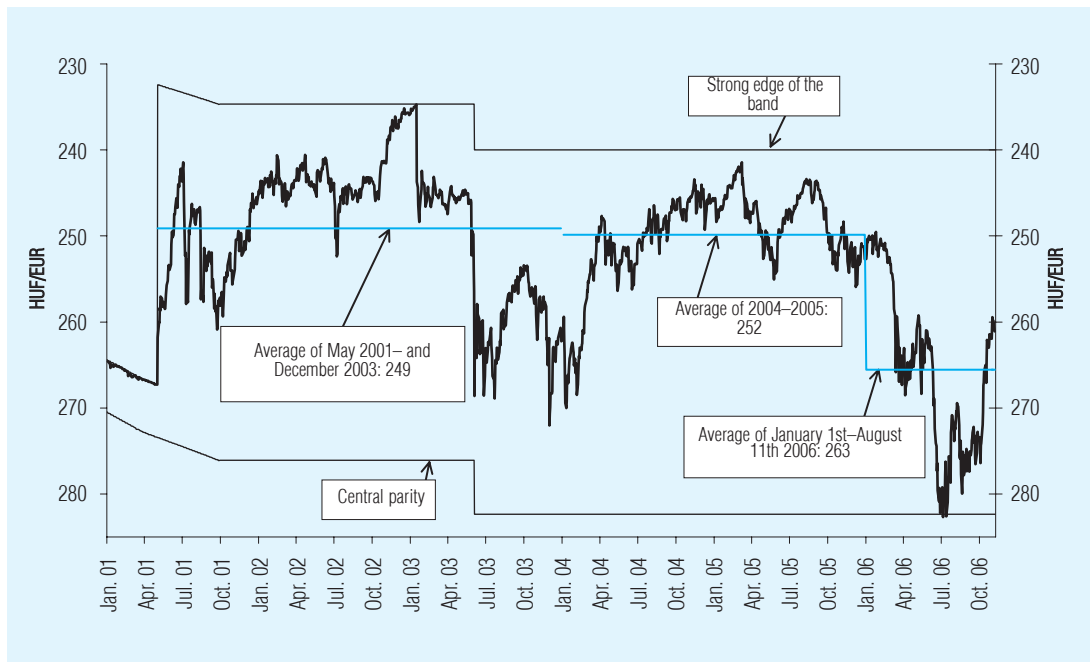
A considerable relaxation in fiscal policy occurred in 2002, and this was not followed by a genuine adjustment in the post-election period. This fiscal loosening affected inflation through the channels of both demand and supply. The most important demand factor was the increase in household consumption resulting from salary increases and the introduction of tax-free minimum wages, in conjunction with

the state-subsidised housing loan system. As a supply factor, we should mention the tension in the labour market caused by an increase in public sector employment. This fiscal loosening did not yet affect the achievement of the inflation target for end-2002, but as a result of the above measures, considerable upside risks emerged in relation to the 2003 target, which was set at  $3.5 \pm 1$  per cent back in late 2001. The loosening of fiscal discipline also involved a deteriorating and fluctuating risk assessment of the Hungarian economy. The exchange rate of the forint depreciated temporarily in the summer of 2002, and could only be stabilised by an increase in central bank interest rates and the Government's promises to reduce the budget deficit. As a result of these fiscal policy shocks and, to a lesser extent, rising oil prices, meeting the 2003 year-end inflation target required a strict monetary policy, and the exchange rate approached the strong edge of the fluctuation band (see *Figure 3*). Stronger capital inflows and the associated strengthening of the forint during that period can partly be ascribed to market optimism boosted by the positive results of the referendum on EU expansion held in Ireland.

In response to this contradictory situation, a significant amount of speculative capital flew into Hungary in January 2003, with a view to forcing a shift in or an abandonment of the strong edge of the exchange rate band in the hope of realizing a high profit. Abandonment of the strong edge of the band appeared to be a possibility to speculators because in the new situation brought about by the loosening of fiscal constraints, the scope of action for monetary policy seemed to be restricted. At that time, the anti-inflation credibility of monetary policy had been strong in the eyes of market participants, so that the thought that the MNB would be willing to modify, or even give up the fluctuation band of the forint – in order to achieve the

Figure 3

**EVOLUTION OF THE EUR/HUF EXCHANGE RATE**



inflation target set for 2003 – might have seemed plausible to many players. This belief may have been strengthened by the MNB's communication, as it emphasised the importance of the exchange rate in pursuing the inflation target. However, these beliefs proved to be wrong in several respects: first, in early 2003, the inflation target for December 2003 was already outside the horizon relevant for monetary policy and second, market participants disregarded the fact that the exchange rate system could only be changed with the Government's approval. It was known that the Government was opposed to any steps which could have increased the risk of further appreciation. That said, it can be assumed that the intensity of speculation could have been reduced had the conditions required for modifying the band been communicated more clearly.

The central bank's response to the influx of speculative capital was to considerably reduce the base rate, as well as to widen the

overnight interest rate corridor, as a result of which pressure on the exchange rate was alleviated: some of the capital speculating on an appreciation exited Hungary, as a consequence of which the exchange rate of the forint weakened by 4 per cent and then stabilised. In June 2003, the MNB agreed to the modification of the exchange rate band requested by the Government which meant a slight – 2.26 per cent – devaluation of the forint's central parity. This difficult to understand action was probably urged by the Government in order to moderate the risk of a potential appreciation. This small, but unexpected measure shook the market's confidence in monetary policy, leading to a capital outflow, as consequence of which the exchange rate of the forint depreciated significantly. The risk premium required by investors increased considerably, indicating that the uncertainties related to the future evolution of the exchange rate had risen. In response, the central bank increased the base

rate by a total of 3 percentage points in two consecutive steps in June.

After the consolidation that followed this turbulent period, as the end of 2003 approached, the market's attention increasingly focused on the unfavourable equilibrium position. The promised fiscal tightening measures were only realised to a symbolic extent, and the fiscal expansion and increased consumer spending was reflected in a strongly negative current account position. The long-term prospects of nominal convergence deteriorated and the date of adopting the euro in Hungary was accordingly delayed. As a result, the exchange rate grew considerably weaker in late November and yields rose, indicating that the risk premium of forint investments had worsened. The Monetary Council increased the policy rate by 3 percentage points at the end of November, with a view to offsetting the increase in the risk premium and preventing further weakening of the forint which would have jeopardised meeting the inflation target. Despite these efforts, monetary policy was unable to maintain the exchange rate within the range consistent with the inflation target and this allowed the inflation-generating impact of the earlier shocks to have a greater effect. Consequently, in mid-2003, the process of disinflation stalled, and the consumer price index increased by 5.7 per cent by the end of the year, considerably surpassing the 3.5 per cent  $\pm$  1 per cent target for December. The fact that in October 2003 the Government and the MNB defined an inflation target of 4 per cent  $\pm$  1 per cent for 2005, compared to the 3.5 per cent  $\pm$  1 per cent for 2004, also shows that the process of disinflation had lost momentum by this time.

Despite the continuing severe economic imbalances in Hungary, the period that commenced at the beginning of 2004 was characterised by stable monetary conditions and significant progress in disinflation. With the

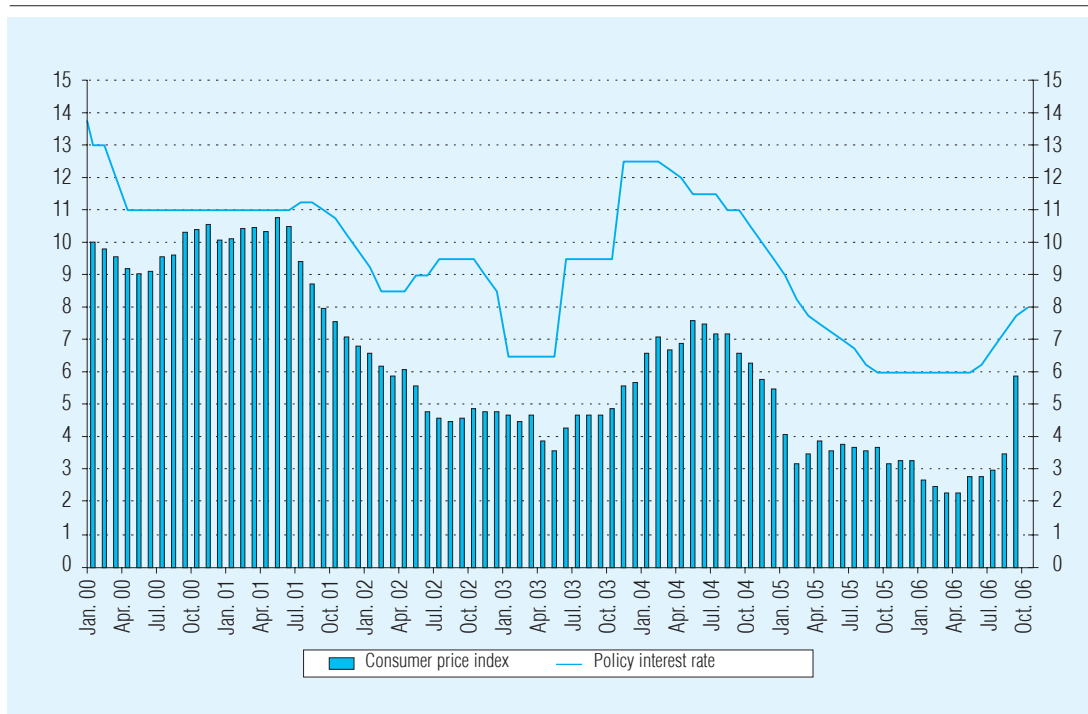
interest rate hikes carried out in late 2003, as well as the ensuing gradual but cautious cycle of interest rate cuts, the central bank clearly indicated to the financial markets that it was committed to achieving price stability. In this period, the exchange rate of the forint was relatively stable, and the strong appetite for risk-taking in the global financial markets allowed for a gradual lowering of the domestic interest rate level, despite the lack of improvement in budgetary prospects. However, the MNB was criticised for being overcautious in reducing the base rate. The increased degree of caution in the monetary policy course taken was also necessary because the VAT rate was increased by the Government with effect from January 2004, which exerted a direct, one-off influence on price levels, and there was a risk that this one-off higher inflation would be incorporated into expectations, causing an increase in inflation over the long run. The central bank did not wish to neutralise the direct price level impact of the VAT tax increase, so it simply "saw through" it. At the same time, however, it indicated that the second round effects represented an upward risk for achieving the inflation target. It is worthwhile to note that the base rate was reduced by the MNB in 2004 prior to the inflation hitting its peak, as soon as it became clear that inflation expectations had not increased (*see Figure 4*).

In my opinion, the cautious easing cycle helped to anchor expectations and, as a result, no second round effects of the one-off increase in price levels materialized in the inflation. While it is true that the 5.5 per cent rate of price increase at the end of 2004 exceeded the upper end of the 3.5  $\pm$  1 per cent target, the price index with unchanged tax content, which did not take into account the impact of the VAT rate increase, coincided with the 3.5 per cent target. This showed that monetary policy was able to keep the econo-



Figure 4

**EVOLUTION OF INFLATION AND THE CENTRAL BANK POLICY RATE**



my on a stable nominal course even in the midst of unfavourable shocks and to successfully anchor inflation expectations. This was increasingly apparent in the wage-setting processes as well. Despite the significant fluctuations in the gross average salaries of the public sector, the growth rate of average wages in the whole economy has tended to decrease ever since the regime of inflation targeting was introduced (see Figure 5). In the course of 2004–2005, due to Hungary's accession to the European Union, competition in the retail sector, together with the slower growth in consumer spending and the adjustment of wages to a lower level of inflation, lead to a consolidation of the downward trend in inflation. By the end of 2005, inflation approximated the 3 per cent level, regarded as price stability for the Hungarian economy. Inflation decreased to 3.3 per cent by December 2005, remaining within the tolerance band, but slightly undershooting the 4

per cent inflationary target set for the end of the year. In the first six months of 2006, the inflation rate was consistently below 3 per cent, primarily as a result of the VAT rate reduction which took effect on 1 January. However, the price moderating effect of the VAT cut proved to be less than expected and the inflation figure of July 2006 (3 per cent) suggests that inflation may again follow an upward trend.

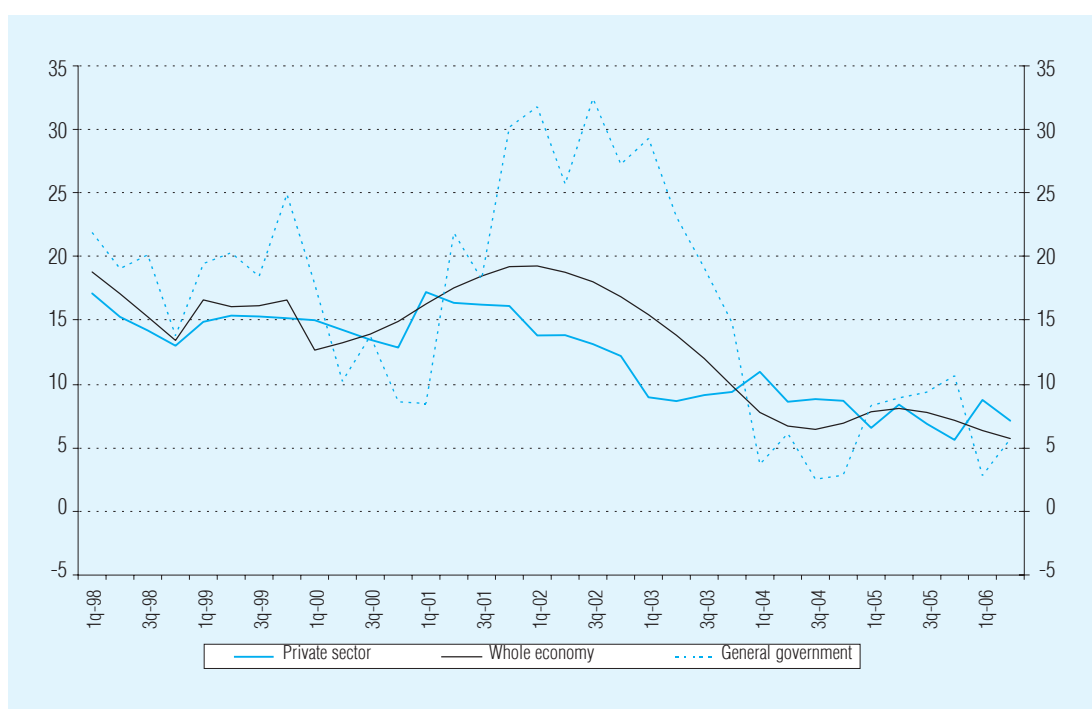
**CONCLUSION**

Having reviewed the experience with inflation targeting, we may ask whether the monetary policy of the past five years has been successful. The success of monetary policy can best be measured against two benchmarks:

- ① At what real economic cost has low inflation been achieved?
- and

**ANNUAL GROWTH OF GROSS AVERAGE SALARIES**

(seasonally adjusted data)



② Can low inflation be maintained in the long term?

It can be regarded as a success for monetary policy that over the last five years – despite the significant cost and demand shocks that have affected the Hungarian economy – price stability was gradually achieved and inflation expectations were reduced to a moderate level. All of this occurred in conjunction with economic growth which was not significantly lower than the potential value, i.e. without considerable costs in terms of growth. It is true that the demand-generating effect of the budget also contributed to sustaining growth, but the structure of this growth improved and exports became the driving force. The strict monetary policy was precisely made necessary by the lax fiscal policy. It should be noted that the role of monetary policy has not been the only factor behind in the favourable developments in inflation; other factors also played a role. Among

these one should note the global disinflationary trends seen in recent years, the favourable external interest rate and liquidity environment, as well as the rather strong risk appetite for emerging market assets. The rapid growth in productivity in the domestic economy has been another contributing factor, as it has allowed to keep the prices of traded goods at a low level, thus maintaining competitiveness. The economically not well justified practice of keeping certain regulated prices artificially low has also been a factor contributing to the moderate inflation.

The above results were achieved under conditions of significant imbalances that carries considerable risks of sustainability in the long run. The massive twin deficit of the government budget and the current account renders the country vulnerable to external shocks. Not only do external shocks slow down the growth of the economy, they may also have

an adverse effect on the inflation process and expectations. This means that the achievement of low inflation and relatively balanced growth can only be maintained over the long run if the central bank's commitment to low inflation is also supported by fiscal policy. From the second half of 2003, the Hungarian economy functioned in a particularly favourable global environment, which was characterised by low long-term yields on the global markets, the strengthening of investors' risk appetite and the related historically low risk premium on emerging market instruments. Hungary did not, however, take advantage of this 'grace period' to improve its budget position. On the contrary, highly favourable external financing conditions were accompanied with a strongly expansionary fiscal policy. As the largest central banks started increasing their interest rates in 2005–2006 and the risk appetite began to weaken, the negative demand effects of the fiscal consolidation efforts commenced in 2006 will reach their peak in a much less favourable international environment. If fiscal policy had not previously been so expansionary, and if the measures aimed at reducing the deficit had been taken earlier, the required adjustment would have been smaller and could have been carried out in a significantly more favourable financing environment. This would have resulted in a lower decrease in aggregate demand and lower sacrifice.

Consequently, the Hungarian monetary policy now faces new challenges. The large fiscal and external imbalances and the significant but in its structure unexpected fiscal adjustment, together with the global cycle of interest rate increases and declining risk appetite, have led to a weakening exchange rate and higher domestic interest rates. Thus, the announcement of the budgetary adjustment measures taken by the new Government has not rendered monetary policy any easier

over the short run. The measures aimed at improving the budget balance are mostly focussed on the revenue side of the budget and have a significant inflationary effect (such as the increase of VAT rates and gas prices), while the long-term sustainability of the announced measures on the expenditure side is uncertain. Average *annual* inflation will probably be well over the 3 per cent target in 2007, and will exceed it to a lesser degree in 2008. It is also difficult to judge how this second jump in inflation in such a short period of time will influence inflationary expectations which seemed to have been successfully anchored at a low level. But is it sustainable when fiscal policy repeatedly pushes inflation higher?

**IN CONCLUSION**, this brings up an important question, namely what is the correct (optimum) reaction for monetary policy when strong fiscal overspending causes a large current account deficit. If the central bank attempts to support the consolidation of the government budget by keeping interest rates low and tolerating a significant weakening of the exchange rate of the forint which jeopardises the fulfilment of the inflation target, the current situation would probably deteriorate further. Such behaviour by the central bank would allow the economy to drift into another inflationary spiral, with all of the concomitant disadvantages discussed earlier. This would be exacerbated by the fact that every new inflationary episode makes it more costly to anchor expectations and to bring inflation down again. This would result in a loss of credibility in the eyes of the foreign investors which finance the current account deficit and, to a large extent, the budget deficit as well, and would trigger a steep increase in long-term yields and decreased capital flows into the country. The interest burden of the budget would go up rather than down as a consequence, while the

state debt denominated in foreign currency would suffer a significant exchange rate loss.

Since the monetary policy has no tools at its disposal with which budgetary developments can be effectively influenced, the central bank can best support fiscal policy by endeavouring to preserve its own credibility and achieve its inflationary target. Beyond this, the monetary policy can only try to use persuasion through consistent communica-

tion, calling attention to the unsustainability of excessive deficits and the expected costs of the unavoidable adjustments that will be forced upon by the markets. Credible communication also means that the central bank, in order to ensure transparency, should always strive to present a realistic picture of the budgetary position, even if this is not always greeted with enthusiasm on the part of governments.