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MONETARY POLICY DILEMMAS IN A TRANSITION ECONOMY: THE CASE OF HUNGARY

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This paper addresses the experiences and challenges of Hungary's monetary policy during the period 1995–2000 and in view of the progress toward EU and EMU membership. The structure of relative prices changed markedly in the past and is expected to continue to change in the future. The reason, in addition to a possible Balassa–Samuelson effect, was the elimination of subsidies and introduction of turnover taxes in the past, and a future convergence toward a price structure prevalent in the EU. In the 1995–2000 period, the resulting gap between CPI and PPI led to massive foreign capital inflows. While the policy of sterilised interventions by the National Bank of Hungary was probably the right answer, it was inevitably costly, and was made costlier than necessary by the way it was carried out. Continued adjustments in the price structure in the future will confront monetary policy with the same dilemmas and, resulting in an inflation floor, will complicate the country's conditions of joining EMU within a reasonable time frame after EU accession.

Keywords: monetary policy, transition, EU accession, capital inflows

JEL classification index: E42, E52, E58, E62, P24

As some of the more advanced transition countries of Central and Eastern Europe are approaching accession to the European Union, there is a growing body of literature discussing issues relating to their further progress towards Economic and Monetary Union. As Temprano-Arroyo–Feldman (1999, p. 742) points out, EU-accession candidate countries "must demonstrate their ability to adhere to the aims of economic and monetary union under the so-called Copenhagen criteria for EU accession". Although these criteria do not mean that they have to satisfy the Maastricht criteria upon accession to the EU, most of them will probably

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wish to join the Euro-zone as soon as possible after becoming a member of the Union. While sustained stability-oriented policies needed for rapid progress towards EMU are by no means assured in advance, it is worth looking beyond eventual temporary transgressions and to investigate the attainability of the Maastricht criteria by the countries in the presence of such policies. In this context, the likely operation of the so-called Balassa–Samuelson effect is often mentioned in the literature. It is hoped that, once becoming members, transition countries will gradually catch up with average economic development level in the Union. This requires a fast productivity increase in the tradeable sector of their economy, behind which productivity in the non-tradeable sector will lag. In the presence of similar wage rates in the two sectors, this will result in an increasing price level in the non-tradeable, relative to the tradeable, sector. It is shown e.g. by Masson (1999) that under such conditions, the overall price level can remain stable only if the exchange rate appreciates, or the exchange rate can be stable only at the price of inflation of the overall price level. In other words, real appreciation of the exchange rate, in terms of the overall price level, is inevitable, and there can be conflict between the inflation and the exchange rate criteria of eligibility to EMU (Masson, 1999; Halpern–Wyplosz, 1997 and Krajnyak–Zettelmeyer, 1998).

To unlock the situation it is proposed that the Union softens either the exchange rate, or the inflation and interest rate criteria for these countries: they should be allowed either to re-value their exchange rate from time to time during the required exchange rate stability period in the run-up to EMU or join the Euro-zone with inflation rates and interest rates significantly in excess of those specified in the Maastricht Agreement (Szapáry, 2000; Kopits, 2000). In addition to difficulties relating to the Balassa–Samuelson effect, these countries will have to face an increased risk of sudden changes in capital flows, and, in particular, strong accession-related capital inflows (Temprano-Arroyo–Feldman, 1999 and Halpern–Wyplosz, 1997).

In what follows I shall first analyse Hungary's experience during the 1995–2000 period regarding interest rates, exchange rates and the capital inflows resulting from their interaction, and assess the merits and the costs of monetary policy. Next, I shall endeavour to discuss the likely conditions under which Hungary's monetary policy will have to operate after EU accession and on the way to EMU.

INFLATION AND MONETARY POLICY

As can be seen in *Figure 1*, the consumer price level rose more than tenfold in Hungary between 1987 and 2000 and relative prices changed markedly behind the increase in the overall price level. The price of energy and services went up at a faster pace than the average, while the prices of manufactured goods lagged behind, and food prices rose close to the average. The same trend was true for the 1994–2000 period, but the overall inflation rate slowed down and changes in relative prices were much less significant: the price index was quite similar in the main groups of consumer goods, except that energy prices rose much faster and prices of durables rose far slower than the average.

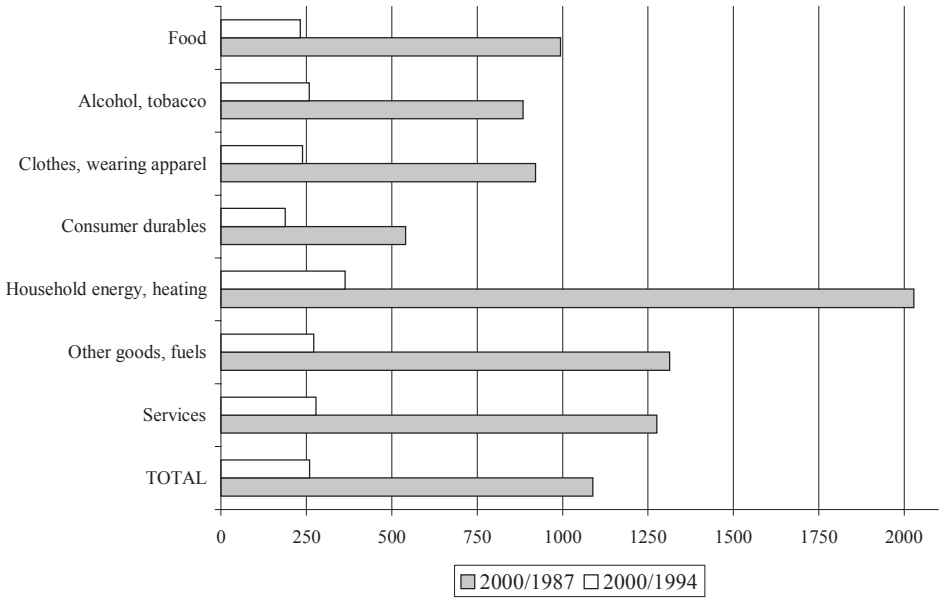

Figure 1. Price indices of consumer goods by main groups (%)

Source: MNB (2000/a, p. 332).

These changes in relative prices between 1995 and 2000 do not seem to suggest that the Balassa–Samuelson effect was significant in that period. Such an effect is very questionable for the first part of the 1988–2000 period as well. The only known estimation of the Balassa–Samuelson effect for Hungary is reported in Szapáry (2000, p. 6), as being 1.9% per year during the 1991–1998 period. In

addition to the Balassa–Samuelson effect, and perhaps more importantly, the net tax rate on consumption, as can be seen in *Table 1* below, grew throughout the 1988–2000 period. As *Table 1* shows, in the 1988–2000 period consumer prices rose twice as fast as producer prices (more precisely: the domestic sales prices of industry). But, again this trend has much less validity for the last five years, when consumer and producer prices have grown almost at the same rate.

Table 1

Percentage change of producer and consumer prices and the net tax rate
(% of purchased goods and services)

	1988	1989	1990	1991	1992	1993	1994	1995
Domestic sales of industry (to wholesale and retail traders)	1.3	14.2	25.0	23.9	10.0	10.5	9.9	27.2
Net tax rate on purchased consumption*	8.2	9.6	10.3	8.1	11	10.4	11	12.5
Consumer price changes	15.7	17.0	28.9	35.0	23.0	22.5	18.8	28.2

	1996	1997	1998	1999	2000	1987 = 100	1994 = 100
Domestic sales of industry (to wholesale and retail traders)	22.5	20.9	10.6	7.0	14.6	573.9	327.6
Net tax rate on purchased consumption*	11.9	12.8	14.5	15.1	15.7		
Consumer price changes	23.6	18.3	14.3	10.0	9.8	1,084	331

* A weighted average of VAT, excise and consumption taxes minus consumer price subsidies, the special subsidy for local transport, pharmaceuticals and medical instruments (including subsidies by local governments).
Source: Cinkotai (1995, p. 57 and Appendix 6; 2001, Appendix 13).

The sustained increase in the net tax rate suggests that the main reason for the gap between consumer and producer price indices in 1988–2000 was Hungary's gradual shift from a socialist price system based on the solidarity principle (heavily

subsidised low prices for basic goods, essentially food, and services) towards a price system based on the market economy principle (prices must cover costs plus carry a fair share of taxes). In the process subsidies were progressively cut, finally most of them eliminated, and value added tax was introduced, first on industrial goods and later extended to other consumer goods and services.

In the period examined here (1995–2000), Hungary had a manageable, but substantial twin deficit: the deficit of the current account ranged between 2% and 5.5% of GDP and the budget deficit was generally even higher (see *Table 2* below). In such an economy, targeting non-negative real interest rates on savings is a minimum requirement in monetary policy; in fact one could argue that unambiguously positive real interest rates should be targeted. *Figure 2* shows how Hungarian monetary policy fared from that point of view; the average deposit rates offered by commercial banks on household deposits, still the greatest part of household financial savings in Hungary,[1] is represented here with the rate on

Table 2

Selected macroeconomic figures of Hungary

	1994	1995	1996	1997	1998	1999	2000
Balance of the current account (million Euro)[a]	–3,300	–1,927	–1,339	–848	–2,020	–1,970	–1,620
FDI inflow (million Euro)[a]	966	3,474	1,815	1,922	1,815	1,849	1,232
Balance of the general government (as % of the GDP, GFS-basis)[b]	–8.4	–6.4	–3.0	–4.9	–6.8*	–3.7	–3.7
GDP growth (%)[a]	102.9	101.5	101.3	104.6	104.9	104.5	105.2
Final consumption growth (%)[a]	97.7	93.4	97.1	102.3	104.1	104.3	103.1

[a] *Source*: MNB (2000/a, pp. 248, 301–307; 2001, pp. 176–178, 227–228).
[b] *Source*: Ministry of Finance, ÁHIR database.
* *Note*: –5.2% without some extraordinary expenses.

[1] In October 2000, the stock of households' financial assets was 6385.6 billion HUF, of which approximately 60% was held in assets sensitive to the HUF interest rate (bank deposits, government bonds, corporate bonds, mutual fund certificates). The remaining 40% was cash (12%), foreign currency deposits (12%), shares traded at the stock exchange (5%), life insurance reserves (6%), and claims on pension funds (6%). (MNB, 2000/c, p. 21).

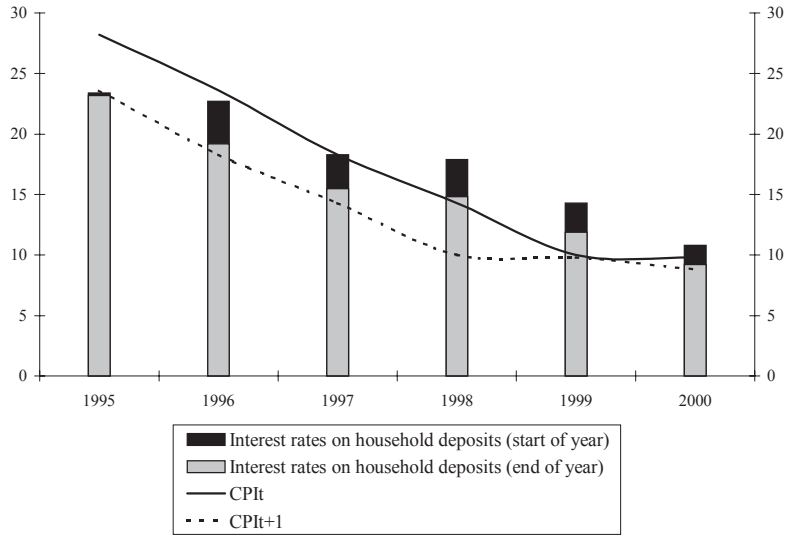

Figure 2. Interest rates and inflation (%)

Source: 1995–1997 data: MNB (1998, p. 318), 1998–1999 data: MNB (2000/a, p. 385), 2000 data: MNB (2000/c, p. 177).

6–12 month deposits at the beginning and at the end of each year (as interest rates were declining throughout the period along with decelerating inflation); against this are plotted the annual consumer price indices of the given year and the next year.

Without analysing further detailed figures, we can see that the real interest rates on household deposits were often negative if same-year CPI is taken into account whereas next-year CPIs leave slightly positive real interest rates for almost the whole period in question. Households' inflation expectations were probably somewhere in between perceived (same-year) inflation and the deceleration of inflation as announced by the National Bank and the government (represented here by next-year CPI). One reason to believe this is that following the substantial devaluation of the HUF in March 1995, the large further depreciation in the months following the introduction of the pre-announced crawling peg regime, the rate of crawl dropped fairly fast and has continued to decrease ever since. This obviously cooled down extreme inflation expectations. There was another factor, which had the impact of moderating inflation expectations: the government did not announce unrealistic declines in inflation. Thus we may say that for the largest saving sector in the economy, the real interest rates on deposits fluc-

tuated around zero between 1995 and 2000. Even if no strong motives to save were provided, at least savings were not punished: monetary policy achieved interest rates close to the minimum level required in the macroeconomic context; a (substantially) lower interest rate would have clearly been contradictory to the twin deficit situation of the Hungarian economy.

EXCHANGE RATE POLICY AND INFLATION

Between 1995 and 2000, the Hungarian Forint (HUF) was devalued by more than 100% against the basket of foreign currencies (first, the basket consisted of 70% ECU and 30% USD, later ECU was replaced by DEM and then Euro; from January 2000, HUF is pegged to Euro). In the first quarter of 1995 the devaluations were based on case-by-case policy decisions, since then a pre-announced crawling peg system was operating, and the crawl was decreasing year by year.

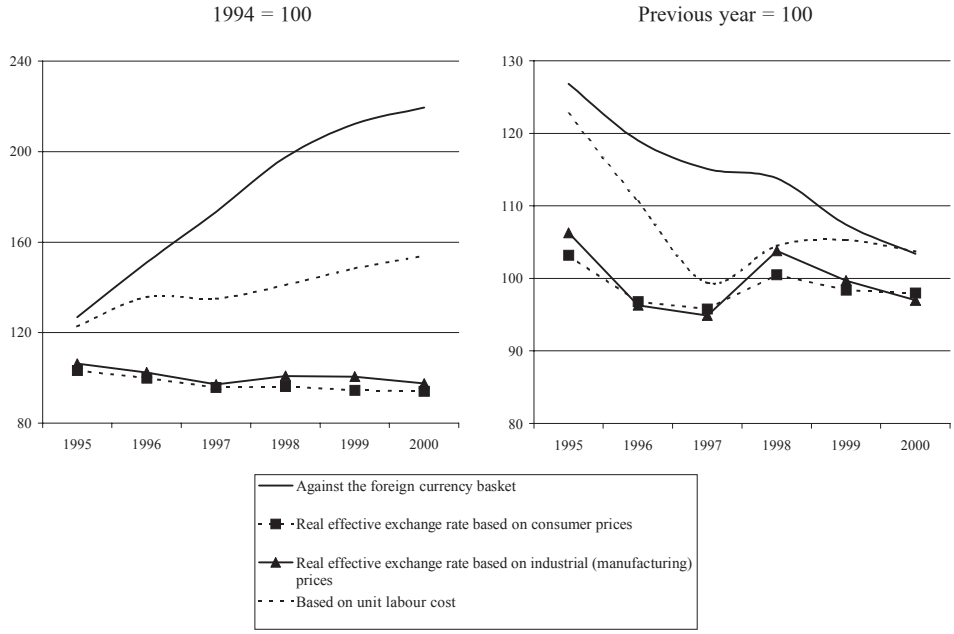

Figure 3. HUF exchange rate indices

Source: MNB (2000/a, p. 77, p. 343; 2000/b, p. 57, p. 58; 2001, pp. 52–53).
Note: an index over 100 means depreciation.

The CPI-based real effective exchange rate appreciated slightly. There was an even smaller appreciation in terms of industrial prices, while a very large depreciation in terms of relative unit labour costs.

Was there a need for such a large devaluation? Would a smaller devaluation have been enough, or should an even larger devaluation have been implemented (by decelerating the rate of crawl more slowly than actually was done)? Obviously, in the tradable sector of the Hungarian economy devaluation cannot result in foreign trade prices (expressed in HUF) durably exceeding domestic prices. This can be seen in *Figure 3* above: the real effective exchange rate of the HUF based on industrial prices appreciated slightly despite the more than 100% devaluation of the nominal exchange rate relative to the peg. Other figures under a slightly different angle also point to that: between 1994 and 2000 Hungarian industrial producer prices increased 2.21 times, while foreign trade prices expressed in terms of HUF increased 2.22 times. The respective figures for the 1987–2000 period are 6 and 6.1 (*MNB*, 2000/a, p. 334). This is not surprising. In a small and open economy, where imports and exports have been fully liberalised for a long time (since 1989–1991), and where foreign capital have been playing a significant role in production and distribution across the whole economy, domestic prices of tradable goods cannot durably and significantly deviate from foreign prices (expressed in HUF). Sellers and buyers are aware of both domestic and foreign market opportunities: they will sell on the more expensive markets and purchase on the cheaper ones. Thus domestic prices of tradable goods will soon catch up with export and import prices that rise because of devaluation. Certainly, should there be a sudden devaluation, domestic and foreign prices may diverge for a while. Unexpected devaluation might have provided a stronger push for exports and import substitution; but this would have really been for the short run: according to a survey, Hungarian manufacturing companies revise their pricing at least every quarter (Tóth–Vincze, 1998, p. 12). After its inauguration, the crawling peg regime even accelerated the adjustment of domestic prices to exchange rate changes: “from 1995 the relationship between tradable prices and nominal exchange rates obviously seems to be stronger. Changing the exchange rate regime had probably played a role in this process. The crawling peg exchange rate regime is much more forward-looking … pricing behaviour is also much more forward-looking … the dynamics of tradeable prices and the nominal exchange rate moved closer to each other” (Jakab–Kovács, 1999, p. 11).

Ex post, it would be rather hard to justify a higher devaluation for the 1995–2000 period in terms of further stimulating exports and import substitution. *Figure 3* shows that the real exchange rate was devalued by 54% based on unit labour costs. Profitability of producing for import substitution and export therefore went up at a rather fast pace, and it is not clear how an exchange rate policy resulting

in even faster depreciation would have been in the interest of the country. Quite on the contrary, it is justified to ask if there was a need for such a large devaluation given the productivity increase and the considerable degree of wage restraint. Would not a more moderate increase in profitability have been sufficient, with less devaluation resulting in a smaller industrial price increase and a lesser cost push in the economy, thus lower inflation? An exchange rate policy targeting lower inflation may also have been reasonably possible because from 1995 the relative prices of goods and services changed less than previously *(Figure 1)* and anti-inflationary objectives are usually more easily achieved when relative prices change less. Halpern and Wyplosz may have had in mind this foregone opportunity of faster deceleration of inflation when they wrote: "In setting up modest declines in the rate of crawl the National Bank of Hungary is implicitly accepting that inflation recedes only slowly: Central Bank inertia rather than inflation inertia?" (Halpern–Wyplosz, 1998). However, we must add that forecasting wages and especially productivity (and foreign wages and foreign productivity) is a very uncertain exercise, whereas in a pre-announced crawling peg regime the rate of devaluation has to be pre-determined. In other words, the authorities have to commit themselves to a future of substantial uncertainties. Naturally, they try to stay on the safe side and undertake commitments that can most easily be met. As a result, they tend to reduce the rate of crawl slower, rather than as fast as possible; the worst that can happen is that they will be given less than excellent marks by ex-post analysts. But this is a much smaller problem than the opposite: if wages, productivity, etc. are predicted too optimistically and the crawling peg decreases too fast, there might be a pressure for increasing the rate of devaluation or even a reason for a sudden large devaluation. Therefore, a pre-announced crawling peg regime is bound to result in inflation that is higher than would be the case in a different exchange rate regime. It must be added that the only realistic alternative of the crawling peg regime in the period examined here would have been a fixed but adjustable exchange rate regime. In such an exchange rate regime however, expectations of devaluation are likely to build up from time to time, which results in the flight and return of capital before and after a larger devaluation, making it difficult for the Central Bank the management of foreign exchange reserves and of the liquidity of the domestic money and capital markets.

Bearing all these in mind, we can conclude that depreciation in excess of what actually happened would have been unreasonable in the 1995–2000 period; on the other hand one may wonder whether the actual amount of depreciation was not excessive – whether all of what was done was necessary and reasonable. At the very least, neither an increase in the crawling peg nor an additional devaluation came to the agenda during the period: the debate was always about how, when and by how much the rate of crawl should decrease. This was natural since

after the dramatic improvement in 1995, the current account deficit remained at an acceptable level throughout the period, and in almost each year the deficit was (more than) covered by the inflow of foreign direct investment.

The obvious sustainability of the macroeconomic development, including the balance of payments, was not exclusively, not even chiefly due to the depreciation of the exchange rate under the crawling peg system; the fact that the whole economic policy followed a sustainable path was more important than exchange rate policy. Following the substantial adjustments in early 1995, the budget deficit started to approach the famous 3%; the growth of final consumption was always below GDP growth, and the latter was quite remarkable from 1997 onward.

Speculators soon learned the nature of monetary policy. The announced crawling peg regime seemed to be sustainable: a higher rate of crawl or a sudden, additional devaluation seemed so senseless that it was practically never expected. On the contrary, decreasing the rate of crawl was always on the agenda. The exchange rate path announced in advance offered speculators the low-risk alternative of making profit from the differing interest rates in Hungary and abroad. Today's foreign currency should be changed into HUF, then the HUF is lent at the actual interest rate (or government bond is purchased) and on the date of maturity the HUF is changed back to foreign currency. Speculators making profit on the different interest rates risked very little: small was the possibility that the speculator loses more on the exchange rate changes between the time of converting into and out of HUF than what he/she expects on the basis of the previously announced crawl.

Throughout the period Hungarian interest rates were always higher than foreign interest rates even if corrected for the loss due to the crawling devaluation of the HUF. This was so despite the fact that monetary policy, as we have seen, tried to keep the interest rates as low as possible: in most years real interest rates (on household deposits) could be considered positive only if (t+1) inflation was taken into account. According to calculations of the National Bank of Hungary, the annual interest premium on the 3-month treasury bill – HUF interest rate minus the pre-announced devaluation (crawling peg) minus foreign interest rate – was 5–10% in 1995 (MNB, 1996, p. 97), decreased gradually to 4% by December 1996 and stayed at 4% until Autumn 1998, when it rose to 8% for a few weeks (MNB, 1999, p. 37). The premium was fluctuating around 5% in 1999 and went down to 2% at the beginning of 2000 (MNB, 2000/a, p. 39). Until December 2000 it was moving within the 2–3.5% band (MNB, 2000/c, p. 28).

SPECULATION, CAPITAL INFLOW AND STERILISED INTERVENTION

The volume of capital inflow under different forms (purchase of government bonds and stock by foreigners, borrowing by residents in foreign exchange, short-selling of foreign exchange, etc.) was of course influenced not only by the level of Hungarian interest rates as they kept decreasing along with inflation. Other factors included

– foreign interest rate developments: as the Central Bank (the National Bank of Hungary) points out, for the May–September period of 1999 (MNB, 2000/a, p. 46), "mostly the increase of long-term Euro and dollar interests rates";
– Hungary's credit rating or significant changes in exchange rate risks as perceived by the international capital markets: for instance, political uncertainty caused by the parliamentary elections in May 1998; the Russian financial crisis in the third quarter of 1998; the flight from "emerging markets" by investors (MNB, 1999, p. 37); or the – temporarily – soaring deficits of the Hungarian government budget and the current account in the first half of 1999 (MNB, 2000/a, p. 39).

The National Bank of Hungary was running an exchange rate regime that (i) pegged the HUF first against a currency basket and later to the Euro, (ii) devalued the HUF by the previously announced crawling rate, relative to the basket, later to the Euro, and (iii) allowed the actual exchange rate on the foreign exchange markets to fluctuate by up to ±2.25% around the peg. In times of substantial capital inflow the HUF appreciated. Thus the HUF/foreign currency exchange rate sank until the so-called lower (or strong) intervention point, when the National Bank of Hungary intervened on the market buying foreign exchange. At times of the rarely occurring capital outflows (e.g. the third quarter of 1998, the impact of the Russian crisis), when the exchange rate reached the upper (weaker) intervention point, the National Bank of Hungary intervened on the market selling foreign exchange.

As *Table 3* shows, the strong capital inflow during the whole period discussed had an upward (appreciating) pressure on HUF, and the Central Bank was forced to buy significant amounts of foreign exchange each year. The intervention helped to keep the HUF's exchange rate within the predetermined narrow fluctuation band, but it also meant the injection of significant HUF amounts into the economy. The process was featured in the whole period in question, but it was not evenly distributed over the years: e.g. in the third quarter of 1998 (the Russian crisis) a significant capital outflow took place (explaining the low figures for 1998).

The Central Bank took most of the money created by intervention out of the economy, i.e., sterilised it. The sterilisation tools included passive repo, voluntary deposit in the Central Bank, sale of Central Bank bonds, cutting refinancing lines of financial institutions with the Central Bank, and the sale of government bonds. The use of these tools implies the increase of interest paid by the Central Bank (e.g., the sale of Central Bank bonds) or the decrease of interest received (e.g., the sale of government bonds, or cutting refinancing lines). In turn, the Central Bank also receives some earnings from sterilisation (if the purchased foreign exchange is held on interest-bearing accounts or in foreign bonds as part of foreign exchange reserves) or can decrease expenses (if the purchased foreign exchange is used to pay existing foreign currency debts back). As Hungarian interest rates were higher than foreign ones, the net costs of sterilisation must have been positive. As most of the capital inflow that needs sterilisation is speculative, according to the definition used by the Central Bank, and the portfolio investments *(Table 3)* invested on the stock exchange are rather volatile and unstable, speculative foreign capital and the portfolio investments require large and liquid foreign currency reserves held in secure forms. Liquid and securely held foreign reserves will necessarily imply small rates of interest.

Raising the required reserve ratio of commercial banks was another sterilisation tool. In this case, the costs of sterilisation are borne by the banks as they receive much smaller interest on required reserves than the market interest rate.

Table 3

Intervention and sterilisation (HUF billion)

	1995	1996	1997	1998	1999	2000
Money creation, due to intervention	451.9	553.8	877.6	191.6	811	643
Sterilisation	295.7	412.2	413.3	68.1	238	278.8
Speculative capital inflow*	412.3	183.9	161.4**	–140	29	254.4
Portfolio investment in shares	9.0	108	289.8	208	483	–194.4

* By MNB definition, portfolio investments in shares, conversion of domestic foreign currency deposits and long-term (beyond 1 year) corporate loan taken in foreign currency are excluded from speculative capital inflow.

** Calculated from the 1997 MNB annual report according to the distribution used in later reports.

Source: MNB (1996, p. 115; 1997, pp. 135–137; 1998, pp. 54–55; 1999, pp. 39–42; 2000/a, pp. 41–43; 2001, pp. 41–43).

The National Bank of Hungary does not publish information from which the cost of sterilisation could be calculated or estimated. Although we have declarations like "Hungary has so far managed to prevent an undue appreciation of its currency without excessive sterilisation costs" (Szapáry, 2000, p. 10), the use of ill-defined concepts makes us suspicious. Moreover, the otherwise information-rich and high-quality National Bank publications contain nothing but empty indications of the sterilisation costs (e.g. "sterilisation is expensive for the Central Bank", MNB, 2000/a, p. 18).[2] Other facts suggest that sterilisation expenses are substantial. For instance, at the beginning of 2000 "the Bank wanted to stop significant foreign capital inflow by unexpected cuts in interest rates and the reference rate of interest was lowered by 250 basis points in January and February" (MNB, 2000/a, p. 40). The market considered these interest rate cuts as excessive and, in fact, in October the Bank had to reverse it with an unusually large increase, 1 percentage point (MNB, 2000/b, p. 28).

Discussing at length the issue of the costs of sterilisation does not mean that the policy of sterilised intervention is questioned here. We have seen before that an exchange rate policy of less depreciation between 1995 and 2000 might have led to lower inflation without significant damages to the real economy (smaller export growth and smaller GDP growth with a smaller decrease of unemployment). Nevertheless, a Central Bank policy that had refrained from intervention on the foreign exchange market in the presence of large capital inflow, and let the exchange rate be determined by market forces, would have had harmful results: not only the crawling peg devaluation could have slowed down, but certainly the HUF's exchange rate would have strengthened too much. Appreciation would have made an increasing part of exports loss-making and, due to the continuous and substantial decline in import prices (in terms of HUF), in the whole tradable sector domestic prices should have kept declining. In a modern market economy such a general deflation is not possible without the very serious danger of policy-induced recession. The substantial appreciation would have caused a drop in exports, an increase in imports besides shrinking domestic output and soaring unemployment. Perhaps with luck, the process would not have gone too far, because investors (both speculators and others) would have recognised the unsustainable nature of the appreciating exchange rate regime and the earlier intense capital inflow would have been replaced by an avalanche-like

[2] However, Szapáry and Jakab (1998, p. 712) report an estimation of the cost of sterilisation in the 1995–1997 period amounting, on average, to 0.16 per cent of GDP per year. According to Oblath and Barabás "the macro-economic costs of sterilisation have fluctuated between 0.2 and 0.5% of GDP since 1997" (European Center of the International Center for Economic Growth, *Newsletter,* 2001, No. 2).

capital flight. Economic recession therefore would have been soon accompanied by financial crisis.

If the Central Bank had wanted to stop appreciation, which was unsustainable in the long run, and intervened on the foreign exchange market, in the case of substantial capital inflow it also had to sterilise; or else the excess liquidity would have pushed down domestic interest rates. If the margin between domestic and foreign interest rates is small, and the international capital and money markets see substantial and increasing country risk, then a slight drop of domestic interest rates can be enough to stop capital inflow. However, as we have seen, the situation in Hungary was quite different between 1995 and 2000. Domestic interest rates were high above foreign interest rates (while yielding barely positive yields for domestic savers), and – with the exception of a few short periods, e.g. the Russian crisis – Hungary's credit rating was improving. Had there been no sterilisation of the money created through intervention on foreign exchange markets, there would have been a heavy and constant pressure on domestic interest rates leading to sustained and markedly negative interest rates. A lasting policy of negative real interest rates would have been in contrast to Hungary's economic interest. Continued structural changes needed for accelerated development, including the aim of catching up with the average development level in the European Union, require substantial capital accumulation, i.e. savings, over a very long period. As for the short- and medium-run a policy of negative real interest rates can be followed only if we do not count on private sector (household) savings, instead, there is a regular and substantial budget surplus. Regular and substantial budget surplus was of no reality between 1995 and 2000.[3]

[3] I would not like to discuss here whether administrative restrictions on cross-border capital movements could have substantially eased the sterilisation and instability difficulties of capital movements. There were no proposals of restrictions that could have had significant impacts. In general, the introduction of controls, which efficiently restrict money-flows, necessarily disable – or at least make very difficult – foreign direct inventments, foreign trade and cross-border cooperation. The price to be paid with respect to economic development is far too high. Or, to put it the other way round, "the greater the integration of an emerging market country into global markets, through current account transactions, long-term capital flows, and direct investment, the less efficient will become the control mechanism on short-term capital inflows or outflow" (Lámfalussy, 2000, p. 132). See also Folkerts-Landau–Ito (1995, p. 96). Last, but not least, introducing new foreign exchange restrictions on capital flows, or, indeed not to fully liberalise capital movements would be contrary to progress towards EU-membership (Temprano-Arroyo–Feldman, 1999. pp. 745–746).

OBLIGING SPECULATORS

The National Bank of Hungary significantly increased the costs of sterilisation between 1995 and 2000: according to the policy announced and the practice followed, the Central Bank intervened on the foreign currency markets only if the market exchange rate touched the limit of the ±2.25% intervention band. Foreign currency was purchased for HUF at the strong (lower) intervention margin, and it was sold for HUF at the weak (upper) margin of the intervention band. Between the upper and lower margins, market forces determined the exchange rate. Taking the typical case of large capital inflows, the result of the Central Bank's exchange rate policy was that the market exchange rate settled and remained at the lower (strong) intervention point – except for rare and short periods.

The exchange rate stayed without interruption at the strong point between March and August 1995; it increased only for a few weeks by some tenths of a percentage point. The departure was slightly larger in Autumn 1997, when the Southeast Asian financial crisis broke out. The exchange rate saw the weak point of the intervention band only during the Russian crisis in August–October 1998, and even at the start of 1999, the time of Hungarian macroeconomic uncertainties, the exchange rate remained mostly in the strong half of the band. From then on, the exchange rate persistently stayed on the strong edge of the intervention band until the end of 2000 (*MNB*, 1997, p. 133; 1998, p. 41; 2000/a, p. 40; 2000/c, p. 12).

As a result, with a few and short-lasting exceptions, speculators did not have to fear even that the exchange rate would move unpredictably within the intervention band totalling 4.5%. In fact, the Central Bank's policy to intervene only on the margins meant risk-free speculation with the rare exceptions mentioned above. A Central Bank policy so favourable for speculators obviously increased the sterilisation expenses, which is ultimately borne by the taxpayers via the profit/loss of the National Bank of Hungary and its impact on the government budget.

If monetary policy had held its "predictable nature", i.e. the crawling peg, but intervened frequently and randomly within the exchange rate band, it would have made the 4.5% exchange rate risk a reality, and speculative inflows of capital, thus sterilisation expenses, would have been less. The speculators, or those who wanted to make profit out of the difference between pre-announced depreciation and forward exchange rates corresponding to covered interest parity, launched relatively short-term speculation with a time spread of a couple of months (partly because the announcements on the future devaluation rate of the crawling peg usually took place after a few months interval). Therefore, only a portion of the annual interest rate differences could be realised while banks usually require a

margin deposit for forward contracts. In such circumstances a 4.5% exchange rate risk can be significant and some speculation may come to grief. So-called dirty floating, i.e. exchange market intervention without predetermined rules, is an internationally known and normal technique. Between 1985 and 1995, covering 2868 working days, the US Fed for instance intervened 215 times on the USD/DEM market (97 times together with the Bundesbank), and the intervention was announced after it had taken place. On a further 184 occasions the intervention went without announcement; the average sum used was 162 million USD. In the same period, the Bundesbank intervened 264 times with the intervention announced afterwards, and on 161 occasions the intervention was only reported in the press, and the average sum used was 123 million USD (Bénassy-Quéré, 2000, p. 21). "The stated policy of intervening only at the margins runs in complete contradiction with experience accumulated in the EMS … speculation is encouraged by the fact that the Central Bank must make the market, the celebrated 'one-way bet'. It is precisely for that reason that, in 1987, the EMS countries agreed to intensify co-ordinated intervention inside the bands" (Halpern–Wyplosz, 1998, p. 15).

Creating a 4.5 (±2.25)% exchange rate risk within the band would have definitely reduced the (non-FDI) inflow of capital, but it is not sure that the extent of this reduction would have been enough to rule out sterilised intervention. If domestic interest rates are markedly higher than foreign interest rates plus the risk premium, the narrow band that leaves space for a relatively small exchange rate risk is not enough. This is especially true for portfolio investments, which target shares and not interest rate differentials. Dynamic economic growth, good performance of companies traded on the stock exchange, confidence in the region or in "emerging markets" can sharply increase the inflow of portfolio investment despite a 4.5% or even higher exchange rate risk.

In such circumstances, the intervention band can (or should) be broadened. It is not sure, however, that a broader band, but not as broad as to allow excessive fluctuations in the nominal and real exchange rate, can be enough to reduce capital inflow if investor confidence is very high. There might still be a need for significant sterilised intervention after broadening the exchange rate band. Nonetheless, one thing is certain: there is no point in broadening the band unless the exchange rate risk appears within the band. In the circumstances the National Bank of Hungary established or tolerated in 1995–2000, the broadened band would have meant a one-time appreciation of the exchange rate, i.e. the HUF would have simply been bound to the strong margin of the larger intervention band.

How much foreign capital is needed in the country? Roughly as much as the deficit of the balance of payments plus the required change in foreign exchange reserves are. It is good to have the country's foreign capital needs covered mostly

by foreign direct investments (FDI); not only because FDI represents long-term objectives and presence, but also because FDI implies the import of technology, know-how, market access and employment. If FDI is substantial, a larger deficit of the current account can be sustained. Financial capital, however, is only needed as far as FDI is insufficient to cover the deficit of the balance of payments plus or minus the desired changes in foreign exchange reserves. Financial capital inflow beyond this extent needs to be sterilised, which implies substantial expenses. Therefore, higher financial capital inflow is not welcome from a macroeconomic point of view.

It is misleading to believe that a higher amount of financial capital inflow is advantageous for the development of the Hungarian capital and money markets. Instead, unstable capital makes the capital market unstable; witness the volatility of the Budapest Stock Exchange index (BUX) experienced in recent years. Investing the slowly growing long-term domestic savings (in pension funds, life-insurance companies, etc.) and securing finance for the hopefully increasing number of enterprises seeking capital on the capital market can hardly rely on a "casino", the index of which can be found anywhere between 3800 (September 1998) and 10000 (March 2000) within just a few years.

THE FORINT AND THE EURO

Although the consumer price index was only slightly higher than the industrial producer price index during the 1995–2000 period, the difference is likely to grow and sustain in the future. Every analysis confirms that the Hungarian consumer price structure differs greatly from the EU's. In the case of some services, prices are 5–10 times lower in Hungary than in the EU, but perhaps more importantly, the consumer prices of food and household energy are less than half of the price level prevailing in the EU. It is rather hard to predict to what extent the Hungarian price structure may remain as it is, or, how fast it will adjust to the EU price structure after Hungary's accession. Based on an expert evaluation, the Hungarian consumer prices of food and household energy can remain 20–30% lower than the EU level even in the long run. 70–80% of the current difference will disappear in 10–12 years according to Spanish and Portuguese experiences after accession (Vissi, 2000, pp. 3–4). According to this assessment, the process of price adjustment will increase the average annual inflation rate (CPI) by 3–4 percentage points. Similar conclusions were drawn by another study using more detailed statistics (GKI Co. 2000, pp. 23–80). The estimations are based on the adoption of existing and expected EU regulations (Common Agricultural Policy, some consumption and environmental taxes, etc.) and sharply increasing land

prices, now only a fraction of the EU level. These cost increases will be enforced in consumer prices, sooner or later, as the supply and demand conditions of the given markets allow.

The pace of Hungarian economic growth should be high or at least markedly higher than that of average EU growth, because this is the way to catch up with the "average" European Union level of economic development. Sustained and fairly fast growth settles the demand-side prerequisites for price increases due to cost effects. The faster the economy – and household consumption – grows, the faster the Hungarian price structure will adjust to the EU price structure, and the higher the difference between consumer and producer prices will be. This comes in addition to the Balassa–Samuelson effect, which causes the price of services to rise faster than the price of goods. For all these reasons, the faster economic growth is, the larger will be the gap between consumer and (industrial) producer prices. On the other hand, if economic growth is slow, it will be more difficult for inflationary pressures resulting from cost and regulatory factors to impact consumer prices (and therefore regulation can be introduced at a slower pace). Then adjustment of Hungarian prices will take longer and will be slower; the gap between consumer and producer inflation will be narrower but lasting longer.

All this does not mean, of course, that the difference between consumer and producer price inflation will be the same each year whether fast or slow economic growth takes place. Cost-side pressure from regulation and other factors (weather for agriculture, productivity, wages, consumer behaviour, etc.) can justify (and/or enable) different annual price increases. The direct influence of monetary policy can only be twofold: (i) exchange rate policy will greatly determine the level of industrial producer prices and thus influence the level of overall inflation at which the adjustment of the consumer price structure will occur, and (ii) interest rates can have a substantial influence on consumption/savings decisions, and through that, on the pace of consumer price inflation.

On long-term average, the industrial producer price level can be stabilised or its increase minimised if the exchange rate is pegged to the Euro, the currency of Hungary's most important trading partner. That would be an exchange-rate-based disinflation in the tradable sector. In this case the industrial producer price level could change only if the terms of trade markedly change; it happens usually when world energy prices drop or rise. (For the sake of simplicity, let us not consider that the European Central Bank's inflation target – CPI less than 2% – may accommodate a certain rate of industrial producer price increase). The HUF fixed to the Euro will not endanger the foreign market competitiveness of Hungary if in the tradable sectors productivity rises at least as much as wages, that is, production per unit of wage does not decrease. More precisely, production per unit of wage should not decrease more than (or should increase as much as) for

competitors. In technical terms, the real effective exchange rate based on unit labour costs should not appreciate, and the relative unit labour cost should not worsen.

Based on recent experience, the above path is not out of reach: relative to productivity increases, there was a remarkable wage restraint in Hungary in the 1995–2000 period. True, in the last two years foreign market conditions were very favourable and sharp domestic output growth made increasing productivity easier. Nonetheless, even if economic and productivity growth is fast, the HUF must not be left to appreciate durably against the Euro because it would imply a substantial and sustained decrease of the industrial producer price level, which is rather risky even if productivity improvement is significant. In the history of modern market economies there are few examples of a sustained deflationary pressure not leading to serious recession. This, together with the gap between consumer and (industrial) producer prices (the relative increase in food, energy and services prices), adds up to an inflation floor, even in the presence of an ambitious anti-inflationary policy fixing the exchange rate to the Euro.

Announcing and introducing an exchange rate policy fixing the HUF to the Euro would help maintaining the necessary wage restraint. A credible exchange rate policy would signal the limits to acceptable costs to employers and the rates of wage increases jeopardising jobs to employees. However, such an exchange rate policy should be announced only if it can be sustained, and, importantly, appears to be sustainable. In recent Hungarian economic history, a stable exchange rate and anti-inflationary policy was repeatedly threatened not by excessive increases in wages, but by soft budgetary and/or monetary policies. This resulted in a surge of domestic demand, which then only could be cut back through devaluation and the resulting increase in inflation.

It remains true even after Hungary's EU accession that there is a need for capital accumulation (savings) in the Hungarian economy, and monetary policy will have to prevent substantial and sustained negative real interest on deposits. A credible anti-inflationary policy must be ready to increase interest rates if there is a need to do so. Of course, no interest rate policy would be able to neutralise the inflationary impact of excessive government deficit. Taking into account the experts' estimates on the adjustment of relative prices, consumer prices may in the future exceed producer prices more than in the recent past (between 1995 and 2000). If so, monetary policy may in the future face even greater challenges in handling foreign capital inflows.

Summing up: best expert evaluations say that after Hungary's EU accession there will be a long, 10–12 year process of price adjustment to the Union's price structure. Due to increasing food and energy prices, the adjustment process will increase consumer price inflation by an average annual rate of 3–4% relative to

producer price inflation. The prices of services rising faster than industrial prices must also be added, depending on the pace of economic development. (Certainly, if the price structure adjusts more or less to the Union's before Hungary's accession, there will be a shorter way to go after gaining membership. This chance will be given if the accession is delayed for some time, which is not desired.) If a very disciplined economic policy is pursued, the domestic price level of the tradable sectors may be held stable (at the 0–2% inflation rate of the EU). This also implies that having joined the EU, for a long rather than short period of time, Hungarian consumer price inflation will be 3–4% (plus the service price increases) higher than the average Euro-zone inflation. This is the best possible achievement, and it is far from being guaranteed. Moreover, it requires highly disciplined economic policies: the HUF/Euro exchange rate can be kept stable only if Hungarian budgetary and monetary policies plus wage developments ensure Hungary's economic competitiveness, so that a sustainable current account balance results in the long run.

The reality of ideas that "… after joining the European Union, 2–3 years will be enough and Hungary will be prepared to enter the European Economic and Monetary Union (EMU). With EMU membership, the EU's common currency – the Euro – will be introduced in Hungary" can be judged upon the above (*Népszabadság*, 2001). In this context, out of the Maastricht criteria, the inflation and interest rate criteria are of special importance.

Hungary will not be able to meet the inflation criterion (and thus the interest rate convergence criterion) for many years after accession. There is no sign that the EU would be generous and make exception for Hungary (or for any of the 12 candidates) from meeting the Maastricht requirements. On the contrary, based on the likely mistaken view that "candidate countries would probably fulfil easily the Maastricht criteria required for joining the single currency without too much difficulty", further questions arise whether the candidates "should face stiffer scrutiny for joining the Euro-zone in order to show that their membership is sustainable" (moreover, these additional criteria should be settled "before enlargement rather than afterwards") (Barber, 2000).

Neither does the EU seem tolerant, given Ecofin's recent call to discipline Ireland, its best performing economy. Average annual economic growth in Ireland has been more than 9% for nine years, unemployment is 4%, the budget surplus reaches 4% of the GDP, and government debt is only 39% of the GDP. Nevertheless, the European Union has told the Irish government to give up its plans to decrease the budget surplus and make the surplus reach at least last year's level. The reason is that cuts in the surplus would further heat the already overheated economy, where inflation was 5% last year (Boucher, 2001 and Wolf, 2001).

It can therefore be taken for granted that for quite a few more years HUF will remain Hungary's currency and will not be replaced by Euro, even if Hungary's EU accession is due soon. What are the main drawbacks of not joining the EMU? In the author's opinion the greatest disadvantage is the high inflow of foreign currency. Pressure on the HUF to appreciate will be (or stay) constant, while from time to time capital flight may threaten the foreign exchange reserves, and occasionally there will be pressure to devalue (or let depreciate) the exchange rate. Such costly financial instability detrimental to Hungary's economic development may emerge independently of Hungarian economic policies: it is a permanent threat even if economic policy – including financial and monetary policies – remains disciplined.

At present the company of EU but not EMU (Euro-zone) member countries is a distinguished club including the U.K., Sweden and Denmark. In the long run the situation may change, and the once distinguished club may become the company of second-class EU members unable to meet the criteria for joining the Euro-zone. The drawbacks of such a scenario can be significant: it may happen that the countries left out from EMU are about joining the EU of the past, and not that of the future (or, in other words, the candidates may be entering a circle already left by the Union). Thus Hungary should not be satisfied with EU membership out of the Euro-zone, not in the long run at least. With a very good economic performance (sustainable fast growth, stable exchange rate, acceptable level of deficit of the government budget and the current account), EMU membership is not hopeless. It is hopeful that in a few years time, when the cohesion of the Euro-zone will have been proven in practice – i.e. not only the small Ireland, but also large member countries with changing governments will have kept to Euro-zone policy discipline – and on international markets the Euro will have proven to be able to stand up against the dollar, EMU policymakers may feel confident enough to tolerate small, well-performing countries entering the Euro-zone when they together only add up to a few percent of the EU economy, even if they operate with higher inflation rates due to structural reasons.

However, tolerance will probably not be granted free of charge. If Euro is introduced in such a country, say Hungary, while the country still faces the problem of inflation exceeding the Euro-zone level over a long period, domestic real interest rates will be negative (as Euro interest rates will of course not adjust to Hungary's higher inflation). If the Union does not want to compensate for the negative impact on Hungarian savings of negative real interest rates with higher savings and higher interest rates than otherwise would be needed in other member countries, Hungary's expected lower private savings will have to be compensated by increased savings in the government sector. More precisely: high-inflation countries (with otherwise good economic performance) may become

EMU members if they take the obligation of reducing government deficit below 3% of GDP or perhaps achieve a surplus. The requirements that have been imposed on Ireland, a Euro-zone country, will be imposed in advance as eligibility criteria for Hungary's membership in EMU. Domestically, people will have to face that in the given circumstances they will have to meet their duty towards the next generation(s) less by accumulating savings and more by reducing government debt and future tax burden. This is not exactly how people would feel; rather they would feel that in addition to permanent inflation raising mostly the prices of basic goods and services, part of the value of their savings was being eroded through negative interest rates. Moreover, they would be subjected to budgetary adjustments on the revenues side or on the expenditures side, or both. Hardly a sweeping political success, even if economic development does, in fact, accelerate as a result of EU and EMU membership.

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