



NATIONAL BANK OF SLOVAKIA

**COMPARATION OF THE ECONOMIC AND MONETARY  
DEVELOPMENT OF SLOVAKIA, THE CZECH REPUBLIC,  
HUNGARY, POLAND AND SLOVENIA**

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## **Introduction**

This work continues the comparisons worked out each year from 1994 to 1999 to provide the Directorate of the NBS with information. It deals with the general situation in the compared countries up to the second quarter of 1999. The first part contains the basic characteristics of economic development in the individual countries, and comparison of selected economic indicators. In this work, we directed attention more to comparison of the monetary strategy of the central banks in the compared countries, which is the content of chapters 2 and 3. In the part 4. the main features of the development in the compared countries in the past decade are described.

In the group of transforming countries, the Czech Republic, Hungary, Poland, Slovakia and Slovenia are distinguished as the most rapidly and effectively progressing towards a market economy. In the initial phase of transformation - stabilisation of the economy after the initial shock from the liberalisation of prices - preventing the origin of an inflationary spiral with the help of a strong monetary anchor had key importance. A fixed exchange rate was usually chosen as the monetary anchor. Depending on the degree to which this nominal anchor was supported by strict wage and budgetary policies, the rate of inflation gradually fell. The initial conditions of individual countries, that is the degree of economic (im)balance "inherited" from the preceding regime, obviously also played a role. Reduction of the extraordinarily high level of inflation created the essential conditions for the renewal of economic growth.

Significant initial depreciation of the currency created space for initial price competitive export activity to developed markets - mainly to the countries of Western Europe. The subsequent rise of the real exchange rate in the compared countries, in the ideal case, was intended to correspond to a combination of the return of the (undervalued) exchange rate to its equilibrium level and of the growth of the real exchange rate equilibrium level resulting from the effect of the transformation of the economy. However, in practice, the growth of prices and wages moved ahead of the growth in quality of products and the productivity of labour, so that appreciation of the currency was excessive and the countries losing competitiveness.

After the unambiguously positive effects of the fixed exchange rate in the period of stabilisation, in the period of liberalisation of the movement of capital its effects proved to be treacherous. The inflation and resulting interest rate differential stimulated an inflow of problematic debt and speculative capital. Its sterilisation had a tendency to have a counter-productive effect on the anti-inflationary efforts of central banks.

Therefore, by widening the fluctuation band of exchange rates, the countries endeavoured to gain greater flexibility and discourage problematic capital. Regulative measures limiting the movements of capital helped in the short term, but they eliminated a certain disciplinary effect of foreign capital and hindered the necessary structural changes in the national economy. It was found that maintaining a fixed exchange rate while competitiveness worsens is expensive, and also impossible, in the event of speculative attacks.

Because of a situation in which a fixed exchange rate already cannot fulfil the function of a nominal anchor, and the effectiveness of money supply control as an intermediate target is limited, a strategy of inflation targeting is coming into the centre of attention. The effort of these countries to join the EU and later, after fulfilling the convergence criteria, also the Economic and Monetary Union (EMU), also works in favour of this strategy. Inflation targeting can effectively

help to achieve the convergence criterion of price stability and the related criterion of long-term interest rates. On the other hand, participation in the European Exchange rate Mechanism means approaching a long-term sustainable level of the real exchange rate. In the conditions of transforming countries, this means completing the reform of relative prices and approaching the price and wage levels of the countries of the EU, and so a higher level of inflation in the medium-term period. In addition, the compared countries rank among the small open economies, so that they cannot lose sight of the importance of competitiveness, which they can correct with the help of the exchange rate. This causes a certain dilemma in the choice of priorities for the aims of monetary policy.

The compared countries have a certain advantage in the period before entry to the EU (EMU) of having possibility to watch how the less performing member countries deal with the problem of "acclimatisation" to demanding environment of the Eurozone, and on the basis of their experience, prevent the possible occurrence of "mountains sickness".

## 1. MAIN FEATURES OF ECONOMIC DEVELOPMENT

In the process of catching up with the developed countries, the first stage - that of overcoming the decline of economic performance at the beginning of transformation - will soon bring to an end. The level of gross domestic product (GDP) produced in 1989, that is, at the beginning of the transformation period, was surpassed earliest by Poland, which was conditioned by the fact that growth began in this country from a very low base after a number of years of stagnation. Slovenia and Slovakia are also close to this level, as table 1 shows. The present conditions are not favourable for overcoming the transformation decline of the Czech Republic, which is passing through a period of recession. Hungary follows with a smaller gap. Up to 1997, it had a lower rate of growth than the other countries.

**Tab.1 Gross domestic product at constant prices**

A - % change compared to the same period of the previous year B - index, 1989 = 100

	Slovakia		Czech R		Hungary		Poland		Slovenia	
	A	B	A	B	A	B	A	B	A	B
1989	-	100,0	-	100,0	-	100,0	-	100,0	-	100,0
1990	-2,5	97,5	-1,2	98,8	-3,5	96,5	-11,6	88,4	-8,1	91,9
1991	-14,6	83,3	-11,5	87,4	-11,9	85,0	-7,0	82,2	-8,9	83,7
1992	-6,5	77,9	-3,3	84,6	-3,2	82,3	2,6	84,3	-5,5	79,1
1993	-3,7	75,0	0,6	85,1	-2,3	80,4	3,8	87,6	2,8	81,3
1994	4,9	78,6	2,7	87,4	2,9	82,7	5,2	92,1	5,3	85,6
1995	6,9	84,1	6,4	92,9	1,5	84,0	7,0	98,6	4,1	89,2
1996	6,6	89,6	3,9	96,6	1,3	85,1	6,1	104,6	3,5	92,3
1997	6,5	95,4	0,3	96,9	4,6	89,0	6,9	111,8	4,6	96,5
<b>1998</b>	<b>4,4</b>	<b>99,6</b>	<b>-2,3</b>	<b>94,6</b>	<b>5,1</b>	<b>93,5</b>	<b>4,8</b>	<b>117,1</b>	<b>3,9</b>	<b>100,3</b>
I-II 99	2,4	-	-1,9	-	3,6	-	2,3	-	4,5	-
*1999	0,7 - 1,5	-	-1,2 - 0,0	-	3,2 - 3,7	-	3,6 - 4,0	-	2,7 - 3,6	-
*2000	2,5 - 4,9	-	1,5 - 2,0	-	3,0 - 4,5	-	4,3 - 5,0	-	3,5 - 3,8	-

Sources: national statistics, own calculations \* forecasts of the EIU, OECD, UN

The process of approaching the economic level of the developed European countries will be much more demanding. The compared countries aspire to membership of the European Union, so that approaching the economic level of the countries of the EU is also a political aim, as one of the basic conditions for successfully joining the EU is a significant reduction in the present difference in incomes per head. Table 2 illustrates how the compared countries are progressing in this direction.

In the period 1995-1997, all the compared countries reduced the difference in GDP per head in Purchasing Power Standard<sup>1</sup> compared to the average of 15 EU members, but only Slovenia and the Czech Republic achieved more than 60% of the level of the EU in 1997. Slovakia and

<sup>1</sup> The calculations used to work out GDP at Purchasing Power Standard enable removal of the influence of the effect of the difference of price levels and differences of exchange rate between countries. They are based on a basket of goods and services, which are comparable and representative for the countries concerned. The data for the transforming countries still do not entirely fulfil these demands. This results in some under-estimation of GDP in the transforming countries. However, in contrast to previous Eurostat's comparisons, the goods included in the basket according to the European standard are more widely accessible in the transforming countries, and the structure of consumption more closely approaches the Western countries.

Hungary were approaching half the economic level of the EU, while Poland had the weakest economic potential with 40% of the EU level. In comparison with Greece, Slovenia was the most effective transforming country, already achieving practically the same level.

**Tab. 2 GDP per head in Purchasing Power Standard**

	in ECU		% of average for EU 15		% of level of Greece	
	1995	1997	1995	1997	1995	1997
Slovakia	7400	8900	43	47	64	68
Czech R	10800	12000	62	63	94	92
Hungary	7800	8900	45	47	68	68
Poland	6200	7500	36	40	54	57
Slovenia	11300	13000	65	68	98	99
EU - 15	17400	19000	100	100	151	145
Greece	11500	13100	66	69	100	100

Sources: Eurostat, own calculations

Overcoming the differences requires a sustained high rate of growth, but without disturbing the stability of the economy. In this area, the situation in individual countries differs. Poland has succeeded in maintaining a high rate of growth since 1994, without signs of overheating. Hungary, due to a significant external and internal imbalance was forced to accept stabilisation measures in 1995, which brought the desired results. However, the price was of a temporary slowing of growth, but since 1997 revival has continued and strengthened.

In Slovenia, the Czech Republic and Slovakia, starting a trajectory of rapid growth gradually put the national economies out of balance, as a result of which, Slovenia reduced the speed of expansion after 1995. The Czech Republic even fell into recession in the process of overcoming the unbalancing tendencies after the currency crisis of 1997. Slovakia grew rapidly, namely due to high domestic demand, but the growing internal and foreign indebtedness led to a slowing of the rate of growth, which will continue until the imbalances are removed.

The results of 1999 in Central Europe will be affected by the slow down in growth of the world economy, under the influence of the effects of the crises in South East Asia, Russia, Brazil and the conflict in Kosovo. It is expected that the growth of world output will stabilise at a level of 2.5% and strengthen to 3.5% in 2000. Apart from the series of external shocks, the compared countries, which depend to a large extent on development in the EU, were affected by the cyclical slow down of growth in the West European countries leading to weaker exports and output.

Slovenia, Poland and Slovakia achieved a weaker performance than in the preceding years. Slovenia was more strongly affected by the conflict in Kosovo, due to result of its commercial contacts with the countries of former Yugoslavia. Among the compared countries, Poland was most affected by the crisis in Russia. The Czech Republic is waiting to see, whether the turn in the recession development evident since the beginning of 1998, will occur. In Hungary, economic growth is still pulled by sectors oriented towards exports, but the other sectors are facing problems.

### **Price Development**

After the acceptance of stabilisation programmes at the beginning of the nineties, the rate of inflation in the compared countries gradually declined. Slovakia, the Czech Republic and Slovenia chose a strategy of rapid reduction of inflation. Hungary and Poland - due to the chosen

exchange rate regime, which meant a step by step devaluation of the currency - progressed to single digit levels of inflation more slowly.

**Tab. 3 Consumer prices** average % change compared to the same period

	Slovakia	Czech R	Hungary	Poland	Slovenia
1990	10,4	9,7	28,9	585,8	549,7
1991	61,2	56,6	35,0	70,2	117,7
1992	10,0	11,1	23,0	43,0	207,3
1993	23,2	20,8	22,5	35,3	32,9
1994	13,4	10,0	18,8	32,2	21,0
1995	9,9	9,1	28,2	27,8	13,5
1996	5,8	8,8	23,6	19,9	9,9
1997	6,1	8,5	18,3	14,9	8,4
1998	8,3	10,7	14,3	11,8	8,0
1999	10,6	2,1	10,0	7,3	6,1
*2000	6,5 - 7,0	4,5 - 5,0	8,0 - 10,0	5,0 - 7,0	5,0 - 6,5

Sources: national statistics \*forecasts of the OECD, WIIW, IMF

### Balance of Payments

With the economic revival, growth rate in domestic output fell behind growth in final domestic demand. This imbalance caused deficits in the trade balances, which led to a deficit in the current account of the balance of payments in the majority of countries. The deficit in the current account by itself was not regarded as a threat to the growth and stability of the economy, as long as it was balanced by an inflow of capital resulting from foreign investment. However, the recent financial crises in Asian countries cast doubt on the stability of such a system in an environment of significantly volatile capital flows.

**Tab. 4 Proportion of the current account of the balance of payments to GDP in %**

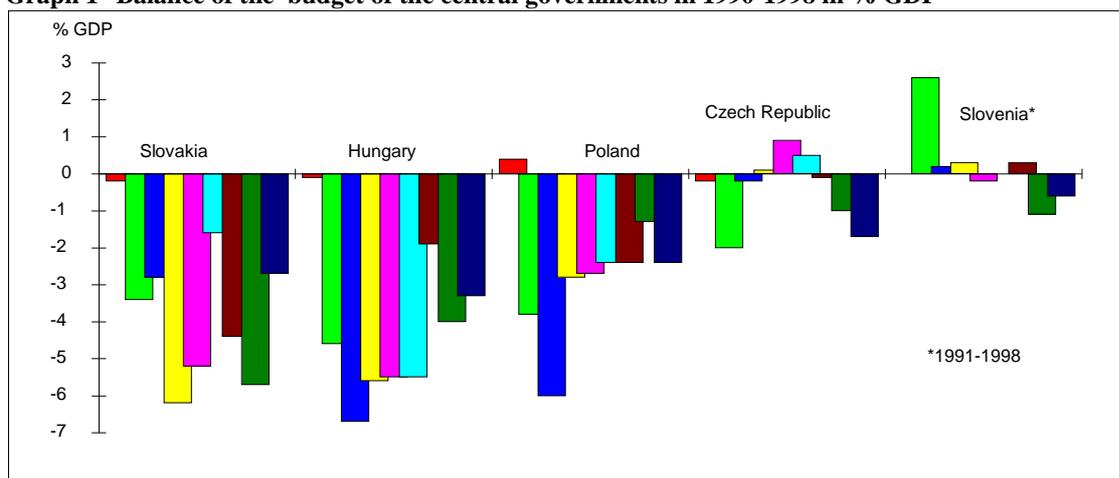
	Slovakia	Czech R	Hungary	Poland	Slovenia
1993	-5,0	1,3	-8,9	-2,7	1,5
1994	5,2	-2,0	-9,4	-1,0	3,8
1995	3,7	-2,7	-5,4	-1,8	-0,2
1996	-10,4	-7,6	-3,9	-6,3	0,3
1997	-9,5	-6,1	-2,0	-3,2	0,2
1998	-10,1	-1,9	-4,8	-4,4	-0,0
I-II 99	-7,7	-0,1	-5,3	-7,2	-3,5
*1999	-4,9	-1,5	-5,5 - -6,1	-6,5 - -6,8	-0,7
*2000	-2,3	-1,9	-5,1 - -5,4	-6,5 - -7,8	-1,2

Sources: national statistics, own estimates \*forecasts of the EIU, IMF, OECD

## State Budget

Slovenia and the Czech Republic were more successful than the other compared countries, in the area of maintaining a more favourable balance of the state budget, as graph 1 shows. Although a tendency to a higher degree of control of budget deficits has appeared, the future sustainability of state finances remains uncertain, as long as structural changes in state budgets and reform of provision health, pension and social insurance are not consistently introduced.

**Graph 1 Balance of the budget of the central governments in 1990-1998 in % GDP**



## Progress in Transformation Process

In the transforming countries, the macro-structural proportions of creation of GDP and employment have changed in favour of the services sector and to the disadvantage of agriculture and industry. However, this tendency was significantly influenced by the collapse of productive structures, and not only by the deliberate transformation strategy. Structural changes from labour intensive towards capital intensive production are being introduced only gradually.

**Tab. 5 Unemployment rate**

in % of the economically active population, end of period

	Slovakia	Czech R	Hungary	Poland	Slovenia
1990	1,6	0,7	1,9	6,3	4,7
1995	13,1	2,9	10,4	14,9	14,5
1996	12,8	3,5	10,5	13,2	14,4
1997	12,5	5,2	10,4	10,3	14,8
1998	15,6	7,5	9,6	10,4	14,6
1999	19,2	9,4	*9,2	*12,5	13,0

Sources: national statistics

\*November 1999

Changes in the structure of employment are occurring more slowly than changes in the structure of GDP. The rising private sector is able to absorb the released work force only partially, which leads to a high level of unemployment.

The development of the private sector has reached the stage where it already has a higher share in GDP and in employment than the public sector. Private ownership prevails in services and the processing industries. Almost all small and middle sized businesses are in private hands, but extensive state ownership remains in these countries in the areas of banking and strategic industrial companies.

The European Bank for Reconstruction and Development regularly evaluates the degree of transformation to the market system achieved by the countries of Central and Eastern Europe. In this evaluation, the countries compared here are considered the most rapidly progressing. However, there are certain differences within the compared group. In the table, the lowest values for individual categories are marked with a darker background. It can be seen that Hungary fulfils the evaluated criteria to the highest degree, while Slovenia and Slovakia are less advanced in the process of transformation, within the evaluated group.

**Tab. 6 Rating of countries according to criteria of the level of transformation achieved**

	Czech R	Hungary	Poland	Slovakia	Slovenia
Share of private sector on GDP, %	80	80	65	75	55
Large-scale privatisation	4	4	3+	4	3+
Small-scale privatisation	4+	4+	4+	4+	4+
Governance and enterprise restructuring	3	3+	3	3	3-
Price liberalisation	3	3+	3+	3	3
Trade and foreign exch. system	4+	4+	4+	4+	4+
Competition policy	3	3	3	3	2
Banking system	3+	4	3+	3-	3+
Securities markets	3	3+	3+	2+	3

Source: Transition Report 1999

The evaluative scale has a range from the lowest (1) to the highest level (4+) of fulfilment of the transformation criteria by the compared countries, in categories:

**Large-scale privatisation**

3 More than 25% of large-scale enterprise assets are in private hands or in the process of being privatised, but possibly with major unresolved issues regarding corporate governance.

4 More than 50% of the assets of state owned enterprises and farms in private ownership, significant progress on corporate governance of these enterprises.

**Small-scale privatisation**

4+ Standards and performance typical for advanced economies, no state ownership of small enterprises, effective tradability of land.

**Governance and enterprise restructuring**

3 Significant and sustained actions to harden budget constraints and to promote corporate governance (by privatisation, tight credit and subsidy policy and/or enforcement of bankruptcy legislation).

**Price liberalisation**

3 Substantial progress on price liberalisation, state procurement at non-market prices largely phased out.

**Trade and foreign exchange system**

4+ Standards and performance norms of advanced industrial economies, removal of majority of tariff barriers, membership of the WTO.

**Competition policy**

2 Competition policy legislation and institutions set up; some reduction of entry restrictions, or enforcement actions on dominant firms.

3 Some enforcement actions to reduce abuse of market power and to promote a competitive environment, including break-ups of dominant conglomerates, substantial reduction of entry restrictions.

**Banking reform and interest rate liberalisation**

3 Substantial progress in establishment of bank solvency and of a framework for prudential supervision and regulation; full interest rate liberalisation with little preferential access to cheap refinancing, significant lending to private enterprises and significant presence of private banks.

4 Significant movement of banking laws and regulations towards BIS standards, well-functioning banking competition and effective prudent supervision; significant term lending to private enterprises; substantial financial deepening.

**Securities markets and non-bank financial institutions**

2 Formation of the securities exchanges, some trading in government paper and/or securities, rudimentary legal and regulatory framework for the issuance of securities and trading of securities.

3 Substantial issuance of securities by private enterprises, establishment of independent share registries, secure clearance and settlement procedures, some protection of minority share holders, emergence of non-banking financial institutions (investment funds, private insurance and pension funds, leasing companies) and associated regulatory framework.

## 2. Monetary Strategy in the Compared Countries

Before we turn our attention to the questions of the future direction of monetary policy in the compared countries, we will summarise the important features of the transformation process.

### 2.1. Stabilisation

January 1st 1990, when Poland started its stabilisation and reform programme, is usually regarded as the D Day of the beginning of transformation in the countries of Central Europe. Replacement of the central planning method of allocation of resources with the market method - by the price mechanism - required adaptation of relative price levels to an unprecedented extent, which meant a price shock at the time of the initial liberalisation of prices. The transforming countries found themselves in the situation, that central wage control and central regulation of prices no longer secured their functioning as nominal anchors, while soft budget constraints upon enterprises remained, and the range of instruments of the central bank did not include indirect instruments for the effective control of money supply. The problems with inflation in these countries at the beginning of transformation can be regarded as the result of abolishing the two nominal anchors of the previous regime - wages and prices - without the possibility of immediately replacing them with a monetary anchor /14/.

The countries were faced with the problem of the choice of an appropriate nominal anchor<sup>2</sup>, which would help to limit effectively the emergence of an inflationary spiral. The central banks could decide between two possibilities - use of the exchange rate or of the money supply as the nominal anchor - on the basis of the character of the imbalance in the economy and fulfilment of the essential conditions for the introduction of an anchor.

A nominal anchor based on the exchange rate was explicitly chosen by the Czech Republic, Slovakia (still as a common state), Hungary and Poland,<sup>3</sup> after the initial devaluation. An adequate level of foreign exchange reserves to support the exchange rate was an important pre-condition for use of the exchange rate as a nominal anchor. In this period, the countries adopted a pegged exchange rate regime.

The advantage of a pegged exchange rate as a nominal anchor was its low dependence on the institutional conditions of the country and the possibility of "importing" the low inflation of developed countries to the currencies of which the exchange rate was pegged. Thus, the countries which used the exchange rate as nominal anchor, could be successful in reducing the rate of inflation, even before the completion of the fiscal reform. A further advantage was simple controllability by the public - practically daily and without time delay. In comparison with money supply targets, the exchange rate has a stronger link to macro-economic stabilisation /16/.

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<sup>2</sup> A nominal anchor is a nominal variable, which is fixed or allowed to move only to a limited extent, for the purpose of stabilising price levels. As a nominal anchor can be chosen only such variable, which can be centrally controlled. Great movements of nominal values were typical for the initial phase of transformation, therefore successful stabilisation required a strong nominal anchor /9/.

<sup>3</sup> Also Estonia.

According to /14/, this method of stabilisation led to:

- slow convergence of inflation to the degree of devaluation,
- real appreciation of the domestic currency,
- worsening of the trade balance and current account,
- indefinite, unclear reactions of real interest rates, which declined during orthodox stabilisation programmes (based on creation of a two-tier banking system, initial strong devaluation of the currency and sustainable fiscal position) and grew during heterodox programmes (based on combinations of various anchors and quasi-anchors).

Slovenia belongs to the group of countries<sup>4</sup>, which chose a strategy based on control of money supply. The choice was conditioned by the low level of foreign exchange reserves at the beginning of transformation. The money supply was regulated by means of management of the money base (as reserve money). An important supporting role played fiscal policy, since the state budget was in surplus in 1991-1993. In comparison with other transforming countries, Slovenia had the advantage of a more developed institutional environment. Various indirect instruments of monetary management and a payment system preventing the growth of arrears were available to the central bank. After acquiring an adequate level of foreign exchange reserves, the Bank of Slovenia in order to support reduction of inflation, began to use interest rate policy<sup>5</sup> which also contributed to success of the stabilisation programme.

The main factors, which limited the more extensive use of money supply as a nominal anchor, were the limited predictability of the velocity of circulation of money, lack of instruments for monetary management, rapid dollarisation limiting the effectiveness of management of the domestic currency, setting of other aims (such as reserves and real exchange rate), which could be inconsistent with the targets for monetary aggregates.

According to /14/ this method of stabilisation led to:

- a slow convergence of inflation to the degree of devaluation,
- real appreciation of the domestic currency,
- a rapid short-term decline in economic activity,
- a rapid initial growth of real interest rates,
- at least a short-term improvement of the trade balance and current account.

Wage policy played an important role in all the compared countries. In the cases of Slovakia, the Czech Republic and Hungary, it is impossible to speak of a typical programme of stabilisation of inflation, because, in comparison with other transforming countries, they had a more balanced macro-economic environment and the maximum annual rate of inflation in the period of stabilisation (50-60%) was much lower than in other transforming countries (reaching hundreds to thousands of per cent).

In the period 1989-1994, after the acceptance of stabilisation programmes, the rate of inflation significantly declined and where the state budget deficit was brought under control this trend continued.<sup>6</sup> The decline of output soon stopped and positive growth was recorded. These results

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<sup>4</sup> With Bulgaria, Rumania, Russia, Latvia and Croatia

<sup>5</sup> Exchange rate policy was directed towards floating at first, then in 1992-94 towards a real exchange rate, and later to an undeclared nominal stability.

<sup>6</sup> Common characteristic for 26 transforming countries according to /5/.

show that reducing high rates of inflation was the pre-condition for revival of growth /5/. Countries, which used a form of pegged exchange rate regime showed higher effectiveness in reducing inflation and achieving a trajectory of growth.

**Tab. 7 Initial conditions and stabilisation programmes in the compared countries**

	stabilisation programme	nominal anchor	exchange rate regime	maximum inflation	minimum GDP
Slovakia	Jan. 1991	pegged rate, wage policy	fixed	1991	1993
Czech R	Jan. 1991	pegged rate, wage policy	fixed	1991	1992
Hungary	March 1990	pegged rate, wage policy	fixed	1990	1993
Poland	Jan. 1990	credit limits replaced by indirect control, wage policy	fixed, crawling peg from 10/1991	1989	1991
Slovenia	Feb. 1992	monetary base, wage policy	flexible	1991	1992

Sources: /5/, /14/, updated

In spite of significant differences among the initial economic structures and institutional frameworks of the individual transforming countries, their experience with inflation and stabilisation are similar in various ways /14/. The critical factors for keeping inflationary pressures under control proved to be:

- prevention of currency and exchange rate adjustment (processes of shock and accommodation were observable for example, in Poland and Slovenia, more rapid reduction of inflation was also prevented by the widespread practice of indexation of contracts),
- wage policy (wage control) as an essential condition for macro-economic stability,
- imposition of fiscal discipline.

When a strict macro-economic policy was followed, the existence of market oriented institutions was not essential for the reduction of inflation after extensive liberalisation of the economy. In this phase, it was more important to impose firm budget constraints upon enterprises, with the aim of reducing the total deficit of the public sector, either directly by structural reform, or indirectly by wage policy.

In discussions about whether an exchange rate or a monetary anchor was really more successful in reducing the inflation rate, for example in works /14/, /4/ and /9/, unambiguous evidence was lacking up to now. Various authors incline to the conclusion that the trustworthiness of the stabilisation programme, in which the chosen nominal anchor operated had decisive importance. In addition, the transforming countries made de facto use of various anchors and quasi-anchors, not conflicting very much in the period of their use, because of the absence of stable relationships among the individual macro-economic variables (money supply, exchange rate, interest rates, credit).

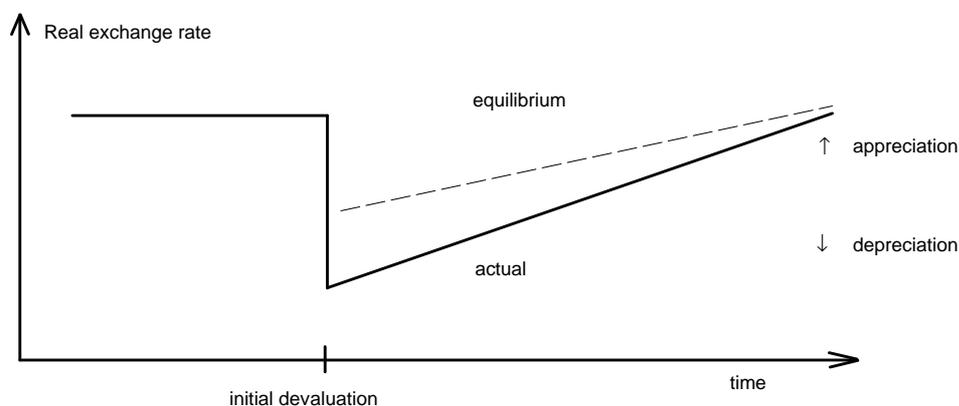
For the positive effects of the independence of the central bank to be applied in practice, rapid implementation of the institutional preconditions was also important (a two-tier banking system, reform of the economic environment). After fulfilment of these preconditions, the acceptance of the more complex aims of monetary policy could be considered further.

As was later found, this initial period was not sufficient for solving all the problems and some countries (Hungary in 1995, the Czech Republic in 1997, Slovakia in 1999) had to accept further corrective measures (so-called "packages" of measures). Growth of domestic demand, exceeding the supply formed by domestic resources was symptomatic. It appeared in a growing deficit of the trade balance, accompanied by a high deficit in the state budget.

## 2.2. The Post-Stabilisation Period

After the initial significant devaluation of the currency at the beginning of the period of stabilisation, a process of trend appreciation of the national currency appeared. In /6/ is expressed the view that the level of the real exchange rate was over-valued before the beginning of the transformation, and after the initial (excessive and sudden) devaluation, the subsequent appreciation of the real exchange rate corresponded to a combination of a return to its equilibrium level and growth of the real exchange rate equilibrium level (Fig.1). This process was consistent with the Balassa - Samuelson effect<sup>7</sup>, if a real growth in the productivity of labour occurs<sup>8</sup> /15/. However, with the influence of the growth of wages faster than the growth in the productivity of labour, the exchange rate appreciated faster than was justified by the effect of the transformation, and the countries lost competitiveness. The inflow of capital and growth of domestic demand deepened the problem.

**Fig. 1 Development of the real exchange rate of a country in transition**



Source: /6/

Even before the appreciation of the currency resulting of the real sector started, pressures deriving from the capital account of the balance of payments appeared. In all the compared countries, the restrictions on the movement of capital were removed under the influence of the growth in trustworthiness, on the basis of the successful stabilisation and subsequent deregulation. Thus, domestic entities received the opportunity to obtain resources abroad, which were often cheaper than at home. This caused a boom in domestic consumption and investments,

<sup>7</sup> Faster growth in the productivity of labour in the tradable sector than in the non-tradable sector leads to the different (higher) inflation rate in the non-tradable sector than in the tradable sector. This difference in the inflation between sectors (so-called dual inflation) results in an appreciation of the real exchange rate, in the case of a pegged exchange rate against the currency of the country with a lower rate of inflation.

<sup>8</sup> Assessment of the productivity of labour in the transforming countries is hindered by the fact that the productive potential was out of date and over-employment was high. The growth of productivity in some areas was a result of the dismissal of redundant workers without long-term positive effects - improvement of technology and/or increasing the quality of products.

which led to a growing deficit in the trade balance and then in the current account (in the Czech Republic, Slovakia and Poland).

As the inflation rate remained high in comparison with the developed market economies, the liberalisation of capital transactions brought an inflow of short-term speculative capital using the interest rate differential. The inflow of capital strengthened the growth of the money supply (and of the foreign exchange reserves), which had a tendency to undermine the anti-inflation policy, in spite of extensive (expensive and finally ineffective) sterilisation. The sterilisation of the excess liquidity by increasing the required minimum reserves, led to the increase in interest rates. Companies in a better financial position borrowed abroad, which increased the difficulties with problematic speculative and debt capital.

This problem appeared most significantly in the countries oriented towards stability of the nominal exchange rate. Even in the case of strong initial devaluation and the beginning of growing productivity, a disadvantage of maintaining a fixed exchange rate was, that stabilisation of the annual rate of inflation at 10-40% led to rapid appreciation of the real exchange rate. The subsequent problems of exporters often led to demands for devaluation, which led to rising inflation, against which the fixed exchange rate regime was actually aimed.

The crisis in Mexico in 1994 could be a warning for future development, but not all the transforming countries have devoted sufficient attention to these events. After the crisis in the countries of South East Asia in 1997, the risk of a policy based on excessive consumption and building of capacities with foreign resources was fully revealed. It struck against the problem of the trustworthiness of the public institutions and their economic policy. Loss of the foreign investors confidence in the sustainability and stability of development and the resulting outflow of capital caused currency crises, which grew into financial crises in some cases (for example in Bulgaria and Romania).

The compared countries fulfilled the above scenario to varying degree. It applied least to Slovenia, which, compared to the other countries, chose a more conservative approach to the liberalisation of the movement of capital, and as a very small country dependent on exports, emphasis placed on the maintenance of competitiveness. From 1991, Slovenia used a floating exchange rate directed on the stability of the real exchange rate. From 1995, various regulative measures were introduced, with the aim of reducing the inflow of foreign capital and its volatility. The almost balanced current account and budget surplus have helped to maintain the macro-economic balance.

In Hungary, a high deficit of the state finances and of the current account as well as foreign indebtedness led to the introduction of corrective measures in 1995, which enabled the correction of the imbalances. In the framework of the corrective measures, the exchange rate regime was changed to a crawling peg, aiming at the maintenance of competitiveness. After the introduction of the crawling peg, the National Bank of Hungary monitored the maintenance of an appropriate proportion between interest rates on the domestic market and abroad. Sterilisation of excessive liquidity was done in co-ordination with the state treasury.

Poland, the Czech Republic and Slovakia overcame similar problems with a growing deficit in the current account, inflow of capital and excessive liquidity in the banking sector. In this area, Slovakia had the advantage of a lower level of liberalisation of capital movements. In these

countries, widening the fluctuation band of the exchange rate, with the aim of discouraging the inflow of short-term capital, was effective only partially.

In the Czech Republic, lack of harmony between a restrictive monetary policy and a relaxed fiscal policy led to a currency crisis in May 1997, and a change to a floating exchange rate. Slovakia abandoned the system of a fixed exchange rate and changed to a floating rate in October 1998. However, this was not caused by an attack on the currency from abroad, but by the influence of the domestic environment.

On the basis of the development after the stabilisation period, it is possible to come to the conclusion that after the achievement of macro-economic stability, a flexible exchange rate proved to be more suitable. It can be used as a signal for the adoption of corrective measures before imbalances cause a crisis, and it facilitates the management of capital flows. Poland and later Hungary changed from a fixed exchange rate to a system of a crawling peg with a fluctuation band. This system can still fulfil the function of a nominal anchor, while also enabling more rapid reaction to problems with the balance of payments. It also provides sufficient flexibility to protect the economy against shocks coming from the foreign exchange markets and prevents from the movement of highly volatile capital flows.

Developments proved that the danger of a pegged exchange rate lay in the maintenance of this strategy for too long. In the medium-term, it is difficult to maintain a fixed exchange rate, when external competitiveness worsens with the growth of an inflation differential, and maintenance of the exchange rate is expensive. The lower the co-ordination of monetary and fiscal (and wage) policies is, the lower foreign exchange reserves are, the sooner right time to abandon this aim will come.

### **2.3. Integration Efforts**

The Luxembourg Summit of the EU in December 1997, meant a further stage in the integration of the associated countries. A decision was taken to begin a screening process with all the applicants for membership (not only with the countries proposed on the basis of Agenda 2000).

Integration into the EU and later entry to the Economic and Monetary Union (EMU) is the common strategic aim of the compared countries. To achieve this ultimate aim, the countries will have to fulfil the macro-economic convergence criteria. Since the process of transformation is still not completed, it is necessary to assess carefully the present degree of fulfilment of the convergence criteria by the candidate countries. Although these criteria are not fully applicable, it is necessary to bear them in mind as definite indicators of healthy macro-economic bases of an economy. For this reason, the candidate countries accept them as medium to long-term aims of their economic policies. There are differences between the member and candidate countries, especially in interest rate stability, price stability and interest rate levels. The fiscal position is often better than in some EU member countries with a high level of indebtedness. However, if the candidate countries are going to fulfil the convergence criteria, they need to reform their public finances and develop their financial markets. The key is real convergence, that is growth in the performance of the economy as a basic pre-condition for long-term maintenance of the convergence criteria.

However, compliance with the monetary convergence criteria involves a certain conflict with the need for real convergence. On the one hand, it is necessary to reduce the inflation rate to the level of the EU countries (price stability criterion), which will enable reduction of the interest rate differential and convergence of long-term interest rates. On the other hand, entry to the ERM2 requires that a country reach a level of real exchange rate close to its equilibrium level<sup>9</sup>, so that it will be able to fix the nominal exchange rate and maintain it (within the fluctuation band) without generating macro-economic imbalances. This pre-supposes correction of relative prices, approximation to the level of prices and wages in the EU countries, which will bring a higher inflation.

The publicly presented strategies and aims of the central banks of the compared countries show that, at present, approaching the rate of inflation achieved in the developed market economies is in the foreground of the interest of the central banks.

The Czech Republic and Poland adopted a strategy of inflation targeting with the aim of affecting the inflationary expectations of the public and thereby assisting the process of disinflation (their strategy is described in more detail in part 3).

In the Czech Republic, the introduction of a floating exchange rate in 1997 meant the loss of the nominal anchor in the form of the fixed exchange rate of the crown, and with this, also the loss of its positive effect on the main policy aim of the Czech National Bank (CNB) - the reduction of inflation. This produced a need to change the strategy of monetary policy, and thereby a strategy of direct inflation targeting was adopted in 1998. One of the main features of inflation targeting strategy is its transparency and provision of regular information to the public on the implementation of monetary policy, with the help of which the CNB is attempting to shape inflationary expectations in the desired direction. The CNB defined its inflation target using the concept of net inflation.

In Poland, in 1998, the National Bank of Poland (NBP) set control of inflation measured by the consumer price index, as the main aim of monetary policy for the coming period. The NBP came to the view that regulation of the money supply as an intermediate target of monetary policy had not significantly influenced inflation in the preceding period. In the document Medium-Term Monetary Policy Strategy for Years 1999-2003, the NBP set the aim of reducing the inflation rate to less than 4% by the end of 2003.

With regard to the expected entry to the ERM, the NBP is considering a gradual transition to a floating exchange rate. The NBP will endeavour to gradually free the exchange rate by widening the fluctuation band and by reducing the rate of crawling peg.

In Slovenia, from 1998, the policy of maintaining a stable real exchange rate was subordinated to the aim of reducing the inflation rate. In the medium-term strategy for the entry of Slovenia to the EU for the period 1998-2002, the Bank of Slovenia (BS) has set the aim of reducing the inflation rate to the level of the EU countries as well as to reduce interest rates.

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<sup>9</sup> That is the equilibrium level or even better moderate under-valuation, which could create a certain reserve for the possible appreciation of the real exchange rate.

At present, ratification of the association agreement with the EU is a significant determinant of development. Up to now, Slovenia has been restrained in liberalisation of the movement of capital and opening the domestic market to foreign competition, but it will now be facing more pressure to adopt legislation supporting opening of its market. Since the association agreement came into effect in February 1999, Slovenia is obliged to liberalise the movement of capital by 2003.

In Hungary, the medium-term aim of monetary policy is to reduce the rate of inflation to about 2-4 percentage points each year. The National Bank of Hungary (NBH) is attempting to prevent from higher appreciation of the real exchange rate than is justified by growth in the productivity of labour, which is quantified at 2-4% yearly in the conditions of Hungary. The NBH considers the foreign exchange channel of the transmission mechanism more important than the interest rate channel, because domestic demand is not very sensitive to the movement of interest rates.

During 2001, Hungary wants to definitively end the present crawling-peg exchange rate regime of the national currency, assuming that after this step, the NBH will be able to fix the exchange rate of the forint to the Euro and reduce the rate of inflation to a maximum of 3%. Thereafter, Hungary is clearly planning to accept some form of inflation targeting. From November 1998, the NBH already began to publish quarterly reports on inflation, with the aim of providing the public with a review of the expected development of inflation and evaluation of the latest developments from the point of view of the NBH.

In the immediate future, the intention of monetary policy in Slovakia is to eliminate adequately the spreading of inflationary impulses from the deregulation of prices. In the medium-term, monetary policy will be increasingly supported by inflation targeting, qualitative performance of monetary policy (management by intermediate of interest rates) reduction of interest rates and gradual stabilisation of the nominal exchange rate against the Euro. The long-term goal of monetary policy is stabilisation of the nominal exchange rate against the Euro and gradual reduction of interest rates. With the aim of increasing the informedness of the public, the core inflation as well as the headline inflation are published from 2000.

### **3. Inflation Targeting - Experiences from the Czech Republic and Poland**

The main characteristic of inflation targeting is an explicit (quantitatively low) inflation target, and the priority of this target on the basis of the hypothesis that monetary policy has no permanent real effect - it only influences the price level and the rate of inflation in the short-run. Since inflation reacts to changes in monetary policy with a time-lag, the procedure of inflation-forecast targeting is used.

The basic institutional pre-conditions for inflation targeting are a high degree of the central bank independence, its responsibility for the results achieved, no obligation to maintain another nominal anchor (so that there will be no conflict with the aim of low inflation)<sup>10</sup> and co-ordination of monetary and fiscal policies (which practically means the absence of fiscal sources of inflation).

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<sup>10</sup> Therefore, inflation targeting is generally inconsistent with the regime of a fixed exchange rate.

In the Czech Republic, legislation provides the possibility of direct financing of the government up to a level of 5% of the state budget receipts for the previous year, but this was not used in the preceding years. From 1997, the CNB changed to a regime of a floating exchange rate, so the potential for conflict with the inflation target was reduced. The target of a low inflation rate actually means a new nominal anchor. In Poland, the possibility of granting direct credit to the government was abolished by law in 1997. The country still uses the regime of a crawling band - which is a sort of monetary anchor - but the fluctuation band of • 15% gives the exchange rate sufficient freedom. The National Bank of Poland (NBP) has declared the aim of a future transition to a floating exchange rate, but has not specified a date yet.

Another of the key conditions for the success of inflation targeting is the ability of the central bank to give adequate forecasts of the inflation development and to estimate the influence of a change in the instruments of monetary policy on inflation (time-lag and extent of influence). In the transforming countries, the quantitative framework is marked by the influence of rapid structural changes and the associated low level of the models reliability. Relations among changes in the parameters of the monetary policy instruments are usually weakly identified, and the time-lags of the transmission mechanism channels are not precisely known.

At present, the CNB and NBP provide the public with limited information about the methodology of producing inflation forecasts. The results of study /7/ in the case of Poland showed that logical relationships between the various leading indicators of inflation<sup>11</sup> and inflation are beginning to emerge. So far, the relationships among the exchange rate and various representations of the CPI are the most evident, although they are still not very strong statistically. There is no convincing statistical evidence of a relationship between short-term interest rates and inflation. Changes in core inflation are generally more predictable than changes in headline inflation.

The inflation targeting framework is aimed to make monetary policy control more transparent, and thus influence the inflation expectations of the public in the desired direction. This requires an open and active policy of communication with the public. Regularly published inflation reports are important sources of information. They should contain information about the principles of the monetary policy being implemented, the forecast of inflation and the methodology used, explanation of what measures the central bank (CB) will use if the short term targets are not fulfilled, explanation of the past steps of the CB (as well as the reasons for absence of corrective measures), and the possible risks of future development. A further component of the communication policy is early announcement of changes in the monetary policy and explanation of the reasons for its measures. Practice in the countries targeting inflation also includes publication of minutes from the decision making body meetings, including all the arguments discussed for and against the adoption of a particular measure. In Great Britain, the results of individual votes are also published. This is regarded as a support for the quality of individual decisions.

The CNB did not announce its adoption of inflation targeting in advance. The NBP announced the adoption of a new strategy in a special document "The Medium-Term Monetary Strategy". The CNB publishes quarterly reports on the development of inflation. The NBP began to publish

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<sup>11</sup> For example industrial production, retail sales, unit labour costs, unemployment rate, deposit interest rates, interest rates on the interbank market, NBP interest rates, nominal and real exchange rates

inflation reports semiannually and later quarterly. The results of voting of members of the Monetary Policy Council are published, on the basis of the law on the NBP.

The choice of an indicator, to which the inflation target is explicitly and quantitatively fixed is a sort of compromise between transparency and the responsibility of the central bank. Emphasis on a certain indicator of core inflation shows that the central bank is interested in tracing the long-term trend of the inflation development. Targeting of the consumer price index (CPI) shows an interest in eliminating temporary fluctuations as well. The advantage of the CPI is that it is the most transparent indicator for the public, and catches the development of inflation most broadly. On the other hand it does not exclude various shocks (non-monetary determinants), which the central bank cannot influence. The indicator of core inflation is more easily monitorable, but not very understandable for the public.

The problem of a large difference between headline and core inflation is connected in transforming countries. In this situation, core inflation must not gain the position of the "anchor" of inflationary expectations, because it does not reflect the development of prices, as perceived by the public. However, in any case, it is necessary to explain thoroughly the choice of the particular target (index) to the public. The CNB targets the rate of growth of the index of core inflation (called as the net inflation index). After convergence with the development of the consumer price index will be reached, it plans to declare the CPI as the target. The NBP decided to target the rate of growth of the CPI, because of its transparency.

Similarly as the choice of index, the choice of the target corridor width is a compromise - adoption of a very narrow target can lead to instability of the monetary policy instruments, the bad impression in the case of missing a broadly set target is greater than in the case of non-achievement of a narrow target.

In 1998, the CNB adopted a corridor of only • 0.5 of a percentage point. For 1999 the corridor was widened to • 1.5. In 1999, the NBP adopted a corridor of only • 0.25 of a percentage point, which was later widened to • 0.6 of a percentage point. Such targets are considered very narrow, even for the conditions of developed market economies /8/.

When setting the corridor width for the chosen quantitative target, the CNB considered that determination of targets should not be a base for inflation acceleration or be directed below the level of price stability, defined as 2% • 1 percentage point. The CNB expects that after 2000, net inflation will fall by 0.5 of a percentage point each year.

The choice of the time horizon for target determines the speed of convergence towards the target, if the inflation rate is outside the targeted interval. The horizon should be sufficiently long for the reaction of central bank to be effective, that is, the time horizon should correspond to the time-lags of the transmission mechanism.

The CNB and NBP directed their attention to the gradual reduction of the inflation rate, and specified medium-term targets supplemented by short-term (annual) targets. The long-term target of the NBP is limited only upwards, the target is inflation lower than 4% in 2003. The final target of the NBP is to achieve price stability.

In 1999, the CNB adopted a document "The Long-Term Strategy of the CNB", which lengthens the time horizon of the inflation target to 2005, when it wants to achieve a rate of 1-3% of net inflation. The CNB supposes that in the horizon up to 2005, the impacts of the correction of regulated prices will be absorbed by price development and the index of net inflation will develop in parallel to the CPI. Its ambition is to come close to the achievement of price stability - 2% inflation - as defined by the European Central Bank. Therefore, 2005 can be understood as the reference period for completing the process disinflation in the country.

The responsibility of the central bank. Provided that the central bank can control inflation only to a limited extent, it is difficult to assess whether missing the target was the result of shocks and factors outside the control of the CB or of inappropriate monetary policy measures. Therefore, it is useful to specify the situation in which the inflation target can be modified or even not fulfilled (the so-called escape clause).

So far, the NBP has not defined such a set of unforeseeable factors, which would entitle it to deviate from the declared inflation target. After under-shooting its target for 1998, the CNB defined a set of exceptions for the following period /2/, including:

- significant deviations of the world prices of raw materials, energy sources and commodities from those predicted,
- significant fluctuations of the exchange rate, not connected with the development of fundamental domestic indicators and monetary policy,
- significant changes in the conditions of agricultural production with an impact on the prices of agricultural products,
- natural disasters and other extraordinary situations with cost and demand impacts on prices.

In conclusion, one rather theoretical comment. Provided that the statutes of central banks state that their primary, basic goal is to maintain the external and internal stability of the domestic currency, monetary aggregates targeting and the exchange rate targeting can be understood as two special cases of inflation targeting. If we assume that, among the leading indicators of inflation, money supply is the most reliable indicator of future inflation, we come to targeting of monetary aggregates. If future inflation is most correlated with development of the exchange rate, it is the case of exchange rate targeting.

#### 4. Conclusions

The development of the transforming countries up to now has shown some tendencies, to which general validity can be attributed:

- Ten years after the beginning of the transformation, it is clear that the group of transforming countries is developing in different directions. The method by which inflation was reduced and controlled stands out against the background of different developments. In contrast to the countries of the former USSR (with the exception of the Baltic States), the countries of Central Europe, which carried out a strong liberalisation of prices, were able to achieve a trajectory of growth more quickly, thanks to the rapid creation of a stable monetary environment.
- After the initial period of stabilisation of the economy, micro-economic reforms and the practical application of the institutional and legislative pre-conditions for a market economy are crucial for progressing towards a market economy. Although the compared countries achieved much in this direction, limitations of the transformation process, such as protection of group interests, monopolist practices, bureaucracy and corruption, still exist. Transformation will clearly be a longer-term process than was expected at its beginning.
- Similarly, the process of catching up with the developed market economies will require a substantially longer - generation - time horizon. This process pre-supposes a rate of growth in the transforming countries, exceeding the average rate of growth of the EU countries (or specific reference countries). Projections from the mid nineties, of long-term growth of the transforming countries at the speed of the Asian tigers, proved to be erroneous. Economic entities in the transforming countries will have to get used to the existence of economic cycles, to which national economies are subject. Apart from periods of expansion, there will be periods of slower growth (or sometimes recession), which will slow the process of catching up. Since the compared countries are small open economies, movements of world prices and developments in the economies of their main trading partners have a significant (and ever increasing) impact on the domestic situation.
- Productive and competitive investments are the basis for long-term sustainable growth. This applies even more, if the investment capacities are composed of foreign credit resources. Various artificial stimuli and/or excessive protective measures can promote economic activity in the short-term, but they are counter-productive in the longer-term.
- From the point of view of the activities of central banks, the change of instruments from direct to indirect ones brought a need to change the strategy of monetary policy. Direct instruments enabled the central bank to control and manage the activity of the banking sector in the desired direction "by command". Opening to the outside, by intermediate of convertibility of the currency and liberalisation of the movement of capital, the space for central bank's direct influence narrowed. Thus the signalling importance of the steps of the central bank increased.
- While at the beginning of transformation central banks reacted more to events of past development (for example, one-time devaluations, indexation of interest rates), creation of a

stable monetary environment has generated conditions for a gradual lengthening of the time horizon of the expectations of economic entities.

- The need to influence the expectations of economic entities is increasing the importance of a more transparent presentation of the aims of monetary policy to the public, including definition, explanation and consistent observance of a strategy directed towards achieving the desired development.
- Co-ordination of monetary, fiscal and income policies is a pre-condition for a stable development. The need for a high degree of consistency of policy measures not only applies to measures of the central bank. In the context of joint responsibility of the government and central bank, it is also very important for creation of the expectations of the public and the monetary and financial markets participants.

If we attempt to look ten years into the future, we can very probably expect that the compared countries will be members of the EU. In the event of their entry to the EMU, their central banks will hand over all their legal powers to carry out monetary policy to the European Central Bank, so that the autonomy of their management of monetary and exchange rate policies will cease. The possibility of solving imbalances arising in the national economy with the help of the instruments of monetary policy will be lost, and emphasis will shift to the instruments of economic policy in the hands of the government.



## **Bibliography**

- /1/ Begg, David, 1998, Pegging Out: Lessons from the Czech Exchange Rate Crisis, *Journal of Comparative Economics* 4/1998
- /2/ ÈNB, 1999, Dlouhodobá minová strategie Èeské národní banky
- /3/ European Bank for Reconstruction and Development: Transition Report 1999, 1999, EBRD
- /4/ Filosa, Renato, 1997, The Monetary Framework in Central and Eastern Europe: The Relevance of Other Countries' Experience, Oesterreichische Nationalbank, *Monetary Policy in Transition in East and West: Strategies, Instruments and Transition Mechanisms*
- /5/ Fisher, Stanley, Ratna Sahay and Carlos Végh, 1996, Stabilization and Growth in Transition Economies : The Early Experience IMF Working Paper 96/31
- /6/ Halpern, László and Charles Wyplosz, 1997, Equilibrium Exchange Rates in Transition Economies, IMF Staff Papers
- /7/ Christofferson, Peter F. and Robert F. Wescott, 1999, Is Poland Ready for Inflation Targeting? IMF Working Paper 99/41
- /8/ Krzak, Maciej and Helmut Ettl, 1999, Is Direct Inflation Targeting an Alternative for Central Europe? The Case of Czech Republic and Poland, Oesterreichische Nationalbank, *Focus on Transition* 1/1999
- /9/ Lipschitz, Leslie, 1997, Where Do We Stand with Monetary Transformation in Central and Eastern Europe - Strategies, Instruments and Transition Mechanisms, Oesterreichische Nationalbank, *Monetary Policy in Transition in East and West: Strategies, Instruments and Transition Mechanisms*
- /10/ Mishkin, Frederic S., 1999, International Experiences with Different Monetary Policy Regimes, National Bureau of Economic Research, Working Paper 6965
- /11/ National Bank of Hungary, 1999, Monetary policy Guidelines for 2000, NBH
- /12/ National Bank of Poland, 1999, Inflation Report 1998, NBP
- /13/ National Bank of Poland, 1999, Monetary Policy Guidelines for Year 2000, NBP
- /14/ Sahay, Ratna and Carlos Végh, 1995, Inflation and Stabilisation in Transition Economies : A Comparison with Market Economies IMF Working Paper 95/8
- /15/ Szapáry, György and Zoltán M. Jakab, 1998, Exchange rate Policy in Transition Economies: The Case of Hungary, *Journal of Comparative Economics* 4/1998
- /16/ Wagner, Helmut 1998, Central Banking in Transition Countries, IMF Working Paper 98/126