

EXCHANGE RATE, INFLATION AND REAL ECONOMIC GROWTH IN TRANSITIVE ECONOMIES

Jaroslava DURČÁKOVÁ, Martin MANDEL *

Abstract:

In this paper we discuss the issue of the choice of exchange rate regimes in transitive economies and the effect of exchange rate policy on the development of macroeconomic indicators (e. g. the average growth rate of real GDP in domestic currency, the development of domestic inflation and the real exchange rate). Our analysis indicates that monetary and exchange rate policy is not a passive factor, at least in the medium term. Monetary policy should, in the first phases of transformation development, warn against two extremes: absolute stability even appreciation of the nominal exchange rate, or, on the contrary, chronic and severe depreciation.

Keywords: transitive economies, exchange rate, economic growth, inflation

JEL Classification: E310, F430

1. Introduction

In this article we shall be dealing with the issue of the choice of exchange rate regimes in transitive economies and the effect of exchange rate policy on the development of national economic fundamentals (e. g. the average growth rate of real GDP in domestic currency, the development of domestic inflation and the real exchange rate). In the first part of the article, we will summarise the advantages and disadvantages of individual exchange rate systems and how they have been dealt with by economic theorists and practitioners since about the 1950s. At the same time, this part of the article will talk about the exchange rate systems in place in the individual transitive economies aspiring to membership of the EU. In the second part we shall try to interpret the opinions of Czech economists on this problem, given their experience with the development of the Czech exchange rate system after 1993 (if relevant, even from the time before the division of Czechoslovakia 1990 – 1993). In the third part we shall attempt, with the help of simple graphic analyses (cross – section approach) to ascertain, if it is possible to observe a certain relationship between the development of the nominal exchange rate and other economic indicators (e.g. real growth of GDP, the CPI and the real exchange rate) from 1993 – 2000.

*) University of Economics, 4, W. Churchill Sq., CZ – 130 67 Prague 3.

**) This research was supported by the Grant Agency of the Czech Republic under Grant No. 402/00/0439.

This analysis will be based on the sample of 12 countries – the Czech Republic, Bulgaria, Estonia, Croatia, Lithuania, Latvia, Hungary, Poland, Romania, Russia, Slovakia and Slovenia.

2. Foreign Exchange Rate Regimes in Accession Countries

In case of the following transitive economies there have appeared a lot of different exchange rate systems taken from the point of view of IMF classification: a managed floating, fixed peg arrangements to individual currency baskets or to a major currency, crawling peg and currency board.

2.1 Managed Floating

Managed floating is the less radical form of floating. Unlike free floating, the central bank doesn't surrender the use of foreign exchange intervention for stabilising the level of foreign exchange rate, especially in cases of so-called destabilising speculation. In comparison with fixed peg arrangements, however, the central bank doesn't officially announce either the central rate or the oscillation band. According to advocates of managed floating, this system should be understood as a compromise between the fixed exchange rate and free floating in situations, where, on the foreign exchange market, the existence of destabilising speculation cannot be ruled out.

The basic reasoning behind managed floating remains the idea that free movement of foreign exchange automatically ensures equilibrium in the balance of payments, and that indirectly helps to remove customs tariff barriers which prevent the growth of foreign trade.

In comparison with the movement of real income or price levels, movement of exchange rate in this concept is connected with the smallest cost of selfregulating mechanism in the removal of disequilibrium (namely deficits) in the balance of payments.

Managed floating should, at the same time, enable central banks to operate a relatively independent internal currency policy and prevent the carrying over of inflation from one country to another. Advocates of free floating (usually) criticise managed floating on the grounds that it is a step towards re-introducing some parts of the fixed foreign exchange rate system. On the other hand, fixed foreign exchange rate advocates usually emphasise the fact that the costs of foreign exchange intervention can be higher than that of the fixed foreign exchange rate, because an officially announced band of oscillation doesn't exist, which has a psychological (e.g. disciplinary) effect on destabilization speculators.¹⁾

At the end of 2000, according to the IMF report, managed floating regimes were used in 32 countries. From this group of 32 the Czech Republic (since May, 1987), Poland (since April, 2000), Slovakia and Slovenia belong to accession countries.

1) There exists a fairly wide range of literature dealing with the pros and cons of free floating, managed floating and fixed exchange rates, e. g. Friedman (1953), Johnson (1973, 1976), Wallich (1973), Heller (1978), Batten and Mack (1983).

2. 2 *Fixed Peg Arrangements Against a Single Currency or Against a Composite*

As a rule, advocates of fixed peg arrangements are sceptical of the idea of the existence of major stabilization of speculation on foreign exchange markets. Historically, experience with currency crises and the significance of technical analysis in the forming of expectations, leads (us) to the conclusion that destabilising speculators are significant players on foreign exchange markets. Do not overestimate the alternative of foreign exchange hedging, which can be, in part connected with certain marked costs, and, furthermore has a time limit (the repayment time doesn't exceed 1 year). A sharp increase in the movement of exchange rates, which is a risk with "floating", can have a negative effect, especially on small open economies with an insufficiently "deep" foreign exchange market.

Small countries, disadvantaged by having a "shallow" foreign exchange market, are worse affected by foreign exchange supply and demand shocks. Their currency becomes easy prey for destabilization speculators. With regard to the fact that small economies are, as a rule, markedly open economies with a high proportion of imports in their GDP. Increased volatility of foreign exchange rate could destabilise the national economy. Sensitivity of the national economy in the area of prices and real (behaviour) of the movement of the capital speculation is in direct proportion to the "shallowness" of the foreign exchange market and the degree of openness of the national economy.

In the case of small open economies, there are two further arguments in favour of the fixed exchange rate. Firstly, with growing openness of the economy there is usually a growth of the ratio of imports to exports. Under these conditions there is a reduction of the effectiveness of the exchange rate as an instrument for removing disequilibrium in the balance of payments. Secondly, small open economies usually have a high marginal tendency to imports which enables correction of the deficit in the balance of payments with relatively low expenses involved.

Fixed exchange rates can be established by firmly pegging to one currency (e. g. USD or EUR), to the individual currency basket and to the international currency unit, whose rate is derived from the currency basket (e. g. SDR).Pegging to one referent currency used to be criticised because it put forward the notion that the floating domestic currency was one and the same as the chosen referent currency. This exchange rate union makes economic sense so long as the given country conducts business to a large extent with one particular country (in other words with one currency area).Under conditions of diversified international trade, pegging to one currency loses its substance while pegging to the individual currency basket emerges as the most advantageous.

According to the IMF report of the end of 2000, 51 countries used fixed peg arrangements. Of the countries aspiring to EU membership, Latvia is one which pegged to SDR (0.7997 LVL/SDR).

2. 3 *Crawling Peg (Band)*

Crawling peg and crawling band are specific types of fixed exchange rates, where the central bank carries out regular, relatively often and usually announced in advance adjustments of central rate. If market exchange rate is maintained within certain fluctuation margins it is called "crawling band". If it has no band to oscillate we speak of the so-called "crawling peg" system.

Exchange rate pegging can be similar to the abovementioned cases, brought into effect, either, by pegging to one leading national currency or to the currency bas-

ket. The key problem with this system is the choice of indicator, by which adjustments to the central rate will be controlled. It is here that recommendations for individual economies and concrete practical applications markedly differ (see Williamson, 1981). Theoretically it can be about the average market value of the exchange rate at an earlier stage, the development of foreign exchange reserves, the inflation differential, set of official indicators, subjective decisions of central banks etc.

Crawling band (peg) gained in importance, especially in countries with higher rates of inflation, where often and regular adjustments to the central exchange rate compensates for higher domestic inflation and stabilises the real exchange rate which maintains the competitiveness of domestic exporters on foreign markets. Devaluation of the exchange rate, however, at the same time compensates for even relatively high domestic interest rates in comparison with foreign interest rates (on condition that there is uncovered interest rate parity) and the domestic economy thus prevents excessive inflow of foreign speculation capital.

According to the IMF report, to the end of 2000, 11 countries used "crawling peg" and "crawling band". Among them are Hungary and, to April, 2000, Poland.

2. 4 Currency Board

The basic element of the exchange rate system "currency board" is the binding obligation of central bank to maintain the fixed exchange rate of their currency to the recommended currency, without the option to devalue or valorise it. In fact, that means, in effect, a rigid exchange rate with no oscillation band, where the central bank surrenders all its instruments of control with the exception of unsterilised foreign exchange intervention.

The theoretical basis of this system is apparently the so-called monetarist approach to the balance of payments, which connects disparity in the balance of payments with disparity between the money supply and the money demand on the home market. According to this approach, the dominance of money supply over money demand leads to deficits in the balance of payments and vice versa. A direct consequence of disparity on the (domestic) money market is external disparity of the economy in question. The point is, whether the assumptions of the monetarist approach (i.e. the economy is a pure price taker in the area of the price of goods and in the area of interest rates, and, that the economy always moves in the vicinity of potential GDP) are in the (real) world, at least, for the most part, fulfilled.

Unsterilised foreign exchange intervention introduces a self-regulating mechanism which constantly harmonises the money supply and the money demand, thus, maintaining equilibrium in the entire economy. If, for example, a greater supply of money than demand for it causes a deficit in the balance of payments, it leads to the depreciation of the domestic currency. The central bank uses its foreign exchange intervention in support of its (home) currency, i. e. it sells foreign currency and buys domestic currency, thus returning harmony to the supply of and the demand for money.

This system is recommended for countries whose central bank has lost credibility as a consequence of an unsuccessful battle with inflation. The credibility of this system is based on the simple and clearly laid down rules governing the execution of monetary policy and the requirement that foreign exchange reserves must be big enough to cover the size of the currency base.

According to the IMF report from the end of 2000, this system is in use in 8 countries. Of the countries wishing to join the EU, it is used in Bulgaria (pegged to the DEM since June, 1997), Estonia (pegged to the EUR 15.65 EEK/EUR) and Lithuania (pegged to the USD 4 LTL/USD).

3. Development of the Czech Exchange Rate Regime and Theoretical Debate

The exchange rate system for the CZK from 1993 to the currency crisis in May 1997 could be characterised as a fixed exchange rate system pegged to the individual currency basket.²⁾ The currency basket consisted of the DEM and the USD: 65 per cent DEM and 35 per cent USD. The choice of currency and specific value share in the currency basket was made on the basis of the significance of individual countries in foreign trade and foreign currency payments relative to the Czech Republic. The oscillation band in the currency basket up to February 1996 was very narrow ($\pm 0.5\%$) which the Czech National Bank further complicated with its control of the money reserves (M 2) at a time of strong inflow of foreign capital and foreign exchange intervention against the appreciation of the CZK. Since February 1996 the oscillation band was widened to ($\pm 7.5\%$) with the aim of increasing the foreign exchange risk for speculators, thus lowering the inflow of short term foreign capital.

Mainly due to the enormous deficit in the current account (7.4 % of GDP in 1996) and the growth of foreign debt (brutto) to sensitive limits (foreign obligations of the Czech Republic amounted to 40 % of its GDP) in the middle May 1997 the CZK came under strong speculative pressure. Apparently, the currency and banking crises in some East Asian countries, and the resulting departure of investors from the risky area, triggered the situation with the CZK. Political conflict among the parties of the then governing coalition could have played a role, too.

The Czech National Bank, after more than a week of foreign exchange intervention, during which it sold USD 2.5 billion, decided on the 26th May (after consultations with Government) to loosen the oscillation band and to adopt managed floating, with the CZK oriented on the DEM.

Initial theoretical discussions concerning exchange rate systems and exchange policy, which took place in 1990 while the country was still Czechoslovakia, aimed at the problem of the initial devaluation of the foreign exchange rate of the CSK. The Czechoslovak State Bank already in 1990 carried out three devaluations, during which the koruna gradually depreciated by approximately 110 %. The thus adjusted level of the exchange rate of the CSK (17.995 CSK/DEM and 28.443 CSK/USD) ensured approximately 80 % of exporters profits on their exports to developed market economies.

That is why the concept of "initial drastic devaluation" won, which was meant to create an "exchange rate pillow", providing a certain adaptation period for Czechoslovak export firms. The concept of "drastic devaluation", at the same time, enabled the removal of a major part of the export subsidies and was linked to the relatively high degree of convertibility of the CSK.

After the division of Czechoslovakia in 1993, there arose the question, while drawing up the currency and exchange rate policy of the Czech Republic, whether to stay with the fixed exchange rate system, pegged to the currency basket, or, whether to try the crawling band (peg). At that time, most Czech economists were of the opinion that an exchange rate system based on regular devaluation would not stimulate exporters sufficiently to reduce costs (in the case technological innovation and the export of manufactured products).

2) Discussion on the individual phases of the development of the exchange system of the CZK is contained in the articles and research papers of Tošovský (1991), Hrnčíř (1993), Mandel (1994), Dědek (1995), Janáčková (1995), Šmídková (1998) and Kočenda (1998).

There was also the fear that devaluation as a solution to deficits in the current account could be linked to the worsening of foreign terms of trade. Crawling band (peg) was also criticised from the standpoint that often repeated devaluation of the exchange rate will prevent the deflation process. It is possible to agree only partly with this opinion. It is necessary to be aware of the fact that devaluation affects exports and imports in different ways. While repeated devaluation on the export side may lead companies to "laziness"; it could force the import side to adopt saving measures and to cut costs.

Crawling band (peg) can be linked to deflation strategy, so long as the central bank gradually reduces the speed of devaluation. The deflation process, in the case of crawling band (peg) is apparently slower than is the case with a fixed nominal anchor (e.g. currency board). The question is whether in the long run slower, systematic deflation isn't the worst solution. In Czech economic policy up to the currency crisis in May 1997 the fixed foreign exchange rate pegged to the currency basket played a role, the so-called "nominal anchor". The stabilising role of the nominal anchor can be understood in two senses. Firstly, as a fixed "calculation point" for the translation of foreign prices to domestic and vice versa. And secondly, it can be taken as a component of the self regulating mechanism for the renewal of equilibrium between the money supply and the demand for money on the principle of the unsterilised foreign exchange intervention, in the spirit of the monetarist approach to the balance of payments. In Czech economic literature it was usually emphasised the first approach. In the currency board theory it was traditionally stressed the second approach, rather.

Czech experience says that fixed nominal exchange rate as a price calculation anchor, functions well in the group of goods known as "tradeables". From the point of view of the transitive economies it is also an advantage that it doesn't prevent the growth of "nontradables", because most regulated services belong to this group (e.g. rent, water and sewage services, city and intercity transport) and the gradual liberalization of their prices is an economic necessity. On the other hand the working of the second course has shown itself to be fairly problematic – namely the self regulating process on the money and financial markets. Its critical part is apparently the rigidity of the high interest rates, which have a tendency to follow past inflation (the concept of real interest rates ex-post).

Transitive economies keep high inflation for relatively longer than developed market economies. Even in cases where they managed to stabilise prices fairly, quickly in the "tradables" sector; in the "nontradables" sector, inflation stayed for a relatively longer time. If the domestic interest rates follow this higher inflation ex-post (it is an attempt to maintain bank deposit rates at least on the level of past inflation). Set by a "guaranteed" fixed nominal exchange rate it leads to an undesirable stimulation of the inflow of borrowed foreign capital.

In the Czech economy this inflow was supported by the low rate of foreign debt, the country's good rating on the investment level and a relatively liberal foreign exchange law. Under these circumstances the Czech National Bank was afraid to tackle the appreciation of the exchange rate of the CZK with "unsterilised foreign exchange intervention". With rigid interest rates and the constant inflow of borrowed foreign capital, there were fears of a sharp increase in the money supply brought about by foreign exchange intervention. For this reason politicians chose "moderate" sterilization policy. Where the practical results were a relatively high annual growth rate of the money supply M2 was around 20 % (second half of 1993 – first half 1996). With regard to the fact that national budgets were at that time expansive rather than restrictive the Czech economy gradually headed towards overheating, whose imme-

diate cause wasn't higher inflation; rather a fast growing deficit in the current account.

If we put together the Czech experience with the currency basket and with a narrow oscillation band we can say that they are rather controversial. The basic problem is apparently the combination of higher inflation with a rigid interest rate, which produces an excessive inflow of borrowed foreign capital with systematic pressure on the appreciation of the nominal exchange rate.

The historically unanswered question remains, whether our macroeconomic development would be more balanced by a restrictive policy, which would slow down the growth of domestic aggregate demand, and at the same time would bring certain pressure to bear on the decline of domestic interest rates. We can be slightly sceptical of the functioning of "currency board" for a given stage of transformation. We assume that the necessary preconditions for the success of this currency and exchange rate policy are:

- the marked flexibility of domestic interest rates on the money supply, and,
- domestic interest rates should be approximately on the same level as world interest rates as regards the "risk premium".

Meeting the second prerequisite is apparently conditional on the conclusion of the process of price deregulation and the complete reduction of supply (side) inflation pressure in a given transition economy.

4. Empirical Analysis of the Relationship between the Foreign Exchange Rate, Inflation and Real Economic Growth

In the following empirical analysis we shall not be looking at the direct influence of the chosen foreign exchange system on the development of national economic figures. We shall limit our research only to the search for significant actual movement of foreign exchange rates for the development of real economic growth and inflation. In this way the monitored economies varied: One group of countries (e.g. the Czech Republic, Estonia, Lithuania, and Latvia) put a greater stress on stabilization of the nominal exchange rate, while the second group (e.g. Hungary and Poland) concentrated more on stabilization of the real exchange rate. Our approach enables us to get over the problem of frequent changes in the exchange rate system in transitive economies.

For example, the exchange rate system of the CZK underwent a historic series of changes, from being pegged to the currency basket with varying width oscillation bands ($\pm 0.5\%$ to $\pm 7.5\%$) to managed floating. Throughout this system of changes, however, the monetary policy of the Czechoslovak State Bank and, later, the Czech National Bank, was always drawn up so that for the whole period of reform (i.e. 1991 to 2000) it maintained a stable exchange rate to the DEM (hereafter: the EUR).

We assume that the foreign exchange rate alone can by means of many different transmission channels³⁾ have an effect on the real growth of the domestic economy.

Firstly, depreciation of an exchange rate which is too soft will be linked to a higher rate of inflation and slower economic growth. Secondly, an unbalanced and overvalued foreign exchange rate can slow down the growth of domestic exports, and, even

3) This problem is dealt with by e.g. Dixit (1989), Krugman (1989), De Graue (1990), Bruno (1995), Ghosh et al. (1995) and Razin and Collins (1997).

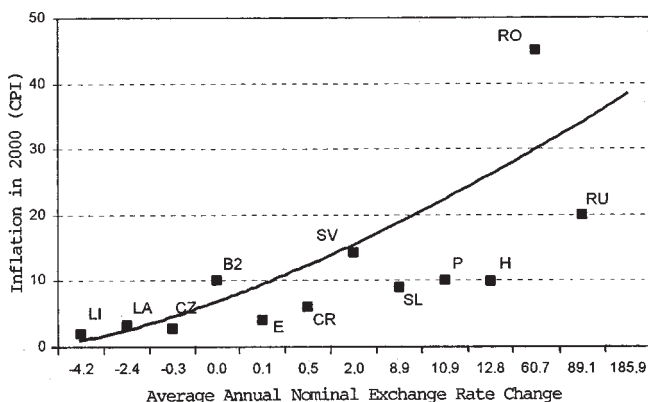
economic growth. Thirdly, the policy of having an overvalued foreign exchange rate, usually linked to depreciation expectations, can discourage foreigners from investing directly. Fourthly, unstable currency development, allied to increased volatility of the foreign exchange rate makes it hard for firms in the areas of foreign trade and investment to carry out economic calculations and it slows down and worsens the process of allocating resources.

Of the twelve monitored countries (Lithuania (LI), Latvia (LA), the Czech Republic (CZ), Bulgaria (B), Estonia (E), Croatia (CR), Slovakia (SV), Slovenia (SL), Poland (P), Hungary (H), Romania (RO) and Russia (RU)) in the period 1993 to 2000, Bulgaria recorded the most pronounced change in exchange rate and monetary policy: it established currency board in 1998, went from a policy of fast depreciation to a policy of absolutely stable exchange rate. For this reason we are following the Bulgarian economy in two periods: 1993 to 1997 (B1), and 1998 to 2000 (B2).

The authors of this contribution work only with annual data, that is why it was not possible to use a more sophisticated method of measurement, and the graphic analysis presented here has illustrative significance, only.

Figure 1

Average Annual Change of Nominal Exchange Rate and Disinflation Process (in %)



Source: IMF, International Financial Statistics, Yearbook, 2000; Newton Holding Database.

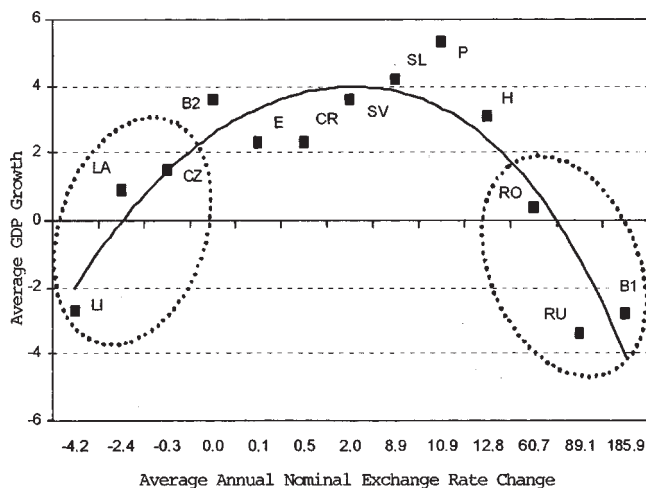
Figure 1 informs us of the success of the disinflation process in individual transitive economies. On the horizontal axis we can observe the average annual change in the nominal exchange rate of the domestic currency to the EUR for the period 1993 to 2000. On the vertical axis we can see the rate of inflation in individual countries in 2000, measured by the CPI. From the Figure 1 it can be seen that countries operating with long term stable nominal foreign exchange rates, achieved in 2000 lower inflation rates than countries with softer exchange rate policies.

Figure 2 shows us the relationship between the average annual modification of the nominal exchange rate of the domestic currency towards the EUR and the average annual real growth of GDP in the relevant national currency. Observed values indicate that two groups of countries have reached a relatively low average rate of real growth:

- countries with a relatively (restrictive) monetary policy, whose result was appreciation or stability of the nominal exchange rate (Lithuania, Latvia and the Czech Republic),

Figure 2

Average Annual Change of Nominal Exchange Rate and Average Annual Growth of Real GDP (in %)



Source: IMF, International Financial Statistics, Yearbook, 2000; Newton Holding Database.

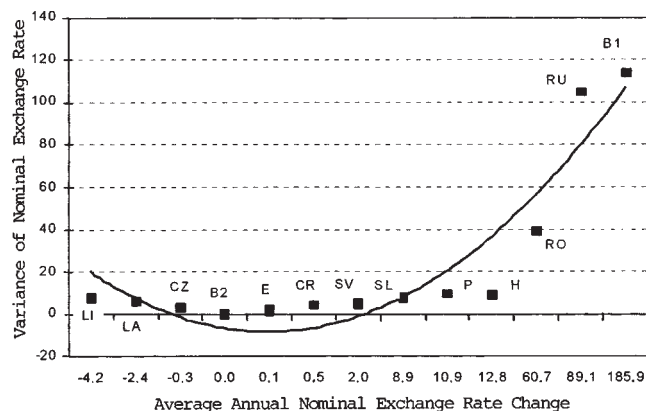
– countries with an extremely soft monetary and exchange rate policy (Russia, Bulgaria (period 1993 – 1997) and Romania).

Poland on the contrary reached the highest average value of real growth (5.3 %) and Slovenia (4.2 %) while the average nominal depreciation of the domestic currency was 10.9 % (up from 8.9 %).

Relatively marked differences in the average rates of real growth of GDP in the monitored national economies can hardly be explained by the different development of nominal exchange rates of national currencies. That's why we are going to concentrate on the issue of volatility of the nominal exchange rate (see Figure 3) and development of the real exchange rate (see Figure 4).

Figure 3

Average Annual Change of Nominal Exchange Rate and Its Volatility (in %)

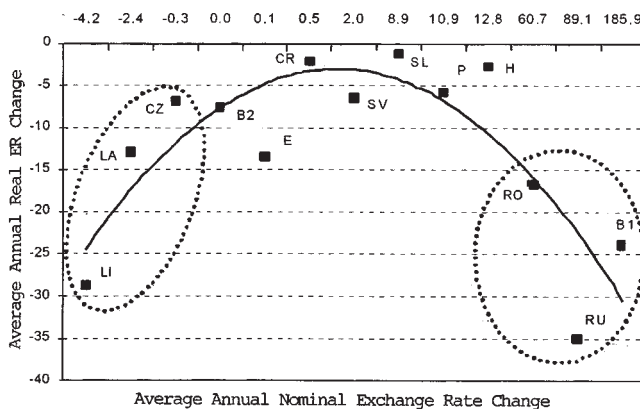


Source: IMF, International Financial Statistics, Yearbook, 2000; Newton Holding Database.

Figure 3 informs us of relationship between the average annual change of the exchange rate on the domestic currency related to the EUR and the volatility of the exchange rate measured with the help of authoritative deviations from relative exchange rate changes. The Figure 3 confirms the intuitively felt reality that volatility of the exchange rate increases with the size of the average annual changes of the exchange rate (depreciation and appreciation). Low rate of real growth can be explained by the high volatility of the nominal exchange rate, especially in countries with extremely soft monetary and exchange rate policies, because market subjects lose fixed orientation points in their calculations in the area of foreign trade and international investment. At the same time it shows that volatility on the nominal exchange rate cannot be explained only by the different rates of real growth between national economies. For example, the relatively greater stability of the CZK over the PLZ didn't mean higher growth of the Czech economy in comparison with the Polish economy; in fact the opposite is true.⁴⁾

Figure 4

Average Annual Change of Nominal and Real Exchange Rate (in %)



Source: IMF, International Financial Statistics, Yearbook, 2000; Newton Holding Database.

Figure 4 shows us the relationship between the average annual changes of the nominal exchange rate and the real exchange rate calculated on the basis of the CPI. The following development of the real exchange rate has in the case of converging economies a double significance.

The development of the real foreign exchange rate is a factor which influences the competitiveness of the domestic economy on foreign markets. With regard to the marked openness of most of the monitored economies it may be assumed that changes in the real exchange rate can even have significant influence on real economic growth.

Figure 4 shows that the highest appreciation of the real exchange rate of the domestic currency was achieved by countries at "opposite ends" from the point of view of the severity of the monetary and exchange rate policy – Lithuania, Latvia

4) One explanation could be that in Poland, the long term use of "crawling peg", which, from the start of devaluation, reduced the risk of dubious exchange rate expectations on economic calculations.

and the Czech Republic on the one hand and Romania, Bulgaria (1993 – 1997) and Russia on the other. So long as the development of the real exchange rate is a significant factor influencing the competitiveness of domestic economies on foreign markets, then this fact can explain why these countries, with such different monetary policies (compare Figure 2 with Figure 4) have the lowest average growth rate of GDP in domestic currency.

Second, appreciation of the real foreign exchange rate of the domestic currency is, together with the real growth of revenue in domestic currency, a part of the convergence process of transitive economies to EU countries. It holds true that the total relative (appreciative) changes in the exchange rate and relative changes in real revenue in domestic currency is equal to relative changes in real domestic revenue in foreign currency (in our case, the EUR). There are many contentious questions on the importance of real appreciation for the convergence process, and here are a few of the many theoretical explanations:

a) in the case of high inflation in the economy, appreciation of the real exchange rate can be a consequence of the inflation process anticipating depreciation of the nominal exchange rate of the domestic currency. Theory offers at least two explanations. The first one is: that in times of increased inflation, the authorities use restrictive measures to limit access to foreign exchange. Secondly, the impoverishment of the population caused by hyperinflation (effects on revenues and wealth) leads to a relative reduction in the demand for foreign exchange, which is considered a luxury good. In both cases, appreciation of the real exchange rate can be considered as temporary and not as an expression of the long term convergence process;

b) as long as we are dealing with “milder” causes of appreciation of the real exchange rate in stabilised transitive economies, statistical errors cannot be ruled out while following inflation and real growth of GDP: when technological improvements in manufactured products is tied to a rise in prices and is mistakenly shown as inflation and not as real economic growth. It can be expected that this problem, well known in developed market economies, will be much stronger in converging economies. This type of statistically illustrated “inflation” does not exert depreciation pressure (in the spirit of the theory of purchasing power parity) on the nominal exchange rate, and leads to systematic real appreciation of the domestic currency;

c) domestic inflation is tied to the rapid increase in the price of “non-tradeable” goods. This type of inflation should not, at the same time, be combined with the depreciation of the nominal exchange rate of the domestic currency, because it is not combined to the direct growth of demand for foreign currency. Besides traditional explanations, Balassa and Samuelson theory (see Balassa, 1964; Samuelson, 1964) is an indispensable argument for the reasons for these price rises and the deregulation of the prices of services: e.g. rents, water, waste disposal, public transport (city and intercity), posts and telecommunications, culture, health and education. The prices of these services were traditionally kept below the level of cost in communist economies. Inflation of this type has a limited influence on both the foreign currency demand and on the nominal exchange rate. Because all other factors are constant (i.e. other prices do not go down) it leads to the appreciation of the real exchange rate.

5. Conclusion

Historical experience (e.g. in the 1950s and 1960s from Japan, the 1980s and 1990s from Spain, Portugal and the Irish Republic) shows that the convergence process is always joined to the appreciation of the real exchange rate. The question remains, however, with what rate of domestic inflation and with how large a change

in the nominal exchange rate. Our analysis indicates that monetary and exchange rate policy is not a passive factor, at least in the medium term. Monetary policy should, in the first phases of transformation development, warn against two extremes: absolute stability (even appreciation) of the nominal exchange rate, or, on the contrary, chronic and severe depreciation. For example, Bulgaria proves that of these two extremes, the second one is the worse. The best results, from the point of view of the growth of real GDP in domestic currency, were obtained in economies with a certain depreciation of the nominal exchange rate (see Poland and Slovenia). It seems that in these economies the achieved rate of appreciation of the real exchange rate did not have a negative effect of the competitiveness of the domestic economy on foreign markets and, at the same time, instability of the nominal exchange rate still has not had a noticeably negative effect on economic calculations in the microsphere.

At the same time, it is important to note two problems in our empirical analysis. Firstly, our analysis comes just from the historical development of national economic indicators, we did not analyse the question of monetary and exchange rate policy systems. That leaves us with the problem of what is the optimum rate of development for the nominal and real exchange rates, which can be found with the aid of the systemic regulations in the area of currency and exchange rate policy. Secondly, our analysis is conditional on the length of the chosen period and the reality, that it concerns the "first phases" of the convergence process, when most of the monitored countries went through the stage of intensive reform of price relations to the present growth of inflation. That is why it can be assumed, that further phases in the convergence process will be linked with other optimum parameters of macroeconomic development than history can indicate (i.e. with a lower rate of inflation and a more stable nominal foreign exchange rate).

References

- Balassa, B.** (1964), "The Purchasing-Power Parity Doctrine: A Reappraisal." *Journal of Political Economy*, 72, pp. 584-596.
- Batten, D. S., Mack, O.** (1983), "Five Common Myths About Floating Exchange Rate." *Federal Reserve Bank of St. Louis Review*, pp. 150-174.
- Bruno, M.** (1995), "Does Inflation Really Lower Growth?" *Finance and Development*, pp. 360-375.
- De Grauwe, P.** (1990), "The Cost of Disinflation in the EMS." *Open Economic Review*, pp. 147-175.
- Dědek, O.** (1995), "Currency Convertibility and Exchange Rate Policies in the Czech Republic." *Politická ekonomie*, 43(6), pp. 723-749.
- Dixit, A.** (1989), "Entry and Exit Decisions under Uncertainty." *Journal of Political Economy*, pp. 620-638.
- Durčáková, J., Mandel, M.** (2000), *International Finance* (in Czech). Prague: Management Press.
- Friedman, M.** (1953), "The Case for Flexible Exchange Rate," in *Essays in Positive Economics*. Chicago: University of Chicago Press, pp. 157-203.
- Ghosh, A., Gulde, A., Ostry, J., Wolf, H.** (1995), "Does the Nominal Exchange Rate Regime Matter?" Washington, IMF, IMF Working Paper 95/121.
- Heller, H. R.** (1978), "Determinants of Exchange Rate Practices." *Journal of Money, Credit, and Banking*, (3), pp. 308-321.
- Hrnčíř, M.** (1993), "Foreign Exchange Rate Regime and Economic Recovery." *Prague Economic Papers*, 2 (1), pp. 3-17.
- Janáčková, S.** (1994), "Transforming the Czech Economy: Role of Convertibility and Exchange Rate Anchor." Prague, Czech National Bank – Institute of Economics, Working Paper No. 24.
- Johnson, H. G.** (1969), "The Case for Flexible Exchange Rate." *Federal Reserve Bank of St. Louis Review*, 51, pp. 12-24.

- Johnson, H. G.** (1976), "Destabilizing Speculation: A General Equilibrium Approach." *Journal of Political Economy*, pp. 102-108.
- Kočenda, E.** (1998), *Exchange Rate in Transition*. Prague: CERGE Charles University.
- Krugman, P.** (1989), "The Case for Stabilizing Exchange Rates." *Oxford Review of Economic Policy*, (3), pp. 123-144.
- Mandel, M.** (1994), "Devaluation and a Fixed Exchange Rate." *Russian and East European Finance and Trade*, (6), pp. 71-82(a).
- _____ (1994), "Process of Sterilization of Foreign Capital Inflow in the Czech Republic." *Prague Economic Papers*, 3 (3), pp. 217-230(b).
- Razin, O., Collins, S.** (1997), "Real Exchange Rate Misalignments and Growth. International Economic Integration," in Razin, O., Sadka, E., eds., *Public Economics Perspectives*. Cambridge: Cambridge University Press, pp. 134-147.
- Samuelson, P. A.** (1964), "Theoretical Notes on Trade Problems." *Review Economics and Statistics*, 46, pp. 145-154.
- Šmídková, K.** (1998), "Koruna Exchange Rate Turbulence in May 1997." Prague, Czech National Bank, Working Paper, No. 2.
- Tošovský, J.** (1991), "First Experiences with the System of Current Account Convertibility of CSK" (in Czech). *Finance a úvěr*, 41(8), pp. 337-342.
- Wallich, H. C.** (1973), "A Defense of Fixed Exchange Rate," in Samuelson, P. A., ed., *Readings in Economics*. London: Mc Graw-Hill, Inc., pp. 210-241.
- Williamson, J.** (1981), "The Crawling Peg in Historical Perspective," in Williamson, J., ed., *Exchange Rules*. London: The Macmillan Press, Ltd., pp. 3-30.