

Can Exchange Rate Targeting Stabilise Inflation Pressures in Transition Countries? - Case of the Slovak and the Czech Republic

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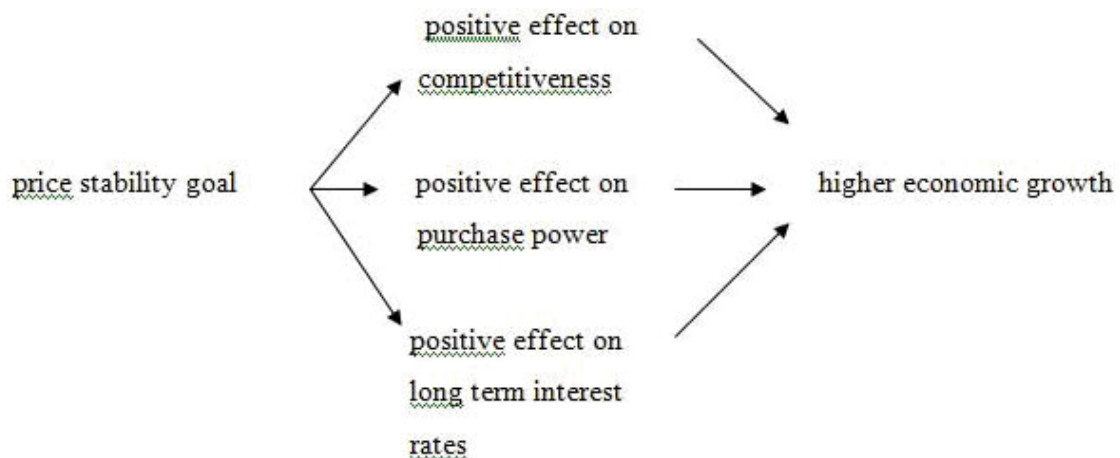
ABSTRACT - Each monetary strategy with its targeting has its strengths and disadvantages. However, exchange rate targeting can be very useful especially at the beginning of transition process as it helps to stabilise inflation. We try to evaluate effectiveness of exchange rate targeting in the Slovak Republic and in the Czech Republic using statistic methods. Our conclusions can serve as an experience to other countries that are e.g. just at the beginning of their transition process.

KEY WORDS: exchange-rate targeting, inflation targeting, inflation rate, Slovakia, the Czech Republic

Targeting in a monetary strategy

Central banks have several monetary strategies at their disposal. Among the most common we can mention; exchange rate targeting, monetary targeting, implicit inflation targeting and explicit inflation targeting. According some economists e.g. Patat (2002, 88), a final goal of a monetary policy should be first of all price stability. It is not in a conflict with other real economic goals at least not in a long term. The logic of Patat idea is described in the picture 1:

Picture 1. Positive effects of the price stability Targeting



Source: Patat, 2002



Consequently, it may seem that the most suitable monetary strategy would be inflation targeting. However, it is not possible to apply inflation targeting in every country and at the beginning of transition process. It is believed, that even exchange rate targeting can help to stabilise turbulent inflation rate at the beginning of transitions.

Aspects of exchange rate targeting

In the case of exchange rate targeting, exchange rate serves as a nominal anchor. Final goal is low and stable inflation rate.

A central bank applying exchange rate targeting tries to ensure stability of its exchange rate through interest rate changes and direct foreign exchange interventions. Stabilised currency should enable to "import" low inflation from a reference country. In general, the reference economy is usually a developed country with stable macroeconomic indicators (Rybková 2005, 23).

A central bank usually applies the targeting when it uses fixed peg arrangements as an exchange rate system. This system can be divided into three subcategories:

1. crawling peg,
2. nominal exchange rate with wide or narrow oscillation bands,
3. central parity depending on one reference currency or more currencies (currency basket).

Currency basket can be very useful measurement in small and open economies at the beginning of their transition process. Foreign currencies in the basket should be chosen according to their importance in external commerce with a chosen small and open economy. E.g. in the case of Thailand it could be Japanese yen and American dollar.

In the Slovak Republic, currency basket comprised from the very beginning of its existence, i.e. since 1993 five currencies: USD (American dollar) 49,6 %, DEM (German mark) 36,1 %, ATS (Austrian shilling) 3,7 %, CHF (Swiss frank) 9 % and FRF (French frank) 2,9 %. However, shortly afterwards, it was obvious that only two currencies had real importance in external commerce of the Slovak Republic. In 1994, currency basket comprised only two currencies: USD (American dollar) 40 % and DEM (German mark) 60 %. The Czech Republic applied the same basket with the similar ratio: USD (American dollar) 35 % and DEM (German mark) 65 %. Consequently, we can expect quite strong relationship between inflation rate in Germany and inflation rate in Slovak respectively in the Czech Republic.

Probably the most important advantage of the exchange rate targeting is the positive effect of a reference country on inflation rate. The targeting can be recommended in the case of small and open economies where exchange rate influence significantly price level evolution. The weakness of the targeting can be an important drop of monetary policy autonomy. There is also a risk of unfavourable supply or demand shocks from the reference country to country in transition. Another disadvantage can be lost of signals concerning market creating of domestic interest rates (Rybková 2005, 22).

Advantages and disadvantages of the exchange rate targeting can be summarised as follows:

Main advantages of the strategy based on exchange rate targeting are following (Nell, 2004, 8):



- Central bank uses automatic mechanism:
 - a. Depreciating factors cause monetary policy restriction.
 - b. Appreciating factors lead to monetary policy release.
- Central bank is characterised by high transparency. Consequently, time inconsistency is lower.
- Advantage for transition countries aiming disinflation is that exchange rate targeting is good signal for creation of private sector expectations.

Disadvantages of this strategy are e.g. following:

- Domestic interests are less followed.
- Economy loses its independency in monetary field.
- Economic chocks are transferred from external chocks more sensitively.
- Vulnerability caused by financial crises is higher.
- Capital controls are necessary in order to prevent speculative attacks in the capital field.

Effectiveness of exchange rate targeting in the Slovak and in the Czech Republic in 1990' is analysed in the following part of the paper.

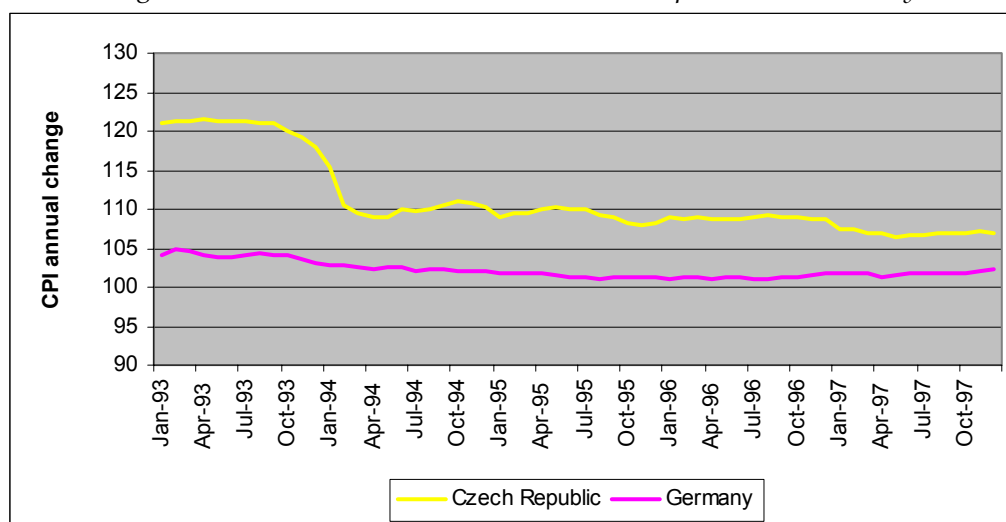
Exchange rate targeting in the Slovak and in the Czech Republic

We have tried to test relationship between inflation rate in the reference country i.e. Germany and inflation rate in the Slovak Republic and in the Czech Republic during 1990'. In other words, if imported inflation from Germany helped to stabilise inflation evolution during transition process in the two countries while their central banks were applying exchange rate targeting. We have used statistic methods in evaluation of this relationship.

The case of the Czech Republic

Time series of inflation rates in Germany and in the Czech Republic were tested by Rybková (2005, 24). It is represented in the following figure:

Figure 1. Relation between CPI in the Czech Republic and Germany



Source: Rybková (2005, 24)



It is obvious from the graphic that time series of inflation rate in the Czech Republic is more and more similar to the inflation evolution in Germany over the observed period. Initial inflation pressures had been stabilised. The graphic ends at the end of the year 1997 as it is end of exchange rate targeting in the Czech Republic. Since 1998 the targeting was substituted by implicit inflation targeting and later on by explicit inflation targeting.

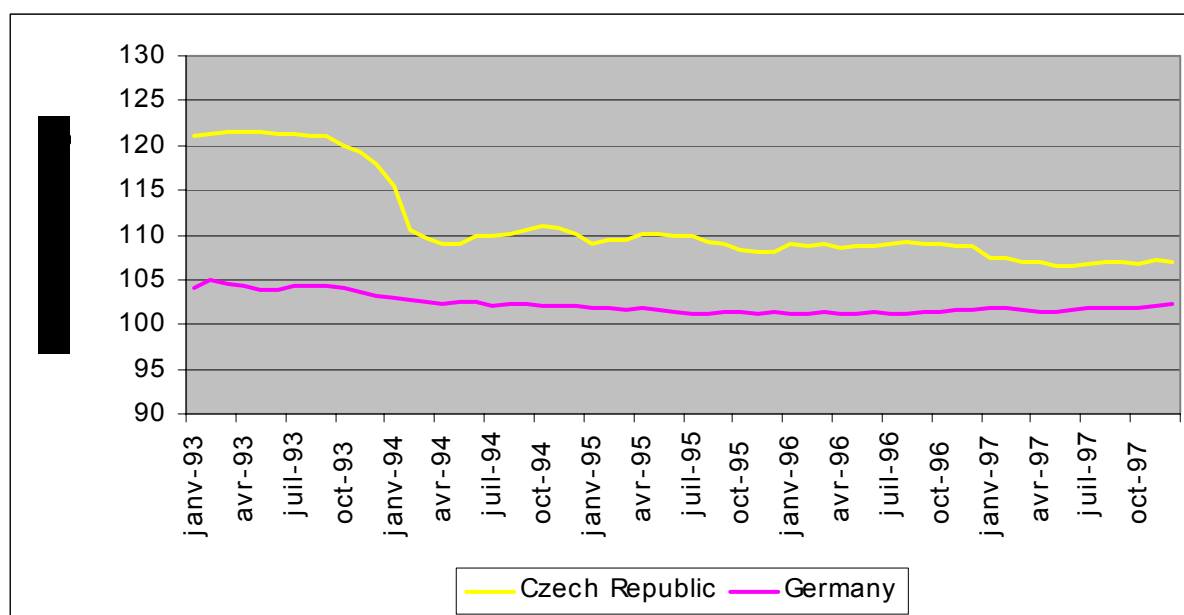
Adjusted coefficient of determination $adj R^2$ reached 95,89 that is high value of correlation between the two time series (Rybková 2005, 24).

Yet, it is important to test if it is not only seeming correlation. It is possible to use regressive analysis of residuals of both time series to deny seeming correlation. Figure shows that there are neither cyclical nor seasonal elements. Thus, residuals can be calculated as values of time series minus values of trend function. It was possible to deny hypothesis on independence of residuals. In conclusion; residual values of both time series are dependent and original assumption about dependence of both time series was correct (Rybková 2005, 25).

The case of the Slovak Republic

We have tried to evaluate time series of inflation rates in Germany in comparison with Slovakia:

Figure 2. Relation between CPI in the Slovak Republic and Germany



Source: own representation according to Statistical office of the Slovak Republic data

Observation ends in December 1998 when National Bank of Slovakia stopped to apply fixed peg arrangements and exchange rate targeting. Slovakia lost its nominal anchor, however central bank adopted new nominal anchor only since 2000. Consequently, Slovakia was without any nominal anchor during one year. This situation was extremely dangerous. Despite very cautious and rational policy of the National Bank of Slovakia since its creation



in 1993 till nowadays, this measurement was very risky. However, fortunately, nothing malignant happened to Slovak economy during this period.

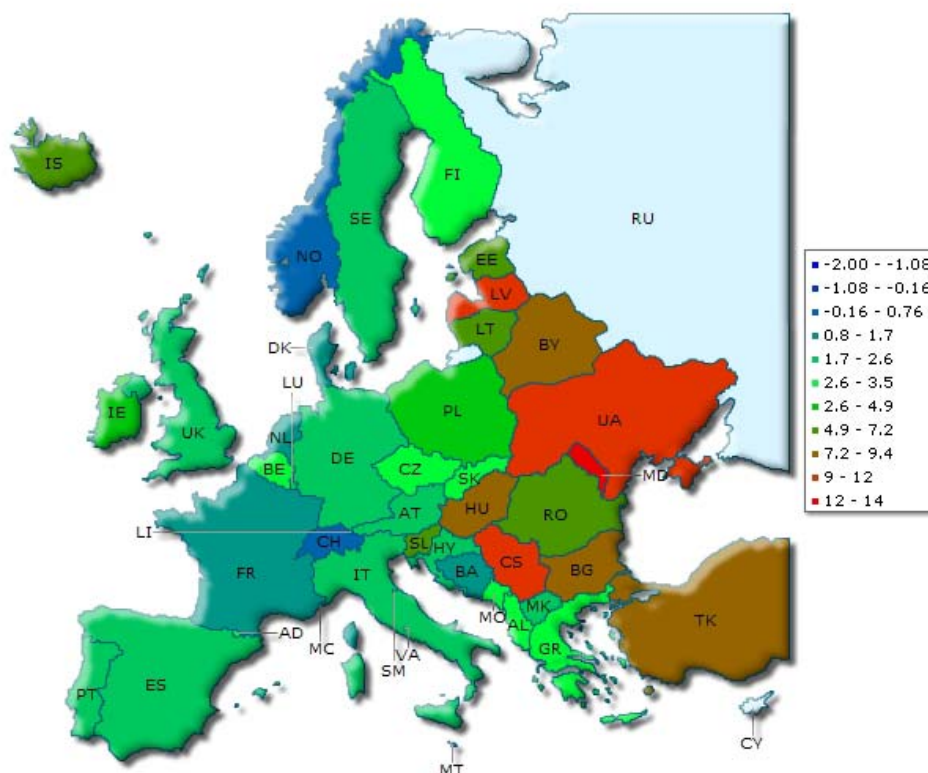
Evolution of this comparison is very similar as it was in the case of comparison between German and Czech inflation. Even we can prove that the correlation between the time series is high as the value of adjusted coefficient of determination $\text{adj } R^2$ is 93,24. It is little bit lower than in the case of the Czech Republic. It can be explained by higher volume of external commerce between the Czech Republic and Germany than between Slovakia and Germany. Consequently, ration in the currency baskets was slightly different.

Analogically, we tested if the correlation is not only seeming one. Using trend analysis, trend function and F-test we can deny hypothesis on independent residuals. As they are independent, we can confirm original idea that time series concerning inflation rate time series in Germany and in Slovakia are dependent.

Overall evaluation of exchange rate targeting

Exchange rate targeting had positive effect on stabilisation of inflation rate in Slovakia and in the Czech Republic. The targeting can be recommended also in the case of other countries especially if they are at the beginning of their transition process. Moderate evolution of inflation in the Slovak Republic (SR) and Czech Republic (CZ) at the beginning of transition process since 1993 to 1998 can be observed in comparison with chosen countries in the table 1.

Picture 2. Inflation rate (consumer prices) – Europe, in January 2008



Source: Index Mundi



Up to now, inflation rate in Slovakia and in the Czech Republic was comparatively low. Consequently, we consider application of exchange rate targeting and currency basket to be very successful. It created favourable fundamentals for macroeconomic stability. Even today, the two countries are among the economies with low inflation rate in Europe as it can be seen in the picture 2. In January 2008, inflation rate was 2% in Germany, 2,6% in the Czech Republic, 2,7% in the Slovak Republic, 4,1% in Poland, 6,6% in Romania, 7,8% in Hungary and Bulgaria.

Table 1. Average annual inflation in chosen countries, 1993 – 1998

Country	SR	CZ	Slovenia	Hungary	Poland	Romania	Bulgaria
Inflation, %	10,6	11,3	15,6	20,9	23,6	123,7	282,1

Source: ILO Yearbook of Statistics 1998

Success of exchange rate targeting in Slovakia and in the Czech Republic was underlined by parallel application of monetary targeting, i.e. targeting of monetary aggregates. This combination seems to be very efficient in the case of both countries and can be recommended also for other countries especially at the beginning of their transition process.

Exchange rate targeting should have positive effect in transition countries on inflation stabilisation if the currency is anchored to a suitable foreign currency. However, evolution in financial markets, bank sector, monetary instruments and macroeconomic stabilisation of the transition country enable application of inflation targeting gradually.

Aspects of inflation targeting

Another possibility how to stabilize inflation evolution in an economy is inflation targeting. Inflation targeting represents a monetary strategy based on absence of intermediate monetary policy objectives. Central bank aims final goal that is again low and stable inflation rate. This goal should be attained directly through monetary instruments, usually through interest rates.

Bernanke, Laubach, Mishkin, Posen (1999) define inflation targeting as a framework for monetary policy that is realized through public announcement of official quantified goals (or scales) for inflation rate. The rate is quantified for one or several future periods. This goal quantification should be accompanied by an explicit confirmation that low and stable inflation is a long-term primary monetary policy goal.

Five basic elements of inflation targeting (Nell 2004, 12):

- Public announcement of mid term inflation goals by a numeric way.
- Price stability is a primary, final and long-term goal. Role of other goals is just secondary and they are taken into account only for short term.
- Transparent and clear communication of plans, objectives and decisions towards public. Monetary measurements are publicly announced too. All changes in monetary policy are explained to economic agents.



- High rate of monetary authority accountancy.
- Economic agents that know precisely central bank strategy behave consistently with primary goal and consequently it fortifies activities of a monetary authority.

Conditions for an implementation of inflation targeting are following (Nell 2004, 13-18):

- Central bank should have sufficient level of independence and thus it can fully bear responsibility for achieved results
- Central bank has to give up other nominal anchors in order to avoid a conflict between previous nominal anchors and price stability as a new anchor and new final goal. That is the reason why fixed exchange rate system usually is not compatible with inflation targeting.
- Declaration of price stability as a final goal itself does not express precisely what does it mean in fact. It is necessary to determinate an explicit numeric inflation target.
- Inflation targeting is characterised by dependence of goals and by independence of instruments. Inflation targeting should be announced together by central bank as well as by government. That would mean indirect commitment of government to fortify inflation targeting by its fiscal policy.
- Fiscal policy should not be dominating policy in an economy. That is very common feature in transition countries. Consequently, there is bigger risk of high inflation because of direct and indirect financing of state budget deficit. Thus, pumping of central bank finance by government should be restricted (restrictions of so called credit links). Monetary and fiscal policy should be coordinated. It means that fiscal inflation pressure should be eliminated in practise (Brucháčová 2000, 28).
- Accountancy, transparency and comprehension of monetary strategy.
- There should be certain assumptions for financial stability, financial system and institutional development in the economy. It enables independency in monetary instrument application. More developed financial markets enable better functions of the channels of monetary transmission and thus, more effective application of monetary policy.
- Central bank should be able to predict future evolution of macroeconomic indicators to aim an inflation goal in a more realistic way. The more precisely is evolution predicted, the more adequate monetary instrument is chosen. Correct predictions require sufficient understanding of effects of monetary transmission channels; sufficiently long time ranks of macroeconomic variables and above all low sensibility of economy to different external and transformation chocks.
- External stability, i.e. limited fluctuations of exchange rate is important as well.

Monetary strategy in the form of inflation targeting can be realised in two modifications:

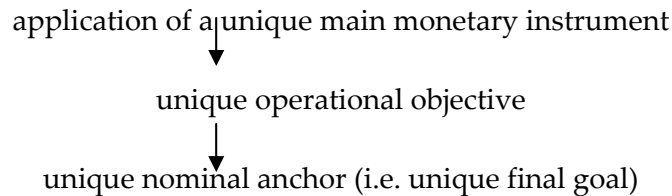
- a) Explicit inflation targeting (“full-fledged inflation targeting”)
- b) Implicit inflation targeting (“light inflation targeting”)



Explicit inflation targeting

Central bank fulfils all five above-mentioned elements of inflation targeting in this monetary strategy. Monetary authority predicts explicitly inflation rate and announces explicitly and publicly numeric value of inflation goal in mid term. It meets its engagements strictly and precisely.

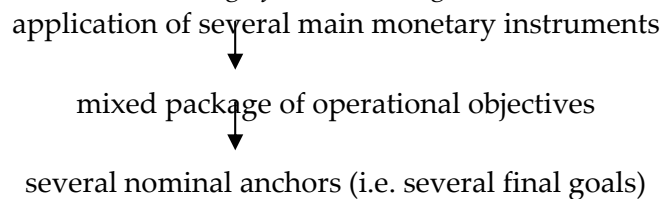
Monetary policy is in this case relatively straightforward, outright:



Implicit inflation targeting

Central bank fulfils only some aspects of five above-mentioned elements of inflation targeting in this monetary strategy. Monetary authority realises sort term and explicit predictions. It sets value of final goals in short term in implicit way, i.e. not officially. It does not have to meet targeted value so strictly and precisely. There is not such a big public control.

Monetary policy is in this case less straightforward, outright:



Main reason for implication of implicit inflation targeting instead of explicit one is partial or complete absence of necessary conditions for monetary strategy in the form of inflation strategy. Central bank has for instance insufficient knowledge about transmission channels, thus it applies several instruments and goals.

Implicit inflation targeting should be just temporary strategy before implementation of proper explicit inflation targeting.

Obstacles of inflation targeting implementation

Economies in the process of transition usually have to face several obstacles, therefore they can not implement inflation targeting from the very beginning. Frequent obstacles for a small and open economy in transition can be following:

- Small and open economy is much more vulnerable to external chocks in comparison with other countries. Thus, it is more complicated to forecast macroeconomic evolution and to maintain external stability of the economy, for instance exchange rate. Transition countries have to face numerous unusual chocks because of the transition process itself (e.g. price deregulations, political and social changes).



- Other complications in predicting are connected with short time ranks of transition economies. These economies have at their disposal relevant macroeconomic data only after implementation of market economy. However, these difficulties will be gradually eliminated.
- Insufficient understanding of the channels of monetary transmission represents another obstacle for inflation targeting.
- During first years of transitions, central banks prefer more often administrative monetary instruments in comparison to direct, i.e. market instruments. However, according to economic practise as well as economic theory, application of administrative instruments is considered to be less effective than application of market instruments. Though, overall employment of market instruments is not possible from the very beginning as financial markets, systems and institutions are not sufficiently developed as it would be desirable.
- Less developed and less stable financial markets cause changes in price signals of assets. Price changes do not provide enough information; even some signals about economic fundamentals and market expectations can be incorrect.
- Fiscal policy should be in harmony with central bank monetary policy. Otherwise, achieving of targeted objectives and goals is more complicated. Monetary strategy in the form of inflation targeting can hardly exist in such a heterogeneous environment.
- Very important obstacle of inflation targeting is impossibility to control fully final goal by central bank. If the final goal of price stability is expressed through e.g. consumer price index (CPI) and changes in indirect taxes, price deregulations and other modifications are often realised by government, central bank can control and influence just small fraction of CPI. In the case of transition countries changes in indirect taxes and price deregulations are usually very frequent. Thus, some countries target rather core or net inflation. For instance, Czech Republic at the beginning of inflation targeting, i.e. since 1998 aimed index of net inflation. Since April 2001 Czech National Bank targets overall inflation through consumer price index (CPI), and since 2004, after joining European Union through harmonised CPI (CNB 2006). Changes in net or core inflation are easier to predict than changes in overall inflation. However, indicators of core or net inflation are less understandable and accountable for public. This is in conflict with basic condition of transparency in inflation targeting. Thus, some countries target overall inflation from the very beginning as e.g. Poland since 1998 (Brucháčová 2000, 26). Basically, choice of inflation targeting indicator is a compromise between transparency and responsibility of central bank. If central bank chooses indicator of net or core inflation, its goal is mostly long-term trend of inflation evolution. Choice of overall CPI indicator means that central bank wants to reduce even short-term inflation fluctuations.

Evaluation of inflation targeting in chosen countries

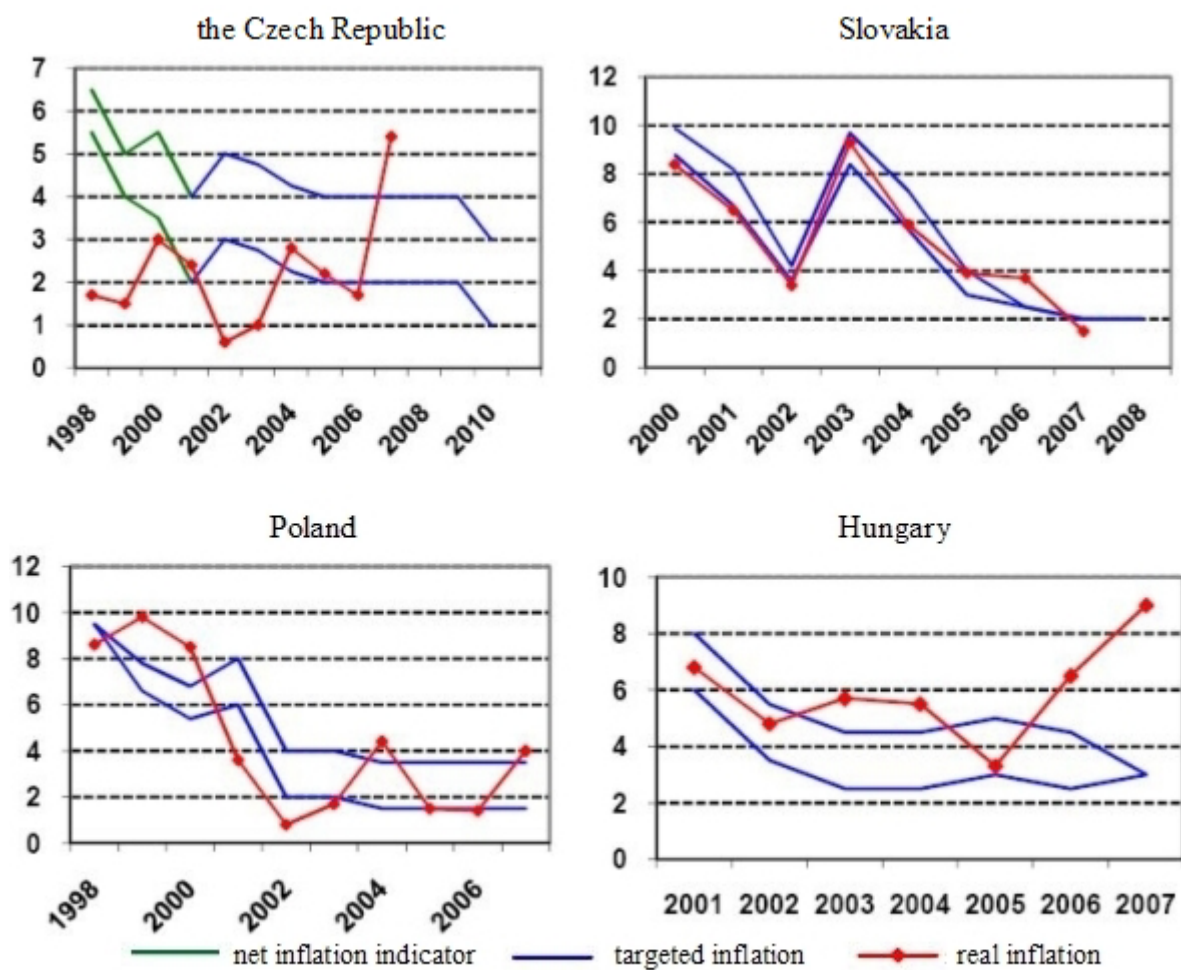
If inflation targeting is applied when an economy is ready to meet above mentioned obstacles, it can lead to positive effects. However, declared targeting sometimes differs from



real inflation rate. In the figure 3 we can compare success in inflation targeting in the Czech and Slovak Republic, Hungary and Poland.

There is the smallest difference between targeted and real inflation in the case of Slovakia. In the Czech Republic, real inflation was lower than targeted one at the beginning of inflation targeting, respectively, real inflation was situated in the lower part of targeted zone. Opposite evolution was in Hungary where real inflation was in the upper part of the targeted zone or above it. Polish central bank managed to fulfil its goal only twice during nine year targeting.

Figure 3. Inflation targeting in Visegrad countries



Source : Bartoková 2008, 72

Success of inflation targeting depends on common effort of central government and monetary authority. The Republic of Serbia has implemented inflation targeting since January 1, 2009 following Memorandum on the New Monetary Policy Framework adopted in August 2006 (National Bank of Serbia 2008, 2). It declares coordination in economic policy.



Basic conditions for efficient targeting are fulfilled, however only reality will be able to test its capacity.

Conclusion

Exchange rate targeting seems to be an efficient measurement in stabilisation of inflation in countries in transition. However, it is necessary to choose a suitable foreign currency to which the domestic currency is anchored. Combination of exchange rate targeting with monetary targeting can be even more successful. Inflation targeting increases transparency of central bank policy and in general, it enables to reduce inflation rate even more. Yet it can be applied only if a certain level of macroeconomic stabilisation is already achieved and if there is a common effort of government and central bank to meet targeted goals.

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