



Influence of the exchange rate on inflation

Introductory words

The employees of the money policy department have prepared two analyses regarding the influence of the exchange rate on inflation. I can state that they have come to the same results despite differing approaches. This fact has confirmed to me and my colleagues that the estimated exchange rate pass through (PTE) will be close to reality with the utmost probability

The first article called **Analysis of the influence of the exchange rate on consumer prices** examines the direct relationship, the influence of the exchange rate (bilateral SKK/EUR exchange rate) on the development of partial components of inflation, namely food, fuels, regulated prices, services and tradable goods on the 1999-2007 July time horizon. The analysis have applied the disaggregated approach, under which the influence of the exchange rate on the development of inflation is calculated as the sum of individual partial PTE.

The second analysis, **Exchange rate pass-through to domestic prices**, is based on the model approach of the effect of an exchange rate change on domestic prices in three phases: influence on the prices of imported goods, influence on the producer prices and influence on consumer prices (in the 1999-2006) using two alternative exchange rate indexes. The bilateral SKK/EUR exchange rate is the first index and the effective exchange rate made up of the four biggest trade partners is the other index.

The reason for preparing the said analyses has been, among other things, the considerable interest of international and domestic institutions in the value of the PTE. Inflation showed a considerable decrease to its lowest level so far in 2007. That decrease, however, was accompanied by a considerable appreciation of the exchange rate, which reached above 12% in mid-2007 on a year-on-year basis (which was also due to the basic effect of depreciation in 2006). In the opinion of some institutions, the current decrease in inflation is or can be due to the exchange rate appreciation, so that inflation could grow considerably after the fixation of the exchange rate. Great importance is attached to the PTE value in this context, because after associating the PTE value with current appreciation, the information as to the extent to which the exchange rate has increased or decreased inflation should be theoretically known.

The results of the analyses imply that the PTE (i.e. elasticity of the change of the price level under a 1% change of the exchange rate) is

about 0.1-0.2 (when applying a bilateral SKK/EUR exchange rate and in relation to the total HICP index), the exchange rate being passed through to inflation gradually, on a horizon of one to two years.

At first glance, inflation should be lower by some 2.4 percentage points as compared to the situation under a stable exchange rate, given the PTE of 0.2 and an approximately 12% year-on-year appreciation of the exchange rate in July 2007. That would mean that in the case of exchange rate fixation (for example from 1 January 2008), inflation should be 3.6% (1.2% inflation in July +2.4 percentage points).

However, is such a mechanical application of the PTE correct?

Several factors have to be taken into account when interpreting and applying the PTE value:

1. The PTE computation has been performed using a long times series of data and it applies to the whole time horizon and might not be correct for one particular period. It has to be clarified for the year 2007, whether the considerable appreciation in the first half of 2007 has an influence on the decrease of inflation. The development for the individual items implies that the effect of 12% appreciation has not been present in inflation for the time being. For example, tradable goods show the same deflation rate as in 2006, when the average appreciation was much lower (3%- 4%). The exchange rate of this year is also not reflected within regulated prices. Only fuels are affected by the exchange rate. The regulated prices for 2007 (due to the fact that the decision regarding their level was adopted by the Regulatory Office of Network Industries – RONI in November 2006) were only influenced by appreciation in autumn of the last year. The exchange rate appreciation in 2007 will be reflected in the regulated prices in 2008 (which is also reflected in the NBS estimate of the minimum growth of energy prices despite a growth of commodity prices).



In sum, it can be stated that there is some influence of the exchange rate within the development of inflation, but not the influence of the 12% appreciation.

2. In addition, it has to be realized that no PTE value can be used in an isolated way, i.e. without specification of how it has been computed and what it relates to, with what time shift it is associated and with respect to which exchange rate this relationship has been analyzed. Some PTE values relate to headline inflation (e.g. in the case of the disaggregated approach), some to core inflation (in the CPI or HICP concept, in the case of the model approach), some only to tradable goods. There can be also differences in the exchange rate variable. The analyses can use a bilateral or an effective exchange rate. It is also very important to know the time shifts and to work with them, because for example in the case of the year 2007 appreciation from the first half year can manifest itself in inflation at the turn of the years 2007 and 2008 (which would mean a further increase thereof against the current level).

Therefore, when using „some“ PTE value, it is necessary to put it into context with the analysis carried out.

For the above-mentioned reasons a mechanical application of the published PTE value to explain the development of inflation can be dangerous and misleading.

As for 2007, there are two possibilities:

1. The estimated PTE does not hold in 2007, or not the full impact of appreciation is passed through to prices. 2007 can be considered a specific year then. This can be due to the effort of retailers to take advantage of the last possibility of appreciation before exchange rate fixation for a one-time increase of profits or for example for covering the costs asso-

ciated with the introduction of the euro. It can be also caused by hedging transactions (their setting) or by the orientation of retailers to the central rate level (35.4424 SKK/EUR).

2. There is a time shift and appreciation from the first six months will manifest itself in inflation at the turn of the years 2007 and 2008, which would become visible especially in a more considerable deflation of tradable goods. Because the deflation rate of tradable goods is slowing down (-0.5% in December and +0.2% in September 2007), this variant is improbable.

Finally, I would like to mention that more important than knowing the PTE level itself is to know what the current as well as predicted inflation level could be under a stable development of the exchange rate.

In this connection, me and my colleagues are of the opinion that the development of inflation is influenced by the appreciation of the exchange rate, present in Slovakia in the previous period (to an extent of some 3%-4%), i.e. on a longer time horizon, and the exchange rate development from early 2007 has not manifested itself in it. Based on the estimated PTE, inflation at the end of 2007 would be 0.3 to 0.5 percentage points higher if the effect of exchange rate appreciation (of 3%-4%) had been missing. We expect within the medium-term prediction MTF-2007Q4 that the influence of the whole appreciation from 2007 will not manifest itself in the following year, either (except the effect in regulated prices). Should the influence of exchange rate appreciation from 2007 be passed through to inflation in the following period, a considerably lower inflation (by approximately 1 percentage point) would be reached as compared to the medium-term prediction.

I wish you a pleasant reading and I am looking forward to a professional discussion.

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