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Annual and monthly inflation rate. Prices seasonality

Technical box extracted from:

Inflation Report no.4, November 2012 [1]

The National Bank of Moldova sets the inflation target through the annual variation of the Consumer Price Index. By the calculation (formula 1), this indicator cumulates the monthly inflation rates for the last 12 months and, thus, its trajectory is determined by both the current evolutions and by the last year's evolutions, also called the base period effect.

$$\pi_t = \frac{P_t - P_{t-12}}{P_{t-12}} * 100$$, where (1)

π_t - annual inflation,

P_t - prices level in the current period,

P_{t-12} - prices level 12 months ago.

Chart no.1. Consumer Price Index, %

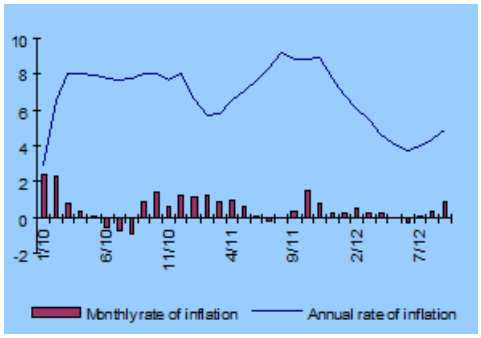
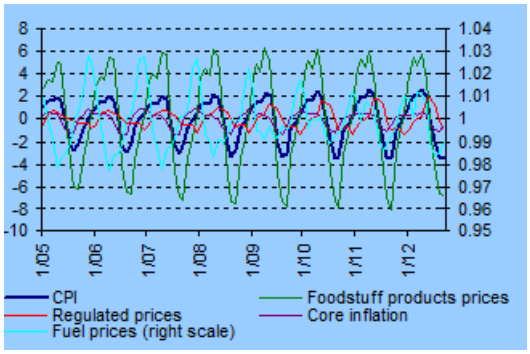


Chart no.2. Estimated seasonal factors



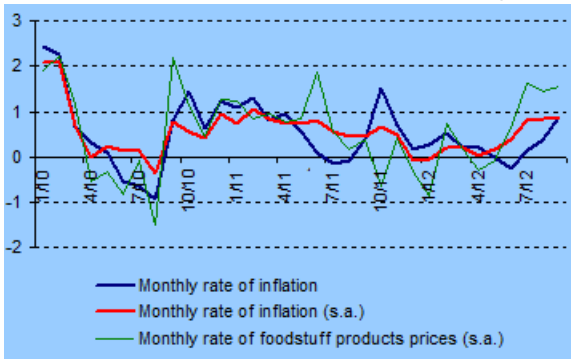
This can be seen especially in the downward trend of the annual inflation in the first half of the year, which was due to a higher level of inflation in the base period (early 2011) due to increases in utility tariffs and less

due to price trends this year (Chart no.1). Thus, the respective measure could create an incomplete image in reflecting the inflationary pressures in due time relevant to the monetary policy existing at the moment.

However, the annual inflation measure advantage is that, by comparison with the index of the current period with that of 12 months ago, it excludes price changes which repeat in similar periods during the year, such as, for example, large sales during the winter holiday season or lower prices for fruit and vegetables in hot weather periods, a phenomenon known as seasonality. Unlike the annual inflation measure, the measure of monthly CPI inflation and its subcomponents presented by the NBS is affected by the seasonal effect. Thus, an evaluation of short-term inflation trends requires, first of all, an estimation of seasonal effects on prices. This can be done by adjusting the CPI basket subcomponents before their weighting in the overall inflation or by seasonally adjusting the overall inflation series.

The prices in the Republic of Moldova have a pronounced seasonal behavior, determined mainly by the food prices. Thus, the seasonal factor for food prices is the most volatile and reaches its maximum value in April and minimum value in September. In other words, food prices, unless other shocks, reach the highest value in spring and the lowest in late summer and autumn, due to the agricultural calendar in the Republic of Moldova (Chart no.2). In conditions where seasonal effect is less pronounced in the rest of subcomponents, the overall inflation seasonality is determined mostly, as mentioned above, by that of food prices.

Chart no.3. The impact of seasonality on prices, %



The exclusion of the estimated seasonal effect from the gross monthly inflation series shows a less volatile price increase. At the same time, it should be mentioned its significant influence in the summer. Thus, the increase of prices in the summer, without a negative seasonal impact, was actually more pronounced and was driven by inflationary pressures from food prices (Chart no.3). Thus, if not treated properly, the monthly inflation measure may present a distorted image of inflationary pressures in the economy. Therefore, for the analysis and forecast of the CPI and its subcomponents, the NBM uses the monthly time series adjusted to the seasonal effect.

See also

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