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Effects on inflation rate caused by changes in fuel prices

Technical box extracted from:

[Inflation Report no.1, February 2013](#) ^[1]

In general, the influence of fuel price changes on inflation rate can be divided into three types of effects:

1. The direct effect - is directly related to the increase in fuel prices in the CPI basket.
2. Indirect effect - is related to changes in production costs (e.g., transport costs, agricultural work-related costs).
3. Second-round effects - arise from the increased cost of living. Thus, workers demand higher salaries to maintain the purchasing power of the disposable income.

It should be mentioned that the first two effects are seen in the short term, while the second-round effects are noticed in the medium term.

Here is a simple example that brings clarity to the above statements. If fuel prices rose by 10.0 percent and their share in the CPI basket is 0.05, therefore the cumulative weight of other products and services is of 0.95. At the same time, let's suppose that the share of fuel in total production costs is of 20.0 percent. It should be mentioned that higher prices for other goods and services will depend on the ability of producers to substitute between fuels and other expenses. So, according to the abovementioned figures, we can determine the effect of a 10.0 percent increase in fuel prices on total CPI.

The direct effect of this growth will be 0.5 percent ($0.05 * 10\% = 0.5\%$). At the same time, assuming that the substitution elasticity of producers with other expenditures is zero, then the indirect effect will be of 1.9 percent ($0.2 * 10\% * 0.95 = 1.9\%$). So, we can conclude that, based on the above calculations, an increase in fuel prices by 10.0 percent will generate a cumulative effect on the CPI of 2.4 percent (the sum of the direct and the indirect effect of $0.5\% + 1.9\% = 2.4\%$).

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