Box VIII-1

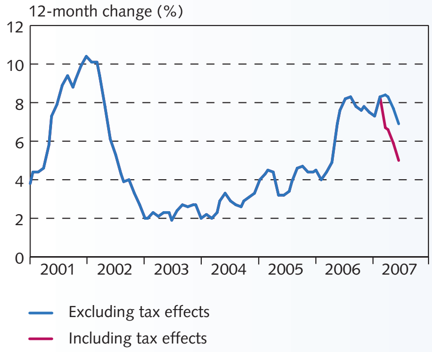
Estimating underlying inflation

The Central Bank of Iceland's inflation target aims at an average rate of inflation, measured as the twelve-month increase in the CPI, of as close to 2½% as possible. In order to attain the target, the Central Bank's monetary policy must be forward-looking. It makes little difference if twelve-month inflation has been 2½%, if underlying inflation pressures are building up. Thus the Central Bank attempts to distinguish transitory and one-off components of past inflation from the core components, or underlying inflation, that provide indications about future inflation developments.[1]

Estimates of underlying inflation attempt to isolate price changes that reflect volatile and short-lived effects, such as changes in indirect taxes, supply-side shocks and changes in relative prices. Central banks generally consider it unnecessary to respond to first-round effects of such price changes, even if they cause short-lived deviations from target. Under certain conditions, however, temporary fluctuations can have lasting effects that call for a response.

Chart 1

Core inflation including and excluding tax effects January 2001 - June 2007[1]



1. Based on core inflation 2 which excludes agricultural products, petrol and public services.
Source: Statistics Iceland.

Measures of core inflation

Statistics Iceland publishes two monthly core inflation indices alongside the headline consumer price index (CPI). The core indices have the same base as the CPI but Core Index 1 excludes prices of vegetables, fruit, other agricultural products and petrol, and Core Index 2 excludes these items and public services prices as well. Some of these subcomponents are highly volatile, their prices are determined in global markets or regulated, and therefore more or less beyond the influence of monetary policy.

Changes in indirect taxes and subsidies affect prices at the time that they take place. They also have a temporary impact on headline inflation. However, they do not necessarily affect underlying inflationary pressures in the economy and therefore do not indicate a lasting change in the inflation rate.

In March 2007, the Icelandic government cut value-added tax and excise taxes on a variety of goods and services, with the aim of lowering food prices. At this juncture, Statistics Iceland began publishing an index excluding the first-round effects of cuts in indirect taxes, in which VAT is kept constant at the rate from the preceding February. This index will provide an important measure of underlying inflationary pressures until the first-round effects of the cut in VAT are no longer captured by the index, in March 2008. Another indicator of underlying inflation is core inflation excluding the first-round effects of cuts in indirect taxes, which shows general price developments excluding volatile items and regulated prices.[2]

Marked divergence between headline and underlying inflation

When the effect of the reduction in indirect taxes was felt in March, the CPI fell by 0.3% and twelve-month inflation from 7.4% to 5.9%.[3] However, the index excluding the tax effects rose by 1.4%, driven by strong underlying inflationary pressures. For this reason, a marked divergence has formed between twelve-month headline inflation and measures of underlying inflation that exclude these tax effects. Headline inflation in June measured 4%, the lowest rate since August 2005. Excluding the effects of the tax cuts, however, the inflation rate was

1. This topic is discussed in Pétursson, Thórarinn G. (2002), Evaluation of core inflation and its application in the formulation of monetary policy, *Monetary Bulletin* 2002/4, 54-63 and in The new framework for monetary policy, *Monetary Bulletin* 2001/2, 40-45.
2. Various other methodologies are used to estimate underlying inflation. These include statistical techniques such as the trimmed mean and multivariate time series. Another common approach is to reduce the weighting of highly volatile subcomponents on the basis of historical standard deviation. See further Pétursson (2002), op. cit.
3. Prices of food and beverages decreased by 7.4%, catering by 3.2%, private sector services by 0.6% and public sector services by 0.9%.

5.8%, after falling from 7.7% in March. The difference between headline inflation and core inflation excluding the tax effect is even more pronounced. In June, the twelve-month increase in Core Index 2 was 6.9%, down from 8.4% in March.

Furthermore, estimates of underlying inflation should ignore the impact of real interest rates on measured inflation. Since monetary policy has a direct effect on the interest cost component (largely reflected in the housing component of the index), it would be misleading to regard it as part of underlying inflation. The first-round upward effect of higher interest rates on the CPI amounted to 0.7 percentage points in the last twelve months. In terms of core inflation excluding tax effects and after adjustment for higher real interest rates, underlying inflation currently measures more than 6%. When such high underlying inflationary pressures are present, the Central Bank is still a long way from attaining its inflation target.