

## Box 4

### Yield curve developments since July 1998

The yield curve can, under certain assumptions, reflect market participants' expectations regarding the future direction of short-term interest rates. At the same time, it can provide useful information on market participants' expectations with regard to future developments in inflation and the pace of real economic activity. The following analysis considers developments in the yield curve, as measured using the interest rates observed on the fixed side of interest rate swap contracts. An interest rate swap is an agreement to exchange a flow of fixed interest payments in return for a variable rate of interest.

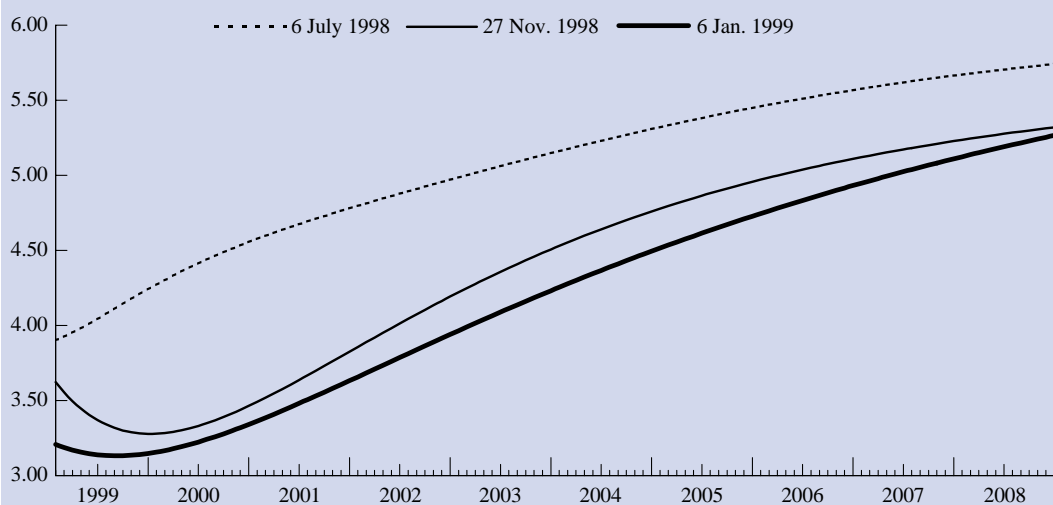
The shape of the euro area swap yield curve has changed significantly over the course of the past six months. Reflecting the decline in both short-term and long-term interest rates, the euro area yield curve has shifted downwards along the entire maturity spectrum. In addition, since these declines were slightly larger at the long end of the maturity spectrum than at the very short end, a slight flattening of the spot yield curve was observed, with the spread of 10-year swap yields over three-month money market interest rates narrowing slightly. Although safe-haven flows related to the turbulence in international markets may at times have played a role in developments in long-term interest rates, this levelling-off of the yield curve slope might also indicate a reduction in the long-term outlook for inflation in the euro area.

The chart below shows how the pattern of implied forward euro area overnight interest rates derived from the term structure of interest rates has changed over the past six months. As may be seen from the chart, abstracting from risk premia considerations related to the term to maturity, in early July 1998 financial markets expected overnight interest rates in the euro area to be at a level just below 4% at the beginning of 1999, and to increase gradually thereafter. The configuration of implied forward overnight interest rates observed in early January 1999, by contrast, shows a change in these expectations, which partly reflects the convergence of short-term interest rates within the euro area to below the levels of those countries which previously had the lowest short-term interest rates.

In early January 1999 market participants expected a very slight decline in overnight rates in the months to come. Subsequently, overnight rates were expected to rise again. This pattern in the yield curve could also be observed in futures markets. In early January 1999 the three-month interest rates implicit in the futures contracts on euro deposits maturing in mid-March and mid-June 1999 were slightly lower than the three-month spot interest rate.

#### Implied forward euro area overnight interest rates

(percentages per annum; daily data)



Source: ECB estimation using the method outlined in the article entitled "Estimating and interpreting forward interest rates: Sweden 1992-94" by L. E. O. Svensson (1994), IMF WP/94/114, Washington, DC. The data used in the estimation are derived from swap contracts.