

### Box 3

## Recent developments in long-term interest rate differentials between the United States and the euro area

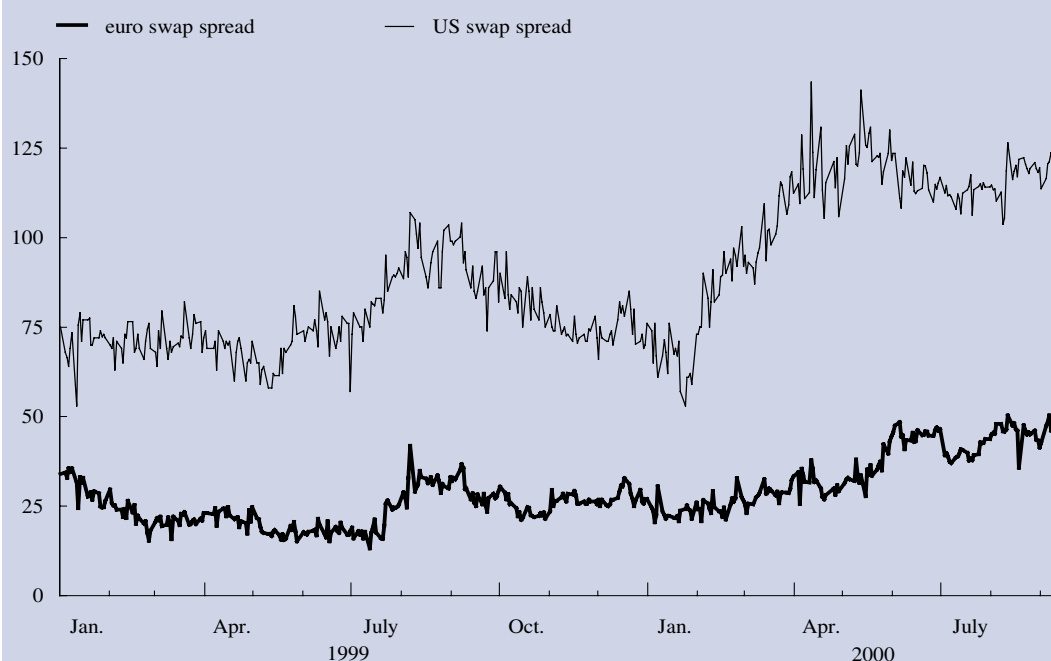
### The impact of government bond buybacks on the information content of interest rate differentials

In recent months the long-term interest rate differential between the United States and the euro area has been narrowing considerably. Between the end of 1999 and early September 2000, the spread between US and euro area ten-year government bond yields narrowed by approximately 60 basis points (see Chart 9), reaching the lowest levels observed since the introduction of the euro. Apart from reflecting shifts in market perceptions of relative growth prospects and inflation expectations in the United States and the euro area, recent developments in government bond yield differentials also seem to have been caused by changes in the actual and expected supply of government bonds, following the announcement of bond buyback schemes in the United States and, more recently, in the euro area. Specifically, government bond yields have been subject to downward pressure as a result of a “scarcity premium”, as investors have increasingly been expecting the supply of government bonds to dwindle. Since this scarcity premium effect appears to have influenced US and euro area bond yields in different ways or at different times, the information content of government bond differentials with regard to expectations of underlying fundamentals may recently have been distorted to some extent.

In order to illustrate the effect of the scarcity premium on government bond yields, it is useful to study recent developments in swap spreads, i.e. the differential between the fixed rate on an interest rate swap contract (the “swap rate”) and the yield on a government bond with a comparable time to maturity (see the article entitled “The information content of interest rates and their derivatives for monetary policy”, published in the May 2000 issue of the ECB Monthly Bulletin). While swap rates are potentially subject to premia related to credit and liquidity risk, as well as to other factors which are likely to be different from corresponding premia for government bond yields, they should not be directly influenced by expectations of declining government bond supply resulting from bond buyback programmes. As can be seen in Chart A below, the US ten-year swap

**Chart A: Ten-year swap spreads in the United States and the euro area**

(basis points)



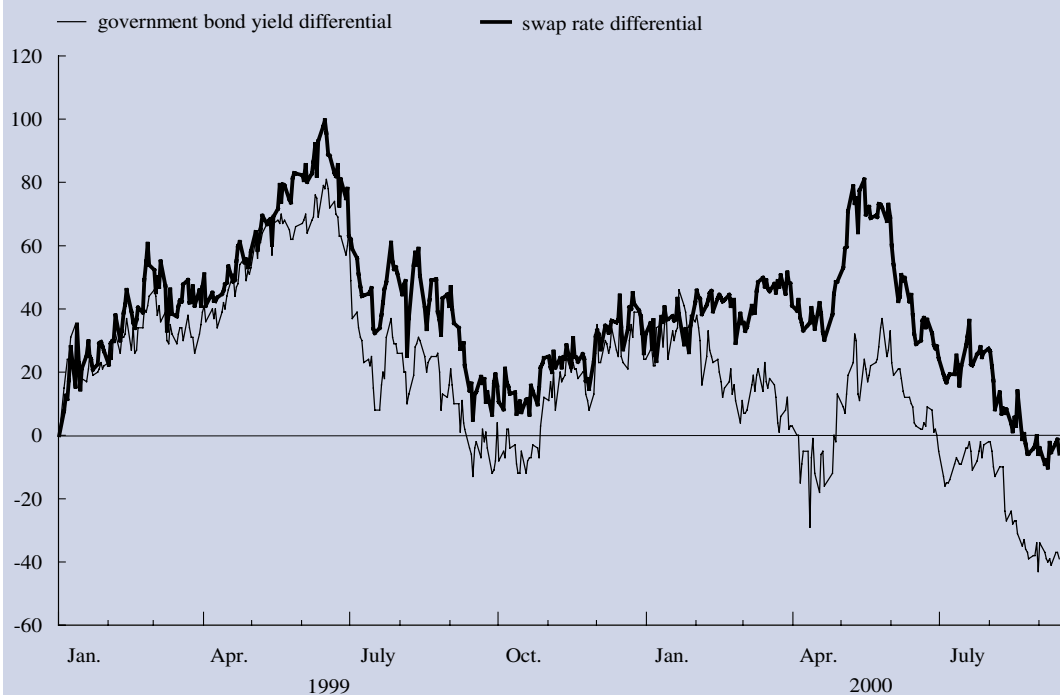
Sources: Bloomberg and ECB calculations.

spread widened rather sharply in early 2000. This pronounced change in the difference between US swap rates and government bond yields coincided with the announcement by the US Treasury that it intended to scale back the issuance of government bonds and implement a buyback programme for outstanding bonds. By contrast, the euro area swap spread remained broadly stable until later in the spring. The slight and gradual increase in the differential between euro area swap rates and government bond yields which took place thereafter seemed at least partly to have been linked to expectations of declining government bond supply in the euro area, as a result of expected proceeds from the sale of third-generation UMTS (Universal Mobile Telecommunications System) licences in individual euro area countries (see Box 1 in this issue of the ECB Monthly Bulletin). Again, it should be emphasised that this conjecture does not take into account effects stemming from possible changes in the market perception of aggregate credit risk or variations in other premia.

In view of the impact of the scarcity premium on government bond yields in the euro area and the United States, it is useful to assess to what extent the government bond yield differential between the United States and the euro area may have been distorted recently. A simple way of examining this issue is to compare developments in the bond yield spread with the corresponding differential between US and euro area swap rates. Since, as mentioned above, swap rates should not be influenced by expectations of a declining government bond supply resulting from bond buyback programmes, recent developments in the swap rate differential between the United States and the euro area may provide additional information regarding underlying economic fundamentals.

Chart B displays the evolution of the cumulative changes in the ten-year government bond yield differential and the swap rate differential between the United States and the euro area relative to the levels prevailing at the end of 1998. As demonstrated in the chart, the bond yield differential and the swap rate differential

**Chart B: Changes in the ten-year government bond yield differential and swap rate differential between the United States and the euro area, relative to end-1998 levels**  
(basis points)



Sources: Bloomberg and ECB calculations.

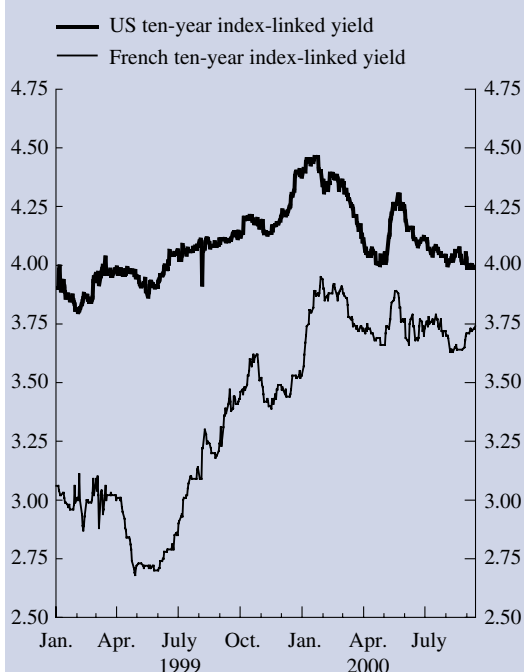
evolved in a broadly similar manner up to the first few weeks of 2000. Subsequently, the government bond differential dropped sharply. By contrast, the swap rate differential remained broadly stable during the first quarter of 2000 and, as a result, the bond yield differential diverged markedly from the swap rate differential. This divergent development, which to a large extent seemed to reflect the aforementioned impact of the US Treasury bond buyback announcement, therefore appears to have distorted the information content of the government bond differential in early 2000. However, Chart B also clearly shows that as from around April 2000 the government bond differential and the swap rate differential started to evolve along very similar paths again. In particular, following a brief period of widening differentials in April and early May 2000, reflecting both fundamental factors and a reassessment among investors of the likely long-term impact of government bond buybacks, the two differentials have been narrowing significantly, although the difference between these two differentials has remained larger than at the beginning of 2000. Hence, with the exception of the first few months of 2000, developments in the government bond yield differential and the swap rate differential seem to paint a similar picture with regard to changes in expectations of underlying fundamentals.

**Factors behind developments in the interest rate differential between the United States and the euro area**

In order to assess which fundamental factors may lie behind the observed developments in the interest rate differential between the United States and the euro area, broadly speaking and abstracting from risk premia considerations, the interest rate differential can be broken down into two components. One component reflects the difference in real interest rates required by investors for holding US and euro area bonds until they mature, which in turn could be seen as being related to relative real growth prospects. The other component reflects compensation for the average expected inflation rate in the respective economies during the life of the bonds. In this regard, the information available from index-linked bond markets, and the

**Chart C: French and US ten-year index-linked bond yields**

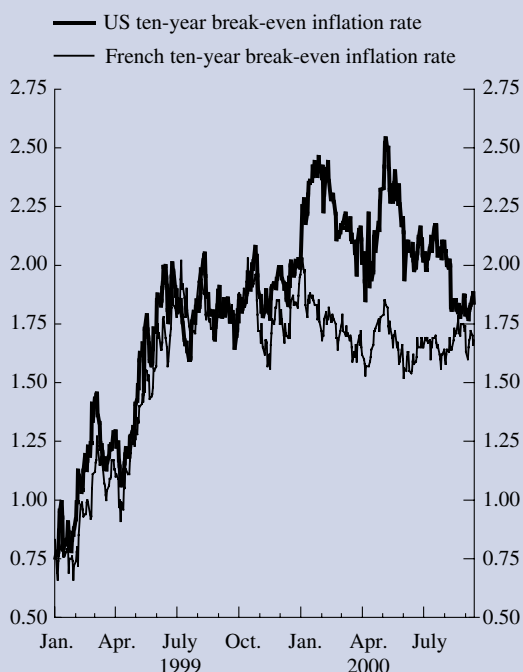
(percentages per annum; daily data)



Source: Reuters.

**Chart D: French and US ten-year break-even inflation rates**

(percentages per annum; daily data)



Source: Reuters.

relative pricing of nominal and index-linked bonds, may provide useful indications as to the likely sources of changes in interest rate differentials between the United States and the euro area. Index-linked bonds have been issued by the US Treasury and, within the euro area, by the French Treasury. While subject to a number of well-known caveats, developments in French index-linked bond yields and break-even inflation rates are frequently used as a proxy for changes in expectations regarding long-term real rates and inflation for the euro area as a whole.

Looking at developments over a longer horizon, Charts C and D suggest that between mid-1999 and September 2000 the primary source of changes in the nominal interest rate differential between the United States and the euro area was a considerable narrowing of the difference between US and euro area long-term real interest rates. At the same time, developments in the break-even inflation rates suggest that the differential between long-term inflation expectations in the United States and the euro area remained virtually unchanged when comparing mid-1999 with September 2000, while undergoing some volatility during the first few months of 2000. Thus, the general picture since the middle of 1999 remains that the evolution of the long-term nominal interest rate differential is consistent with bond market expectations of a strengthening of the relative growth prospects of the euro area vis-à-vis the United States.