

Box 5

ESTIMATING REAL YIELDS AND BREAK-EVEN INFLATION RATES FOLLOWING THE RECENT INTENSIFICATION OF THE SOVEREIGN DEBT CRISIS

The widening of the spreads between yields on German and French government bonds, particularly in the course of November 2011, together with the dissimilar maturity structures of inflation-linked bonds issued by these two countries – with outstanding German bonds having relatively shorter maturities than outstanding French bonds – give rise to significant distortions in an estimated combined real yield curve. As a consequence, break-even inflation rates (BEIRs) derived using the combined real yield curve are also distorted. This box briefly describes the reasons for the distortions and puts forward an alternative estimation method that reduces distortions stemming from widening spreads between German and French bond yields.

To illustrate distortions in a combined real yield curve amid the current tensions in sovereign bond markets, Chart A shows the yields on German and French inflation-linked bonds, together

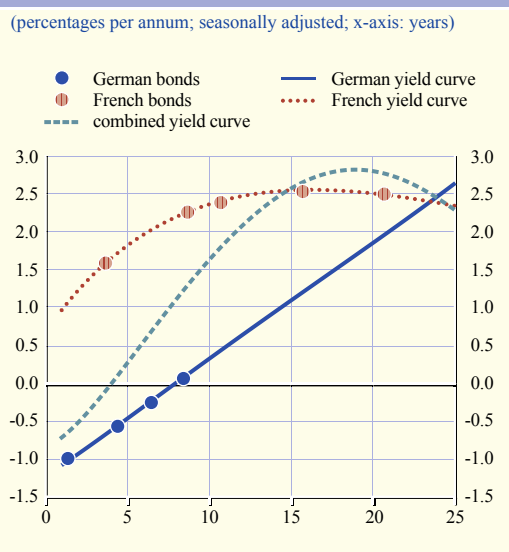
with estimated yield curves for each country's bonds and a combined yield curve estimated using the bonds from both countries. It is clear that short maturities of the combined curve are mainly influenced by German bonds, whereas long maturities are dominated by French bonds. Thus, the slope of the combined yield curve differs from the yield curves estimated separately for German bonds and for French bonds. In fact, for maturities between five and ten years, the combined curve is much steeper than either of the two separate curves and, as a consequence, the distortions in forward rates are particularly severe.

Chart B shows that real forward rates (five-year forward rates five years ahead) based on the estimated combined curve have increased substantially in recent weeks, temporarily reaching values close to 3%. As argued above, such levels of forward real yields are artificially high. To overcome this problem, real yields can be calculated as GDP-weighted averages of real yield curves that are estimated separately for Germany and France.

As well as the distortions in real rates, BEIRs are also distorted, as, to calculate the BEIR curve, the estimated combined real curve is subtracted from the nominal yield curve based on AAA-rated government bonds.¹ In fact, forward BEIRs based on the estimated combined curve have declined dramatically over recent weeks, reaching levels of less than 1%. Such low levels of forward BEIRs are at odds with the information derived from the inflation swap market, which is much less influenced by credit risk and liquidity effects than measures derived from the bond market.

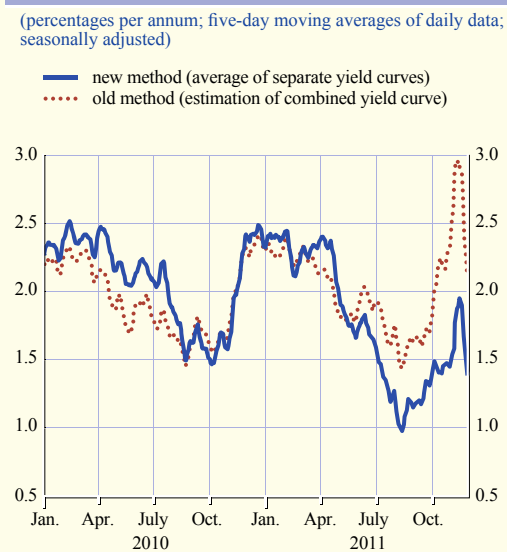
1 The euro area nominal yield curve calculated on AAA-rated government bonds is based on a large number of bonds issued by different countries with different maturities and is therefore much less affected by distortions amid widening sovereign spreads than the real yield curve.

Chart A Inflation-linked bond yields and zero coupon real yield curves



Sources: Bloomberg, Thomson Reuters and ECB calculations.
Note: The data refer to 16 November 2011.

Chart B Euro area real five-year forward rates five years ahead



Sources: Bloomberg, Thomson Reuters and ECB calculations.

To circumvent distortions in the estimation of break-even curves, separate BEIR curves can be computed for German and French data. The GDP-weighted averages of these two BEIR estimates can then be used to gauge market participants' inflation expectations. BEIRs derived by this method are more in line with signals received from the inflation swap market than those derived from the combined real yield curve and currently indicate that long-term inflation expectations stand at around 2.6% (see Chart 27). However, in the current market situation, amid renewed tensions in many sovereign bond markets resulting in volatile nominal and inflation-linked bond yields, inflation swap rates are more reliable indicators of market participants' inflation expectations than BEIRs derived from government bond markets. Nevertheless, information from the bond market, if properly adjusted to take account of these tensions, is useful for cross-checking information derived from the inflation swap market.