

## Box 9

### A CREDIT DEFAULT SWAP-BASED MEASURE OF GOVERNMENT BOND MARKET IMPAIRMENTS IN THE EURO AREA

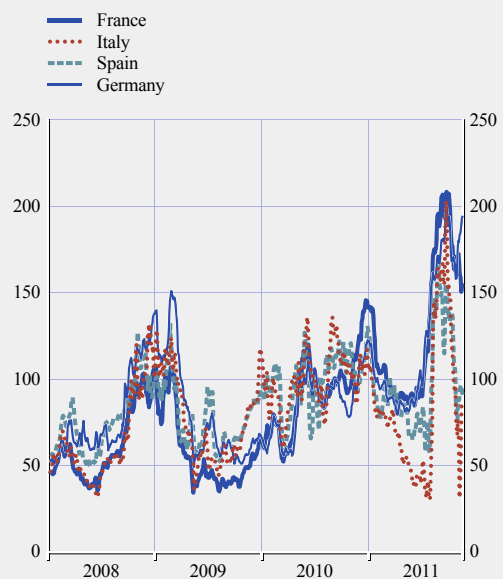
Since the first half of 2010, the government bond markets of some euro area countries have faced illiquid market conditions and other impairments. To address these problems and contribute to restoring an appropriate monetary policy transmission mechanism, the ECB has conducted interventions in dysfunctional euro area market segments since 10 May 2010, using the Securities Markets Programme (SMP). The impact of the SMP cannot be assessed merely on the basis of declines in government bond yields, nor on that of any particular narrowing of spreads, as neither gives an exact picture of market impairments or a robust indication of the effect of the ECB's interventions. Indeed, government bond yields and spreads are affected by a multitude of factors beyond the ECB's interventions, in particular by investors' risk aversion and by market perceptions about the sustainability of public debt, as well as by other European measures such as the actions and prospects of the European Financial Stability Facility (EFSF).

There are several metrics to measure sovereign debt market functioning, both on the price and on the quantity side. This box focuses on the evolution of one such measure – the so-called credit default swap (CDS)-bond basis and examines the evolution of this measure, as well as its limitations.

The CDS-bond basis can be defined as the “unadjusted” difference between a country's sovereign CDS premium and its government bond spread for the same maturity or, in “adjusted” terms, as the difference between the unadjusted CDS-bond basis of a country relative to that of a benchmark country. Deviations of the unadjusted CDS-bond basis from zero provide information on the functioning of the market, as these deviations may result from difficulties in arbitrating between the CDS and the bond markets. The unadjusted CDS-bond bases of euro area sovereign issuers tend to be highly correlated (see Chart A). This is due to the fact that they are driven predominantly by common factors, in particular funding costs, counterparty risks and market volatility.<sup>1</sup> However, information more closely capturing country-specific risks is provided by the “adjusted” CDS-bond basis, taking Germany, which has the most liquid and well-functioning government bond market in the euro area, as the benchmark country. This “adjusted”

Chart A CDS bond-basis for Germany, France, Italy and Spain

(Jan. 2008 – Nov. 2011; basis points; five-year maturities; five-day moving average)

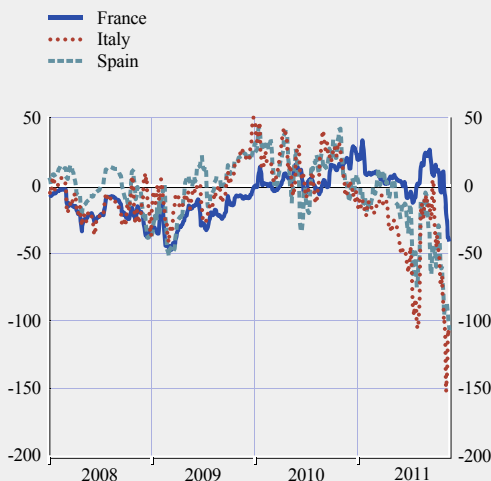


Sources: Bloomberg and ECB calculations.

<sup>1</sup> A. Fontana and M. Scheicher, “An analysis of euro area sovereign CDS and their relation with government bonds”, *ECB Working Paper Series*, No 1271, December 2010.

**Chart B “Adjusted” CDS-bond basis for France, Italy and Spain**

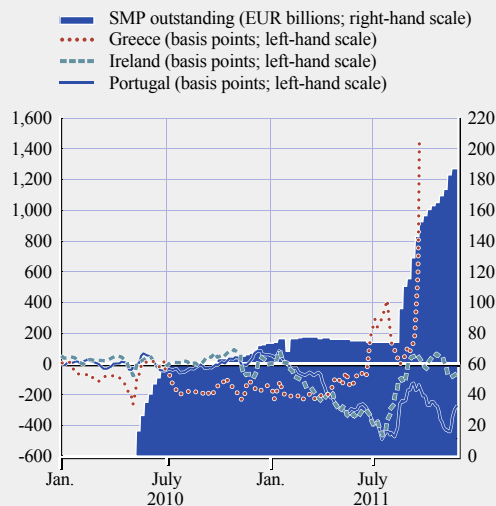
(Jan. 2008 – Nov. 2011; basis points; five-year maturities; five-day moving average)



Sources: Bloomberg and ECB calculations.  
Note: The “adjusted” CDS-bond basis is defined as the difference between a country’s CDS-bond basis and the CDS-bond basis of Germany.

**Chart C “Adjusted” CDS-bond basis for Greece, Ireland and Portugal, and outstanding amounts in the SMP**

(Jan. 2010 – Nov. 2011)



Sources: Bloomberg and ECB calculations.  
Notes: The SMP outstanding amount is approximated by the amount targeted by the ECB in its weekly absorbing operation. No figures on the CDS-bond basis are available for Greece after 18 September 2011.

CDS-bond basis is also equal to the difference between the respective country’s risk premium over Germany, as priced in the CDS market and in the government bond market. If a country has a negative “adjusted” CDS-bond basis, it means that its bond spread over Germany is larger than its CDS differential vis-à-vis Germany, which may be an indication, if persistent, of government bond market impairment. For instance, the “adjusted” CDS-bond basis for France has hovered around zero over the past few years, suggesting no significant impairment of the French government bond market. By contrast, the “adjusted” CDS-bond basis of Italy and Spain turned significantly negative in the second quarter of 2011, when the liquidity in those government bond markets decreased (see Chart B).

The Greek government bond market was the first in the euro area to display a significantly negative “adjusted” CDS-bond basis in the first half of 2010. Following the launch of the SMP on 10 May 2010, the Greek “adjusted” CDS-bond basis immediately rose towards zero (see Chart C). However, amid heightened market concerns about the sustainability of the Greek public debt, the “adjusted” CDS-bond basis returned to negative territory in most of the second half of 2010 and in the first half of 2011 (see Chart C). With the introduction of the concept of “private sector involvement” (PSI) and its application to Greece, as decided by the Heads of State and Government on 21 July 2011, the CDSs on Greece sovereign debt were perceived by investors to have lost much of their hedging power and trading almost stopped as the Greek CDS premium widened significantly – causing the “adjusted” CDS-bond basis to lose its relevance. Meanwhile, the “adjusted” CDS-bond bases for Ireland and Portugal were negative for most of 2011, suggesting a persistent malfunctioning of those government bond markets as well (see Chart C). The agreement of 21 July by euro area Heads of State or Government, excluding any PSI for all countries except Greece, and the statement by the ECB of 7 August 2011 that

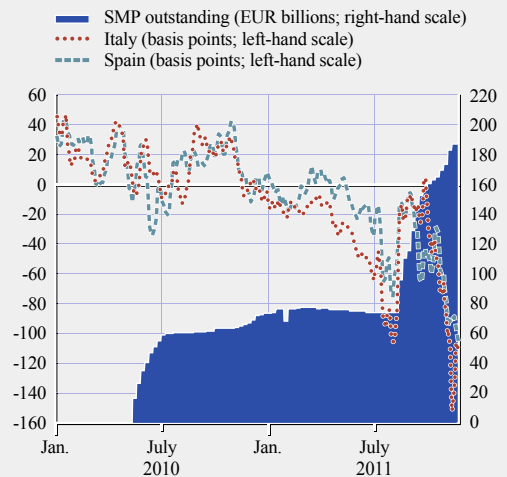
it would actively implement the SMP, while emphasising the importance of new measures and reforms in the areas of fiscal and structural policies by the governments of Italy and Spain, seemed to contribute to bringing the “adjusted” CDS-bond bases for both countries closer to zero, from very negative levels (see Chart D). Later, however, the reduced liquidity and extreme volatility in these government bond markets pushed the “adjusted” CDS-bond bases deep into negative territory.

All in all, the “adjusted” CDS-bond basis for euro area countries has provided a useful indicator for the analysis of impairments of the government bond market. Caution is nonetheless warranted in its interpretation. An important caveat is inherent in its construction and its implicit assumption that robust signals are given by the sovereign CDS market, which may itself be subject to some dysfunctional

behaviour or exhibit large volatility and frequent illiquidity. This phenomenon may indeed have arisen from intermittent bouts of intense risk aversion in particular market segments, manifested also in safe haven flows. Furthermore, in the euro area context, sovereign CDS may be seen as less effective than initially thought as a hedging tool against sovereign debt restructurings. Further possible biases are related to differences between the maturities of the CDS and those of the benchmark bonds and to the fact that CDS contracts do not provide protection of accrued coupons.

**Chart D “Adjusted” CDS-bond basis for Italy and Spain, and outstanding amounts in the SMP**

(Jan. 2010 – Nov. 2011)



Sources: Bloomberg and ECB calculations.  
 Note: The SMP outstanding amount is approximated by the amount targeted by the ECB in its weekly absorbing operation.

Box 10

are reportedly more common.