Box 1

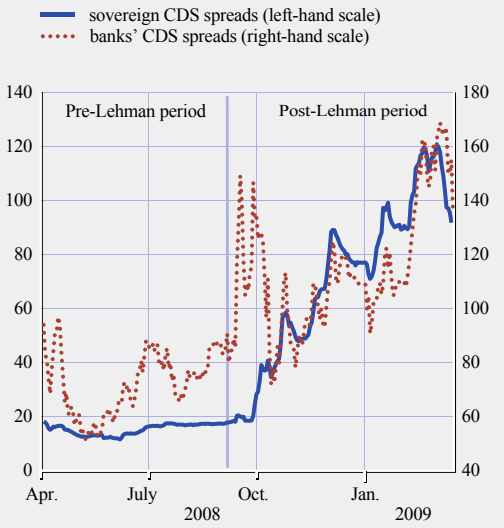
LINKS BETWEEN GOVERNMENTS' AND BANKS' CDS SPREADS IN THE EURO AREA IN THE PERIODS BEFORE AND AFTER THE FAILURE OF LEHMAN BROTHERS

In the period following the collapse of Lehman Brothers, two notable differences arose in euro area sovereign CDS spreads: first, euro area governments' CDS spreads rose above their long-run averages and began to co-move closely with the CDS spreads of investment-grade euro area banks (see Chart A); second, divergences across euro area governments' CDS spreads grew, possibly reflecting differences in the financial cost implications of individual government support measures for local banking sectors across euro area countries as well as disparities in exposures towards emerging markets as well as central and eastern European countries. This box examines the links between the CDS spreads of governments and banks, and explores the determinants of sovereign spreads in the euro area.

Different patterns in the co-movement of banks' and sovereign CDS spreads before and after the default of Lehman Brothers were confirmed empirically within a bivariate time-series framework – a vector autoregression (VAR) of daily iTraxx senior CDS spreads of euro area banks and a weighted average of euro area sovereign CDS spreads for the period between March 2008 and April 2009. During this timeframe, prior to the failure of Lehman Brothers, government CDS spreads moved independently of banks' spreads, but they responded to movements of CDS spreads of banks in the period following the collapse of this institution.[1] The co-movement after the failure of Lehman Brothers is most probably explained by risk transfer: the risk between banks and sovereign risk converged as governments implemented support schemes and other measures aimed at recapitalising euro area banks and easing their access to various funding sources (and thereby reducing their CDS spreads). This had the effect of increasing the expected indebtedness of euro area governments (and thereby increased banks' CDS spreads from that country) in a ratchet-like process. In particular, an adverse feedback between government and bank CDS spreads arose as governments provided support to their banking sectors, which impacted the support rating of individual banks. The rating of any entity, an important determinant of its CDS spread, is composed in part of a support rating – a judgement regarding a sovereign state's or institutional owner's ability to support that entity. As governments committed increasing resources to support measures, concerns emerged regarding their credibility in the face of a significant credit event, negatively impacting support ratings and pushing up bank CDS spreads.

Chart A Euro area governments' and banks' CDS spreads in the periods before and after the failure of Lehman Brothers

(Apr. 2008 – Mar. 2009; basis points)



Sources: Bloomberg, Fitch Ratings and ECB calculations.

To address this feedback between banks' and governments' indebtedness and CDS spreads, a VAR framework was developed with several determinants of government CDS spreads and debt.[2,3] Determinants of government CDS spreads included: investors' sentiment, gauged by Dresdner-Kleinwort's risk aversion measure; government bond yields (on five-year bonds); new net government debt issuance (to capture the difference between priced and matured government debt); and euro area banks' CDS spreads. Several distinct features of governments' CDS spreads before and after the failure of Lehman Brothers were detected by the analysis (see Chart B). First, in the period preceding the collapse of Lehman Brothers, net debt issuance was on a downward trend, indicating a gradual closing of the priced-matured debt gap while government CDS spreads and risk aversion remained low in the euro area. This changed significantly after the default of Lehman Brothers: risk aversion increased substantially, coupled with rising CDS spreads and an

1 In the vector autoregression (VAR) literature, the concept of Granger causality is used, in this case from banks' CDS spreads to governments' CDS spreads in the period following the collapse of Lehman Brothers. This was tested at the 95% confidence level.
2 A constant and trend were included in the VAR model. To ensure shocks were orthogonal, Cholesky decomposition of the variance-covariance matrix was undertaken.
3 On the basis of Akaike Information criterion, two lags were included in the VAR, together with constant and trend terms.

Chart B Sovereign CDS spreads, risk aversion and net sovereign debt issued in the euro area in the periods before and after the failure of Lehman Brothers

(Apr. 2008 – Mar. 2009)

Sources: Bloomberg, Dresdner Kleinwort and ECB calculations.

increasing gap between priced and matured government debt, which was used to a large extent to provide funding for banks.

In the period after the failure of Lehman Brothers, governments' CDS spreads reacted positively to both exogenous increases in risk aversion and increases in the priced-matured debt gap in the euro area. Both indicators suggest that the increase in investors' risk aversion was either related to some exogenous factor or reflected responses to increases in the amount of euro area government debt issued. The response of sovereign CDS spreads to a unit shock in bank CDS spreads confirmed the spiralling hypothesis from the bivariate setting: it was found to be significant and positive (a 1.25 unit increase resulted from a unit shock in banks' CDS spreads). In the same framework, the reverse was also found to be true: banks' CDS spreads react positively and significantly to an increase in governments' CDS spreads (a three-unit increase from a unit shock). These findings must, however, be considered with some caution. In the period after the collapse of Lehman Brothers, governments' CDS spreads were largely driven by the net amount of priced-maturing debt and decreasing government bond yields.