

Box 4

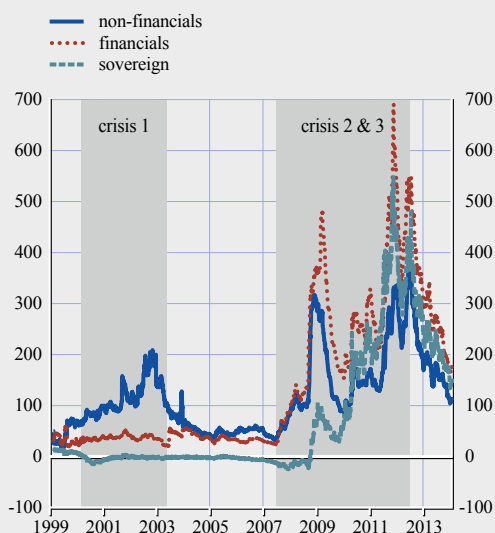
CO-MOVEMENTS IN EURO AREA BOND MARKET INDICES

The improvement experienced in financial conditions in euro area bond markets since mid-2012 has led to significant declines in sovereign and corporate bond yields, particularly in vulnerable countries. The lower financial stress since mid-2012 likely stems from a normalisation of conditions as unjustified fears of tail risks in the euro area dissipated. Such a co-movement, however, may also conceal an excessive search for yield, which – from a financial stability perspective – could make bond markets highly vulnerable to a repricing of risk stemming from the still fragile economic recovery and a normalisation of US monetary policy. To assess the potential relevance of those risks, this box puts those high correlations into historical perspective, comparing them with previous crisis and recovery periods and with developments in euro area high-rated bonds.

Such co-movement of sovereign and corporate bond indices in vulnerable countries has been witnessed in the past, notably during other periods of market stress. Developments in asset swap

Chart A Sovereign and corporate bond indices in Greece, Ireland, Italy, Spain and Portugal

(Jan. 1999 – May 2014; basis points; asset swap spreads)



Sources: Bloomberg and Bank of America Merrill Lynch.
Note: The bond indices comprise securities issued in Greece, Ireland, Italy, Portugal and Spain, but the non-financial and financial bond indices include only issuers with an investment-grade rating (currently mainly Italian and Spanish issuers).

Chart B Correlations between non-financial corporate and sovereign bonds in vulnerable countries

(Jan. 2000 – May 2014)



Sources: Bloomberg, Bank of America Merrill Lynch and ECB calculations.
Note: The peripheral bond indices comprise securities issued in Greece, Ireland, Italy, Portugal and Spain, but the non-financial and financial bond indices include only issuers with an investment-grade rating (currently mainly Italian and Spanish issuers).

spreads for Bank of America Merrill Lynch euro indices¹ of sovereign bonds and financial as well as non-financial corporate bonds suggest at least three periods of significant stress since 1999 (see Chart A): (i) the dot-com bubble (March 2000-June 2003); (ii) the sub-prime mortgage/early stage of the global financial crisis (August 2007-December 2009); and (iii) the euro area sovereign debt crisis (January 2010-August 2012).

With these periods in mind, co-movement between sovereign and corporate bond indices can be assessed by means of pair-wise rolling correlations over a one-year window in different periods (see table). Additional robustness for the volatility of the series is provided by the calculation of dynamic conditional correlations (DCC) using a multivariate model of sovereign and corporate bond indices and allowing for GARCH effects (see Chart B). While differences in duration, rating distribution and country composition between the selected indices might affect the results, they are nonetheless illustrative.

Correlations between sovereign and corporate bonds in vulnerable countries turned strongly negative at the beginning of the global financial crisis, when euro area sovereign bonds were considered a risk-free asset. As the financial crisis deepened and led to the euro area sovereign debt crisis, the rolling one-year correlation reversed to positive territory and moved increasingly

¹ Merrill Lynch euro bond indices include EUR-denominated securities issued in the Eurobond or euro member domestic markets, in some cases by issuers whose country of risk is outside the euro area. The peripheral index includes securities issued by issuers from Greece, Ireland, Italy, Spain and Portugal. The periphery sovereign index includes all rating categories, but the periphery corporate indices include only investment-grade ratings, therefore currently consisting mainly of Italian and Spanish issuers. The non-periphery indices include EUR-denominated securities (with issuers inside or outside the euro area) with the exception of securities issued by issuers from the periphery countries listed above.

Correlations between corporate (financial and non-financial) and sovereign bonds in different periods

Correlations Time period	Non-periphery		Periphery	
	Financial	Non-financial	Financial	Non-financial
Jan. 1999 – May 2014	0.22	0.12	0.89	0.76
Jan. 1999 – Aug. 2007: before crisis 2 & 3	0.44	0.24	0.16	-0.09
Mar. 2000 – June 2003: crisis 1	0.76	0.75	0.27	0.36
Aug. 2007 – Dec. 2009: crisis 2	0.57	0.45	0.88	0.76
Jan. 2010 – Aug. 2012: crisis 3	0.69	0.54	0.93	0.91
Aug. 2012 – Jan. 2014: after OMT announcement	0.34	0.68	0.98	0.98

Sources: Bloomberg and Bank of America Merrill Lynch.

Note: The darker shades of green in the table indicate a higher positive correlation over the given period.

close to 1, reflecting the widening of asset swap spreads for bonds in vulnerable countries, but over the debt crisis period sovereign bond spreads widened in line with corporate bond spreads, which reinforced the correlations. After the announcement by the ECB of Outright Monetary Transactions (OMTs), the correlations increased even further, but such a strong co-movement can be attributed to the widespread asset swap spread tightening amid improved market sentiment and, more recently, search-for-yield pressure.

By contrast, in the case of bond indices for highly rated euro area sovereigns, the correlations were the strongest during the dot-com bubble, although the asset swap spreads moved in a narrower range than in the early stages of the sub-prime mortgage crisis and euro area sovereign debt crisis. At the same time, in vulnerable countries, the correlations were the lowest, indicating that the behaviour of vulnerable and highly rated bond markets can be quite different in periods of market turbulence (see the table).²

It should also be taken into account that the link between financial and non-financial corporations (although not shown in the table), both for vulnerable and other countries, has in general been strong, but also strengthened even further during the euro area sovereign debt crisis and the period after the OMT announcement. This tighter link may be influenced by the bank deleveraging process leading to fewer bank loans to non-financial corporations, which has made the latter more dependent on funding from markets through bond issuance and therefore on overall bond market conditions. This effect may be particularly strong for vulnerable countries recently as market funding conditions have improved significantly both for sovereigns and for corporations in those countries.

To sum up, the link between the bond yields of sovereigns and financial and non-financial corporations may be varying over time, but experience since the inception of EMU suggests that they tend to co-move strongly during market tensions and recovery periods. In the case of bond indices for vulnerable euro area countries, it seems that crisis periods adversely affecting sovereigns resulted in increasing correlations between sovereign and corporate bonds. The currently historically high correlations in this regard can be seen as part of an empirical regularity between sovereign and corporate bonds, alongside a gradual normalisation in bond market conditions. At the same time, the extent to which positive market sentiment may be leading to an excessive compression of risk needs to be monitored closely, given the potential for systemic risk resulting from a correlated unwinding of related flows.

² The rather low correlations during the sub-prime mortgage crisis and the euro area sovereign debt crisis could be affected by the composition of the periphery corporate bond indices, which include not only euro area issuers but also issuers from outside the euro area, which may not have been as greatly affected by the crisis as their euro area counterparts or perhaps even benefited from it (for this reason, some caution should be exercised in interpreting the non-peripheral data).