2 Financial markets

Global financial markets have been characterised by intermittent resurgences in volatility in particular market segments (notably foreign exchange, commodity and, more recently, bond markets) and geographical regions (notably emerging markets). In the euro area, improving economic conditions accompanied by monetary policy measures contributed to dampening financial market volatility, with an associated increased appetite among investors for euro area assets, despite some flare-up of tensions at the country level. In money and credit markets, yields fell further, issuance increased, maturities lengthened, and country fragmentation declined amid reduced credit spreads and improved market access for entities of more vulnerable euro area countries. Euro area equity prices rose to seven-year highs and issuance increased in most of the more vulnerable euro area countries.

While current benign financial market conditions have a fundamental counterpart in the form of improving economic prospects, their breadth across asset classes and regions underscores the widespread nature of an ongoing search for yield in global financial markets. Faced with a prolonged period of low nominal growth, the current environment of increased financial risk-taking has so far had a limited real economic counterpart. If it continues for a protracted period of time, it could result in a build-up of imbalances. For the euro area, the prospects for asset price misalignments appear to differ across individual market segments and have a limited counterpart in credit growth. At the same time, as the search for yield continues in a global context, an incipient build-up of systemic risk could ensue from both strategic factors (most notably the incentive to shift from fundamental-driven to momentum-driven investment decisions) and amplification mechanisms (for instance, in the form of a low level of secondary market liquidity amplifying price reversals, as well as elevated duration exposures). Such mechanisms could be triggered by a re-evaluation of economic fundamentals underpinning asset valuations, resulting for example from tensions in emerging markets, political uncertainty in the euro area or a sharp adjustment in market expectations regarding the future path of monetary policy across major economies (notably including a monetary policy tightening widely anticipated by financial markets for the United States).

2.1 Money market rates hit historical lows as country fragmentation declines

Developments in **euro area money markets** have been characterised by a further compression of rates as well as a decline in fragmentation in secured segments. At the same time, there have been contained bouts of stress in certain segments amid increased financial market volatility. A higher than expected level of excess liquidity, as well as the announcement and implementation of further non-standard measures, put downward pressure on the money market curve. Rates in both the secured and unsecured segments fell to record lows. In response to declining rates, investors

have shown an increased willingness to take on duration and foreign exchange rate exposure, but remain cautious as regards credit risk.[7] Nonetheless, fragmentation has declined amid improved access for the entities of more vulnerable countries to secured markets and a slight compression of credit spreads.

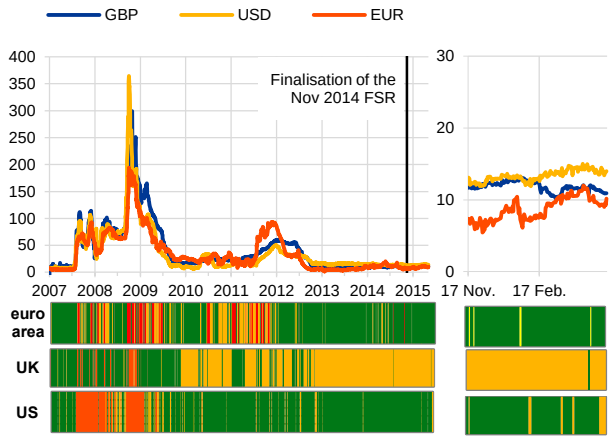
The pass-through of negative rates has been less pronounced in the **unsecured money market segment** where access is more favourable for higher-rated entities. The three-month EURIBOR, which is used as a reference for commercial and financial transactions, fell into negative territory. EURIBOR futures are also currently quoted at slightly negative levels; however, regulatory and economic considerations could maintain longer-dated EURIBOR rates at positive levels. The EONIA rate remained broadly stable at a level above the ECB's deposit facility rate. At the same time, market contacts report that rates for certain banks are drifting towards, if not below, levels where it may become unprofitable for them to trade. This may result in a decline in trading volumes.

Chart 2.1

Increased volatility in the euro area money market evident in a slight uptick in market-based measures of stress but conditions remain relatively calm

Spreads between unsecured interbank lending and overnight index swap rates

(Jan. 2007 – May 2015; basis points; three-month maturities)



Sources: Bloomberg and ECB calculations.

Rates in the **secured money market segment** fell deeper into negative territory and country fragmentation declined. The compression in rates was most pronounced at longer maturities and for entities from more vulnerable euro area countries. Access to repo markets has improved for Spanish and Italian banks using domestic collateral. Repo volumes collateralised with Spanish public sector assets and cleared via LCH.Clearnet increased to a record high and spreads narrowed further, amid better access to foreign funds and lower haircuts by central clearing counterparties. The first Italian bank joined Eurex GC Pooling, an encouraging sign that banks from vulnerable countries are again managing to diversify their funding sources especially towards international providers of liquidity.

Notwithstanding these improvements, volatility in global financial markets translated into temporary bouts of stress in certain segments. Sharp adjustments in commodity markets and exchange rates contributed to a rise in global risk aversion. Price adjustments in riskier assets resulted in the closing-out of positions in short-term interest rate future markets to offset losses in other market segments. On certain occasions, in particular following the decision by the Swiss National Bank to abandon its euro ceiling, EURIBOR futures positions were closed to offset foreign exchange losses. While these short periods of tension did not translate into broad money market stress (see Chart 2.1), they indicate that

[7] For example, money market fund managers responded to the challenge of a negative rate environment by either creating new funds taking more duration risk or engaging in FX swaps which still enable them to generate positive returns.

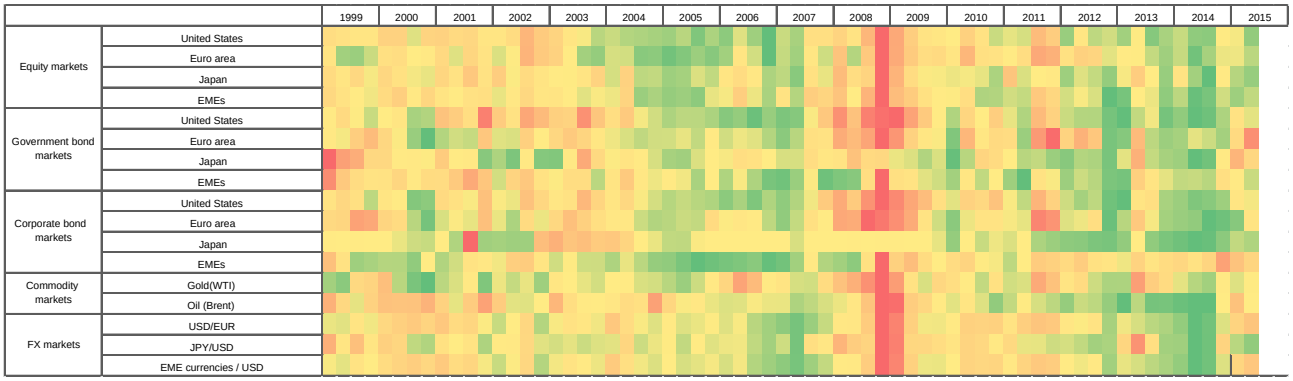
despite well-anchored rate expectations, money markets can be vulnerable to significant bouts of volatility.

2.2 Despite an uptick in volatility, bond yields remain low and equity prices are higher

While global bond yields fell further, financial market volatility has shown some resurgence from its very low levels over the last years. Measures of volatility across a broad range of global financial markets increased from historical lows, as capital flows adjusted to market expectations of a divergence in the monetary policy of major economies, lower oil prices and a growing divergence in the growth outlooks for advanced and emerging market economies (see Table 2.1). Increasing volatility in FX and commodity markets translated to emerging markets. More recently, a correction in global bond markets that began in late-April contributed to a sharp increase in volatility measures for government bond markets, in particular those of the euro area. The increase in yields on euro area government bonds from historically low levels triggered pronounced – and, in the case of Germany, extreme – price adjustments by historical standards.[8]

Table 2.1

After a lengthy period at historical lows, measures of volatility for a number of markets began to increase



Sources: Bloomberg and ECB calculations.
Notes: Volatility estimates are derived from a non-overlapping quarterly sample of daily price data. The colour codes are based on the ranking of the estimates. A red, yellow and green colour code indicates, respectively, a high, medium and low volatility estimate compared with other periods. For further details, see Box 3 entitled "Financial market volatility and banking sector leverage", *Financial Stability Review*, ECB, November 2014.

Increased volatility in foreign exchange markets mainly reflected a marked appreciation of the US dollar (USD) against other major global currencies (especially against the euro). This extended not only to exchange rates, but also to swap markets where euro cross-currency basis swap spreads exhibited a strong decline. In contrast to developments during the sovereign debt crisis, when a spread widening was directly linked to a loss of foreign funding for euro area banks, current developments are likely to instead reflect an increase in euro-denominated issuance

[8] Daily price returns of ten-year German government bonds were within the lowest 6th percentile observed over the past 16 years for five out of the six trading days during the period from 29 April to 6 May 2015.

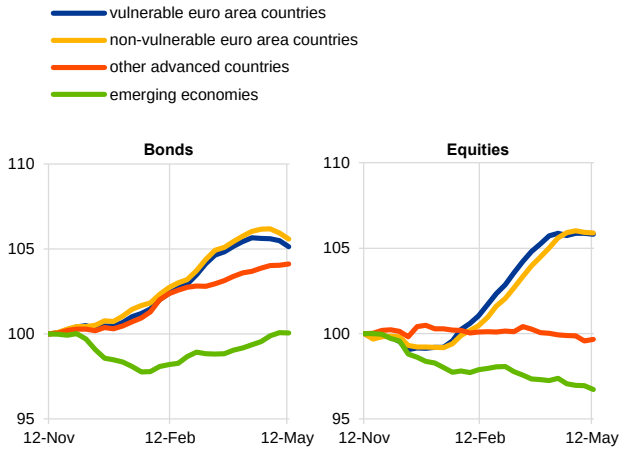
by US firms following a pronounced narrowing in euro credit spreads. As a result, euro-denominated issuance has become more attractive for US institutions with access to the euro market.

Chart 2.2

Strong inflows to euro area markets, but appreciation of the US dollar creates challenging conditions in emerging markets

Flows into bonds and equities by region, index of notional stock

(Nov. 2014 – May 2015; index: 12 Nov. 2014 = 100)



Sources: Bloomberg and ECB calculations.
Note: Vulnerable countries refer to Cyprus, Greece, Ireland, Italy, Portugal, Slovenia and Spain.

The combination of volatile FX and commodity markets contributed to stress in certain emerging markets. Volatility in FX and commodity markets quickly spread to credit and equity markets in regions with a high reliance on USD funding and commodity exports. Following a sharp appreciation of the US dollar and a decline in commodity prices, USD liabilities rose while USD revenues from commodity exports fell, reducing the natural exchange rate hedge for these regions. These more challenging financial conditions raised credit risk concerns, resulting in further capital outflows (see Chart 2.2). Tensions across all markets eased somewhat from February as commodity prices stabilised and market participants pushed back their expectations regarding the timing of US policy rate increases. However, capital flows remain sensitive to concerns regarding the growth outlook for Brazil, China and Russia and changing market expectations regarding the future path of global monetary policy.

Fixed income markets of advanced economies witnessed some sharp intraday movements which raised concerns that price adjustments were being amplified by low levels of **secondary market liquidity**. Indeed, broad measures of market liquidity for euro area markets seem to indicate that secondary market liquidity is low compared with the pre-crisis era. While bid-ask spreads relative to their mid-point prices have fallen considerably from crisis peaks, they remain slightly above pre-crisis levels (see Chart 2.3). Moreover, turnover ratios showed a steady decline across most market segments, while the average deal size traded on the largest inter-dealer trading system for euro area government bonds (MTS) has shrunk by 33% on average (see Chart 2.4).

Recent developments raise more general concerns that market liquidity, while plentiful on aggregate, might be prone to insufficiency in certain key bond market segments during periods of stress (see Box 4). Market liquidity in sovereign and, to a larger extent, corporate bond markets depends on the ability and willingness of market-makers to respond to temporary imbalances. Worryingly, the ECB's SESFOD survey reports reduced confidence among large banks in their ability to act as a market-maker in periods of stress.[9] At the same time, balance sheet statistics imply a reduced capacity to act as market-makers. Euro area banks' inventories of non-financial corporate bonds have fallen by a third since the onset of the global financial

[9] See the December 2014 ECB "Survey on credit terms and conditions in euro-denominated securities financing and over-the-counter derivatives markets" (SESFOD).

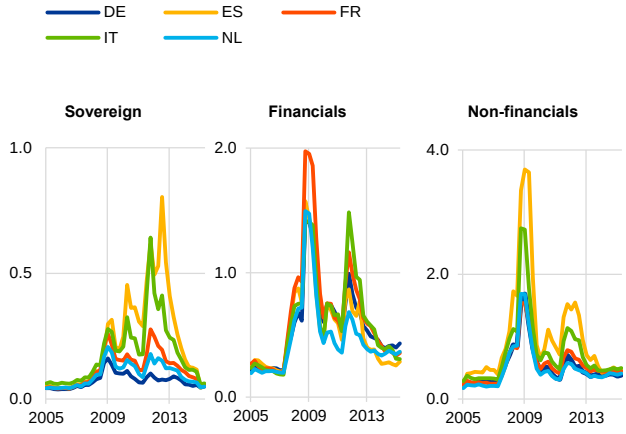
crisis. While banks' holdings of government debt securities have increased since 2008, this has been driven, to a large extent, by growth in held-to-maturity and available-for-sale portfolios rather than trading portfolios.

Chart 2.3

Bid-ask spreads suggest an improvement in liquidity conditions since mid-2012…

Bid-ask spread over mid-point for selected euro area bond markets

(Jan. 2005 – May 2015; basis points)



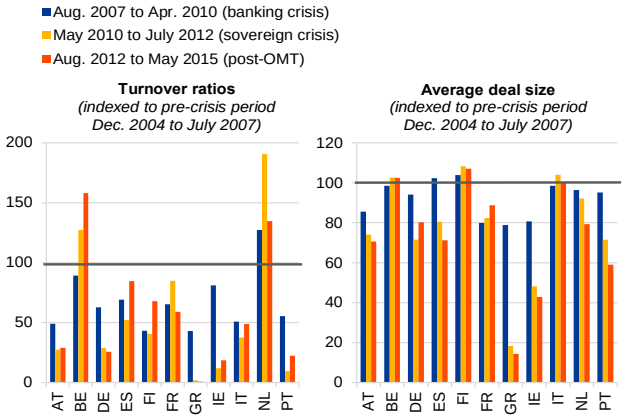
Sources: iBoxx and ECB calculations.

Chart 2.4

…but data on turnover ratios and average deal size for the sovereign bond markets indicate lower liquidity compared with the pre-crisis period

Turnover ratios and average deal size for euro area government bonds traded on MTS

(turnover ratios; average deal sizes; 100 = average over period from Dec. 2004 to July 2007)



Sources: Mercato dei Titoli di Stato (MTS) and ECB calculations.

Box 4

Commonality of bid-ask spreads in euro area bond markets

Low secondary market liquidity and the potential for it to evaporate across market segments during periods of stress represent sources of systemic risk. In an environment of low liquidity, market shocks are amplified and propagated at a faster rate. While many measures indicate that global market liquidity is abundant on aggregate, its distribution within the financial system is not uniform. Broad liquidity measures for secondary fixed income markets indicate a deterioration in conditions (see Section 2.2). This development, alongside reports from large banks of reduced confidence in their ability to act as market-makers during stressed periods, raises concerns regarding the potential for liquidity to evaporate precisely at the moment when it is needed most.[10] One means of measuring the propensity for systemic liquidity stress is to separate bond market liquidity into elements common across all market segments (such as investors' risk perception and appetite for risk or general financial conditions) and elements that are largely idiosyncratic. This box analyses common factors of bid-ask spreads in euro area bond markets, thereby focusing on one particular aspect of liquidity, notably the "tightness" dimension.[11]

[10] See, e.g., "Market-making and proprietary trading: industry trends, drivers and policy implications", *CGFS Papers*, No 52, Committee on the Global Financial System, 2014.

[11] For a definition of the different dimensions of liquidity, see Kyle, A., "Continuous auctions and insider trading", *Econometrica*, Vol. 53, 1985, pp. 1315-1335.

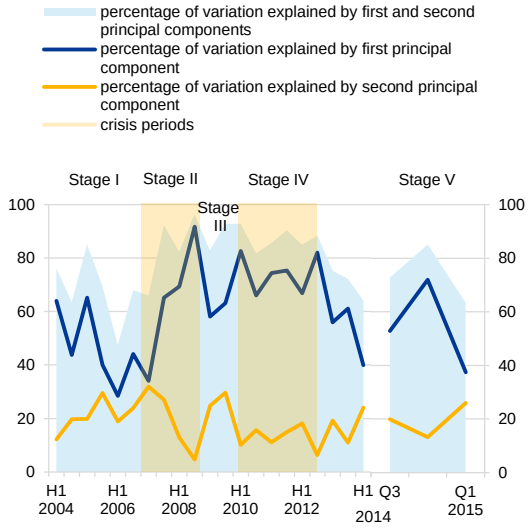
More specifically, a principal component analysis applied to normalised bid-ask spreads across a number of euro area market segments, including large vulnerable (Spanish and Italian) and non-vulnerable (German, French and Dutch) sovereign and corporate bond markets, provides two striking results. First, two factors explain roughly 80% of the variation in bid-ask spreads across all market segments over the past decade (see Chart A). Second, the importance of these factors in driving liquidity conditions shifts from calm periods to periods of market distress (see Charts A and B). It appears that correlations of individual market segments and the common factors display characteristic patterns (see Chart B). One factor is positively correlated with all market segments, but it moves from the second principal component during the pre-crisis period (Stage I) to the first principal component at the onset of the global financial crisis (Stage II). Another factor mirroring the first displays opposing correlations with different segments, also changing over time; it moves from the first to the second principal component.[12]

Chart A

Strong commonality in liquidity-driving forces, especially in periods of market distress

Principal component analysis of bid-ask spreads across selected euro area bond markets

(Jan. 2004 – Feb. 2015; percentages)



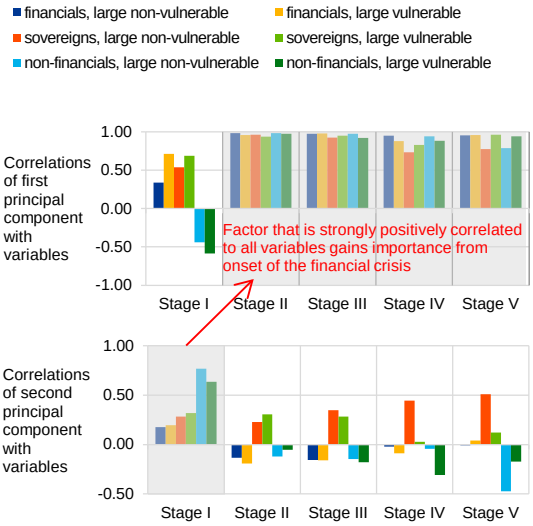
Sources: iBoxx and ECB calculations.
Notes: Stage I refers to the period from January 2004 to May 2007 (pre-crisis); Stage II refers to the period from June 2007 to mid-March 2009 (global financial crisis); Stage III refers to the period from mid-March 2009 to November 2009 (signs of tentative recovery in global economy); Stage IV refers to the period from December 2009 to July 2012 (sovereign debt crisis); and Stage V refers to the period from August 2012 to February 2015.

Chart B

Liquidity-driving forces shift from calm periods to periods of market distress

Correlations of first and second principal components with normalised bid-ask spreads

(correlations)



Sources: iBoxx and ECB calculations.
Notes: Stage I refers to the pre-crisis period from January 2004 to May 2007; Stage II refers to the period from June 2007 to mid-March 2009; Stage III refers to the period from mid-March 2009 to November 2009; Stage IV refers to the period from December 2009 to July 2012; and Stage V refers to the period from August 2012 to February 2015.

A possible way of explaining this predominant factor which drives liquidity conditions across markets in the same direction is to relate it to risk aversion. Before the onset of the global financial crisis, the explanatory power of this possible "risk aversion" factor – as reflected by the second principal component in Stage I – was relatively low (20-30%). It strengthened and is captured by the first principal component from the onset of the global financial crisis (Stage II onwards). At the height of the financial crisis – when risk aversion measures reached unprecedented levels following

[12] It should be noted that the analysis considers non-overlapping sample periods, suggesting that the interpretation of principal components may change over time.

the collapse of Lehman Brothers – the factor explained over 90% of the variation in bid-ask spread movements across euro area markets. Its explanatory power was also elevated (above 80%) during the euro area sovereign debt crisis, peaking in the first half of 2012, a period during which the yields on ten-year Spanish and Italian government bonds rose to exceptionally high levels. More recently, the percentage of variation in bid-ask spread movements explained by a risk aversion factor rose sharply (to over 70%) in the second half of 2014, a period of increasing global uncertainty amid rising geopolitical tensions, concerns regarding Greece, and sharp adjustments in US Treasury and foreign exchange markets. However, the explanatory power of this factor has fallen to its lowest level since the global financial crisis emerged.

Mirroring this development, the explanatory power of another factor, possibly associated with risk-seeking affected market liquidity predominantly before the onset of the global financial crisis, has declined in recent years; it seems to have moved from the first (Stage I) to the second (Stages II to V) principal component. Since the onset of the global crisis, bid-ask spreads for sovereign markets, when compared with financial and non-financial corporates, appear to be inversely related to this factor, suggesting that a rebalancing of portfolios affected market liquidity. During the sovereign debt crisis (Stage IV), this rebalancing channel was concentrated mainly on non-vulnerable sovereigns and non-financial corporations from vulnerable markets. Financial institutions and vulnerable sovereigns were only marginally correlated with this factor throughout the sovereign debt crisis. More recently (Stage V), this factor starts to correlate more strongly with non-financials from non-vulnerable markets and has become stronger in explaining liquidity conditions (see Chart A).

Altogether, the analysis depicts strong commonality in forces driving the “tightness” dimension of liquidity across euro area secondary bond markets, with the two predominant factors possibly related to risk aversion and risk-seeking. In light of recent shifts in the main factors, it can be argued that risk-seeking may play a greater role in determining market liquidity amid a lower propensity for risk aversion to affect all markets simultaneously. Not least since risk-seeking is shown to be important for only a few market segments, pockets of illiquidity have become more likely. Thus, there is a key need to monitor the fragmentation of liquidity in bond markets, also given that bond yields in many segments are well below historical norms and banks report declining confidence in their ability to act as market-makers.

Despite bouts of market tension, there was a further compression of yields across **global government bond markets**. Prior to the recent correction that began in late-April, yields in some markets had fallen to unprecedented negative levels and multi-century lows. Such declines occurred amid an easing of monetary policy by a large number of major central banks – including the ECB and the central banks of Sweden, Switzerland, Denmark, Canada, Australia, China and a number of other emerging market economies. Despite recent yield increases, the government bonds of a number of euro area countries, Japan, Switzerland, Denmark and Sweden still traded at yields below zero at mid-May.

Market expectations of a divergence in monetary policy cycles between the euro area and the United States contributed to a rise in volatility across market segments and a widening of the ten-year US Treasury-Bund spread to its highest level since 1990 (see Table 2.1 and Chart 2.5). Nonetheless, movements in these markets remain strongly correlated. Developments in yields on US long-term bonds appeared to lag

those in yields on German government bonds following the ECB's launch of the public sector purchase programme (PSPP). This trend contrasts with a historical regularity whereby developments in the United States tend to lead those in other regions.

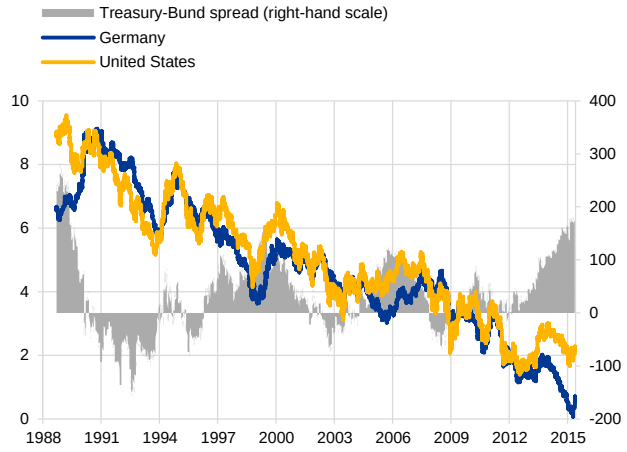
Despite recent increases in long-term bond yields, both US and euro area yield curves remain relatively flat, prompting some concerns regarding compressed term premia (see Chart 2.6). In particular, the compressed level of US term premia has raised concerns about a sharp increase, which could translate globally, should market expectations regarding the future path of US monetary policy change suddenly. Market and survey-based expectations for the future path of US policy rate increases are currently below the forecasts of most members of the Federal Open Market Committee. Past experience suggests that developments in US term premia can have widespread ramifications for global markets – extending also to the euro area.

Chart 2.5

Ten-year US Treasury-Bund spread reaches a twenty-five-year high amid diverging monetary policy cycles

Yields on ten-year US and German government bonds and the ten-year Treasury-Bund spread

(Jan. 1988 – May 2015; percentages; basis points)



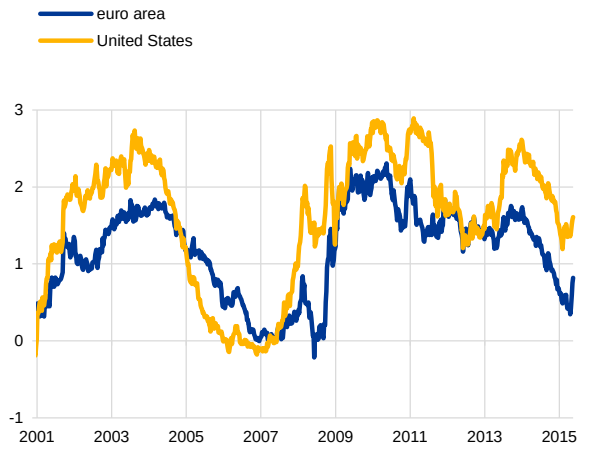
Sources: Bloomberg and ECB calculations.

Chart 2.6

Relatively flat yield curve raises some concerns regarding compressed term premia

Spread between yields on ten-year and two-year US and euro area government bonds

(Jan. 2001 – May 2015; percentages)



Sources: Bloomberg and ECB calculations.

Within **euro area government bond markets**, developments were supported by improving economic conditions (see Section 1) as well as expectations and subsequent announcements of a sovereign bond purchase programme by the ECB (see Box 1). These developments contributed to a decline in yields, a compression of intra-euro area spreads and a flattening of yield curves across all markets, except Greece, that were only partially offset by the bond market correction that began in late April (see Chart 2.7).

Yields on euro area government bonds fell further in most jurisdictions, but their prolonged decline was interrupted in late-April by a noteworthy correction. Market reports suggest a multitude of factors behind the recent correction, including concerns that the protracted decline in yields had overshot, the triggering of stop-loss

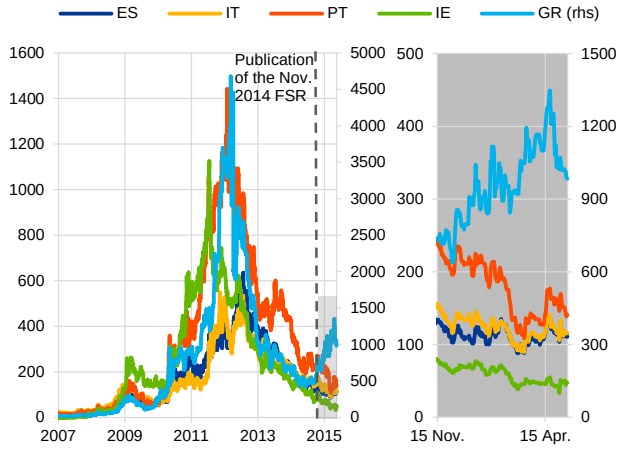
levels, high net bond issuance and improved economic data. There appears to be a broad consensus among analysts that recent price adjustments were amplified by relatively poor secondary market liquidity and the limited capacity of market-makers to absorb shocks.

Chart 2.7

Contagion from Greek stress was largely contained and spreads for vulnerable sovereigns vis-à-vis the Bund fell to new lows

Spreads between yields on selected ten-year euro area government bonds and the yield on the Bund

(Jan. 2007 – May 2015; basis points)



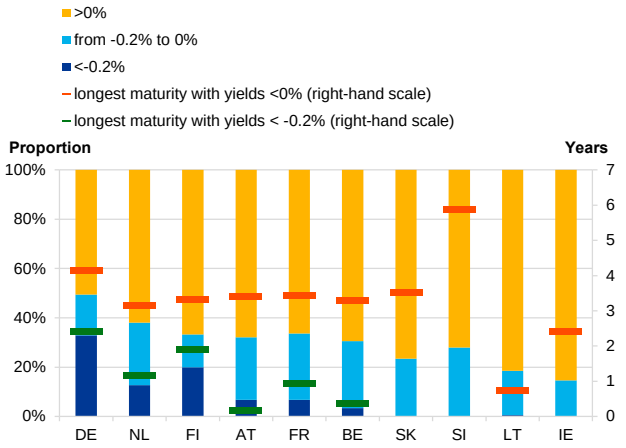
Sources: Bloomberg and ECB calculations.

Chart 2.8

The proportion of outstanding government bonds trading at negative yields reached unprecedented levels across euro area markets

Proportion of outstanding euro area government bonds trading at negative yields (left-hand scale) and maturity at which yields trade negatively (right-hand scale)

(15 May 2015; percentages; maturity in years)



Sources: Bloomberg and ECB calculations.

Intra-euro area spreads compressed further, in particular at longer maturities. While this is reflective of an improving economic outlook in light of recent ECB actions, it might also reflect an increased willingness among investors to accept higher credit and duration risk in order to avoid negative rates.[13] Following further reductions, more of the yields on the outstanding stock of euro area government bonds have fallen into negative territory (see Chart 2.8). For example, on 15 May the German yield curve traded at a negative yield out to a four-year maturity, while roughly a third of the stocks of Dutch, Finnish and Austrian government bonds were trading at negative yields.

Developments in Greece contrasted with broader euro area trends as yields increased and spreads vis-à-vis Germany widened. The lengthy and uncertain process of negotiations between the newly formed Greek government and its creditors contributed to bouts of extreme volatility in Greek markets. Contagion from Greece to other euro area markets was limited; indeed it triggered only minor volatility in sovereign yields and also in the credit default swap levels of Portugal, Italy and Spain (see Chart 2.7). While there were short-lived intermittent rises in the

[13] The average duration of euro area government bond portfolios has risen above long-run averages (for the period from January 1999 to March 2015), significantly so for AAA and AA-rated portfolios (1.5 years above long-run averages). Strong demand for longer-term debt of lower-rated sovereigns was evident in Ireland's well-received auction for its first 30-year bond in February 2015.

correlation between sovereign yields for these countries and those of Greece, a broad-based rally in the context of positive sentiment related to the PSPP saw spreads of Irish, Italian, Portuguese and Spanish ten-year bonds vis-à-vis the Bund fall to fresh lows for the period following the onset of the sovereign debt crisis.

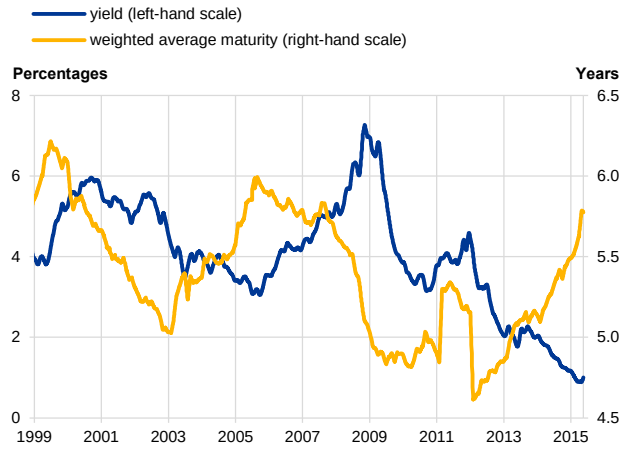
Developments in **euro area non-financial corporate bond markets** were similar to those in sovereign bond markets: country fragmentation eased, maturities lengthened, yields declined across most rating categories, in some cases to negative levels, and credit spreads tightened.[14] Euro area non-financial corporate (NFC) bonds continued to attract strong demand following an impressive performance in 2014: both the investment-grade and high-yield segments recorded equity-like total returns of 8% and 6% respectively. Investors showed an increased appetite for duration, credit risk and product risk in euro NFC debt markets, but exercised some caution regarding lower-rated issues within the high-yield segment.

Chart 2.9

Strong demand for investment-grade bonds evident in a compression of yields and increased maturity of portfolios

Yield and weighted average maturity of euro area non-financial corporate investment-grade index

(Jan. 1999 – May 2015; percentages; years)



Sources: Bloomberg, Merrill Lynch and ECB calculations.

Bond issuance remained strong as firms took advantage of benign market conditions to lock in low rates at longer maturities. Yields declined across most rating categories and maturities of new issues lengthened further to 8.7 years for investment-grade bonds and to 8 years for high-yield bonds. However, market observers do not report any meaningful leveraging among euro area corporates. The share of callable bonds within new issues has also increased, driven by a strong growth in issuance by higher rated firms. Another noteworthy feature of recent developments in euro-denominated markets is the rise in issuance by companies from outside the euro area, in particular US firms.[15] Given narrower credit spreads on euro-denominated debt, US NFCs can issue debt in euro that is swapped back into US dollars at a lower cost than directly issuing in US dollars.

The **investment-grade** bond market remained particularly robust with limited volatility. Strong investor demand was evident in a further compression of yields and an additional increase in the weighted average maturity of investment-grade portfolios (see Chart 2.9). Yields on the euro-denominated securities of certain higher-rated corporates declined to negative levels, an unprecedented occurrence. As credit spreads between euro area and US markets widened, US firms took advantage of relatively benign conditions and increased their issuance of euro-denominated bonds. Fragmentation within euro markets fell as indices for vulnerable euro area countries outperformed those of non-vulnerable countries, resulting in a convergence of credit spreads within the euro area. While this development suggests

14 See Section 3 for a detailed discussion on financial corporate bond markets.

15 US firms accounted for one-fifth of euro-denominated bonds issued by NFCs in the first quarter of 2015, compared with 9% in the first quarter of 2014.

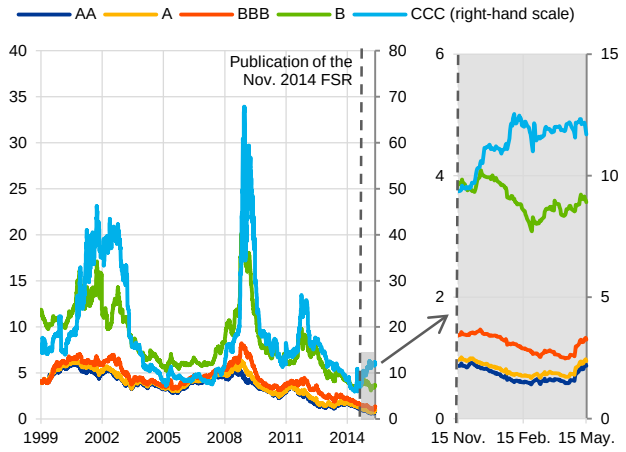
that the sovereign drag, which has weighed on corporate markets since 2010, has diminished, pair-wise correlations indicate that movements in corporate and sovereign bond yields remain highly correlated.[16] An increased willingness among investors to take on product risk was evident in a significant increase in share of callable bonds in new issues. In the first quarter of 2015, almost half of the issuance in the investment grade sector was in callable bonds (up from 25% in 2014).

Chart 2.10

Increased risk appetite evident in a compression of yields but investors remain cautious as regards lower-rated bonds

Yields on corporate bond indices by rating category

(Jan. 1999 – May 2015; percentages)



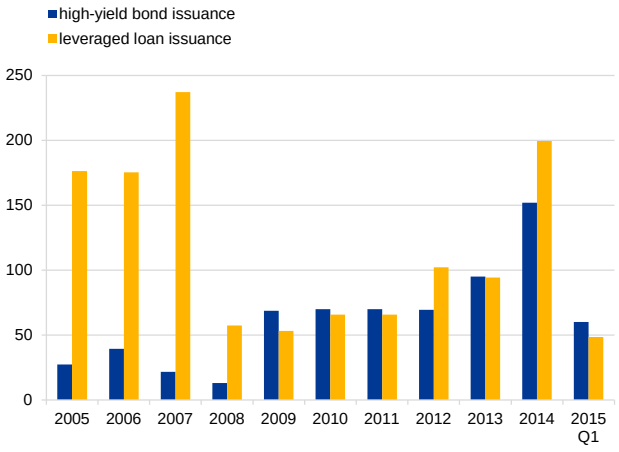
Sources: Bloomberg and ECB calculations.

Chart 2.11

Issuance of euro area leveraged loans reached a seven-year high in 2014 and outpaced high-yield bond issuance

Issuance of high-yield bonds and leveraged loans by euro area non-financial corporations

(2005 – Q2 2015; EUR billions)



Sources: Dealogic and ECB calculations.
Note: Data for 2015 refer to the period up to 8 May.

Investor appetite for **high-yield** bonds improved in 2015, following significant outflows in the second half of last year. Yields compressed across most rating segments and issuance increased (see Chart 2.10 and Chart 2.11). Global investors poured a record amount of cash into European high-yield bonds in the week following the ECB's announcement of the PSPP.[17] While risk appetite among global investors has clearly increased, greater discrimination against lower credit quality within the high-yield segment continues. Investors appear more willing to search for yield within non-standard structures issued by firms with a B rating and above rather than expose themselves to firms with weak credit profiles. Lower-rated firms have faced some difficulties in accessing the market, while bond indices show further increases in yields on bonds rated CCC or below (see Chart 2.10).[18] At the same time, the share

16 Dynamic conditional correlations and one-year rolling correlations between non-financial corporate and sovereign bond indices for vulnerable and non-vulnerable countries remain elevated, having strengthened since mid-2012. Correlations for vulnerable countries are above average. See Box 3 entitled "Co-movements in euro area bond market indices", *Financial Stability Review*, ECB, May 2014.

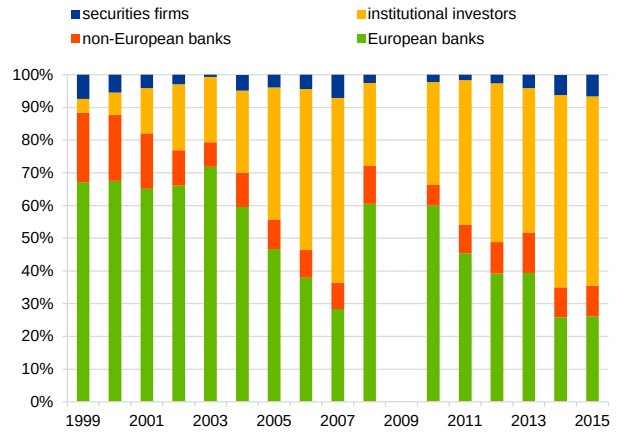
17 An inflow of over €1 billion into European high-yield bond funds was recorded for the week ending 28 January 2015. It is the largest weekly inflow since J.P. Morgan began recording such data in 2011 and significant higher than median weekly inflows of €95 million over the past four years.

18 Certain issuers opted to discontinue their issuance process amid low demand from investors.

of callable bonds in total high-yield bonds issued remained relatively high at 75% in the first quarter of 2015 (compared with an average of 50% for the past seven years).

Chart 2.12

Banks have been replaced by institutional investors as the dominant investor in European leveraged loan markets



Source: S&P Capital IQ's LCD.
Note: Data for 2015 refer to the period up to 8 May. Given the lack of primary issuance, LCD did not track enough observations to compile a meaningful sample for 2009. As a result, data are unavailable for 2009.

Issuance of **leveraged loans** by euro area firms reached a seven-year high in 2014 and remains strong in 2015, while price indices rose further (see Chart 2.11). A deterioration in underwriting standards is evident in the increasing proportion of highly indebted issuers, below-average coverage ratios and growth in the covenant-lite segment. In the first four months of 2015, roughly half of European leveraged loan issuers had a debt/EBITDA ratio of 5 and above (compared with an average of a third of issuers over the past eighteen years). Interest coverage ratios for highly leveraged institutions, including high-yield bond issuers, are below long-run averages despite the low interest rate environment. This raises concerns that rising interest rates could create difficulties for firms and investors. Institutional investors have the largest exposures to recent issues as ongoing bank deleveraging and increased regulation have contributed to lower demand for leveraged finance products from banks (see Chart 2.12).

Euro area equity markets outperformed their global counterparts, soaring to seven-year highs amid strong portfolio inflows driven by positive economic data, more accommodative monetary policy and a weaker euro. Global investment flows into euro area equity markets have been relatively strong (see Chart 2.2). Although stock prices retraced some of their gains in recent weeks amid heightened financial market volatility, the EURO STOXX 50 index still recorded a year-to-date increase of 15%. The rally in share prices was equally pronounced for NFCs and banks, although large financial institutions outperformed. The median year-to-date gain on share prices of large and complex banking groups exceeded those of the broader EURO STOXX Banks index by nine percentage points.

While the recovery in euro area stock prices since mid-2012 has been impressive, standard valuation metrics for the euro area stock market do not signal widespread imbalances. The EURO STOXX 50 index remains 25% below its 2007 peak and commonly used metrics of stock market exuberance, such as the cyclically adjusted price/earnings ratio, remain close to their long-run averages and below pre-crisis peaks (see Chart 4 in the Overview section).