

3 FINANCIAL MARKETS AND GLOBAL FINANCIAL INSTITUTIONS

Notwithstanding the wide-ranging effects of ECB action designed to address impaired monetary policy transmission, the functioning of money and debt markets remained impaired, largely on account of the high fragmentation driven by intertwined sovereign and counterparty credit risk concerns. One corollary of this fragmentation has been a persistent hunt for perceived safe and liquid assets, pushing yields towards (or beyond) previous historical lows in some regions, impacting not only sovereign bond yields but also markets for non-financial corporate debt.

In this environment, the profitability of global large and complex banking groups (LCBGs) declined in the second and third quarters of 2012, whereas capital buffers remained broadly stable. Nonetheless, the operating environment is likely to remain challenging for LCBGs, with muted profitability for at least the next 6-12 months. Although hedge funds found it difficult to navigate through volatile financial markets and used moderate financial leverage, they recouped May-June 2012 investment losses. Investor inflows slowed down and investor redemption pressures appeared to be increasing somewhat.

3.1 SOME SUBSIDING OF MONEY AND CAPITAL MARKET TENSIONS

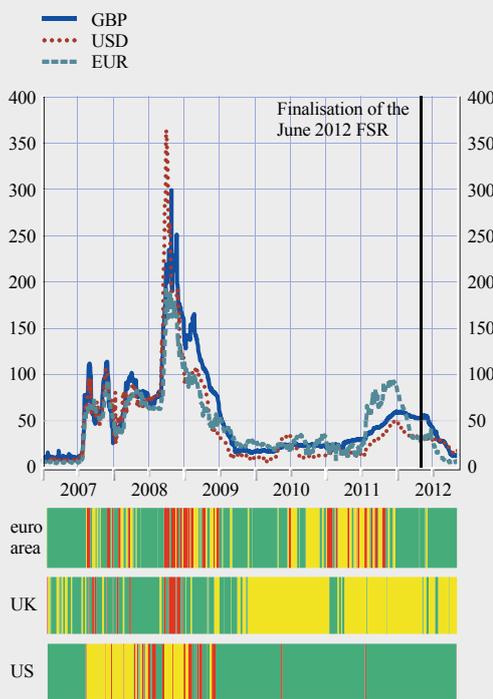
MONEY MARKETS

Despite some signs of improvement, the functioning of the euro money market has remained impaired. Although aggregate excess liquidity has remained high, its diffusion has been hindered by an increased fragmentation¹ caused by elevated counterparty credit risk concerns with respect to banks from euro area countries under stress. According to market-based indicators, tensions somewhat abated following the decisions taken by the European Council on 28-29 June 2012 and the reduction of ECB policy rates by 25 basis points on 5 July 2012 (see Chart 3.1), but a more tangible improvement started only after end-July 2012, when the expectations of market intervention by the ECB intensified (see Chart 3.2, Chart S.4.1 and Chart S.5.8) and eventually were confirmed by the ECB's announcement of the modalities of Outright Monetary Transactions (OMTs) on 6 September 2012.

Amid abundant aggregate liquidity conditions and following the reduction of ECB policy rates on 5 July 2012 – including the cut of the ECB's deposit facility rate to zero – euro money market interest rates declined, but the zero deposit

Chart 3.1 Spreads between unsecured interbank lending and overnight index swap (OIS) rates

(Jan. 2007 – Nov. 2012; basis points; three-month LIBOR/OIS spread)



Sources: Bloomberg and ECB calculations.
Notes: In the lower panel, red indicator points to rising, yellow to moderating and green to falling pressure in the respective money markets. For more details, see Box 4, entitled “Assessing stress in interbank money markets and the role of unconventional monetary policy measures”, in ECB, *Financial Stability Review*, June 2012.

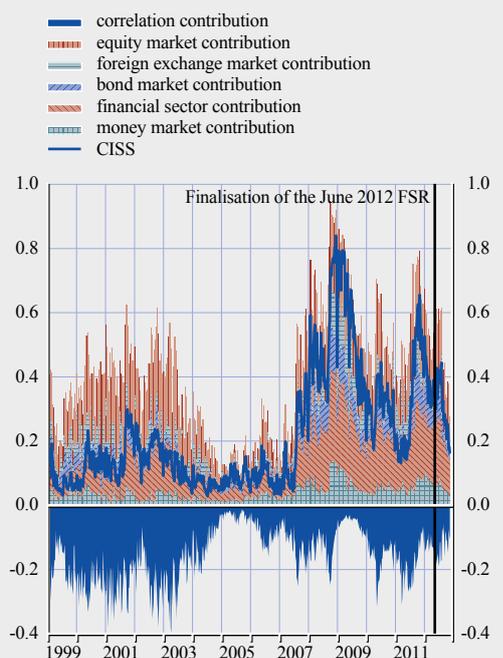
The functioning of the euro money market remained impaired

The zero rate of the ECB's deposit facility has not led to higher unsecured interbank lending...

¹ See also ECB, *Financial integration in Europe*, April 2012.

Chart 3.2 Composite indicator of systemic stress (CISS) for the euro area and contributions of its components

(Jan. 1999 – Nov. 2012)



Sources: ECB and ECB calculations.
 Note: For further details, see Special Feature C, entitled “Systemic risk methodologies”, in ECB, *Financial Stability Review*, June 2011.

facility rate has not led to higher unsecured interbank lending, as, for example, evidenced by low EONIA volume.² The low level of unsecured interest rates reportedly did not provide enough incentives to bear additional credit risk. Nonetheless, it encouraged overall higher risk-taking, thereby flattening the yield curve, as investors lengthened their investment duration in their search for a higher yield. Although the zero rate of the ECB’s deposit facility should make banks indifferent about whether they hold their funds as unremunerated excess reserves or place them into the deposit facility, some banks seemed to still have incentives to use the deposit facility. Anecdotal evidence suggests that internal liquidity management practices as well as regulatory requirements (i.e. reserves held in the deposit facility would count towards liquidity buffers, whereas excess reserves held in the current account would not) may have played a role. In the period ahead, aggregate excess liquidity might already begin to subside as of 30 January 2013, the first date when banks might choose to exercise an early repayment option for the first of the three-year longer-term refinancing operations (LTROs).

... while secured interbank activity was much more resilient

By contrast, secured interbank activity was more resilient – especially for short-term maturities – not least because of the general trend towards the collateralisation of credit exposures (see Box 3). Still, in addition to the reportedly increasing scarcity of the highest-grade collateral, repo volumes have also been adversely affected by the exhaustion of interbank credit limits, higher haircuts and high asset encumbrance at some banks from countries under stress. In order to alleviate collateral pressures, on 20 June 2012 the Eurosystem decided to broaden the scope of the measures which were introduced on 8 December 2011 by reducing the rating threshold and amending other eligibility requirements for certain asset-backed securities. Furthermore, on 6 September 2012 the Eurosystem decided (i) to suspend the application of the minimum credit rating threshold requirement for assets issued or guaranteed by the government of countries that are eligible for OMTs or are under an EU/IMF programme and comply with the attached conditionality as assessed by the ECB’s Governing Council, and (ii) to make eligible for its refinancing operations marketable debt instruments denominated in US dollars, pounds sterling and Japanese yen.

The fragmentation of the euro money market remained high

The fragmentation of the euro money market has somewhat abated following the ECB’s announcement on 6 September 2012, but remained high, as, for example, evidenced by: (i) a large, albeit decreasing, dispersion of EONIA, EURIBOR and EUREPO contributions (see Chart 3.3);^{3,4} (ii) the “home bias”

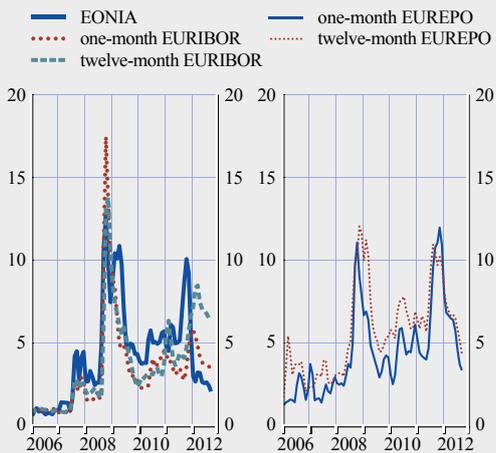
2 From 5 July 2012 to late November 2012 average daily EONIA volume hovered around €23 billion and was about €2.5 billion lower than after the second three-year LTRO in February 2012.

3 For more information, including on the contributing panel of banks, see <http://www.euribor-ebf.eu>.

4 See also ECB, *Financial integration in Europe*, April 2012.

Chart 3.3 Cross-country standard deviation of average unsecured lending and repo rates

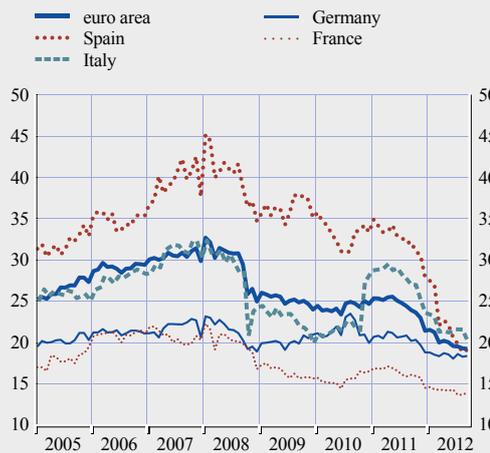
(Jan. 2006 – Oct. 2012; basis points; two-month moving average)



Sources: European Banking Federation and ECB calculations.

Chart 3.4 Share of cross-border non-repo interbank lending and borrowing

(Jan. 2005 – Sep. 2012; percentage of total non-repo interbank lending and borrowing)



Sources: ECB and ECB calculations.
Note: Sum of non-repo lending to and borrowing from monetary financial institutions.

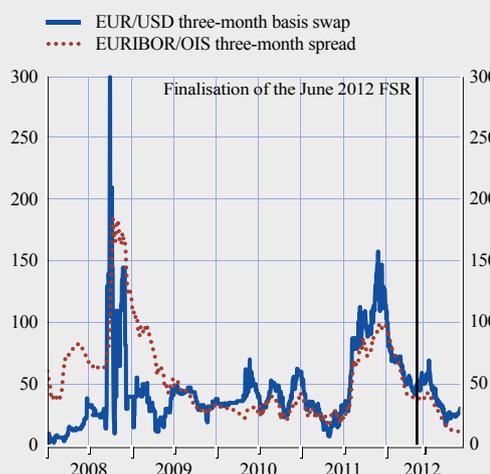
with respect to interbank counterparties (see Chart 3.4); or (iii) a continuing dependency of some banks on the Eurosystem's liquidity support through the weekly liquidity-providing operations, despite the high level of overall excess liquidity. Following the reduction of the ECB's deposit facility rate to zero, secured lending rates for perceived safe-haven country general collateral became negative, whereas interest rates for lending against collateral from countries under stress, while also lower, remained positive.

Very low unsecured and sometimes even negative secured interest rates had forced some prime euro-denominated money market funds (MMFs) to suspend new subscriptions. This, however, created opportunities for MMFs with less stringent investment constraints in terms of permissible credit ratings and maturities. In this context, it is noteworthy that the outstanding amount of short-term European paper (STEP) slightly increased from €382 billion in mid-May 2012 to around €400 billion in late November 2012, although the bulk of outstanding paper and new issuance remained confined to highly rated entities.

Similar to the euro money market, liquidity remained ample in the US dollar money market. On 13 September 2012 the US central bank announced a USD 40 billion a month purchase programme for agency mortgage-backed

Chart 3.5 EURIBOR/OIS spread and the EUR/USD basis swap

(Jan. 2008 – Nov. 2012; basis points)



Source: Bloomberg.

Low interest rates pose challenges for money market funds

The availability of US dollar funding has improved for euro area banks

securities and extended the guidance for near-zero short-term interest rates until mid-2015. The availability of US dollar funding for euro area banks has improved, as suggested by: (i) a continued tightening of the EUR/USD basis swap (see Chart 3.5); (ii) a declining recourse to the ECB's US dollar-providing operations; and (iii) a recovery in lending to euro area banks by US MMFs.

Box 3

MAIN FINDINGS OF THE EURO MONEY MARKET SURVEY 2012

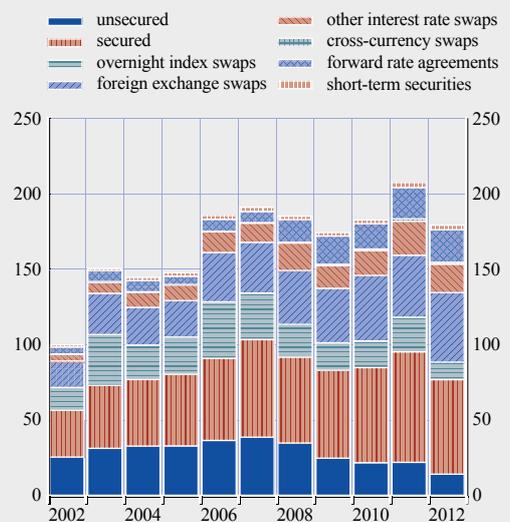
On 28 September 2012 the ECB published the results of the Euro Money Market Survey 2012, which were based on data collected from banks in 28 European countries (the EU Member States plus Switzerland) and covered developments in various segments of the euro money market in the second quarter of 2012. This box reports the survey's main findings.¹ Overall, the survey results suggest a strong impact of the euro area sovereign debt crisis as well as of the Eurosystem's extraordinary policy measures that aim at restoring market functioning and the proper transmission of monetary policy in an environment where the euro money market remains fragmented.

The overall turnover in the euro money market decreased by 14% in the second quarter of 2012 compared with the second quarter of the previous year (see Chart A). After a significant increase in turnover in 2011, aggregate turnover fell back to below 2010 levels in the second quarter of 2012. This decline could be attributed to both the ongoing euro area sovereign debt crisis and the related impairment of the interbank market, as well as to the surplus liquidity environment that prevailed in the euro interbank market as a result of the high allotment at the two three-year longer-term refinancing operations (LTROs) in December 2011 and February 2012.

The most notable decline in turnover took place in the segment of overnight index swaps (OISs), where turnover declined by 50%, and in the unsecured market, where turnover contracted by 36%. Market activity in the unsecured segment remained highly concentrated in the overnight market (with a share of more than 70%), while turnover in the segment beyond one month remained very limited (only around 2% of total unsecured activity). The contraction in the unsecured market can be explained by the general trend towards secured lending and a shortening of maturities against the backdrop of greater risk aversion to counterparty credit

Chart A Aggregate average turnover of the euro money market

(Q2 figures in the period from 2002 to 2012; index: aggregated average daily turnover volume in 2002 = 100)



Source: ECB Euro Money Market Survey 2012.
Note: The panel comprised 105 credit institutions.

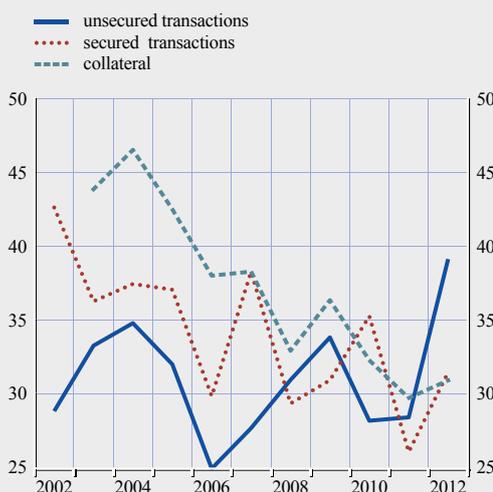
1 For more details, see ECB, *Euro Money Market Study*, December 2012.

risk. At the same time, the high level of surplus liquidity provided by the Eurosystem reduced the demand for interbank funding, while stricter regulatory requirements tend to reduce the supply of unsecured interbank lending.

The decline in money market activity was particularly pronounced compared with the previous year, as the second quarter of 2011 was a time before the intensification of the euro area debt crisis when surplus liquidity had temporarily subsided and activity in the money market had picked up substantially. This effect is also very noticeable in the substantial decline in the OIS segment – the environment of high surplus liquidity, combined with the low level of interest rates (close to the zero percent level of the deposit facility) and low volatility of the overnight EONIA rate, have significantly reduced the need for hedging interest rate risk.

Chart B Share of domestic counterparties and collateral

(percentage of total)



Source: ECB Euro Money Market Survey 2012.
Note: The panel comprised 105 credit institutions.

The secured market remained the largest segment of the euro money market, although turnover declined by 15% in the second quarter of 2012, which was broadly in line with the findings of the latest International Capital Market Association’s European repo market survey.² The decline in turnover was driven by a 26% decrease in overnight activity. The share of secured market activity cleared through central clearing counterparties (CCPs) increased further and accounted for 55% of secured market transactions (compared with 51% in 2011). While in previous years activity through CCPs picked up considerably after more European banks had joined the international repo platforms, in 2012 even the CCP-cleared repo business declined (albeit at a slower pace than all repo transactions), on account of, among other things, increased margin requirements following rating downgrades and higher yields on debt securities of some euro area countries under stress in the second quarter of 2012. Demand for repo was also lower because many banks had had their funding needs for 2012 fulfilled with liquidity received from the Eurosystem’s LTROs.

The continued decline in the relative share of unsecured lending, as well as the increase in the share of transactions settled through CCPs, indicate heightened concerns about counterparty credit risk, especially with respect to banks from euro area countries under stress. Except for unsecured transactions, the data on the geographical structure of counterparties and used collateral show, however, only some limited signs of a stronger preference for domestic banks and collateral (so-called “home bias”). In the unsecured market, the share of domestic counterparties increased significantly from around 28% in 2011 to around 39% in 2012, while for the secured market the share of domestic collateral increased slightly from 26% to around 31% (see Chart B).³

² See International Capital Market Association, “European repo market survey”, No 23, August 2012.

³ For a bigger panel of 172 credit institutions, for which only 2011 and 2012 data were available, the results were quite similar: in the unsecured market the share of domestic counterparties increased from around 31% in 2011 to around 43% in 2012, while for the secured market the share of domestic collateral remained broadly unchanged at around 30%.

Tensions in the euro area government bond markets of countries under stress have somewhat subsided

The decline in yields was most pronounced for shorter-term maturities

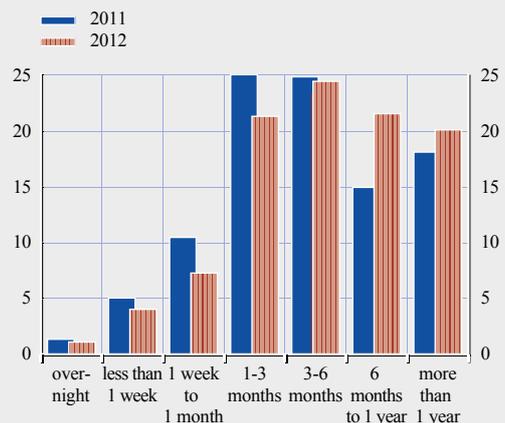
There has been a slight trend away from domestic collateral – also related to the euro area sovereign debt crisis – as repo investors are often less willing to trade repos with collateral issued in the same country as the counterparty for countries with perceived elevated sovereign and counterparty credit risk (so-called “wrong way” correlation risk).

The only market segment where activity picked up significantly was in the derivatives market, namely foreign exchange (FX) swaps (up by 12%), as such swaps remained an important secured cash funding instrument for European banks and had benefited from the move away from unsecured transactions. Another sign of the resilience of the FX swap market is the fact that the increase in activity took place also for the longer maturities (see Chart C). Furthermore, a wider use of e-commerce platforms continued to support activity in this market segment, as the survey showed that the share of electronic trading increased in most market segments.

The overall turnover in the outright secondary market for short-term securities declined by 9%, whereas the turnover for the short-term paper issued by credit institutions increased by 12%, a trend that could also be indirectly supported by an increase in the outstanding amount of short-term European paper (STEP). Some of this increase could potentially be explained also by the eligibility of these short-term securities as collateral for the Eurosystem’s operations.

Chart C Maturity-weighted breakdown of average daily turnover in the foreign exchange swap segment

(percentage of total)



Source: ECB Euro Money Market Survey 2012.
Note: The panel comprised 172 credit institutions.

GOVERNMENT BOND MARKETS

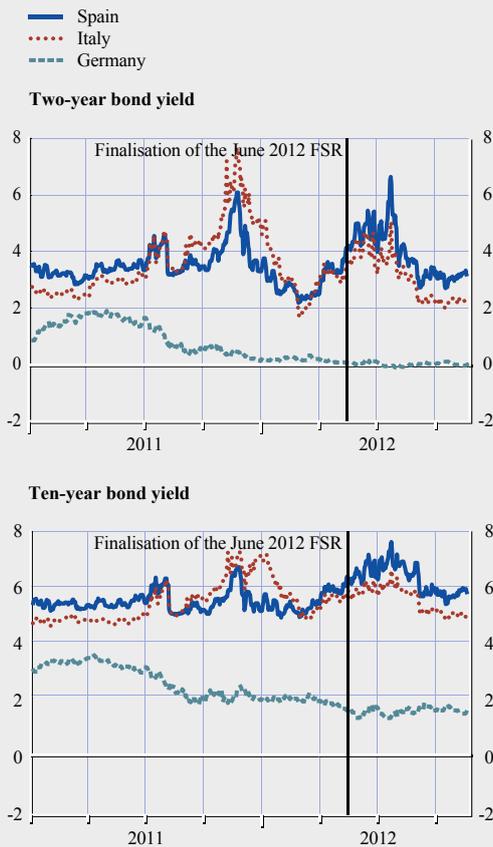
Following the ECB’s announcement on 6 September 2012 of the modalities of OMTs in secondary sovereign bond markets that aim at safeguarding an appropriate monetary policy transmission and the singleness of the monetary policy, tensions in the government bond markets of euro area countries under stress somewhat subsided (see also Chart 3.2), most notably in Spain and Italy, although the improvements had already started after end-July 2012, when expectations of market intervention by the ECB intensified. Beyond their stated purpose, the prospect and eventually an announcement of the modalities of OMTs provided an accompanying forceful boost to market confidence across virtually all asset classes – not unlike the impact of LTROs in late 2011.⁵ Most notably, this paved the way for a reversal of the fragmentation of euro area government bond markets, the progress of which, however, will ultimately depend on the successful and swift implementation of various agreed policy measures at the national and euro area levels.

The general decline in yields on bonds issued by vulnerable sovereigns was particularly pronounced for shorter-term maturities (see Chart 3.6) as shorter-term debt securities are more sensitive to potential near-term funding liquidity pressures. The positive impact on shorter-term bonds was further reinforced by the fact that OMTs will focus on the shorter part of the yield curve and in

⁵ See Box 5, entitled “The impact of the longer-term refinancing operations on money market options”, in ECB, *Financial Stability Review*, June 2012.

Chart 3.6 Two- and ten-year government bond yields in Germany, Italy and Spain

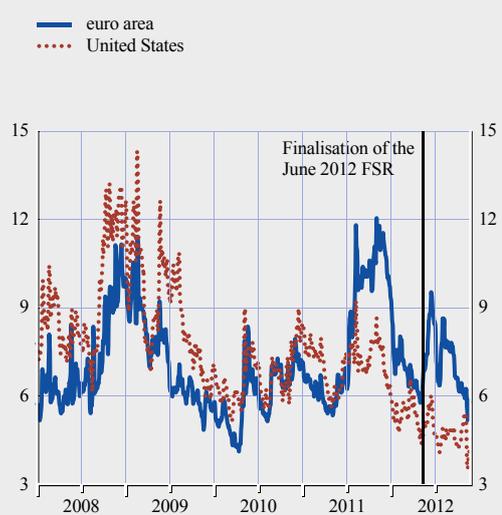
(Jan. 2011 – Nov. 2012; percentages)



Source: Bloomberg.

Chart 3.7 Implied bond market volatility in the euro area and the United States

(Jan. 2008 – Nov. 2012; percentages; three-day moving average)



Source: Bloomberg.

Notes: Implied government bond volatility is a measure of uncertainty over the short term (up to three months) for German and US ten-year government bond prices. It is based on the market values of related traded options contracts. Bloomberg uses implied volatility of the closest to at-the-money strikes for both puts and calls using near-month expiry futures.

particular on sovereign bonds with a maturity of between one and three years. By contrast, yields on shorter-term government bonds that tended to benefit from flight-to-safety flows have slightly increased, which in some cases means that they returned to positive territory.

Despite these positive developments, the heterogeneity of market conditions across euro area government bond markets remained, as yield levels, volatility and liquidity conditions varied significantly. By October 2012 the cumulative year-to-date volumes of Italian and Spanish government bonds traded on the MTS platform were €423 billion and €60 billion respectively, much lower than during the same period in 2010 and 2011. The share of non-domestic investors in sovereign bonds of vulnerable euro area countries has reportedly halted its downward trend and some market participants publicly expressed their more positive views (see also Chart S.2.9). According to several market reports, market-makers have been reviewing their trading activities and downsized trading inventories, not least because often high volatility (see Chart 3.7) reduced volatility-based position limits and thus prevented them and other market participants from entering into larger trades. Hence investors who wanted to increase their allocations to government bonds issued by vulnerable euro area sovereigns needed to consider also what alternative (non-dealer) sources of liquidity could be used in future to exit such positions.

Low yields on the highest-grade government bonds were not confined to the euro area sovereigns. High demand for safe and liquid assets has been a global phenomenon pushing down yields also of other AAA-rated government debt securities – in some cases to historical lows (see Chart 3.8). This has a clear counterpart in a shrinking supply of assets perceived to be safe and liquid – as shown

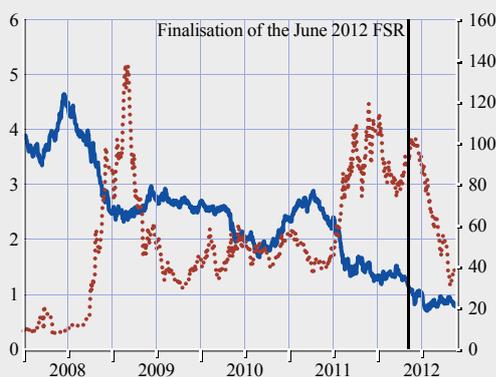
Yield levels, volatility and liquidity conditions varied significantly

Low yields on the highest-grade euro area government bonds are part of the global phenomenon

Chart 3.8 Average bond yield and CDS spread of AAA-rated sovereigns

(Jan. 2008 – Nov. 2012; five-year maturity)

— bond yield (percentages; left-hand scale)
 CDS spread (basis points; right-hand scale)



Sources: Thomson Reuters Datastream and ECB calculations.
 Note: AAA-rated sovereigns include Australia, Austria, Denmark, Finland, France, Germany, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States.

Chart 3.9 Credit ratings of OECD and euro area sovereign issuers

(Jan. 2000 – Oct. 2012; number of countries)

— OECD countries: at least one investment-grade rating
 OECD countries: at least one triple-A rating
 - - - - euro area countries: at least one investment-grade rating
 — euro area countries: at least one triple-A rating



Sources: ECB and ECB calculations.
 Notes: Data refer to the current OECD (29) and euro area (17) member countries. Calculations are based on long-term foreign-currency credit ratings issued by Fitch, Moody's and Standard & Poor's.

in Chart 3.9, the pool of sovereign issuers with the highest or at least an investment-grade credit rating has been declining, amplified by the size of the markets affected, thereby limiting choices available for credit rating-constrained or index-tracking investors. A sudden reversal of safe-haven flows might lead to an abrupt rise in bond yields of AAA-rated countries. It is also noteworthy that credit default swap (CDS) spreads for AAA-rated sovereigns had been more persistently elevated, declining in earnest only after May 2012 (see Chart 3.8). That said, signals from euro area sovereign CDS markets should be interpreted with caution given reportedly falling liquidity on account of regulatory initiatives to curb “naked” purchases of sovereign CDS protection.

CREDIT MARKETS

Against the backdrop of low nominal interest rates and the increasing dearth of high-grade sovereign bonds, investors have turned their search-for-yield efforts towards corporate debt markets, first and foremost to debt securities issued by non-financial corporations. Strong demand for non-financial corporate debt, also through inflows into bond investment funds, resulted in record- or close to record-high issuance of such debt in the United States and the euro area respectively during the first ten months of 2012 (see Chart 3.10). Issuing companies were keen to lock in current low interest rates for longer maturities, not least because of lower availability of bank financing.

Buoyant demand outstripped supply and pushed down yields and spreads across various credit markets. Non-financial corporate bond spreads tightened significantly both in the euro area and the United States and both for investment-grade and high-yield debt (see Chart 3.11). In the same vein, credit spreads narrowed for various types of AAA-rated euro area asset-backed securities (see Chart S.3.7). It should be noted, however, that in some cases the cost of issuing longer-term high-yield bonds had been so low by historical standards that some market observers started questioning the rationality of the pricing of the associated default risk.

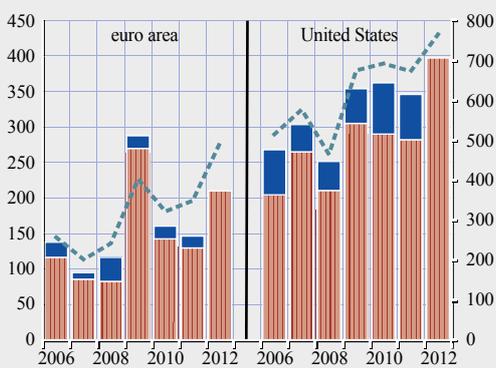
Search-for-yield activity resulted in high demand for non-financial corporate debt...

...pushing down yields and spreads across credit markets

Chart 3.10 Bond issuance by non-financial corporations (all rating classes)

(Jan. 2006 – Oct. 2012; issuance in EUR billions and number of deals)

- rest of the year (left-hand scale)
- first ten months (left-hand scale)
- number of deals (right-hand scale)

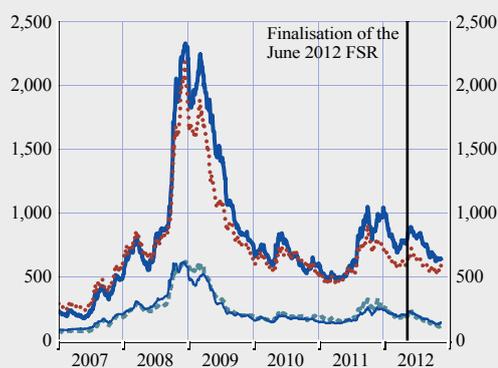


Sources: Dealogic and ECB calculations.

Chart 3.11 Corporate bond spreads in the euro area and the United States

(Jan. 2007 – Nov. 2012; basis points)

- euro area speculative-grade-rated
- US speculative-grade-rated
- euro area A-rated
- US A-rated



Source: Bank of America Merrill Lynch.
Note: Option-adjusted spreads of corporate bond indices (average maturity of six to ten years).

EQUITY MARKETS

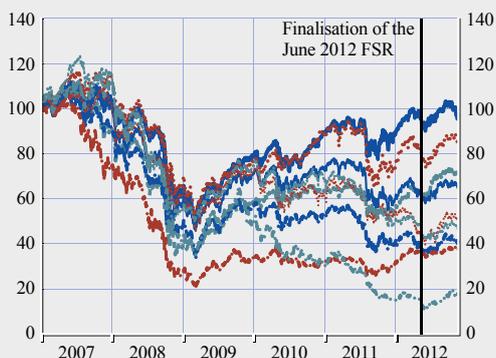
Amid higher risk tolerance (see Chart S.3.1), reinforced by major central bank policy actions, euro area and US equity markets rallied, creating the impression that equity investors had shrugged off the uncertain macroeconomic outlook. From mid-May 2012 to late November 2012, broad equity indices increased in all countries shown in Chart 3.12. In the case of the United States, equity prices

Equity prices rallied, supported by lower risk aversion

Chart 3.12 Equity price developments in the euro area and the United States

(Jan. 2007 – Nov. 2012; index: Jan. 2007 = 100)

- US (S&P 500)
- Germany
- Belgium
- France
- Spain
- Portugal
- Italy
- Ireland
- Greece

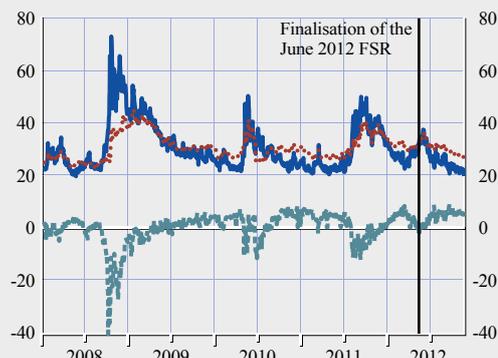


Source: Thomson Reuters.

Chart 3.13 Option-implied volatility for the euro area stock market at different horizons

(Jan. 2008 – Nov. 2012; percentages)

- three months
- two years
- three-month to two-year slope



Source: Thomson Reuters.
Note: EUROS TOXX option-implied volatility.

Profitability declined in the second and third quarters of 2012...

at one point even exceeded end-2006 levels. Price increases were relatively broad-based, but more pronounced for shares issued by financial firms. As a further reflection of improved market sentiment, implied stock market volatility derived from stock option prices declined, while the increasingly positive slope of the implied volatility curve was not suggestive of any near-term stress (see Chart 3.13 and Chart S.3.4). Cyclically adjusted price/earnings ratios slightly increased, but remained below historical averages and thus did not point to an overvaluation of euro area equity prices (see Chart S.3.2).

3.2 CHALLENGING ENVIRONMENT FOR GLOBAL FINANCIAL INSTITUTIONS

GLOBAL LARGE AND COMPLEX BANKING GROUPS⁶

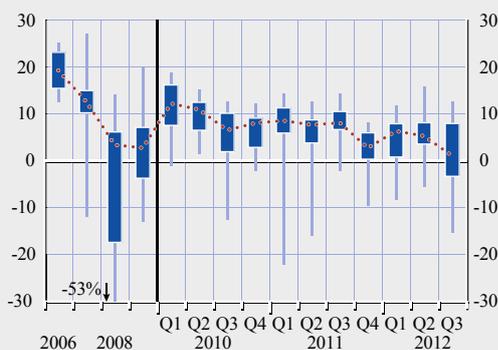
The **profitability** of large and complex banking groups (LCBGs) headquartered outside the euro area – which include banks in the United States, the United Kingdom and Switzerland – declined in the second and third quarters of 2012 (see Chart 3.14). The performance across institutions was, however, varied – not surprisingly given the diverse conditions faced by these banks – with some banks suffering substantial outright losses.

The weaker financial performance was due to a deterioration in all major income sources, whether compared with a quarter or a year earlier, hurt by the pronounced financial market volatility during the spring and summer (see Chart 3.15). Fee and commission income, although declining slightly compared with the first quarter of the year, remained the main contributor to income. Net interest income continued on its steady but moderate declining path and was put under pressure by lower loan demand. Profitability was in some cases also negatively affected by some prominent

6 For a discussion on how global LCBGs are identified, see Box 10 in ECB, *Financial Stability Review*, December 2007. The institutions included in the analysis presented here are Bank of America, Bank of New York Mellon, Barclays, Citigroup, Credit Suisse, Goldman Sachs, HSBC, JP Morgan Chase & Co., Lloyds Banking Group, Morgan Stanley, Royal Bank of Scotland, State Street and UBS.

Chart 3.14 Return on shareholders' equity of global large and complex banking groups

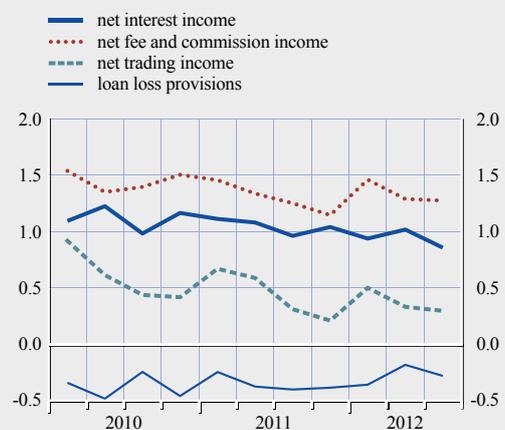
(2006 – Q3 2012; percentages; maximum, minimum, interquartile range and median)



Sources: Individual banks' reports and ECB calculations.

Chart 3.15 Breakdown of income sources of global large and complex banking groups

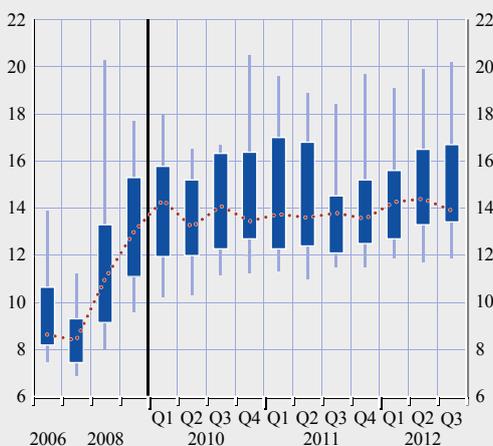
(Q1 2010 – Q3 2012; percentage of total assets)



Sources: Individual banks' reports and ECB calculations.

Chart 3.16 Tier 1 capital ratios of global large and complex banking groups

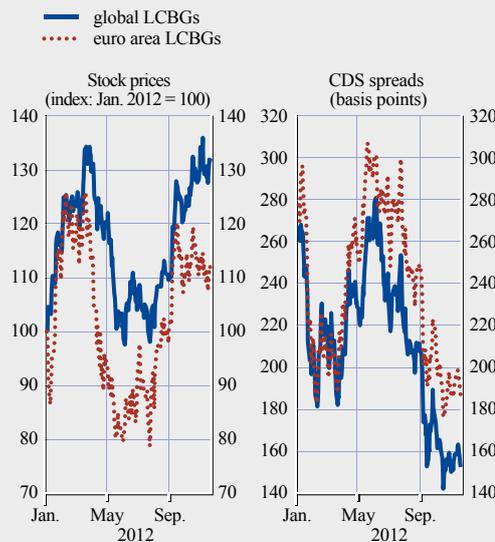
(2006 – Q3 2012; percentages; maximum, minimum, interquartile range and median)



Sources: Individual banks' reports and ECB calculations.

Chart 3.17 Stock prices and CDS spreads of global and euro area large and complex banking groups

(Jan. 2012 – Nov. 2012; median; five-year maturity CDS spreads for senior debt)



Sources: Bloomberg and ECB calculations.

manifestations of operational risk, with some instances of higher compliance/penalty costs and higher provisions taken to compensate customers for mis-sold products.

Solvency positions of global LCBGs – including both core Tier 1 and Tier 1 capital ratios – improved at the beginning of 2012 and remained broadly stable from then onwards (see Chart 3.16). This strengthening of solvency positions was due to both increases in Tier 1 capital levels, which increased by 3% on average, and reductions in risk-weighted assets, which declined by 2% on average during the first half of 2012. The Tier 1 capital growth was mainly spurred by higher retained earnings. Significant capital-raising in some cases also stemmed from more stringent capital requirements imposed by the authorities, for instance in Switzerland.

The financial performance of global LCBGs during the second and third quarters of 2012 was, in general, somewhat better than that of their euro area peers (see Section 4.1). This had a clear link to the weaker performance of **market indicators** of euro area LCBGs, such as stock prices and CDS spreads (see Chart 3.17).

Looking ahead, the operating environment for global LCBGs is likely to remain challenging, with muted bank profitability for at least the next 6-12 months stemming mainly from weak macroeconomic growth prospects. Banks' operating environment is characterised in particular by a combination of relatively high levels of unemployment, low interest rates, and still high levels of non-performing assets, compounded by depressed residential property values in the United States and remaining commercial property fragilities in the United Kingdom. In addition, short-term costs may accrue to banks in the form of higher regulatory and compliance costs. With respect to the latter, further fines and litigation costs associated with the LIBOR manipulation process uncovered in the summer of 2012 cannot be excluded.

...with capital buffers stable

Global LCBGs outperformed their euro area peers

The operating environment remains challenging

...but banks' shock-absorption capacity has improved

Hedge funds have recouped losses suffered in May and June 2012 ...

These possible negative effects for global LCBGs are to some extent counterbalanced by the strengthening of capital positions, cost-cutting measures which should improve net earnings, and the improvements in liquidity positions, including reduced reliance on short-term funding.

HEDGE FUNDS

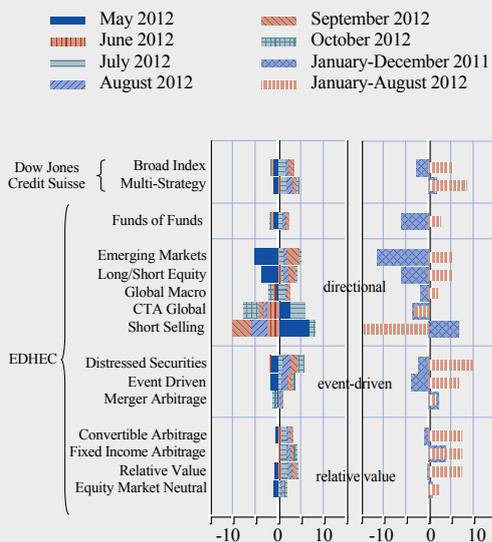
Investment performance and exposures

Hedge fund investment performance was quite volatile over much of 2012, closely tied to rapidly evolving market conditions over the course of the year. By the end of October 2012 hedge funds had recouped investment losses suffered in May and June 2012. In this way, they provided a call option-like downside protection, since at an aggregate level investment losses in May and June 2012 were lower than in world equity markets and the positive result was posted over the period from July to October 2012, which, however, was lower than the increase in global equity prices.⁷ The average cumulative investment performance of all broadly defined investment strategies except for short-selling and managed futures was positive in 2012 (see Chart 3.18). For the sector as a whole, the year-to-date investment performance was somewhat below the median of historical returns, generated using all possible investment dates and holding periods of a theoretical investment in the broad non-investable hedge fund index (see Chart 3.19).

7 While it is common to compare average aggregate hedge fund investment performance with rather volatile changes in world equity prices, a more appropriate benchmark could be a diversified portfolio of global equities and bonds.

Chart 3.18 Global hedge fund returns

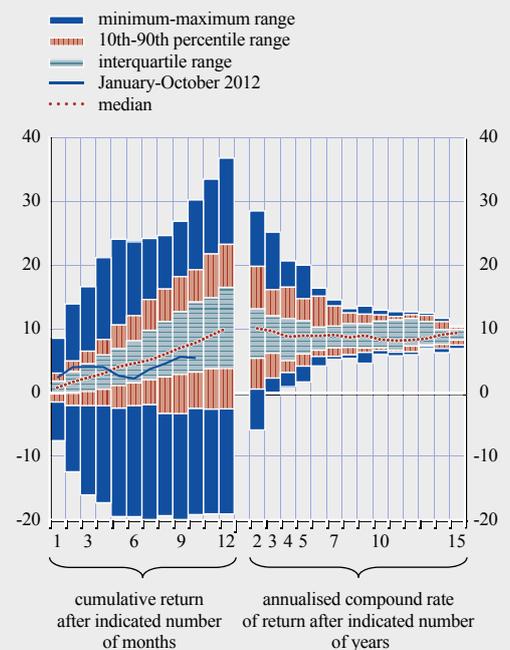
(Jan. 2011 – Oct. 2012; percentage returns, net of all fees, in USD)



Sources: Bloomberg, EDHEC Risk and Asset Management Research Centre and ECB calculations.
Notes: EDHEC indices represent the first component of a principal component analysis of similar indices from major hedge fund return index families. "CTA Global" stands for "Commodity Trading Advisors"; this investment strategy is also often referred to as managed futures.

Chart 3.19 Distribution of historical global hedge fund returns by investment holding period

(Jan. 1994 – Oct. 2012; percentage returns, net of all fees, in USD)



Sources: Bloomberg and ECB calculations.
Notes: Dow Jones Credit Suisse Broad Hedge Fund Index. Distributions are generated using all possible investment dates and investment holding periods up to October 2012.

The estimated similarity of hedge funds' investment positioning within broadly defined investment strategies and thus the associated risk of simultaneous and disorderly collective exits from crowded trades varied across investment strategies. At the end of October 2012 moving median pair-wise correlation coefficients of the investment returns of hedge funds within investment strategies – a measure of the possible **crowding of hedge fund trades** – reached or were close to their respective all-time highs in the case of multi-strategy (0.7), macro (0.4) and fixed income arbitrage (0.4) strategies.⁸

FUNDING LIQUIDITY RISK AND LEVERAGE

According to various estimates, investor inflows into the hedge fund sector have slowed down.

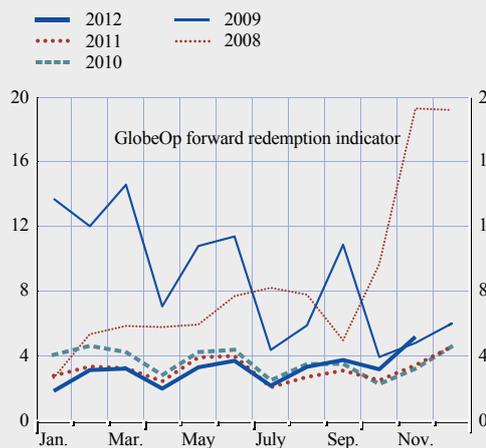
This was most noticeable in the second quarter of 2012, while the pace of new allocations in the third quarter of 2012 remained subdued. Some investors reportedly seemed disappointed by hedge funds' inability to deal successfully with volatile market conditions. Nonetheless, institutional investors continued to express interest in hedge fund investments, not least because of low nominal yields on traditional debt investments. The share of total capital under management provided by institutional investors, in particular pension funds, has been increasing, largely at the expense of the share of capital entrusted by high net worth individuals and family offices.⁹

Against this backdrop, near-term funding liquidity pressures associated with large investor redemptions appeared to be somewhat increasing, as suggested also by the forward redemption indicator shown in Chart 3.20. According to this indicator, in November 2012 forward redemption notifications received from investors, measured as a percentage of the total capital under management of covered hedge funds, were higher than in 2009, 2010 or 2011.

None of the major prime-broker banks were under acute financial stress and thus for hedge funds the risk of funding liquidity pressures associated with large and sudden withdrawals of **short-term financing provided by banks** and the resulting disorderly fire sales of assets did not seem to be high. However, should banks' or market conditions deteriorate, bank financing could be withdrawn quickly, especially if term financing commitments by banks prove to be cancellable in stressful conditions. According to the Federal Reserve System's September 2012 survey on dealers' financing terms¹⁰, price and non-price credit terms for US dollar-denominated securities financing

Chart 3.20 Near-term redemption pressures

(Jan. 2008 – Nov. 2012; percentage of hedge fund assets under administration that investors plan to withdraw)



Source: GlobeOp.

Notes: Assets under administration refer to the sum of the net asset value (capital under management) of all hedge funds administered by GlobeOp. Data are based on actual redemption notices received by the 12th business day of the month. Investors may, and sometimes do, cancel redemption notices. Unlike subscriptions, redemption notifications are typically received up to 90 days in advance of the redemption date, depending on individual fund redemption notice requirements. In addition, the establishment and enforcement of redemption notification deadlines may vary from fund to fund.

...while the estimated possible crowding of trades increased

Investor inflows slowed down...

...and investor redemption pressures appeared to be somewhat increasing

The risk of cuts in bank financing did not seem to be high...

8 Estimated using the moving 12-month Kendall's τ_b pair-wise correlation of monthly net-of-all-fees returns in US dollars. The most recent data are subject to incomplete reporting.

9 See Financial Services Authority, "Assessing the possible sources of systemic risk from hedge funds", August 2012.

10 See Federal Reserve Board, "Senior Credit Officer Opinion Survey on Dealer Financing Terms", September 2012.

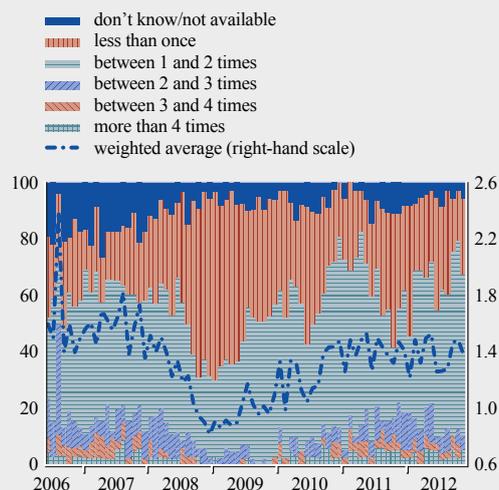
...while the use of financial leverage was moderate

and over-the-counter derivatives transactions with hedge funds remained basically unchanged over the three-month period ending in August 2012 (see also Section 4.1.2).

In tandem with unchanged credit terms, respondents to the same Federal Reserve survey indicated that the use of **financial leverage** by hedge funds also remained basically unchanged, whereas in the surveys earlier in the year modest net percentages of respondents had pointed to a reduction in financial leverage. Furthermore, the availability of additional (and currently unutilised) financial leverage under existing agreements between dealers and hedge fund clients also changed little, on balance. Other data sources and market intelligence also suggested moderate aggregate leverage, not least because many hedge fund managers found it difficult to navigate successfully through volatile financial markets driven by macro-financial developments and policy-makers' actions (see Chart 3.21).

Chart 3.21 Hedge fund leverage

(June 2006 – Nov. 2012; percentage of responses and weighted average leverage)



Source: Bank of America Merrill Lynch, "Global Fund Manager Survey".
Notes: Leverage is defined as a ratio of gross assets to capital. In 2011 and 2012 the number of responses varied between 32 and 48.