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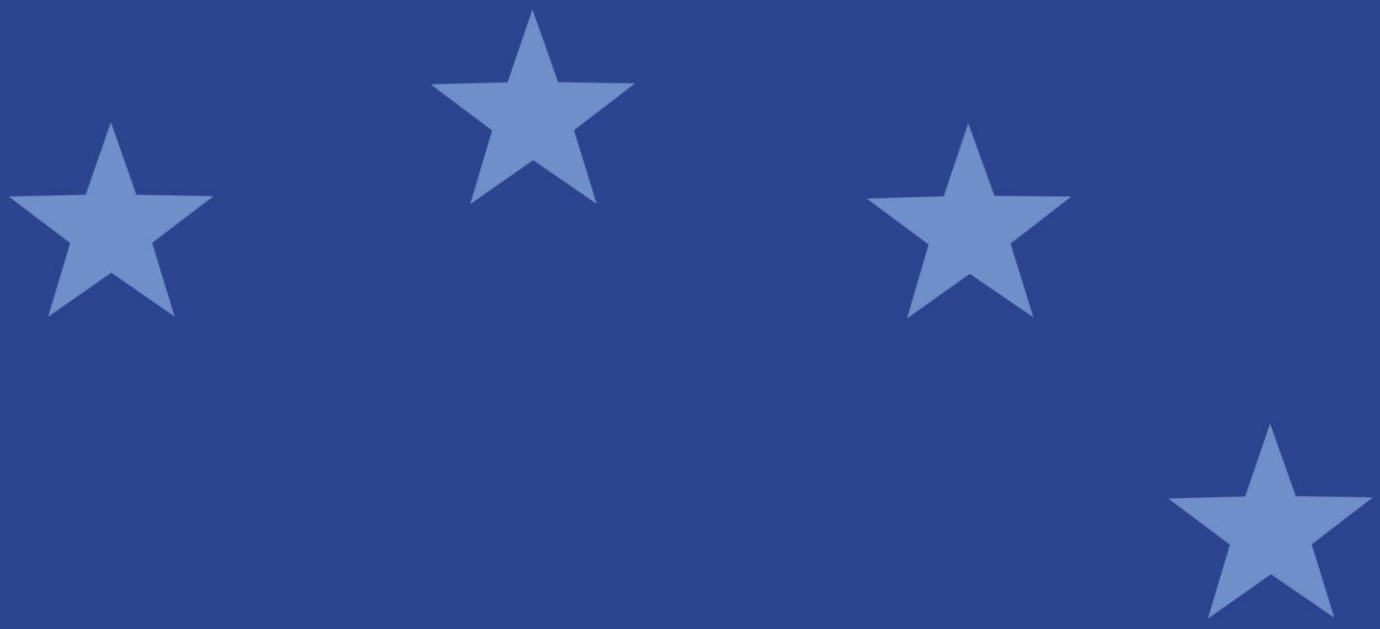
European Securities and Markets Authority

Trends Risks Vulnerabilities

No. 2, 2013



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ESMA Report on Trends, Risks and Vulnerabilities, No. 2, 2013

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 The reporting period of this Report is 01 January 2013 to 30 June 2013, unless indicated otherwise. The reporting quarter of the Risk Dashboard in the Risk Section is 2Q13. Legal reference of this Report: Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC, Article 32 "Assessment of market developments", 1. "The Authority shall monitor and assess market developments in the area of its competence and, where necessary, inform the European Supervisory Authority (European Banking Authority), and the European Supervisory Authority (European Insurance and Occupational Pensions Authority), the ESRB and the European Parliament, the Council and the Commission about the relevant micro-prudential trends, potential risks and vulnerabilities. The Authority shall include in its assessments an economic analysis of the markets in which financial market participants operate, and an assessment of the impact of potential market developments on such financial market participants." The charts and analyses in this report are, fully or in parts, based on data not proprietary to ESMA, including from commercial data providers and public authorities. ESMA uses these data in good faith and does not take responsibility for their accuracy or completeness. ESMA is committed to constantly improving its data sources and reserves the right to alter data sources at any time. The shaded area in all charts indicates the reporting period of this report.

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Abbreviations

ABS	Asset-Backed Securities
AuM	Assets under Management
AVG	Average
BF	Bond fund
BPS	Basis points
CAP	Cumulative Accuracy Profile
CCP	Central Counterparty
CDO	Collateralised Debt Obligation
CDS	Credit Default Swap
CRA	Credit Rating Agency
DTCC	Depository Trust & Clearing Corporation
EA	Euro Area
EBA	European Banking Authority
ECB	European Central Bank
EF	Equity fund
EFAMA	European Fund and Asset Management Association
EIOPA	European Insurance and Occupational Pensions Authority
EM	Emerging market
EMIR	European Market Infrastructure Regulation
EOB	Electronic Order Book
EONIA	Euro Overnight Index Average
ESMA	European Securities and Markets Authority
ETF	Exchange Traded Fund
EU	European Union
FRA	Forward Rate Agreement
IMF	International Monetary Fund
IPO	Initial Public Offering
IRS	Interest Rate Swap
LTRO	Long-Term Refinancing Operation
MA	Moving Average
MBS	Mortgage-Backed Securities
MMF	Money Market Funds
MTN	Medium Term Note
NAV	Net Asset Value
NCA	National Competent Authority
OIS	Overnight Index Swap
OMT	Outright Monetary Transactions
OTC	Over the Counter
RMBS	Residential Mortgage-Backed Securities
SCDS	Sovereign Credit Default Swap
SF	Structured Finance
UCITS	Undertaking for Collective Investment in Transferable Securities
YTD	Year to Date
Countries	*Abbreviated according to ISO standards*
Currencies	*Abbreviated according to ISO standards*

Executive summary

EU securities markets in 1H13

Trends

Securities markets: Conditions in securities markets improved moderately in 1H13, while issuance was subdued. EU equity prices declined slightly, but liquidity on sovereign bond markets improved and volatility stabilised, while overnight interbank EUR market activity increased. The second quarter was marked by a general increase in borrowing costs for sovereigns and a spike in commodity market volatility, especially for precious metals. Issuance of corporate bonds, covered bonds and securitised products was subdued across sectors, with spreads low. Rating downgrades for the corporate sector rose, highlighting lingering strains in the non-financial sector.

Investors: In 1H13, the EU fund industry benefited from positive trends in financial markets, although fund inflows were highly volatile. Bond and equity funds drove the sector's growth, but initial capital flows partly reversed in 2Q13 for both types. MMF assets and shares continued to decline. Alternative funds increased their share base. Leverage was moderate and stable for most fund types but fell for real estate funds and increased for hedge funds. While retail investors continued to enjoy above-long-term-average portfolio returns, general investor sentiment deteriorated.

Market infrastructures: Activity on EU trading venues increased in early 2013 as general market conditions picked up. Central clearing of interest rate swaps continued to gain ground. With regard to financial benchmarks, the number of banks in the Euribor panel dropped by 23% from December 2012. Credit rating agencies' accuracy improved slightly on average in the course of 2012 but deteriorated for ratings on structured finance instruments.

Risks

Systemic stress: The level of systemic risk in EU securities markets remained stable throughout 1Q13, decreased slightly in early 2Q13 and rose substantially towards the end of the quarter. Sources of market uncertainty, e.g. funding risk, the low interest rate environment and obstacles to orderly market functioning, continued to impact on EU financial stability, aggravated by higher market volatility in emerging economies and commodity markets and a weakening global economic outlook. Clustering remained a vulnerability, with a group of countries and market segments still experiencing trends significantly different to those in the majority of EU markets. The consequences of the recent restructuring of one national banking sector underlined this tendency, even if they were locally limited. Liquidity, credit and contagion risks and their future outlook remained unchanged, while uncertainties over the low-interest-rate environment aggravated market risks, which can be expected to continue rising going forward.

Liquidity risk: Liquidity risk remained constant in the last two quarters and is still highly dispersed across market segments and regions. Some countries saw liquidity deteriorate in sovereign bonds and equities.

Market risk: After improvements in securities market conditions in 1Q13 and early 2Q13, in June 2013 market risk intensified. The search for yield associated with reduced investor risk aversion and evidenced by stronger inflows into riskier bond market segments, subsided into volatile market expectations for the slope of the yield curve, temporarily destabilising the bullish trend in securities markets. As concerns linger, the outlook for market risk may be expected to further deteriorate in the months ahead.

Contagion risk: Contagion risks have remained unchanged on late 2012. In 1Q13, the market segments most exposed to contagion risks, i.e. sovereign bonds, exhibited increasing clustering. Early 2Q13 saw a temporary trend reversal, but geographical and sectoral clustering persisted throughout a broad set of asset classes including equities, CDS and private bond markets. Markets reacted moderately to the restructuring of one national banking sector in early 2013, in spite of limited direct cross-border exposures.

Credit risk: In 1H13, credit risks did not increase further. Growth in issuance was initially strong, mainly in asset classes with higher risk and longer maturities, but subsided in 2Q13. In 2H12 average credit ratings continued to fall, while a general decrease in their volatility, corporates excluded, evidences a shift of credit risk to this sector. Debt maturities at issuance continued to shorten throughout 1H13, particularly in the bond market segments for distressed sovereigns. The concentration of outstanding bank debt at shorter maturities persisted. Despite the recent successful refinancing operations by debt issuers and narrowing spreads, substantial credit risks remain.

Main risks: Sources

Risk	Change since 1Q13
European sovereign debt crisis	→
Market clustering	→
Funding risk	↗
Low interest rate environment	↗
Market functioning	↗

Note: Assessment of main risk sources for markets under ESMA remit, change since the last assessment. Upward arrows indicate an increase in the contribution to risks, downward arrows a decrease.

Main risks: Categories

Risk category	Systemic risk	Change since 1Q13	Outlook for 3Q13
Liquidity risk		→	→
Market risk		↗	↗
Contagion risk		→	→
Credit risk		→	→

Note: Assessment of main risk categories for markets under ESMA remit since past quarter and outlook for current quarter. Systemic risk assessment based on categorisation of ESA Systemic Risk Heat Map, green=low, yellow=moderate, orange=high, red=very high. Systemic Risk Heat Map measures current risk intensity. Upward arrows indicate a risk increase, downward arrows a risk decrease.

Vulnerabilities

Short Selling Regulation: This article analyses the impact of the entry into force of the EU's Short Selling Regulation along three dimensions: reports of short positions to NCAs, implementation of temporary short selling bans, and bans on uncovered sovereign CDS. It shows that investment funds account for most of the short positions reported on EU equities, with the top ten holders accounting for around 30% of all reported positions. Looking at temporary short selling restrictions, they appear to have had limited impact on markets, both in terms of liquidity and volatility. Finally, there was no evidence of a significant deterioration in liquidity in the sovereign CDS market.

Network structure of CDS exposures on European reference entities: We analyse the potential for contagion risk stemming from the CDS market, describing the main characteristics and developments of the market over the past four years, and then establish rankings of the most interconnected market participants by means of network centrality indicators. The potential "super-spreaders" of financial contagion identified consist mostly of banks. Net CDS exposures at some banks are particularly large relative to their total common equity. The structural features revealed suggest that the network of CDS exposures would, in most cases, be resilient to failure. However, should more than one major player be affected together, the network might possibly lose its connectedness and hence its ability to function.

EU UCITS industry: In this article we provide an overview of the EU UCITS industry. UCITS represent by far the bulk of the EU fund industry, with an estimated market share above 70% in terms of assets under management. The industry is very diverse since the UCITS label encompasses a wide range of fund types, including bond, equity, money market, mixed assets and exchange traded funds, and even some alternative funds. Since 1985 the UCITS Directive has proved a sound framework for investors and delivered financial stability. Funds in particular demonstrated their resilience during the recent crisis and have recovered, both in terms of assets under management and profitability. In this regard, rules on the eligibility of assets and investor protection have helped to contain risks and sustain investors' confidence. However, on-going financial market development, in terms of risks, financial innovation and interconnectedness, constantly exposes the UCITS industry to new vulnerabilities.

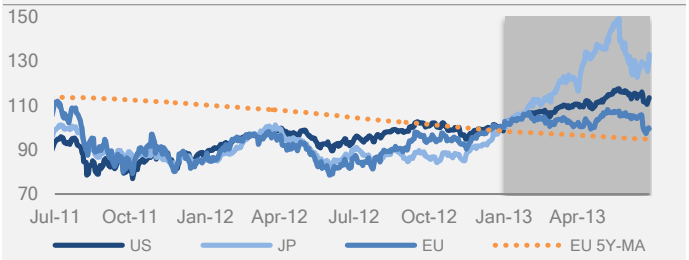
Bail-in securities and contingent capital securities: Recently, a class of hybrid securities with features that combine fixed income and equity securities has emerged. Driven by both regulatory and market pressures, they have been created to meet financial institutions' emergency capital funding needs. Securities that fall under regulatory oversight and are guided by statutory powers are commonly called bail-in securities. Securities that have contractual agreements tied to the issue and issuer are typically termed contingent capital securities. While the trigger points are set at different levels for the two types of securities, both provide the issuer with a capital cushion and serve to mitigate the need to rely on public funding. The exact supply and demand forces for these securities are not yet known, as the regulatory legislation driving their development has not been finalised.

Trends
Risks
Vulnerabilities

Securities markets

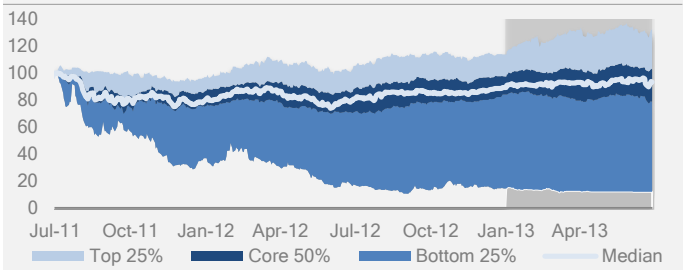
Equity markets

Prices: EU equities underperform US and JP T.01



Note: Datastream regional equity indices for the EU, the US and JP. 1/1/2013=100.
Sources: Thomson Reuters Datastream, ESMA..

Dispersion: Increase due to outliers T.02

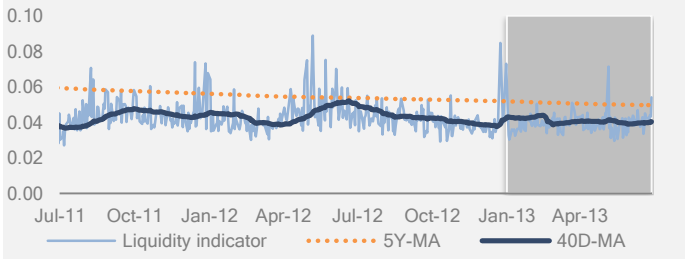


Note: Dispersion of the 27 main national equity indices, EU. Indexed, 01.07.2011=100.
Sources: Thomson Reuters Datastream, ESMA.

Volatility: Slight increase T.03

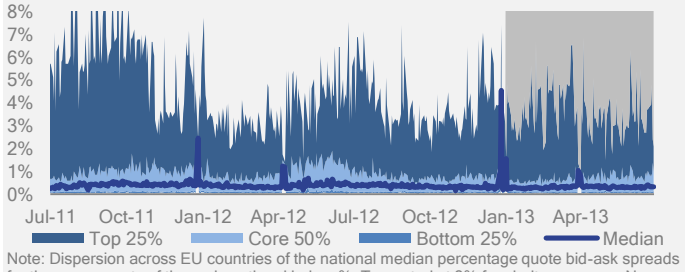
Note: Implied volatility of options on EuroSTOXX 50, %.
Sources: Thomson Reuters Datastream, ESMA.

Liquidity: Broadly stable in 1H13 T.04



Note: Liquidity measured as median bid-ask spread, EU components of Eurostoxx50, %.
Sources: Thomson Reuters Datastream, ESMA.

Liquidity dispersion: Better conditions T.05



Note: Dispersion across EU countries of the national median percentage quote bid-ask spreads for the components of the main national index, %. Truncated at 8% for clarity purposes. No data for LV, LT, MT, SI and SK.
Sources: Thomson Reuters Datastream, ESMA.

Despite the progress made on the establishment of a Banking Union and the lasting effects of the ECB Outright Monetary Transactions (OMT) announcement, EU equity markets lost ground in 1H13 amid continuing problems in some EU banking and sovereign debt markets as well as slumps on Asian and EM markets and persistent volatility in commodity markets. The EU equity index was outperformed by the US and, most particularly, the JP equity index. EU equity volatility increased slightly, while liquidity stabilised.

Performance: EU equity prices fell 0.6% in 1H13, reducing their cumulative gains since July 2012 to 22%. However, due to the downward trend in long-term average prices, EU equity markets nonetheless exceeded their five-year average for the first time since May 2011. EU equity market performance in 1H13 compares with a 13% gain in the US and a 33% gain in JP, as the weak European economic environment continued to weigh on regional equity performance.

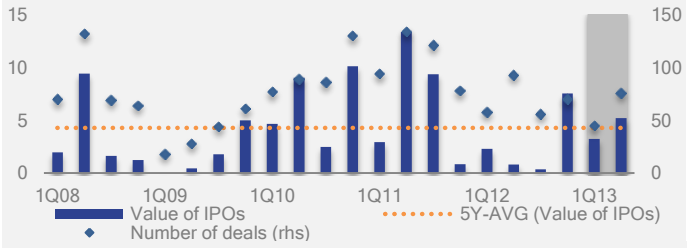
Price dispersion: Among EU national equity indices, dispersion continued to increase in 1H13 as the top 25% national indices increased their gains while the bottom 25% did not manage to pare their losses. One EU country also suffered a sharp drop in 1Q13, but the aggregate effect of this decline was mitigated by the fact that the country in question has low market capitalisation. However, it does reflect EU equity markets' continued differentiation, as price movements in national equity indices for the bottom quartile are decoupled from the positive trends that prevailed in most other national indices.

Volatility: Expected volatility increased slightly in 1H13 compared to the end of 2012, averaging 18.4% during the first quarter but 19.9% during the second quarter, reflecting an increase in global market volatility. A temporary spike towards the end of February reflected concerns over the conditions of agreement to an EU/IMF programme by one EU country. Volatility dropped soon after, as market conditions normalised, but started rising again in June in line with equity market volatility in other regions. Nevertheless, EU equity volatility remains at a moderate level relative to recent years, and below its five-year average.

Liquidity: In 1H13 liquidity held roughly stable in EU markets for blue chips. The bid-ask spreads increased only slightly during the first quarter due to illiquid market conditions before the year-end holidays still reflected in 40D-MA data. At around four basis points, the median bid-ask spread remains below its five-year average, and substantially lower than the all-time high of 30 basis points reached in December 2008.

Liquidity dispersion: Liquidity on EU national equity indices improved on average, with an overall reduction in bid-ask spreads. However, liquidity did decrease in a few countries amid low turnover and investors' reduced willingness to trade. The countries with the lowest market liquidity remained the same throughout the observation

IPO: Minor recovery in 1H13 T.06



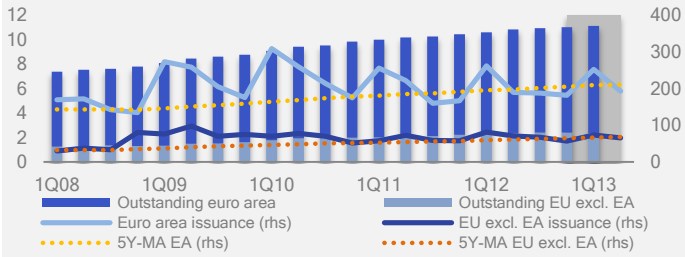
Note: Offering value of IPOs, EUR bn.
Sources: PwC IPO Watch Europe, ESMA.

period, suggesting that this feature might be linked to the structural characteristics of national markets.

New issuance: The value of IPO deals increased in 1H13 relative to the preceding periods, averaging EUR 4.2bn compared with EUR 1.5bn during the same period last year, and almost on a par with the five-year average of EUR 4.3bn. However, the number of deals remained weak at around 61 per quarter, down from a quarterly average of 71 in 2012 and 107 in 2011.

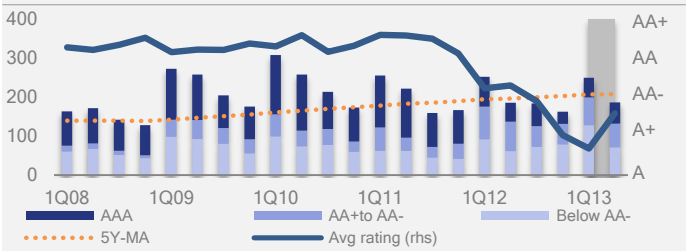
Sovereign bond markets

Issuance: Lower than average T.07



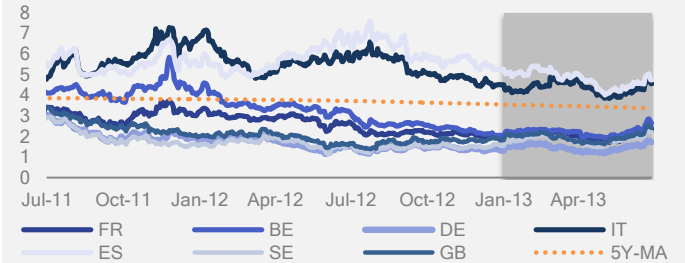
Note: Quarterly issuance, EUR bn, and outstanding debt, EUR tn.
Sources: Dealogic, Eurostat, ESMA.

Issuance: Improvement in average credit quality T.08



Note: Quarterly issuance in the euro area ranked by S&P ratings at launch, EUR bn. Weighted-average rating computed by converting ratings into a numeric scale (AAA=1, AA+=2, etc).
Sources: Dealogic, Standard & Poor's, ESMA.

Yields: Increased from May T.09



Note: Yields on 10-year sovereign bonds, selected EU members, %. 5Y-MA of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

Sovereign CDS: Slight decrease in 1H13 T.10

Note: Spread on 5Y Western Europe SovX index, basis points. Index computed as an average of CDS spreads on 14 European countries. On 13/03/2012, Greece was replaced by Cyprus and the latter was excluded on 13/09/2012 due to low turnover.
Sources: Thomson Reuters Eikon, ESMA.

Sovereign bond market performance was mixed in 1H13: Liquidity improved and volatility remained broadly stable, but borrowing costs increased in several countries and markets remained clustered. Sovereign bond issuance decreased in 1H13 relative to the first-half average in previous years, while the deterioration in the average credit quality of sovereign issuance was brought to a halt.

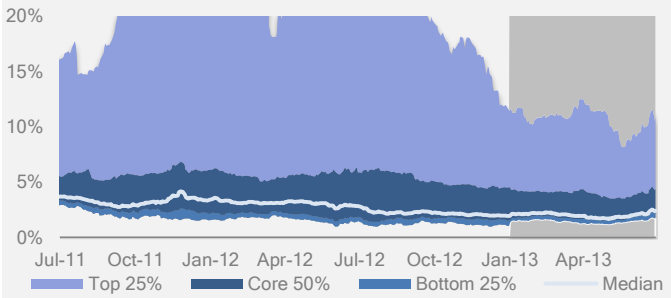
Issuance: EU sovereign bond issuance totalled EUR 583bn in 1H13, below the 1H12 amount of EUR 602bn. Issuance in 1Q13 (EUR 325bn) was higher than the quarterly average for 2012 (EUR 270bn) as government bond issuance tends to be concentrated in the first quarter of each year. EA issuance stood at EUR 445bn in 1H13, 12% below the first-half average of the four previous years, reflecting the impact of fiscal consolidation on government bond issuance as well as limited market access for some countries. Outstanding EU sovereign debt nonetheless reached a new high of EUR 11.1tn in 1Q13 (85.9% of EU GDP), including EUR 8.8tn for the EA only (92.2% of EA GDP).

Ratings: The weighted-average issuer rating fell below A+ in 1Q13, down a notch from 1Q12, before recovering in 2Q13. The initial deterioration reflected both a smaller pool of AAA-rated sovereigns due to recent downgrades and a larger pool of lower-graded sovereigns, including some programme countries re-entering capital markets for the first time in several years. However, issuance of sovereign debt rated below AA- dropped 41% in 2Q13 compared with the previous quarter, largely contributing to the improvement in average credit quality.

Yield levels: Funding conditions for EU sovereigns improved until May 2013 but subsequently deteriorated. 10Y sovereign bond yields climbed by around 50 basis points from the end of 2012 in non-distressed markets, while remaining stable or declining slightly in large EA periphery bond markets, thereby reducing intra-EA spreads. The general increase in borrowing costs in May and June reflected global bond market developments rather than EU-specific events.

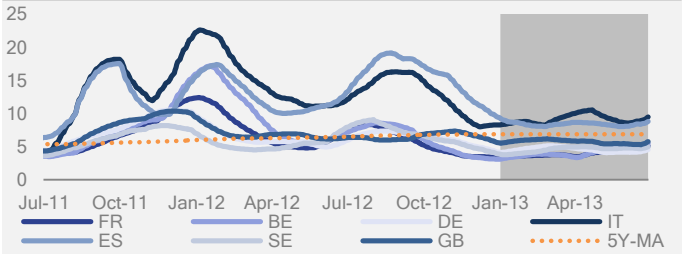
CDS spreads: European CDS spreads narrowed slightly in 1H13, as reflected by the SovX index based on 14 European sovereign CDS. Following the entry into force of the Short-Selling Regulation and the associated ban on uncovered sovereign CDS on 1 November 2012, both net and gross outstanding notionals of SovX contracts decreased significantly, potentially due to the necessity to

Yield dispersion: Slight reduction in 1H13 T.11



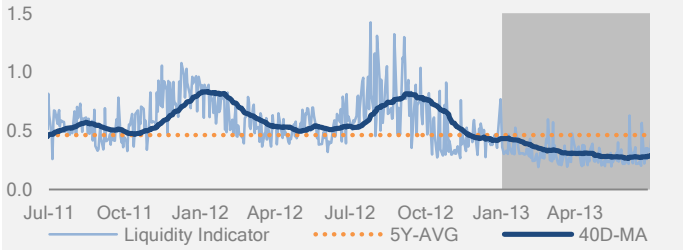
Note: Dispersion of yields on 10Y sovereign bonds, EU, %. Scale truncated for readability.
Sources: Thomson Reuters Datastream, ESMA.

Volatility: Relative stability in 1H13 T.12



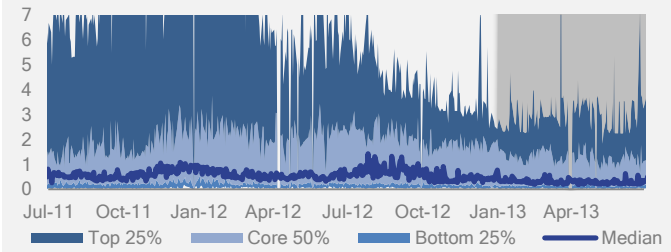
Note: 40D volatility of 10Y sovereign bonds, selected EU members, %. Series are smoothed exponentially.
Sources: Thomson Reuters Datastream ,ESMA .

Liquidity: Continued improvement T.13



Note: Liquidity measured as median bid-ask spread on 10Y sovereign bonds benchmarks, EU sovereigns, %. 8Y bonds used for CY and SK.
Sources: Thomson Reuters Eikon, ESMA.

Liquidity: Still clustered T.14



Note: Dispersion of percentage quote bid-ask spreads for 10Y sovereign bonds benchmarks, EU sovereigns, %. 8Y bonds used for CY and SK. To remove outliers, the highest (lowest) quartile excludes the 99th (first) percentile. Scale truncated for readability.
Sources: Thomson Reuters Eikon, ESMA.

hold all 14 underlying EU bonds in order to buy insurance through SovX contracts (see also our analysis in the Vulnerabilities section).

Yield dispersion: Mirroring price developments in EU sovereign bond markets in 1H13, yield dispersion decreased until May, but increased thereafter. The value of yield dispersion in the third quartile (which includes 75% of countries in the sample) fell slightly from 4.5% at the end of 2012 to 4.3% in June 2013, while the median increased from 1.9% to 2.4%. The value of the first quartile also increased, however, from 1.5% to 2.2%, implying a reduction in overall fragmentation in EU sovereign debt markets. This was despite substantially higher yields in a few countries, as illustrated by the size of the upper quartile.

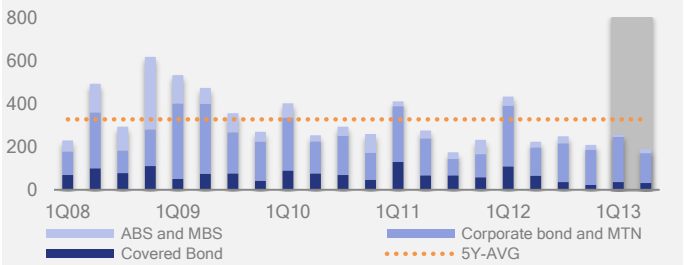
Volatility: Volatility in EU government bond prices held steady at relatively low levels in 1H13, despite an uptick in June. An exception to this relative stability was due to political uncertainty contributing to a temporary spike in the volatility of asset prices in one market, although market tensions eased soon after. Overall, the level of volatility in bond prices across EU member states was more homogenous than in 2012 with a slightly reduced upper bound. However, there were still signs of clustering between distressed and non-distressed EU markets.

Liquidity: EU sovereign bond market liquidity increased, with the median bid-ask spread falling below its five-year average to reach its lowest level since early 2010. Overall, liquidity conditions also appeared more stable in 1H13 than in 2H12, as the volatility of the median bid-ask spread declined, pointing to a normalisation in EU sovereign bond markets.

Dispersion: Liquidity across sovereign issuers remained broadly stable in 1H13, although June 2013 did see a slight increase in dispersion. However, liquidity continued to be clustered. It remained sparse for countries receiving financial assistance, despite some improvement early in the year thanks to lower bond yields and shifting risk perceptions. For Eastern European countries, structural factors such as comparatively small market sizes explained the relatively low liquidity of sovereign bonds, which barely changed over the last two years. Cohort composition altered little in 1H13, with stressed markets remaining in the top 25% of observations, i.e. the more illiquid. One noticeable change did occur in early April 2013, when one country dropped from the core 50% around the median to the worst-performing 25%, due mainly to recent financial sector stress.

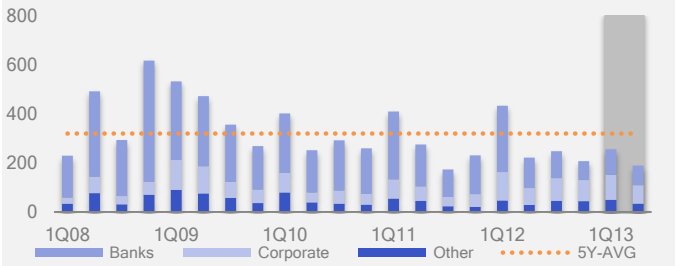
Corporate bond markets

Issuance: Still subdued T.15



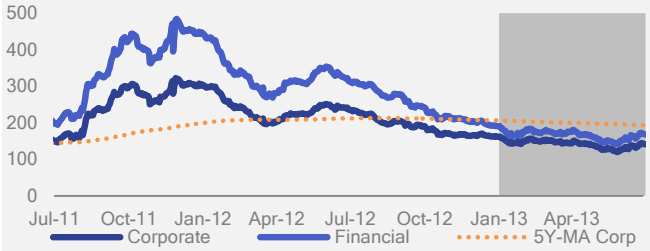
Note: Quarterly issuance of EU debt by deal type, EUR bn.
Sources: Dealogic, ESMA.

Issuance: Decline in banking sector issuance T.16



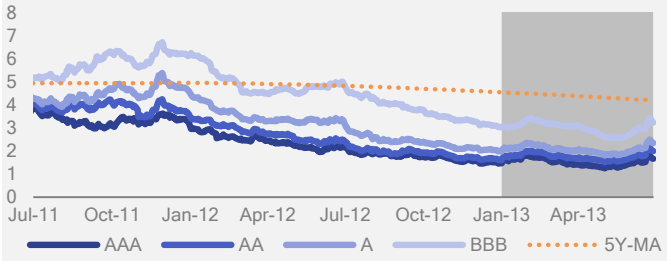
Note: Quarterly issuance of EU debt, EUR bn.
Sources: Dealogic, ESMA .

Spreads: Slight narrowing T.17



Note: Asset swap spreads on Barclays Pan-European bond indices, basis points. 5Y-MA of corporate bond spreads.
Sources: Thomson Reuters Datastream, ESMA.

Yields: Increased across ratings T.18



Note: Markit iBoxx euro corporate bond indices. %. 5Y-MA of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

Conditions stabilised in corporate bond markets with bond yields increasing in 1H13 and spreads still tightening. Issuance remains subdued, especially in the banking sector, while issuance of securitised products such as ABS and MBS stood at multi-year lows.

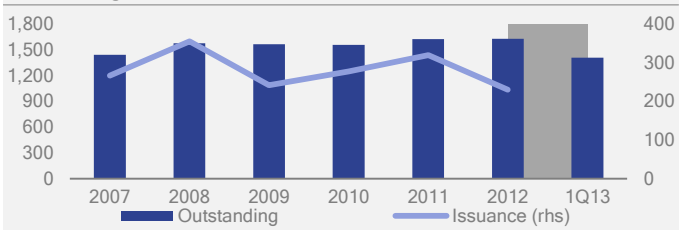
Issuance: EU corporate bond issuance remained below its five-year average with a total of EUR 445bn in bonds, covered bonds, asset-backed securities (ABS) and mortgage-backed securities (MBS) issued in 1H13, the lowest first-half volume since 2000. This contrasted with EUR 656bn in 1H12 and was mainly due to a 15% drop, from EUR 412bn to EUR 349bn, in corporate bond and MTN issuance. Issuance of securitised products also fell to multi-year lows, with ABS and MBS totalling EUR 30bn in 1H13, against a first-half average high of EUR 207bn in 1H09. Following its Governing Council meeting in May, the ECB indicated that it would begin consultations on initiatives to support the ABS market collateralised by loans to non-financial corporations. By sector, bank bond issuance dropped most sharply, with issuance volumes of EUR 183bn in 1H13 against a first-half average of EUR 467bn in the previous four years. This is explained partly by lower funding needs of EU financial institutions as balance sheets shrink and business models adapt to the new regulatory environment. EA banks have also taken advantage of readily available funding through the ECB's long-term refinancing operations.

Bond spreads: Asset-swap spreads narrowed in 1H13. Spreads on financials contracted to 170bps, down 20 basis points from end-2012 and 310 basis points off their peak in November 2011. Corporate bond spreads also tightened, down to 140bps from 160bps at the end of 2012. The difference in spreads between the overall corporate index and the financials index thus remained unchanged in 1H13.

Yields: Corporate bond yields increased across credit ratings in 1H13. Corporate bonds with different ratings increased between 20 and 50 basis points since the end of 2012. However, yields remained below their five-year moving average, following their all-time high in 2009 and subsequent resurgence in 2011. The diverging trend in spreads is explained by recent increases in the risk free rate, with swap spreads rising between 40 and 180 basis points across the maturity spectrum.

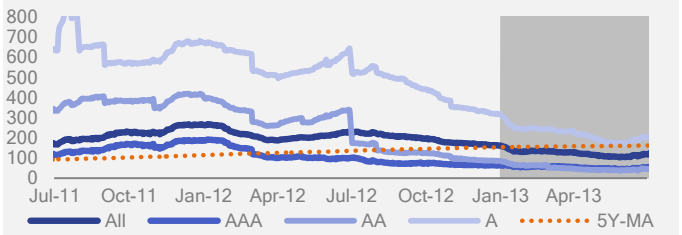
Covered bonds

Outstanding: Down in 1Q13 T.19



Note: The outstanding amount is the sum of covered bonds maturing after the reference date. First quarter only for 2013, EUR bn.
Sources: Dealogic, ESMA.

Spreads: Narrower T.20



Note: Asset swap spreads on iBoxx covered bond indices, basis points. 5Y-MA of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

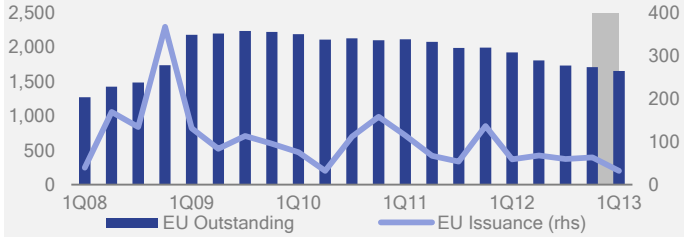
In 1H13, the outstanding amount of covered bonds decreased and issuance was subdued. However, there was still appetite for covered bonds: Low issuance met stable demand from investors, which resulted in declining spreads.

Issuance: EU covered bonds outstanding totalled EUR 1,627bn as of end-2012. The volume began to fall in 1H13 as bonds matured and new issues fell to a scant EUR 67bn (versus EUR 203bn for the whole of 2012). Due to the national specificity of these products, there may also be a home bias, with investors preferring bonds issued in their home market.

Spreads: The decline in covered bond spreads continued in 1H13 across the credit rating spectrum and was steeper for lower-rated covered bonds (-115bps for A-rated bonds versus -40bps and -10bps for AA and AAA, respectively). Overall, as of June 2013 covered bond spreads were 40bps below their five-year average, at 120bps.

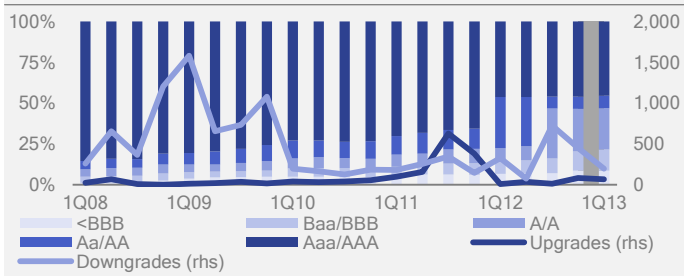
Securitisation

Outstanding: Continued decline T.21



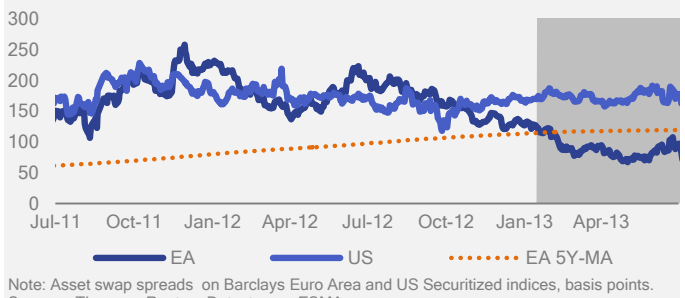
Note: 2008 outstanding figures potentially underestimated. EUR bn.
Sources:AFME, ESMA.

Ratings: Stable in 1Q13 T.22



Note: Total EU outstanding, Moody's rated securities, %.
Sources: AFME, Moody's, ESMA.

ABS: Decline in spreads T.23



Note: Asset swap spreads on Barclays Euro Area and US Securitized indices, basis points.
Sources: Thomson Reuters Datastream, ESMA.

In 1Q13, the issuance of securitised products was subdued in the EU, reaching a historical low that mirrored a broader trend in financial sector debt issuance. The average credit rating of new issuances deteriorated markedly compared with 2011. However, risk perceptions shifted favourably, as illustrated by a significant drop in credit spreads.

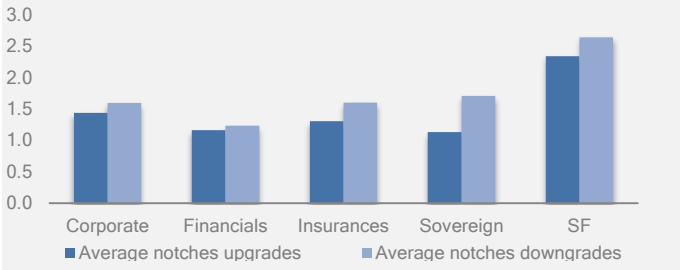
Issuance: In the EU the issuance of securitised products totalled EUR 32.5bn in 1Q13, a 49% decline compared to 4Q12. This was the lowest volume since 2010. 51.4% of the products were placed in the market, with the rest retained, compared to 42.5% in 4Q12. The amount of securitised products outstanding continued to fall since 2008, with EUR 1,652bn outstanding in 1Q13, of which 52.2% was retained. The bulk of securitised products were RMBS (57% of the total) although the amount outstanding fell 18% in one year. The US market was more resilient, with EUR 445bn issued in 1Q13, mostly in agency MBS, and total outstandings of EUR 6,702bn.

Ratings: The credit quality of EU securitised products remained stable, with 46% rated Aaa by Moody's in 1Q13. Nevertheless, the number of high-grade products dropped significantly compared to 2011 (66% Aaa), as the criteria for awarding the highest grades were tightened up for both new issues and products outstanding, resulting in numerous downgrades in 2012.

Spreads: Spreads on EA securitized products narrowed significantly by 35bps in 1H13, from 127bps to 92bps. This was linked mainly to an increase in the risk-free rate during the reporting period. As a result, EA securitized spreads were around 30bps below their five-year moving average, indicating further improvement in the EA securitized market. In the US, spreads held steady at around 180bps.

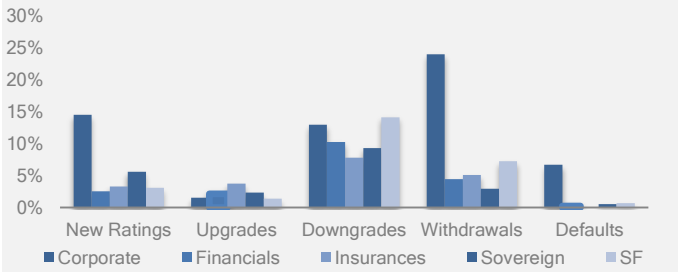
Credit quality

Rating actions: Average downgrade larger than upgrade T.24



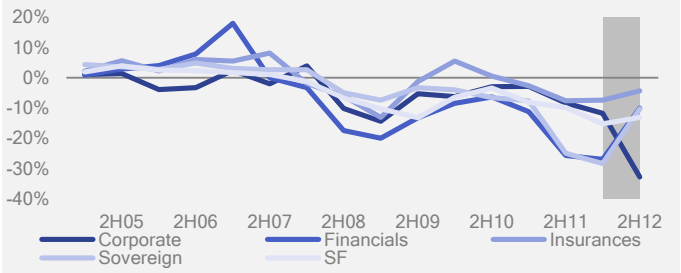
Note: Average size of upgrades and downgrades from all credit rating agencies by asset class for 2H12, average number of notches. Sovereign including public finance.
Sources: CEREP, ESMA.

Rating activity: Downgrades still in majority T.25



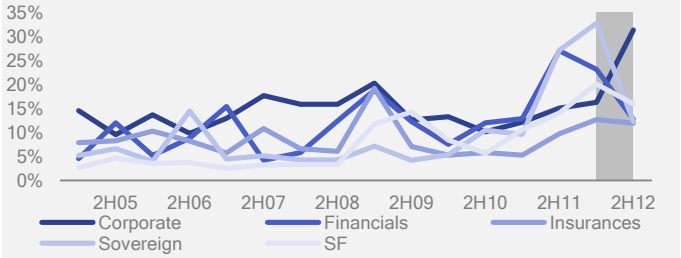
Note: : Rating activity of all credit rating agencies (CRAs) by asset class for 2H12, % of outstanding ratings. Sovereign including public finance.
Sources: CEREP, ESMA.

Rating changes: Upward trend T.26



Note: Drift of ratings from all credit rating agencies by asset class computed as percentage number of upgrades minus percentage number of downgrades.
Sources: CEREP, ESMA.

Rating volatility: Susbstantial increase for corporates T.27



Note: Volatility of ratings by all credit rating agencies for corporates, financials, insurances, sovereigns and structured finance, computed as number of upgrades and downgrades over number of ratings outstanding.
Sources: CEREP, ESMA.

Rating activity in 2H12 was characterized by a larger number of rating downgrades than upgrades and larger downgrades in terms of rating notches. However, rating agencies' tendency to downgrade was significantly less than in 1H12. Rating volatility was also substantially lower in 2H12, except for a peak in corporate rating volatility, suggesting that credit risk shifted away from sovereigns and financials towards the corporate sector.

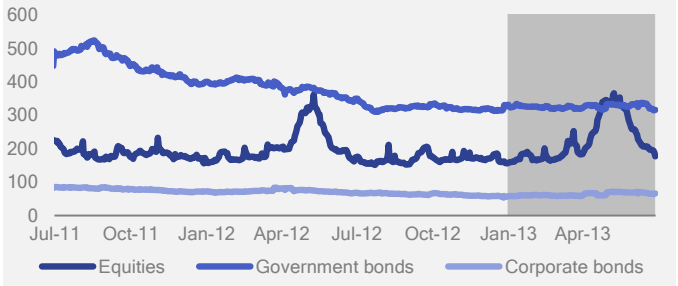
Rating activity: 2H12 was characterized by a large number of downgrades, albeit less than in 1H12. Specifically, rating activity on sovereigns was reduced by half and the share of downgrades in total rating activities for this asset class fell by two-thirds between 1H12 and 2H12 (from 30.6% to 9.3%). Rating activity on financials also decreased, with this asset class experiencing half as many downgrades as in 1H12 (from 22.2% to 10.2%), possibly reflecting the normalisation of market conditions in the EU towards the end of 2012. There were also more upgrades in 2H12 than in 1H12, with the exception of structured finance instruments, for which upgrades declined from 2.3% to 1.4% of outstanding ratings. The most upgraded asset class was insurance (3.7%) followed by sovereigns (2.3%) and financials (2.1%). Defaults occurred in all asset classes, except for insurance, and almost doubled for corporates (from 3.6% to 6.7% of rating activity) but decreased by 50% for sovereigns (from 1.1% to 0.5%). In terms of notches, the average size of downgrades was higher than that of upgrades in 2H12 across all asset classes. However, the gap between downgrades and upgrades narrowed relative to 1H12 for corporates, insurance and structured finance. The biggest difference was on sovereigns, where upgrades averaged 1.13 notches and downgrades 1.7.

Rating changes: The downward trend that began in 1H11 was reversed in 2H12 across all asset classes, except for corporates, whose ratings deteriorated further. While downgrades in insurance outnumbered upgrades by only 4%, there were around 10% more downgrades than upgrades for financials and sovereigns and 13% more for structured finance. Downgrades on corporates were 33% more frequent than upgrades during 2H12, compared to 12% in 1H12. This deterioration in credit quality may lead to eventual deleveraging across sectors.

Volatility: The upward trend in rating volatility prevailing since 2011 was also reversed in 2H12 for insurance, structured finance and most particularly sovereigns. For the latter, the volatility of ratings decreased from 33% in 1H12 to 12% (the same level as financials). The volatility of ratings on corporates increased substantially from 16% to 31% in 2H12, reflecting a shift in credit risk towards this asset class.

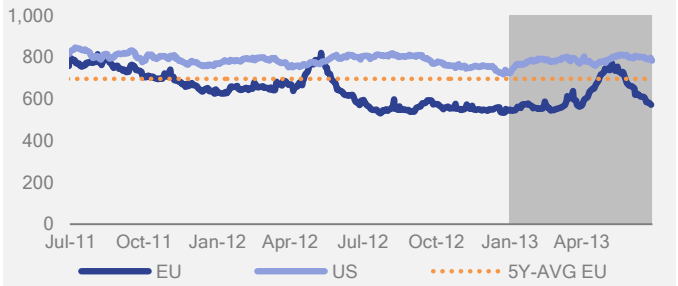
Securities lending

EU securities lending: Slight increase in volumes T.28



Note: total value of securities on loan, in USD bn.
Sources: Markit Securities Finance, ESMA.

US and EU securities lending: Increase in 1H13 T.29



Note: Value of securities on loan, in USD bn.
Sources: Markit Securities Finance, ESMA.

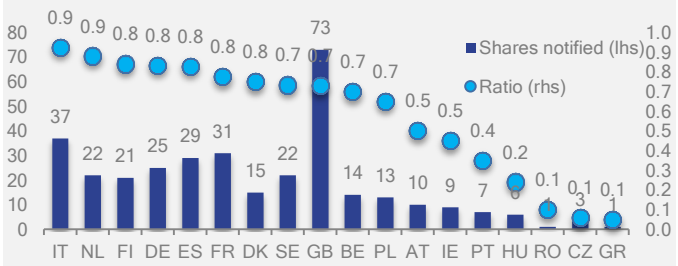
EU securities lending stabilised from mid-2012 and increased slightly in 1H13, but the total value of securities on loan remains lower than in the US.

EU lending: The total value of EU securities on loan increased slightly in 1H13, from USD 544.2bn to USD 560.1bn, despite the smaller amount of EU sovereign bonds on loan (USD 316.4bn, -4% since last December). Corporate bonds on loan increased 16% to USD 66.1bn. EU equities on loan increased 13% to USD 177.6bn. The seasonal peak in EU equities lending from April through June was due to corporate action trading: Holders lend their equities in order to arbitrage between different dividend tax regimes across EU countries so as to maximise their dividend revenues. Controlling for seasonality, the value of equities on loan increased by more than 10% between June 2012 and June 2013.

International markets: The total value of securities on loan increased in the US by about 8% since the beginning of the year, and in the EU by 3%. Securities lending in the EU partially recovered from a drop in lending activity that had occurred between July 2011 and July 2012, when the value of securities on loan fell almost 30% from around USD 775bn to USD 545bn, before stabilising in 2H12.

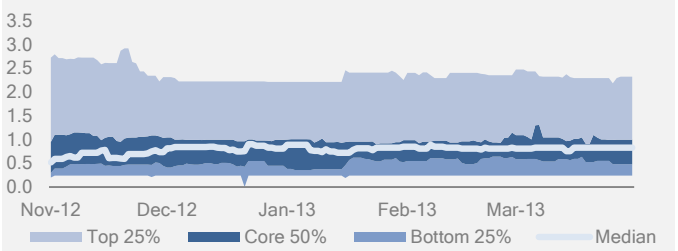
Short selling

Short-position notifications: Numbers and ratios vary T.30



Note: Number of shares in the national main stock indices notified by EU National Competent Authorities under the European Short-Selling Regulation, 1/11/2012 to 31/03/2013. The ratio represents the proportion of shares notified compared to the total number of shares in the corresponding index.
Sources: National Competent Authorities, ESMA.

Size dispersion: Stable across countries T.31

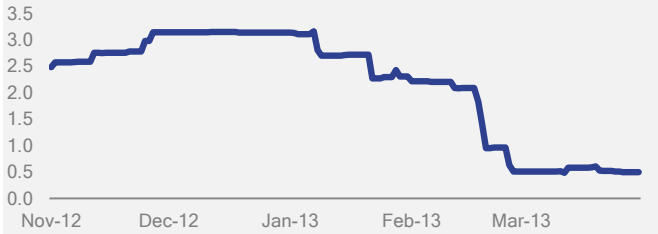


Note: Dispersion of the national median size of aggregated short positions held on stocks under EU Competent Authorities' remit and belonging to EU national main indices, % of issued share capital of an issuer. Sample consisits of 14 EU countries who reported on the whole period.
Sources: National Competent Authorities, ESMA.

Around one half of the shares in the main EU national stock indices were subject to reported short-selling activities. However, there are strong disparities among EU members. The size of short positions held on national sovereign debt decreased substantially over the period.

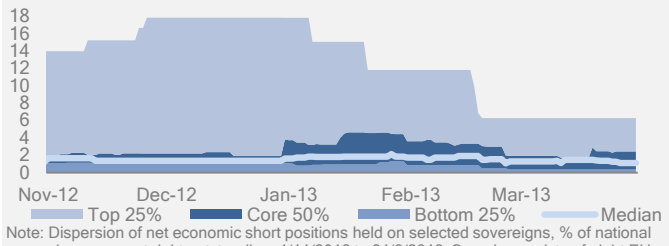
Shares: Between 1 November 2012 and 31 March 2013 there were 336 short-sale notifications on shares to 18 EU National Competent Authorities among the altogether 550 shares available in the corresponding national indices. However, short-selling activity varied between countries with the share of short sold stocks in the main national indices ranging between 92% and 5%. Short sales of EU stocks belonging to the main national indices were stable following the entry into force of the Short-Selling Regulation on 1 November 2012. The median value across EU countries of the national median size of reported short positions increased from 0.66% to 0.88% of issued share capital. The largest national median short position was 2.32% in March 2013, related to shorting activities on one specific share. Similarly, the lowest national median short position is where only one stock was shorted. Apart from those two outliers, the observations were concentrated around the median. On 15 July 2013, the Hellenic Republic Capital Market Commission lifted the short selling ban on shares in credit institutions on the Athens Exchange. As of mid-July 2013 no short-selling bans on shares in the EU remain in force.

EU sovereigns: Net short positions smaller T.32



Note: Net short positions held on selected sovereigns, % of sample total government debt outstanding , 1/11/2012 to 31/3/2013. Sample consists of nine EU countries that reported on the whole period. Outstanding debt for 1Q13 extrapolated from Ameco.
Sources: National Competent Authorities, Eurostat, Ameco (European Commission), ESMA.

EU sovereigns: Heterogeneity across countries T.33

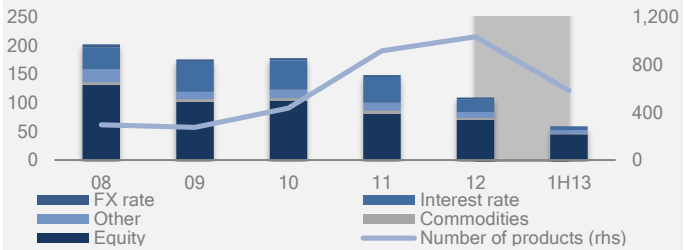


Note: Dispersion of net economic short positions held on selected sovereigns, % of national general government debt outstanding, 1/11/2012 to 31/3/2013. Sample consists of eight EU countries that reported on the whole period. Outstanding debt in 1Q13 extrapolated from Ameco.
Sources: National Competent Authorities, Eurostat, Ameco (European Commission), ESMA.

EU sovereigns: Average aggregated net short positions on EU sovereign debt amounted to between 2% and 3.1% of total outstanding debt for the countries in the sample. These positions fell to 0.51% of the sample total debt outstanding in March 2013. This is likely due to a reduction in the size of individual short positions, allowing holders to avoid the reporting requirement. As chart T.32 depicts a weighted-average, this sharp fall shows that the reduction in the aggregated size of short positions held on sovereigns was particularly marked for countries with high national debt relative to the sample, i.e. with a large weight in the average. Short sales of EU sovereigns decreased sharply in value after the Short-Selling Regulation entered into force. The median size across the sample contracted from 1.65% to 1.1% of a country's public debt outstanding. The most-shorted sovereign debt belonged to the same country until mid-February 2013, on which no aggregated short position was reported in March 2013. The least-shorted debt belonged to the same country over the whole period. The contraction in the size of net short positions reduced dispersion in the sample, leaving the bulk of the observations highly concentrated around the median.

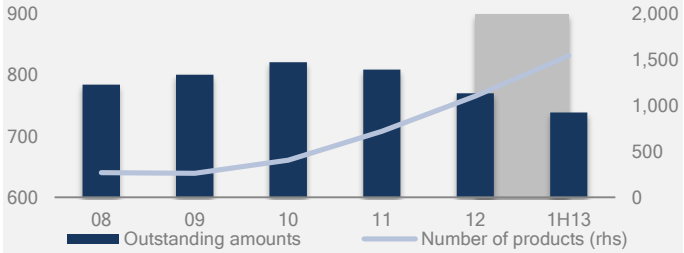
Structured retail products

Sales: Down in 2012, but up in 1H13 T.34



Note: Volumes of structured products sold to retail investors by asset class, EUR bn. Number of products sold, in thousands. 2013 as of July 1.
Source: StructuredRetailProducts.com, ESMA.

Outstanding: Decline in volumes T.35



Note: Outstanding amounts, EUR bn. Number of products, in thousands. 2013 as of July 1.
Source: StructuredRetailProducts.com, ESMA.

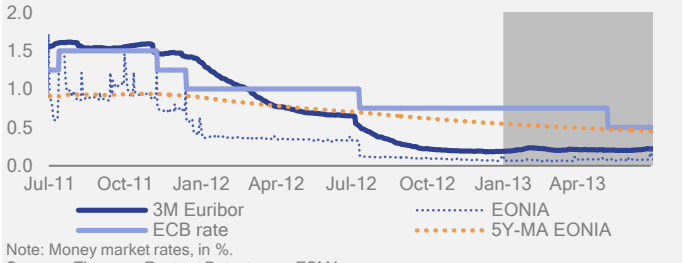
Volumes of structured products sold to retail investors declined in 2012 but increased in 1H13, with equity products on the rise but interest-rate products receding. Outstanding volumes of structured retail products continued to fall.

Sales: The volume of structured retail products sold in 1H13 amounted to EUR 59.1bn. This compares with EUR 109.3bn for 2012 as a whole. Sales of equity products were EUR 44.7bn, compared with EUR 69.9bn last year, while interest rate products dropped to EUR 5.7bn in 1H13 from EUR 22.6bn in 2012. Based on volumes in the first half of 2013, sales for the full year could potentially increase around 8% compared to last year.

Outstanding: The amount of structured products outstanding continued to decrease in 2013 through June, falling to EUR 739bn from EUR 770bn end-2012, while the number of products continued to increase, reaching 1.5mn compared with 1.1mn at end-2012. While the database used covers most of the EU market, it may not be fully representative of domestic markets in all EU countries.

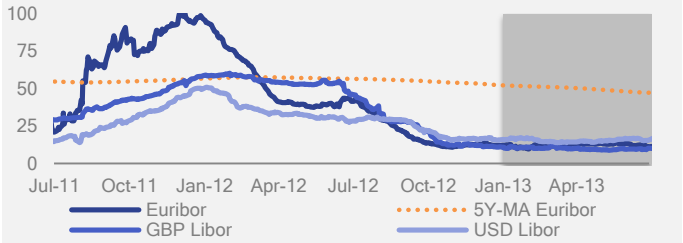
Money markets

Rates: ECB rate lower, main benchmarks stable T.36



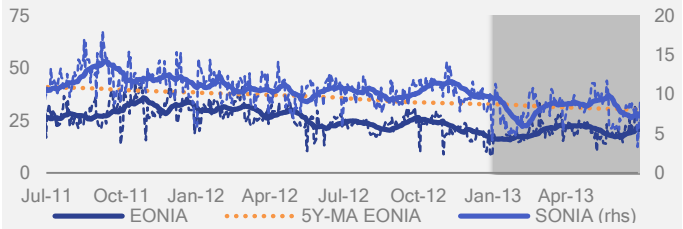
Note: Money market rates, in %.
Sources: Thomson Reuters Datastream, ESMA.

Spreads: Stabilised at low levels T.37



Note: Spread between 3M interbank rates and 3M Overnight Index Swap (OIS), in basis points.
Sources: Thomson Reuters Datastream, ESMA .

Interbank overnight activity: Small increase in EUR market T.38



Note: 20D moving average of volumes on Euro Overnight Index Average (EONIA) and Sterling Overnight Index Average (SONIA), EUR and GBP bn.
Sources: Thomson Reuters Eikon, ESMA.

The ECB cut its refinancing rate further to 0.5%, while 3M Euribor and EONIA remained stable. Interbank spreads maintained their low levels throughout the first half of 2013. Interbank overnight activity recovered slightly after February in the unsecured EUR interbank market, but continued to decline in the GBP market.

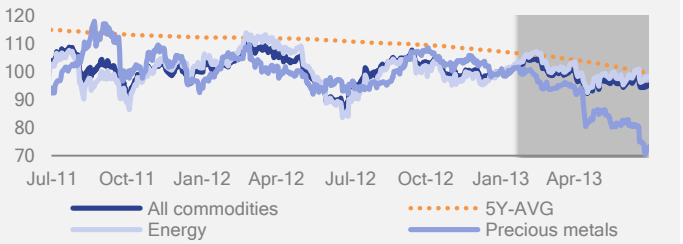
Levels: The ECB main refinancing rate reached a historical low of 0.5% in May 2013 following a 25 basis point cut. The ECB deposit rate remained at 0%, its level since July 2012, while the marginal lending facility rate was cut to 1.0%. The three-month Euribor remained slightly above 0.2% since the beginning of the year and the EONIA around 0.1%.

Spreads: EU interbank market spreads remained very low relative to their five-year average, with Euribor and Libor at around 10 basis points above OIS throughout the observation period. However, this low level is still not passing through to the broader economy in several EU Member States in the form of lower interest rates on bank credit, resulting in substantial credit spreads across the EU.

Volumes: After hitting new lows early 2013, activity in unsecured overnight interbank transactions recovered slightly as from February. For the EUR market, 20-day average volumes increased from EUR 16bn to EUR 22bn but were still significantly below their peak volumes in 2007 (when activity averaged EUR 50bn per day) and the five-year average of EUR 30bn. The Sterling Overnight Index Average moved lower over the same period, with daily volumes falling 20% from EUR 9.5bn to EUR 7.4bn.

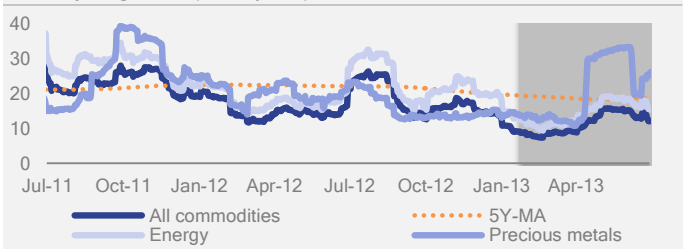
Commodity markets

Prices: Drop in precious metals T.39



Note: S&P GSCI Commodity indices. Indexed, 01/01/2013=100. 5Y-AVG for all commodities.
Sources: Thomson Reuters Datastream, ESMA.

Volatility: Higher, especially for precious metals T.40



Note: 40D volatility of S&P GSCI Commodity indices, %. 5Y-AVG for all commodities.
Sources: Thomson Reuters Datastream, ESMA .

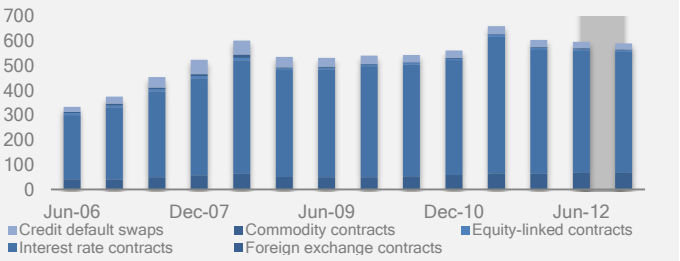
Commodity prices fell sharply in the first half of 2013, led by precious metals. The price correction relates mainly to two factors: lower-than-expected demand in key emerging markets, and falling consumer price inflation in several parts of the world.

Prices: Following gains in the second half of 2012, commodity prices fell sharply in 1H13, experiencing a 5.4% drop. Precious metals suffered the steepest decline, with prices falling 28% from the end of 2012, including a 9.6% drop on 15 April. Energy prices were more resilient, losing 2.4% since last December, while agricultural prices dropped 6.7%. As a result, at the end of June 2013 the overall commodity index stood eight percentage points below its five-year average.

Realised volatility: Overall commodity price volatility increased in 1H13, in particular for precious metals, where 40-day volatility peaked early June at 33%. Other commodity markets were only marginally affected, with volatility remaining below 20%, including for energy prices.

Derivatives markets

Notionals outstanding: Slight decline T.41



Note: Gross notional amounts of outstanding OTC derivatives by category, USD tn.
Sources: Bank for International Settlements, ESMA.

Market value: Slight decline T.42

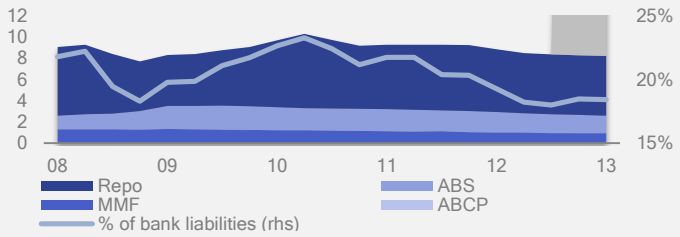
Note: Gross market values of outstanding OTC derivatives by category, USD tn. Gross market values represent the cost of replacing all open contracts at the prevailing market prices.
Sources: Bank for International Settlements, ESMA.

In 2012, global OTC derivatives markets were slightly down in terms of notional amounts and market value. Interest rate swaps continued to form the bulk of the OTC derivatives market with a share of 83% of gross notionals as of end-2012.

Contracts outstanding: Global OTC derivatives markets receded slightly in 2012 as gross notionals fell 2% (USD 14tn) to USD 591tn while the market value of contracts outstanding dropped 9% (USD 2.4tn) to USD 22.9tn. However, the underlying decline is larger than the face-value numbers suggest, as USD depreciation pushed up the USD value of most derivative contracts. The bulk of the global OTC market is made up of interest rate contracts, which accounted for 83% of the total. Gross notionals on CDS declined 12% since the end of 2011 to USD 25.1tn due to portfolio compression in bilateral and centrally-cleared trades. In the process, essentially similar transactions among counterparties are terminated and replaced by a smaller number of transactions of lower notional value in order to reduce the risk, cost, and inefficiency of maintaining unnecessary transactions on counterparty books.

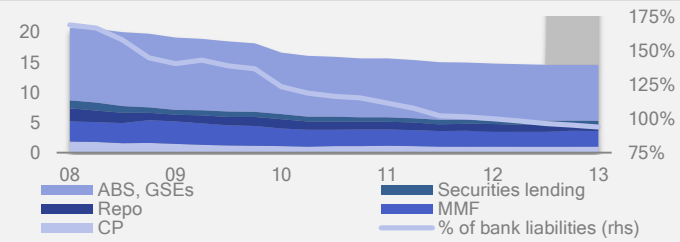
Shadow banking

EU liabilities: Gradual decline T.43



Note: Size of shadow banking system proxied by amounts of Asset-Backed Securities (ABS) and Asset-Backed Commercial Paper (ABCP) oustanding, size of the EU repo market and liabilities of Money Market Funds (MMF).
Sources: ECB, AFME, ICMA, ESMA

US liabilities: Slower reduction T.44



Note: Size of shadow banking system proxied by liabilities of ABS issuers, GSEs and pool securities (ABS, GSEs), open commercial paper (CP), size of the US repo market , securities borrowed by broker dealers and liabilities of Money Market Funds (MMF), USD tn.
Sources: FED Flow of Funds, ESMA

The shadow banking system

The definition of shadow banking has not yet been finalised conclusively. The Financial Stability Board (FSB) defines shadow banking as "credit intermediation involving entities and activities outside the regular banking system". The size of the shadow banking system is assessed by adding the liabilities of ABS issuers and all short term money transactions not backstopped by deposit insurance schemes (repo, MMF, commercial paper and securities lending). The estimates are gross measures, i.e. they may include double counting, and as such represent the gross total of securities related to shadow banking activities.

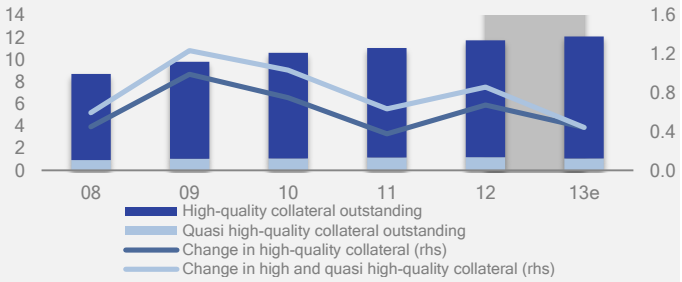
EU shadow banking system liabilities contracted by 7.2% in 1Q13 from a year ago, significantly faster than in the US. At EUR 8.2tn, EU shadow banking liabilities amounted to 18% of EU bank liabilities, compared with 94% in the US.

EU shadow banking: EU shadow banking sector liabilities shrank further in 4Q12 and 1Q13, by around EUR 130bn, to EUR 8.2tn, bringing the cumulated decline from 2011 to EUR 1tn. This was mainly due to a EUR 80bn reduction to 1.7tn in the amount of ABS outstanding. Other shadow banking activities decreased at a slower pace, with European MMF liabilities falling by EUR 32bn and repo markets shrinking EUR 18bn. As a percentage of EU banking sector liabilities, the EU shadow banking system expanded half a percentage point to 18.4% due to bank balance sheets shrinking by EUR 1.8tn. The share of short-term instruments (repo, MMF and ABCP) in shadow banking increased to 80%, up from 73% in 2009.

International comparison: US shadow banking system liabilities were broadly stable in 4Q12 and 1Q13 at USD 14.6tn, seeing only small changes in composition. Liabilities of ABS issuers and Government Sponsored Enterprises accounted for 64% of the total, followed by MMFs (18%), while repo and commercial paper markets were a combined 14% (compared with 20% in 2007). As of 1Q13, US shadow banking system liabilities were equivalent to about 94% of US banking sector liabilities, down from a peak of 175% in 3Q07. This is due to the reduction in shadow banking liabilities (USD 5.5tn) and rise in US bank liabilities (USD 3.7tn). The share of short-term instruments remained stable at 40% of the shadow banking system.

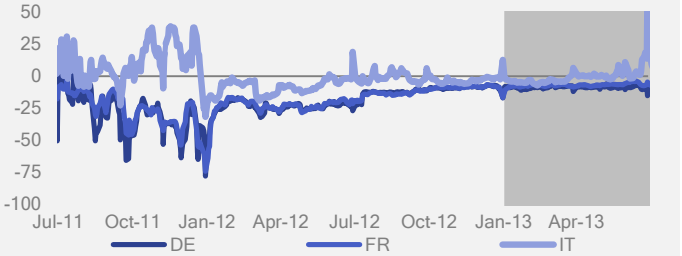
Supply of collateral

Collateral outstanding: Increase due to sovereign issuance T.45



Note: Amounts outstanding and yearly changes, EUR tn. 2013 is ESMA estimate.
Sources: Dealogic, Eurostat, Ameco (European Commission), Standard & Poor's, ESMA.

Sovereign repo: Normalisation T.46



Note: Spread between overnight rates on sovereign repo transactions and EONIA, in basis points.
Sources: ICAP, ESMA.

The supply of high-quality collateral increased by EUR 709bn in 2012, and is expected to continue growing in 2013 due to additional issuance from EU sovereigns carrying high ratings. Collateral demand for high-graded sovereign bonds stabilised, as indicated by higher repo rates.

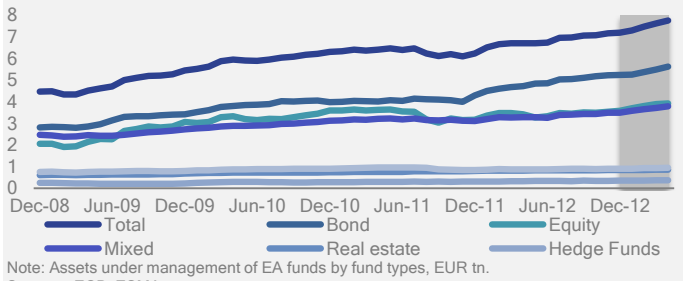
Market size: The supply of high-quality collateral increased by EUR 709bn in 2012 and is expected to grow by around EUR 350bn in 2013, given EUR 450bn in additional issuance from EU sovereigns carrying high ratings but a EUR 100bn drop in net issuance of quasi-high quality collateral. High-quality collateral is proxied by sovereign bonds issued by countries with a credit rating of BBB- or above, while quasi high-quality collateral is proxied by corporate and covered bonds rated AA- or above. The 2013 estimate is based on AMECO general government debt forecasts, for high-quality collateral, and year-to-date net issuance of corporate and covered bonds, for quasi-high quality collateral.

Repo market: The repo market showed further signs of normalisation, evidenced by a reduction in spreads between repo and unsecured rates for overnight transactions and further convergence in repo rates. While spreads in non-distressed markets remained slightly negative, they gradually increased after July 2012.

Investors

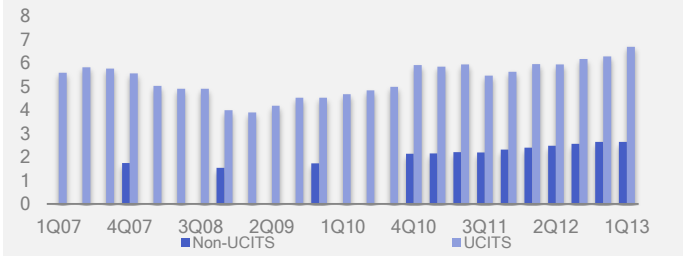
Fund industry

Assets: EA investment funds continue to grow robustly in 2013 T.47



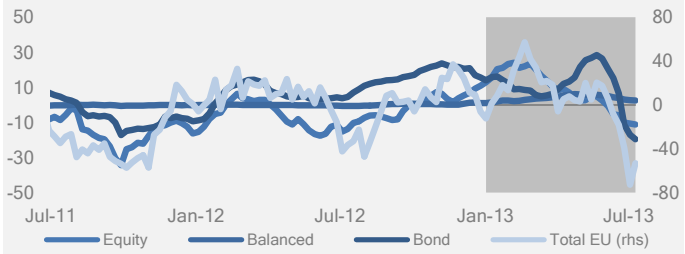
Note: Assets under management of EA funds by fund types, EUR tn.
Sources: ECB, ESMA.

Assets: UCITS recover, Non-UCITS market share stabilises T.48



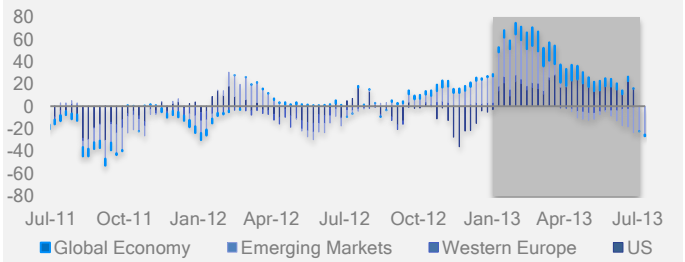
Note: NAV of EU fund industry, EUR tn. Mixed frequencies due to limited data availability.
Sources: EFAMA, ESMA.

Flows: Flows in EU domiciled funds peaked before decreasing T.49



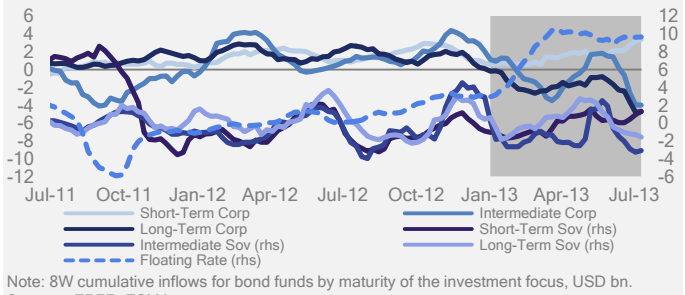
Note: 8W cumulative inflows, for EU domiciled funds, USD bn.
Sources: EPFR, ESMA.

Flows: Equity fund inflows reversed in emerging markets T.50



Note: 8W cumulative inflows for equity funds by regional investment focus, USD bn.
Sources: EPFR, ESMA.

Flows: Appetite for corporate bond funds declined T.51



Note: 8W cumulative inflows for bond funds by maturity of the investment focus, USD bn.
Sources: EPFR, ESMA.

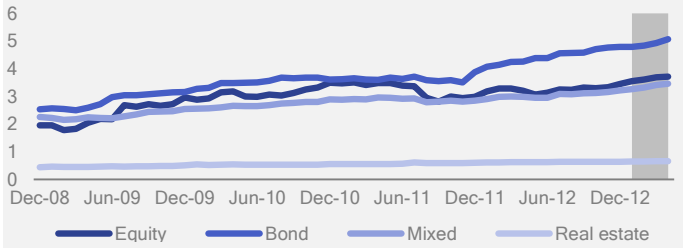
In 1H13, EU funds benefited from positive developments in financial markets but remained exposed to volatility in flows. Bond funds continued to drive the growth in assets for the sector. EU equity fund inflows were positive at the beginning of the year, but this growth was partly offset at the end of the semester. Despite bullish stock markets, investors still seemed attentive to possible adverse developments, especially in the EU. Leverage remained moderate and stable for most of the funds, while real estate funds continued their deleveraging process.

Assets: The assets under management at EA investment funds reached a historical peak at EUR 7.7tn in April (+7.8% year to date). The bulk of the assets was invested in bond funds (EUR 5.6tn; +7.1%), followed by equity (EUR 3.9tn; +9.6%), mixed funds (EUR 3.8tn; +8.6%) and real estate funds (EUR 0.8tn; +2.0%). Given the substantial cross holdings between funds, the total volume is smaller than a pure aggregation across all fund types would imply. The rise in assets under management in 1H13 could be explained by investor risk appetite, but also by increasing asset values in a positive market. UCITS funds represent the vast majority of the industry in the EU, with 72% of the total assets in March 2013. This market share stabilized compared to non-UCITS funds.

Flows: Net inflows into European funds were positive in 1H13 (USD 24.9bn). Investment peaked during 1Q13 in the wake of the general market improvement observed since the second half of 2012. However, the fear of possible adverse political and economic developments in parts of the EU reversed the trend into a decline in 2Q13. These events also affected risk appetite, with the volatility of flows diverging between asset classes. Equity funds, the main beneficiary of the rally in 1Q13, experienced a reversal, although the accumulated flows remained positive over the first half of the year (USD 16.4bn). Bond funds attracted a solid stream of net investments (USD 21.0bn in 1H13), before experiencing disinvestments in late 2Q13. Balanced funds attracted a regular but slow stream of investment (USD 12.9bn). The major withdrawal essentially occurred from money market funds (see below).

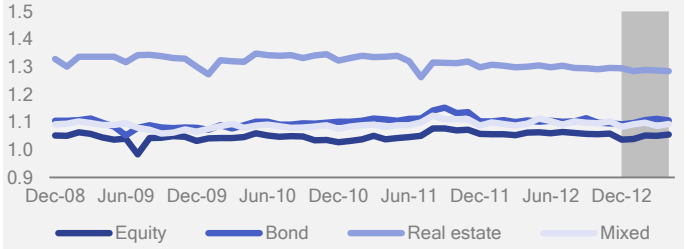
Investments: With regard to the geographic focus of investments, assets located outside the EU proved more attractive than European assets, with investors taking advantage of outperforming markets, especially for equity. Emerging markets attracted a high share of new investment in 1Q13, before experiencing strong outflows at the end of 2Q13. But the most significant evolution refers to the surge in US equity, contrasting with the negative flows experienced in 2012. Within bond funds, investors shifted their preferences from longer term corporate and short-term sovereign bonds to short-term corporate bonds, following a temporary peak in demand for sovereign bonds in late 4Q12. Demand for long-term sovereign bonds recovered sufficiently to generate positive inflows again. Also, investments into floating rate bond funds surged in 1H13. Net investments increased to USD

NAV: Bond funds reached peak T.52



Note: Net Asset Value, EUR tn.
Sources: ECB, ESMA.

Leverage: Stable for most investment fund types T.53



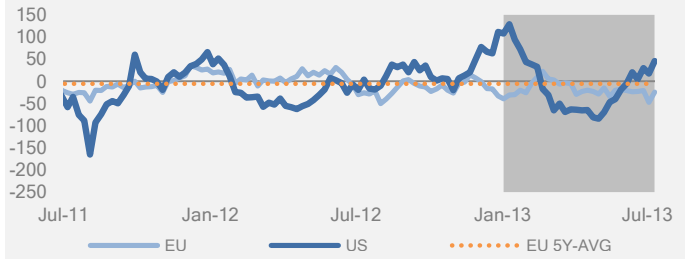
Note: Leverage computed as the AUM/NAV ratio.
Sources: ECB, ESMA.

29.7bn, compared with USD 8.5bn for the whole of 2012. These funds invest mainly in US assets with nominal interest rates, such as loans to corporates, usually below investment grade, and securities collateralised by loans. The growing demand for shares of this fund type can be explained by market expectations of a potential rise in US interest rates in the medium term and their backing with collateral.

Leverage: The evolution of the EU investment fund industry's share base reflects the growth of the sector's assets. As of April 2013, the NAV of bond funds was EUR 5.1tn (+5.8% year to date), followed by equity (EUR 3.7tn; +7.7%), mixed (EUR 3.5tn; +7.6%) and real estate funds (EUR 0.7tn; +2.8%). The parallel evolution between NAV and AuM results in a stable leverage ratio of less than 1.1 for most of the funds. The leverage ratio of real estate funds remained higher than the rest of the industry, at 1.28, but continued to follow the downward trend tracked since 3Q11. It seems consistent with the slowdown in housing markets in many countries. Among the other funds, equity funds remained less leveraged than bond or mixed funds.

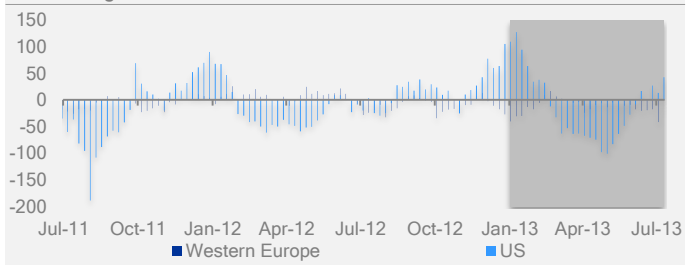
Money market funds

Flows: Flows in MMFs turn negative in 1H13 T.54



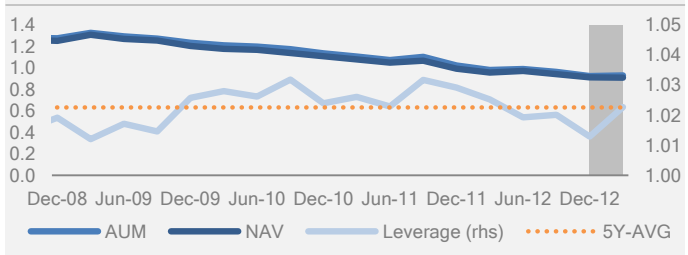
Note: 8W cumulative net flows, USD bn.
Sources: EPFR, ESMA.

Flows: Negative but volatile flows into MMFs T.55



Note: 8W cumulative inflows for MMFs, USD bn
Sources: EPFR, ESMA.

Leverage: MMFs' AUM decrease and leverage increases in 1Q13 T.56



Note: Net Asset Value and Assets under Management of EA MMFs, EUR tn. Leverage computed as the AUM/NAV ratio.

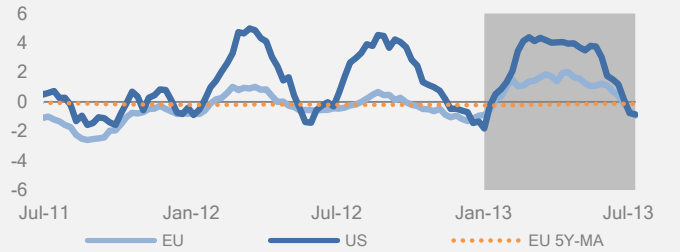
EU MMFs experienced substantial fund outflows in 1H13, driven by persisting uncertainties over the EU banking sector and low interest rates. Similarly, AuM continued to decrease. The leverage ratio increased considerably.

Flows: Outflows from MMFs reached EUR 28.4bn in 1H13. This decline was consistent with ongoing efforts by banks and public initiatives to reduce the use of short-term wholesale funding, including MMFs. However, the even larger outflow from US funds observed over the same period (USD 73.2bn) does qualify this interpretation, given that US banks were less exposed to EU events. A potential driver contributing to both effects is the current low interest rate environment, which is making business models of money market funds vulnerable to losses.

Assets: Along with the negative flows observed, AuM and shares outstanding in EA money market funds continued to contract, falling to EUR 0.92tn. EA funds' leverage increased throughout 1Q13, remaining well above one throughout the entire observation period. This value is the lower limit necessary to forestall incentives to a run on deposits and avert the associated liquidity risks. Nevertheless, the fact that many MMFs with constant net asset valuation guarantee refund of the principal invested at any time, while paying a return higher than that on other deposits, still gives the first-mover an advantage in periods of financial market stress. In response to this, the ESRB issued a recommendation on 20 December 2012 advocating a switch to variable Net Asset Valuation (NAV) instead of Constant Net Asset Valuation (CNAV). In this case the capital would always depend on current market conditions and would not be considered guaranteed. The recommendation also called for improvements to the liquidity requirements and greater public disclosure, especially regarding the risks associated with MMF.

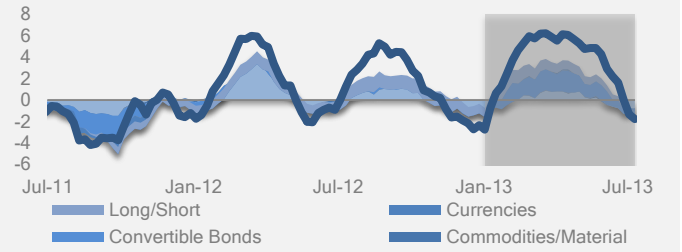
Alternative funds

Flows: Flows in alternative funds rebound T.57



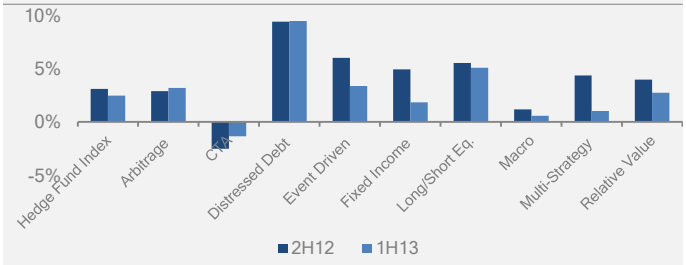
Note: 8W cumulative netflows, USD bn.
Sources: EPFR, ESMA.

Flows: Volatile inflows, no dominant strategy T.58



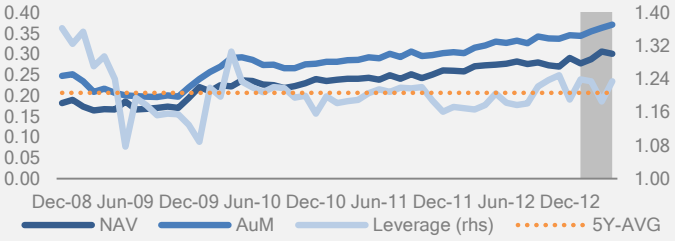
Note: 8W cumulative inflows for alternative funds, USD bn.
Sources: EPFR,ESMA

Strategies: Most strategies earn positive returns T.59



Note: Growth of hedge fund performance indices by strategy, %.
Sources: Eurekahedge, ESMA.

Leverage: EA hedge fund assets continue to rise T.60



Note: Net Asset Value and Assets under Management of EA hedge funds, EUR tn. Leverage computed as the AUM/NAV ratio.
Sources: ECB, ESMA.

Alternative funds enjoyed significant net inflows of funds in the first quarter of 2013, before losing some of the previous inflows in 2Q13. Not only did AuM grow but fund leverage also increased, proving that despite macroeconomic uncertainty investors were prepared to accept greater alternative exposures in early 2013. The appetite for alternative investment was accompanied by positive performance for most alternative strategies, in particular also long/short equity. However, the bulk of the new investments are not dedicated to a specific asset class, confirming a general investor preference for diversified strategies.

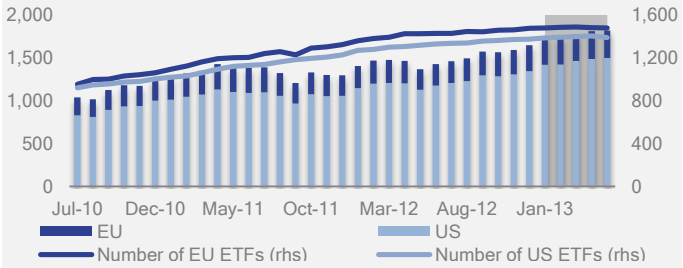
Flows: Flows into alternative funds rebounded in 1H13, before declining again in late 2Q13. The positive inflows into EU funds (USD 3.0bn) contrasted with the previous reduction in 2012. A similar tendency in the US (inflows of USD 8.8bn) does not imply a new trend, since US funds experienced similar episodes of inflows in the past and their subsequent reversal in 2012. Like equity funds, alternative funds may have benefited from lessening risk aversion and the related search for yield, attracting additional investments despite the adverse political and economic events in the EU in the first quarter of 2013.

Investment focus: The bulk of new investment was not dedicated to a single specific asset class, confirming a general investor preference for diversified strategies. Investment in funds investing in other funds was particularly attractive. These funds invested nearly a quarter of their portfolio into long/short equity funds. The funds under this strategic mandate recorded positive returns in 1H13 (+5.1%), like most of the strategies with performance indices reaching their high watermarks. Distressed debt funds registered some of the best performance (+9.5%).

Assets: In the EA, AuM by alternative funds accounted for EUR 370bn at the end of April 2013 (+7.2% year to date), while outstanding shares represented EUR 300bn (+3.4%) in aggregate. The difference between the two figures is due mainly to external funding. A substantial part of the growth stemmed from an annualized rate of return of 3.75% between 1Q12 and 1Q13. This performance was slightly lower than that of US hedge funds, which enjoyed an annualized rate of return of 4.7% (Cf. T.59, first column). Throughout 1Q13 the leverage ratio of alternative funds remained close to its long term average.

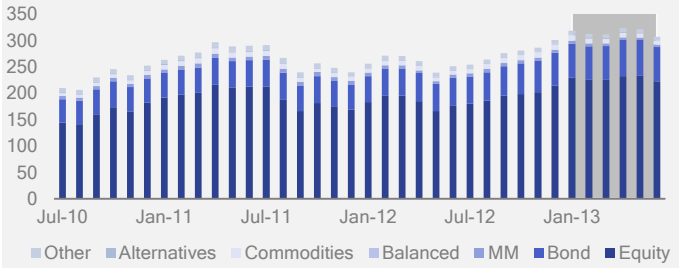
Exchange-traded funds

EU and US ETFs: Slower market growth T.61



Note: Net Asset Value of ETFs, USD bn.
Sources: Thomson Reuters Lipper, ESMA.

Investment focus: Equity funds dominate T.62



Note: Net Asset Value of EU ETFs by asset type, EUR bn.
Sources: Thomson Reuters Lipper, ESMA.

In 1H13, the NAV of EU ETFs increased moderately. In May 2013, their aggregate share base stood at USD 322bn. The industry remains dominated by equity funds using synthetic replication methods.

Assets: In 1H13 EU ETFs experienced a small inflow of funds, increasing their share value by USD 2bn. In the same period the number of active funds decreased by 7 to 1,471 within the EU. The 2012 rebound by exchange-traded funds thus flattened out in 1H13. Around 70% of the entire industry's NAV is held by funds focused on equities and roughly another 25% by those focused on bonds.

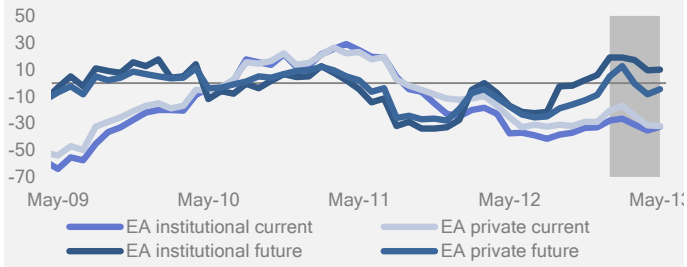
Investment focus: The majority of EU funds (around 65%) comprises funds working with the synthetic replication method. These funds were instrumental in the industry rebound in NAV (+15% for synthetic funds) observed during 2012. The simultaneous long-term growth trend in synthetic and physical exchange-traded funds was thus interrupted only temporarily in 2011. In total, in June 2013 European ETFs comprised 1,471 funds with EUR 295bn in NAV. Compared to the US exchange-traded fund sector, the EU industry was still in its infancy, amounting to barely 20% of US ETF assets.

Retail investor trends

Portfolio returns: Slightly below average T.63

Note: Monthly returns on a portfolio composed of 47% stocks (Stoxx600), 42% deposits (1Y Euribor) and 11% bonds (Barclays Euro Aggregate 7-10Y).
Sources: Thomson Reuters Datastream, EIOPA, ESMA.

Investor sentiment: Decline throughout 1Q13 T.64



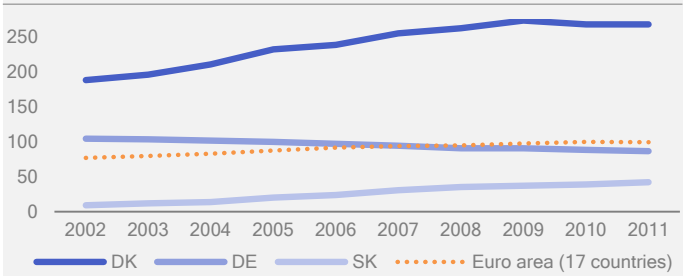
Note: Sentix Sentiment Indicators for Euro Area private and institutional investors for a 10 year horizon. The zero benchmark marks a risk-neutral position. Monthly frequency.
Sources: Datastream, ESMA

In 1Q13, the returns on a representative retail investment portfolio remained above their long-term average. Investor sentiment declined. The average debt-income level of an EA household in 2011 was slightly below 100% and almost at the all-time peak level. Around the same time, roughly 83% of the wealth of an average EA household was invested in real assets. The bulk of households' financial assets consisted of claims on pension funds, deposits or currency holdings. Overall these assets comprised 30% of all outstanding financial assets in the EA. The share of households investing into more sophisticated financial products decreases with the level of household income.

Portfolio returns: Monthly returns on a representative portfolio of retail investors' financial wealth averaged 0.75%, slightly higher than the five-year average of 0.43%. Throughout 2013 monthly returns fluctuated constantly between 0.04% and 1.36%. Currency and deposits represent 33% of the average household's financial wealth, insurance and pension fund technical reserves 29%, shares 27% and other instruments 11%. The insurance and pension fund technical reserves can be decomposed into 50% shares, 35% bonds with an average maturity of 7 to 10 years and 15% deposits. Accordingly, shares represent 47% of total household financial wealth, currency and deposits account for 42% and bonds for 11%.

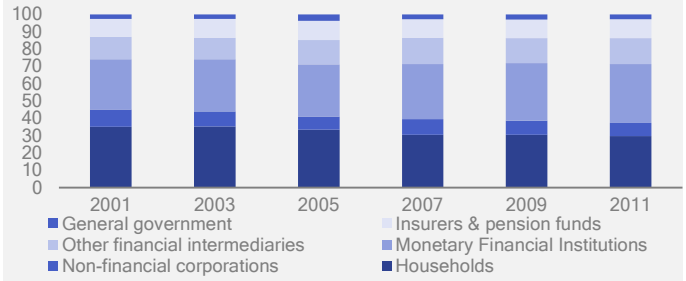
Investor sentiment: In 1Q13 private investor sentiment in the EA started to decline, partially reversing the improvements of 2012. Sentiment continued to fall short of its five-year average and that of its international peers. Absolute and relative investor pessimism in the euro area set a new trend evident since early 2012, which can be traced back to the European sovereign debt crisis

Debt to income: Indebtedness on long-term rise T.65



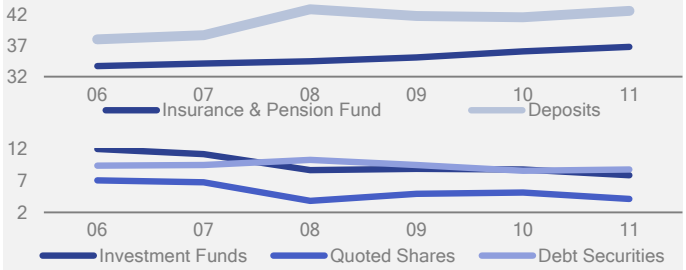
Note: Loans, liabilities divided by gross disposable income with the latter adjusted for the change in the net equity of households in pension fund reserves, %.
Sources: Eurostat, ESMA.

Financial assets: Households' share decreasing T.66



Note: EA, %.
Sources: EFAMA, ESMA.

Households' Financial Assets T.67



Note: EA household financial assets, % of total.
Sources: EFAMA, ESMA.

and the associated macroeconomic costs. Investors' future expectations are consistent with their assessment of the current situation in so far as expectations predict changes in current assessments. Hence, the recently observed rise in expectations for the future reflects optimism with regard to improvement in current investor sentiment. Institutional investor sentiment behaved similarly to that of private investors, whereby private investors were more pessimistic about the future but slightly more optimistic about the current situation.

Debt to income: The increase in private debt, largely in the form of mortgage obligations, outpaced increases in income, as illustrated in T.65. The EA average increased from 77% in 2001, to 99% in 2011. On a comparative basis, Denmark exhibits the highest level of debt to income, with an increase from 188% to 267%. On the other hand, while Slovakia's figure increased from 9% in 2001 to 42% in 2011, it remains the lowest in the EA. In Germany the level actually fell from 105% to 86%.

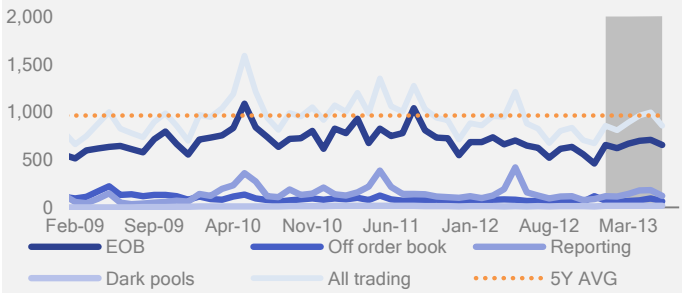
Financial asset ownership: As a percentage of total financial assets, the average EA household share decreased steadily, falling from 35% in 2001 to approximately 30% in 2011. Over the same period the proportion held by financial institutions increased from 29% in 2001 to 34% in 2011. When comparing financial assets to total assets, average EA household financial assets comprise approximately 17% of total assets. The balance of real assets is composed primarily of real estate.

Household investment distribution: On a percentage basis across European households, short term deposits form the highest allocation, a full 42% of financial assets, while insurance and pension investments comprise approximately 37%. There has been a steady decrease in allocation to asset classes featuring higher risk exposures: debt, equity and investment in funds.

Market infrastructures

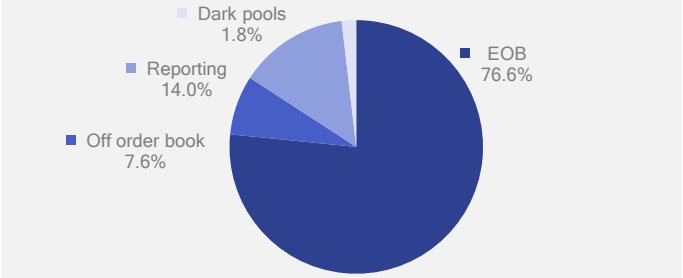
Trading venues

Turnover: Rebound in 1H13 T.68



Note: Turnover on trading venues by category, in EUR bn. 5Y-AVG= 5Y average of all trading.
Sources: FESE, ESMA.

Equity trading: Turnover by transaction types T.69



Note: Data as of June 2013, EOB= Electronic Order Book.
Sources: FESE, ESMA.

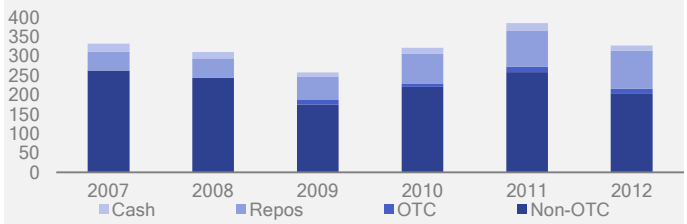
In 1H13, activity on European trading venues rebounded after sharp falls during the latter half of 2012, returning trading activity to its five-year average.

Turnover: Reaching approximate monthly turnover of EUR 855bn in June 2013, the rebound constituted a near-30% rise from December, and volumes edged closer to the EUR 960bn five-year average. A similar rebound was observed for trades executed through dark pools, with a 70% increase to EUR 16bn.

Transaction type: Equity trading continued to be transacted mainly through electronic order books (77% of total turnover in June 2013). Trading on dark pools remained limited, at 1.8% of total turnover, but has steadily increased from less than 0.8% three years ago. However, this figure refers only to exchanges and some MTF operated dark pools. If Broker Crossing Networks are considered plus the other Dark Pool MTFs, the share of dark trading will inevitably be higher: Thomson Reuters' estimates for June 2013 put it at 8.8%. Reporting transactions, i.e. trades reported through a Trade Reporting Facility in which only one counterparty provides information on the trade and offers dissemination services at the request of the reporting trader, increased by EUR 30bn compared to December 2012 and stand at EUR 120bn.

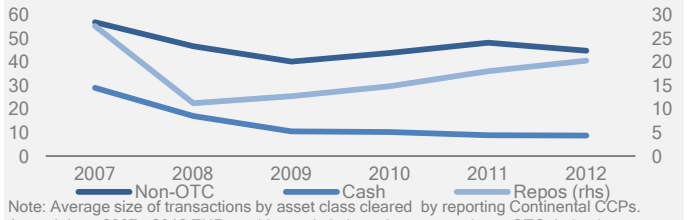
Central counterparties

Value: Repos plateaued as non-OTC retreated T.70



Note: Value of transactions by asset class cleared by reporting Continental CCPs. Annual data; EUR tn: Cash, Repos, non-OTC and OTC derivatives. Uneven reporting across years and CCPs. Includes CCP Austria, Eurex Clearing A.G.; LCH Clearnet S.A.; EMTE; CC&G; Hellenic Exchanges Holdings S.A.; KDPW CCP S.A.; KELER CCP.
Sources: ECB, ESMA.

Trade size: Divergent trends across asset classes T.71



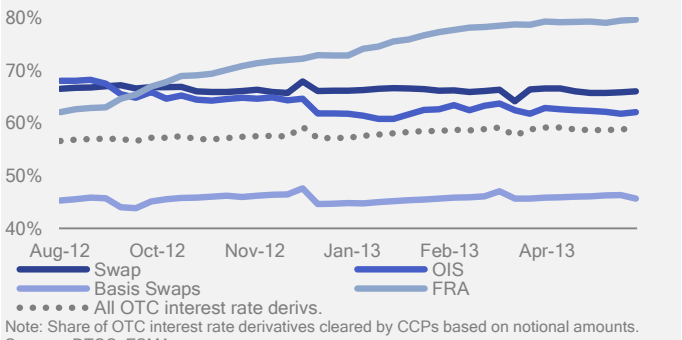
Note: Average size of transactions by asset class cleared by reporting Continental CCPs. Annual data: 2007 - 2012 EUR mn (rhs scale bn): cash, repos and non-OTC derivatives. Uneven reporting across years and CCPs. Includes: CCP Austria Eurex Clearing A.G.; LCH Clearnet S.A.; EMTE; CC&G; Hellenic Exchanges Holdings S.A.; KDPW CCP S.A.; KELER CCP.
Sources: ECB, ESMA.

In 2012, the total value of trades cleared through Continental CCPs retreated somewhat following the post-crisis recovery, notably for non-OTC derivatives. Meanwhile, the average trade size developed quite differently by asset class, with repos continuing their rebound while non-OTC seem to have plateaued and cash transactions continue to shrink.

Value cleared: In 2012, the value of transactions cleared by continental CCPs retreated to EUR 200tn after having recovered to close to pre-crisis levels in 2011, when a volume of EUR 260tn was cleared. While non-OTC derivatives constitute the largest part of values cleared, their share continues to decline, from 80% in 2007 to 60% in 2012. Meanwhile, repos have doubled their share to 30%.

Average size: The average size of centrally cleared transactions on the Continent varies by asset class, as does their evolution. Repos –the asset class displaying by far the largest average transaction size – experienced the most pronounced fall with the crisis, while achieving an immediate and persistent rebound. Non-OTC derivatives have stabilized at around 75% of their pre-crisis average size of EUR 57mn in 2007, reaching about 45mn in 2012.

OTC: Increase in the use of CCPs T.72

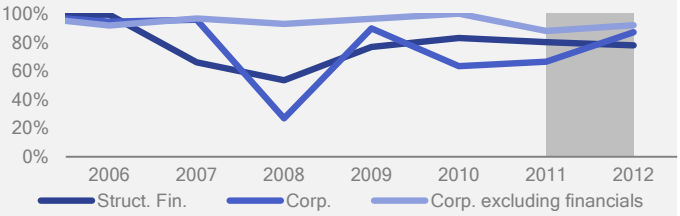


Note: Share of OTC interest rate derivatives cleared by CCPs based on notional amounts.
Sources: DTCC, ESMA.

Interest Rate Swap clearing: Gross notionals cleared through CCPs increased by two percentage points in 1H12 to 59%. This was driven chiefly by Forward Rate Agreements (FRA), for which around 80% are cleared through CCPs (73% end-2012). For other IRS, CCP use increased by one percentage point for Basis Swaps and remained roughly stable for Swaps and Overnight Index Swaps (OIS). Some asset classes such as swaptions, options on interest rates and exotic swaps, accounting for around 11% of IRS notionals, were not cleared at all as of May 2013. Overall, IRS cleared through CCPs amounted to USD 321tn as of end-May 2013, compared to USD 290tn end-2012.

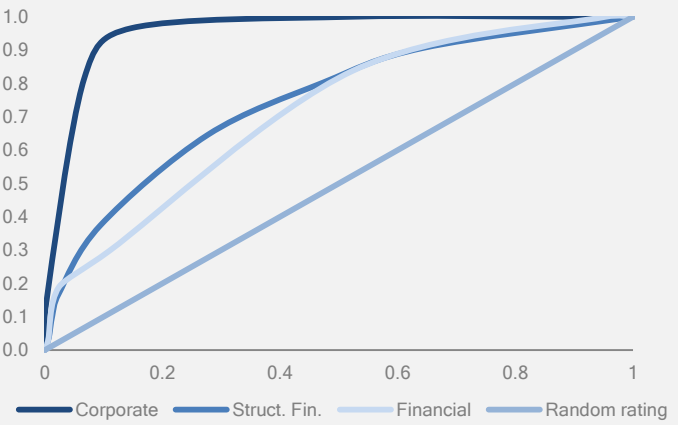
Credit rating agencies

Rating performance: Improved in 2012 T.73



Note: Cumulative Accuracy Profile (CAP) coefficients measure the accuracy of ratings. The coefficient is derived from average defaulter position (AP), then computed as follows: CAP = 2*AP -1. The closer the coefficient is to 100% the higher the accuracy of the ratings (i.e. defaults occur among low credit ratings).
Sources: CEREP, ESMA

Rating accuracy: Mixed performance T.74



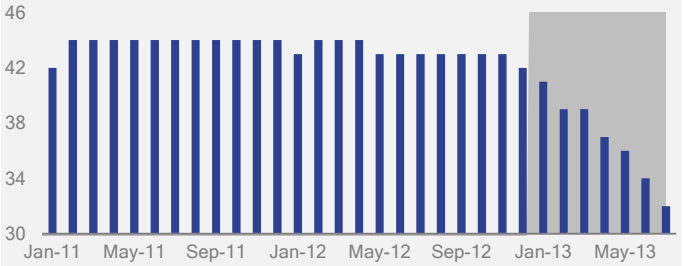
Note: Cumulative accuracy profile (CAP) curves for the 3 largest credit rating agencies. 2008-2012. The CAP curve plots the cumulative proportion of issuers by rating grade (starting with the lowest grade on the left) against the cumulative proportion of defaulters by rating grade.
Sources: CEREP, ESMA.

The operative efficiency of CRAs as gauged by the CAP coefficients shows uneven performance with respect to the asset class rated, with better rating accuracy for financials and corporates in 2012 and less so for structured finance.

Rating performance: Overall rating performance improved in 2012 for corporates, due chiefly to fewer defaults in the financial asset class. The 1-year CAP coefficient, measuring the performance of rating per asset class over one year, increased from 66.5% to 87.1% for all corporates, and from 87.8% to 91.9% for corporates excluding financials. Rating performance for structured finance products decreased slightly, from 80.1% to 77.8% although it remains higher than in 2008, when ratings on entire asset classes such as CDOs and MBS performed poorly, unlike other structured products such as ABS. Ratings performed very differently across asset classes over the period 2008 to 2012, as evidenced by the cumulative accuracy profile (CAP) curves. The closer the CAP curve is to the random curve, the lower the performance of the ratings, i.e. defaults occurring independently of the rating grade. Corporate rating accuracy was higher than for financials and structured finance issuers, with defaults mostly concentrated on low-rated corporate bonds, as evidenced by the shape of the CAP curve. The financials CAP curve was affected mainly by the relatively large number of defaults in the AA and A rating classes, although the small size of the sample (30 defaults) may affect the robustness of the results. The structured finance CAP curve indicates that defaults occurred even in the highest rating classes.

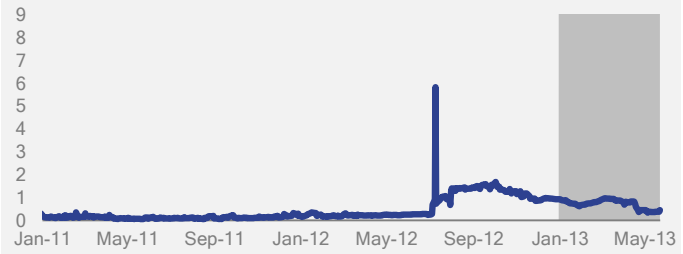
Financial benchmarks

Euribor continuity: Decrease in the number of Euribor panel banks T.75



Note:Number of banks participating in the Euriborpanel.
Sources: Euribor-EBF, ESMA.

Euribor submissions: Decline in dispersion T.76



Note: For each of the 15 Euribor tenors, the difference between the highest and lowest submitted contributions of panel banks is computed and normalized by the corresponding Euribor rate. The chart dispalys the maximum of those differences across the 15 tenors, in percentage points. The increase in the series since July 2012 is linked to technical factors such as the low level of Euribor rates. The lower the rate, the higher the impact of a given dispersion in the contributions.
Sources: Thomson Reuters Eikon, ESMA.

Key EBA-ESMA provisions on benchmarks T.77

Benchmark definition: A price, rate, index or other value which is

- made available to users, whether free of charge or for payment; and
- calculated through the application of a formula to the value of one or more underlying assets or prices, including estimated prices, interest rates or other values, or surveys; and
- by reference to which (i) the amount payable under a financial instrument or the value of the financial instrument is determined; or (ii) the performance of a financial instrument is measured.

General framework for Benchmark-Setting: General provisions on

- methodology,
- governance structure,
- supervision and oversight,
- and transparency of benchmarks.

Principles for Benchmarks: Specific provisions governing the activities of

- Benchmark Administrators,
- Benchmark Submitters,
- Benchmark Calculation Agents,
- Benchmark Publishers,
- Benchmark Users, and
- Principles for the Continuity of Benchmarks.

Legal continuity, revision and review: Without prejudice to the above Principles, ESMA and EBA

- are conscious that any change to a benchmark framework (calculation methodologies and procedures) should be managed so as to ensure that any disruption to existing benchmark-referenced contracts are proportionate and minimised;
- may revise the Principles in the light of potential future EU regulations, material changes in market practices or the agreement of international standards pertaining to benchmarks;
- plan to conduct a review of the application of the Principles eighteen months after their publication, but may alter that timeframe should they deem it to be appropriate or necessary.

Note: Summary excerpts from EBA-ESMA Principles. For full text see original document.
Source: EBA-ESMA Principles for Benchmark-Setting Processes in the EU, London, Paris, June 2013.

Financial benchmarks are currently being scrutinised more closely by public authorities. The continuity of key financial benchmarks in the EU remains a major concern for ESMA, as a number of banks withdrew from interbank interest reference rate panels during the reporting period. The incidence of obviously erroneous submissions deviating abnormally from other submissions seems to have declined in response to the heightened scrutiny by supervisory authorities.

Benchmark continuity: The continuity of benchmarks remains a key concern of ESMA, in particular in respect of quote-based interbank interest reference rates. Existing and planned internal measures by benchmark administrators to strengthen continuity provisions notwithstanding, withdrawals from benchmark panels by contributing banks can weaken the representativeness of an interbank reference rate and may lead to a decline in confidence on the part of benchmark users. A growing number of withdrawals from interbank reference rate panels were observed, despite greater regulatory and supervisory guidance and the enhanced scrutiny by authorities of irregularities in the submission and calculation of benchmarks. One example is the Euribor panel, where the number of submitting banks declined by 23% between December 2012 and June 2013, from 42 to 32 (chart T.75). Other panels administered by Euribor-EBF experienced similar withdrawals. ESMA continues to monitor continuity issues in financial benchmarks in the EU.

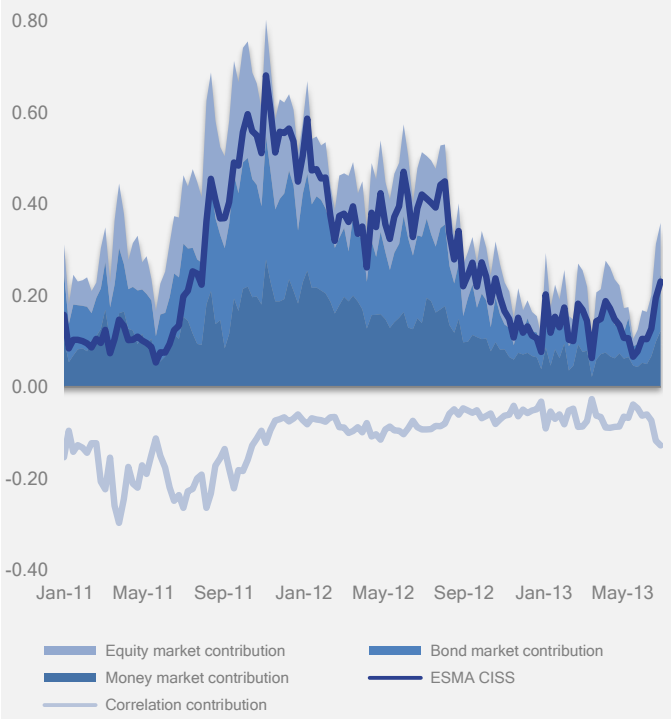
Quality of contributions: Enhanced scrutiny of benchmarks by supervisory authorities for irregularities in submission and calculation focuses, among other factors, on the quality of contributions by submitters to quote-based reference rates, especially the potential submission of manipulated quotations. Investigations by competent authorities in the EU and elsewhere into potential manipulations of interbank reference rates, oil price benchmarks and exchange rates are ongoing. In addition to manipulation, erroneous quote submissions were identified as a second source of potential benchmark inaccuracies. The incidence of obviously erroneous submissions – i.e. quotes that deviate abnormally from other submissions, including so-called fat finger errors – seems to have declined in response to the heightened scrutiny by supervisory authorities. Patently erroneous submissions became rare in recent months, as indicated by the dispersion in rate submissions. For example, the dispersion of contributions by Euribor panel banks declined since January 2013. In particular, abnormal deviations did not occur between September 2012 and May 2013 (chart T.76).

Policy measures: ESMA, in cooperation with the European Banking Authority, developed a set of Principles to address the problems with benchmarks until such time as a potential formal regulatory and supervisory framework for benchmarks has been devised in the EU. The contents of the EBA-ESMA Principles are summarised in chart T.77. Although the provisions are without binding legal effect, they do provide benchmark users, benchmark administrators, calculation agents and publishers and firms involved in benchmark data submissions with a common framework within which to work together and provide a glide path to a potential future EU regulatory framework.

Trends
Risks
Vulnerabilities

ESMA Risk Dashboard

Systemic stress: After stable but volatile 1Q13, systemic stress returns in 2Q13 R.01



Note: ESMA version of the ECB-CISS indicator measuring systemic stress on securities markets. A detailed explanation is provided in the technical annex to the Risk Dashboard. Sources: ECB, ESMA.

Main risks: Sources R.02

Risk	Change since 1Q13
European sovereign debt crisis	→
Market clustering	→
Funding risk	↗
Low interest rate environment	↗
Market functioning	↗

Note: Assessment of main risk sources for markets under ESMA remit, change since the last assessment. Upward arrows indicate an increase in the contribution to risks, downward arrows indicate a decrease in the contribution to risks.

Main risks: Categories R.03

Risk category	Systemic risk	Change since 1Q13	Outlook for 3Q13
Liquidity risk	●	→	→
Market risk	●	↗	↗
Contagion risk	●	→	→
Credit risk	●	→	→

Note: Assessment of main risk categories for markets under ESMA remit since past quarter and outlook for current quarter. Systemic risk assessment based on categorisation of ESA Systemic Risk Heat Map, green=low, yellow=moderate, orange=high, red=very high. Systemic RIsk Heat Map measures current risk intensity. Upward arrows indicate a risk increase, downward arrows indicate a risk decrease.

Systemic risk in EU securities markets remained stable throughout 1Q13, as conditions in equity and bond markets stabilised. In early 2Q13, systemic risks decreased, only to rebound to elevated levels in late 2Q13. Monetary policy support notwithstanding, a combination of unfavourable macroeconomic prospects and adjustments in yield curves, in particular the growth in the international heterogeneity of their levels and the increase in their slopes, kept the underlying sources of market uncertainty in place. Funding risk, the duration of the low interest rate environment and obstacles to orderly market functioning remained important sources of uncertainty for EU financial stability, aggravated by higher market volatility in emerging economies and commodity markets and a weakening global economic outlook. While some partial defragmentation was observed in sovereign debt markets, clustering still remains a source of vulnerability. On this basis, our outlook on liquidity, contagion and credit risks remains unchanged, while market risk was driven up by the ancillary effects of yield curve adjustments, such as increased price volatilities in various market segments and the outflow of funds from EM, and can be expected to continue rising going forward.

Systemic stress: Systemic stress in securities markets started to pick up again in 2Q13, having undergone temporary fluctuations throughout 1Q13 and early 2Q13. Past disturbances in the long-term downward trend are also reflected in increased volatility in systemic risk levels.

EU sovereign debt crisis: The EU sovereign debt crisis continued to weigh on the stability of financial markets. In particular, sovereign yields remained sensitive to economic and political uncertainties in some EU countries, including the need for restructuring in one national banking sector. Other economies have come under closer market scrutiny in recent weeks.

Market clustering: In 2Q13, the clustering of investor risk assessments persisted for individual geographies and markets, reflected in the dispersion and volatility of EU equities and sovereign yields as well as the related liquidity in some markets. Evidence of declustering was observed in sovereign bond markets, where some distressed markets improved. While contributing to domestic stabilisation, capital controls such as were introduced in one Member State can lead to fragmentation and impair the credibility of the EU single financial market. Any further aggravation of market clustering or potential fragmentation of the EU's Single Financial Market, even if limited in territorial and economic dimension, would impact market efficiency.

Funding risk: In 2Q13, activity in most market segments – with the exception of short-term securities – decreased, particularly in money markets and in asset-backed and mortgage-backed securities. The latter markets benefited from the continuing relief stemming the previous year's monetary policy measures and improvements in most EU real estate markets. Low levels of securities issuance, coupled with significant bank redemptions in the next three years (due especially to maturing LTRO funds) and a shortening in debt maturities, imply significant funding risks for the future, when sovereigns, financial institutions, and corporates too need to roll over their debt. As a result, funding risks increased over the last quarter.

Low interest rate environment: The prevailing low interest rate environment continues to influence

Main risks: Summary assessment R.04

Risk category	Summary
Liquidity risk	Liquidity risk remained constant and highly dispersed across market segments and regions over the last quarter. The evidence below indicates that recent reactions by policy makers and market participants have reduced liquidity risks in some segments. However, other segments saw liquidity conditions deteriorate.
Market risk	Market risk remained stable in early 2Q13 but experienced a sudden increase in June 2013, driven by rising valuation concerns in equity and bond markets. However, market developments in early 2Q13 were not in line with macroeconomic conditions. Fostered by the low interest rate environment, higher yields in riskier bond market segments attracted strong inflows. Equity markets retained the same level of attraction In late 2Q13, markets partially corrected for their divergence from fundamentals, experiencing portfolio adjustments, price declines and yield increases. The fund industry responded with a risk averse reaction. As markets expect further adjustment, market risk can be expected to continue rising.
Contagion risk	In 2Q13, conditions in the market segments currently most exposed to contagion risks revealed persistent, but reduced clustering, reflected in a reduction in CDS exposures and a weakening perception by investors of divergence in national idiosyncratic risks. Investors deemed the idiosyncratic risks of some vulnerable segments to be lower than in 1Q13. Hence, the potential for contagion between clusters increased, while contagion risks within the distressed cluster abated. All in all, contagion risks have remained unchanged on 1Q13. Markets showed some reaction to the restructuring of one national banking sector despite limited direct cross-border exposures.
Credit risk	In 2Q13, securities markets in the EU witnessed reduced issuance volumes, mainly in asset classes with higher risk and longer maturities. Sovereign debt maturity at issuance continued to fall, in particular for countries with distressed sovereign bond markets. The concentration of outstanding bank debt at shorter maturities persisted. Despite the recent successful refinancing operations by debt issuers, substantive credit risks remain. Overall, credit risks did not increase further but remain at a high level.

Note: Qualitative summary of assessment of main risk categories for markets under ESMA remit.

behavioural patterns in financial markets. While mitigating bank-funding costs, low interest rates result in narrow spreads and can make it more difficult for borrowers to attract investors due to low returns. They also imply a risk of potential distortion in capital allocation and encourage search-for-yield strategies generating inflows into high-yield and, by implication, riskier assets. This is an increasing source of concern as the discrepancy between the reduced risk aversion in financial markets and unfavourable macroeconomic fundamentals increases and feeds back into market stability in the form of misvaluation risks. In addition, an eventual future return to higher interest rates is likely to trigger substantial portfolio readjustment needs as well as corrections in asset prices, thus increasing market uncertainty during the transition period.

Market functioning: ESMA continuously monitors potential structural risks in the markets under its remit. Relevant issues include:

— Benchmarks: In the reporting period, measures were taken by the EU Commission, EBA and ESMA aimed at improving the governance of benchmark systems and ensuring their continuity. At the same time, new concerns emerged over potential oil and currency price manipulations, and withdrawals by submitting banks from interbank interest rate benchmark panels in the EU continued.

— Shadow banking: Amid subdued securitisation issuance, shadow banking continued its gradual contraction. Leveraging of funds in the securitisation chain remained limited on average. Systemic risks from high degrees of interconnectedness are being kept under surveillance.

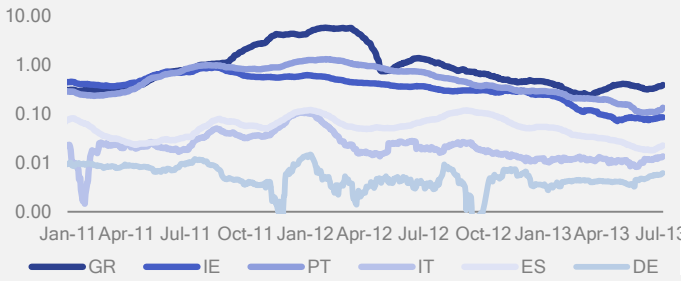
— Collateral: Key determinants, such as demand, supply, rehypothecation and changes in asset quality and their potential to impair the efficiency of financial intermediation, are monitored closely by ESMA. Currently, immediate risks to collateral availability are limited.

— Leverage: Even though average leverage ratios remain below pre-crisis levels, the exposure of MMFs, HFs and other fund types to potential liquidity shortages is relevant for systemic risk analysis and therefore remains subject to supervisory attention.

— Interconnectedness: Systemic size and interconnectedness can generate risks in derivative markets, in central clearing and within financial intermediation chains tapping into repo and interbank markets.

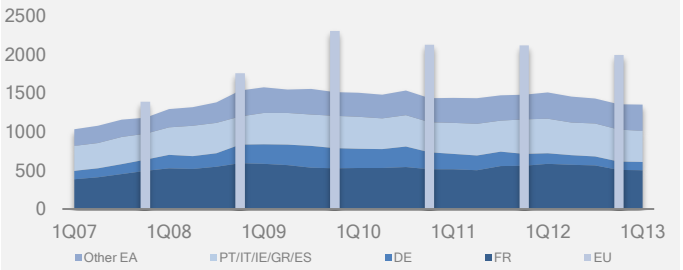
Liquidity risk

Liquidity increased for most distressed markets R.05



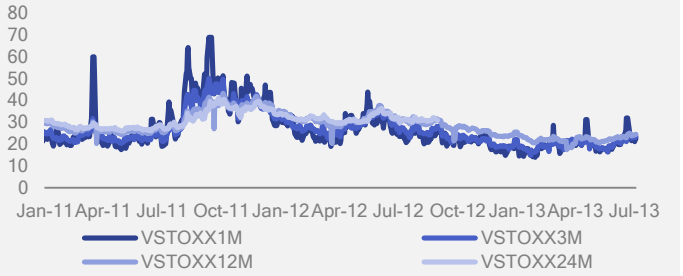
Note: EA sovereign bid-ask spread in percentage points (logarithmic scale). 30D moving average.
Sources: Thomson-Reuters EIKON, ESMA.

Slight decrease in supply to money markets R.06



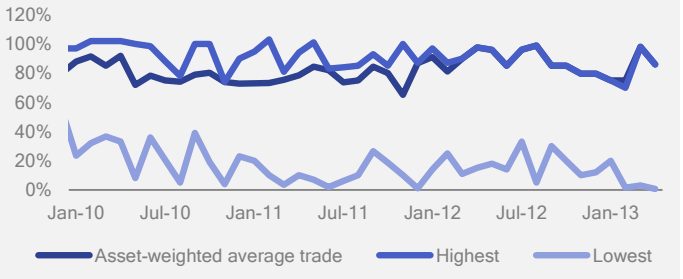
Note: Volume of short-term securities issued, EU, EUR bn. Germany has only issued Euro paper since 2011. Only yearly data available for non-EMU countries, stacked data.
Sources: ECB, ESMA.

Slight increase in expected volatility, but dispersion compressed R.07



Note: Stoxx50 implied volatilities measured as indices, %.
Sources: Thomson Reuters Eikon, ESMA.

Price index for hedge fund shares on secondary markets R.08



Note: Monthly price index for hedge fund shares on secondary markets computed as the asset-weighted average trade in percent of the Net Asset Value.
Sources: Hedgebay, ESMA.

Liquidity risk remained constant over the last quarter. Its dispersion across market segments and regions remained high. The evidence below indicates that recent reactions by policy makers and market participants have reduced liquidity risks in some segments. However, other segments experienced a deterioration in liquidity conditions.

Sovereign bonds: In 2Q13 the bid-ask spreads of EA sovereign bonds narrowed for several key countries, while holding roughly stable for others. Spreads increased in at least two countries; there is considerable dispersion in levels across sovereigns. While some countries not using IMF and EU bailout funds continue to face lower market depth than other EU countries, differences in bid-ask spreads between most markets narrowed in 2Q13. In late 2Q13 a general increase in the level of spreads was observed, indicating a readjustment in market expectations for sovereign debt within the EA.

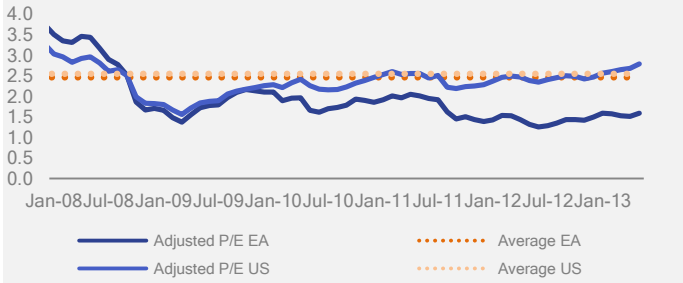
Short-term securities: In 1Q13, the outstanding volume of short-term securities, which constitutes the maximum liquidity available to money markets, exited its 2012 downward trajectory. The increase in issuance volumes was pronounced in some non-distressed EA markets, while debt issuance by distressed EA countries continued to decline. Nevertheless, there is no evidence of a liquidity shortage on money markets in the EU. Taken in conjunction with low interest rates and the slight revival in interbank overnight activity reported elsewhere, this indicates that the factor driving the squeeze in the supply of capital to businesses is not a lack of liquidity, but rather the lack of intermediaries' willingness to provide financing because of the greater perceived risk or low returns.

Volatility: In 2Q13, implied volatilities stabilised at a slightly higher level than in 1Q13. The term structure returned to a regular pattern, while showing some signs of compression in late 2Q13. Previous compressions have occasionally signalled risks ahead. The associated increases in contemporaneous volatilities on equity markets indicate market reactions to recent adverse macroeconomic and political events. The current level of implied volatilities remains comparatively low for the time being.

Liquidity premium: The liquidity premium required by investors to acquire hedge fund shares, which had tracked a rising trend during the last quarter of 2012, fell temporarily in March 2013; and in contrast to the previous quarter, the variability in liquidity premia and their dispersion increased. These effects may signal improved, although still volatile, expectations of hedge funds' future performance by investors. Funds with market directional strategies, which focus on exploiting market trends, continued to underperform relative to other hedge funds. Consequently, hedge fund sector liquidity continues to be affected by market trends and the associated macroeconomic risks.

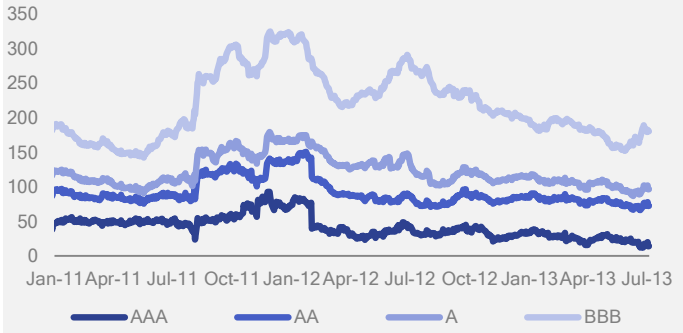
Market risk

Adjusted price-earnings ratios for euro area and US equities R.09



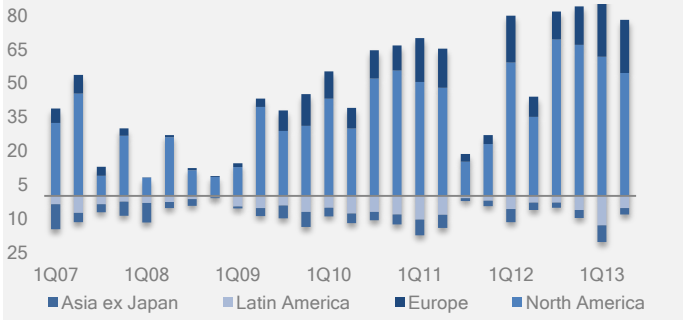
Note: Monthly earnings adjusted by a Kalman filter methodology which eliminates trends and cyclical factors based on OECD leading indicator, units of standard deviation. Averages computed over 2M73-5M13.
Sources: Thomson Reuters Datastream, ESMA.

Compression in risk spreads reversed in late 2Q13 R.10



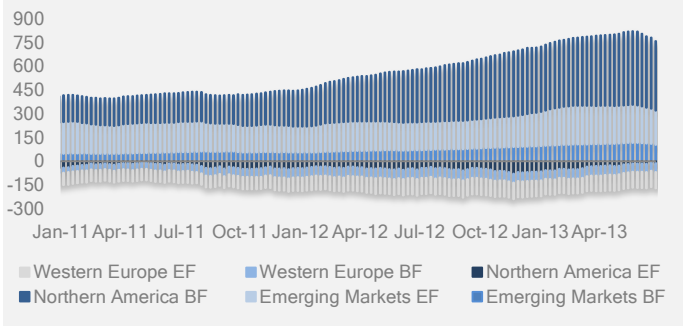
Note: Non financial corporate bond spreads by rating grades, EA, basis points.
Sources: Thomson Reuters Datastream, ESMA.

High-yield corporate bond issuance remained high R.11



Note: Quarterly data on high-yield corporate bond issuance by issuer region, EUR bn.
Sources: Dealogic, ESMA.

Investments into funds follow investors' risk perceptions R.12



Note: Cumulative net flows into bond and equity funds (BF and EF, respectively) by regional investment focus, USD bn.
Sources: EPFR, ESMA.

Market risk held steady in early 2Q13 but suffered a sudden setback in June 2013 fuelled by rising valuation concerns in equity and bond markets. Bolstered by the low interest rate environment, higher yields in riskier bond market segments attracted strong inflows. Equity markets also remained attractive within the quarter. In late 2Q13, markets partially corrected for their divergence from fundamentals, undergoing portfolio adjustments, price declines and yield increases. The fund industry reacted with caution. As markets expect further adjustment, market risk can be expected to continue rising going forward.

Equities: Since early 1Q13, the previously positive trend in the price-earnings ratios of equities within the EA levelled, leaving them well below their long-term average. US equities increased slightly throughout that period, finally surpassing their long-term average. Hence the gap between EA and US price-earnings ratios started to widen again. In the weak macroeconomic environment, the past increase and recent volatility in international equity indexes generated growing concern over potential valuation risks and the associated contagion dangers. Given that in recent years the average price-earnings ratio has undergone structural downward correction, these concerns also hold for Europe.

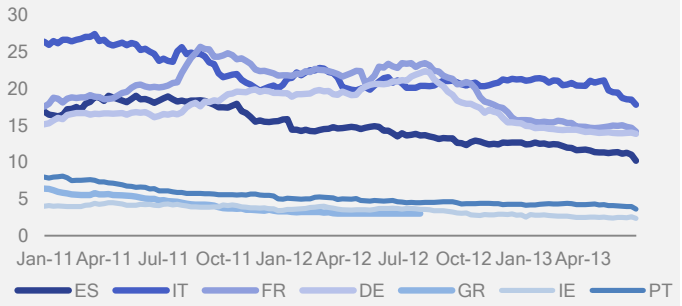
Bond spreads: Investment-grade non-financial corporate bond spreads in the EA reflect the continuing macroeconomic uncertainty. In 2Q13, after initial increases in April, risk spreads narrowed for lower rating grades. On the other hand, spreads on bonds with higher rating grades experienced a volatile increase in 2Q13. These fluctuations show that bond markets remain very sensitive to signs of adverse events or developments, especially those at the more risky end. This also underpins the increased possibility of future risk realignment. Nonetheless, for 2Q13 net inflows into Western European bond funds offer evidence of improvement within this particular market segment.

Bond issuance: High-yield corporate bond issuance remained strong throughout 2Q13, with increases in the EU and slight decreases in North America. This period was also characterised by positive, albeit weak issuance in emerging markets, possibly as a result of more moderate macroeconomic performance in the latter group. Since mid-2012 the extreme volatility in issuance observed during the last two years has started to fade. This may reflect market confidence in policy continuity, while the high issuance volume may indicate the revival of investor risk appetite. Still, risks related to changes in yield curves, especially in developed economies, and realignment in risk evaluation may heighten instability and add to valuation concerns.

Flows of funds: Fund investments in 2Q13 concentrated on US equity funds and EU bond funds. However, net flows for both fund types remained volatile, fluctuating between negative and positive values. Owing to market fluctuations and political uncertainties, emerging market funds and US bond funds suffered massive outflows in 2Q13. EU funds focusing on assets in distressed markets experienced inflows, albeit on a smaller scale than in 1Q13, while the majority of the other markets saw capital withdrawn. This trend may be due to the low interest rate environment rather than resulting from structural improvements in those economies. If so, it heightens valuation risks and should be closely monitored.

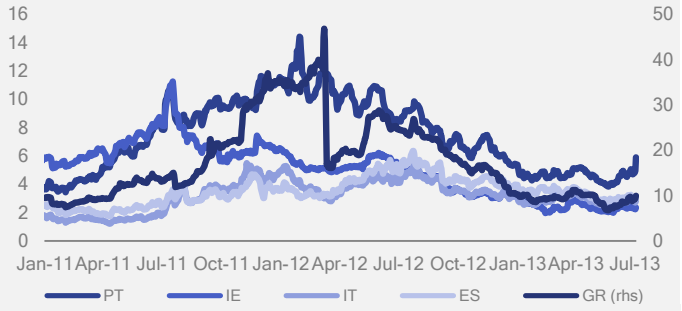
Contagion risk

Decline in outstanding volumes of EU sovereign CDS R.13



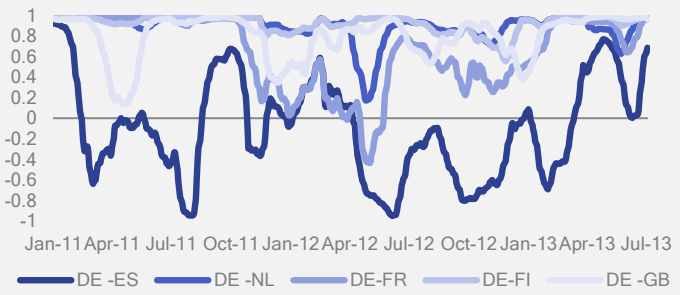
Note: Outstanding net notional amounts, USD bn.
Sources: Thomson Reuters Eikon, ESMA.

Sovereign risk premia on the rise again, but still low R.14



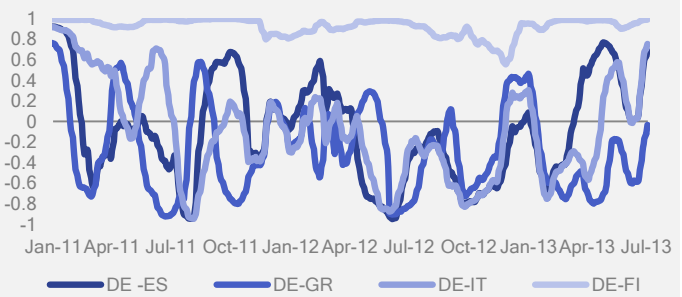
Note: Selected 10Y euro sov. bond risk premia (vs. German bond), percentage points.
Sources: Thomson Reuters Datastream, ESMA .

Clustering in distressed and non-distressed markets persists R.15



Note: Correlations over 60D rolling windows of 10Y sovereign bond redemption yields, EU.
Sources: Thomson Reuters Datastream, ESMA.

Markets with sovereign stress displayed higher dispersion R.16



Note: Correlations over 60D rolling windows of 10Y sovereign bond redemption yields, EU.
Sources: Thomson Reuters Datastream, ESMA.

In 2Q13, conditions in the market segments currently most exposed to contagion risks revealed persistent but reduced clustering, reflected in a decline in CDS exposures and waning perception of divergence in national idiosyncratic risks by investors. Investors assessed the idiosyncratic risks of some vulnerable segments lower than in 1Q13, weakening the ability to distinguish between different sovereign debt issuers. Hence the potential for contagion between clusters increased, while contagion risks within the distressed cluster eased. Overall, contagion risks have remained unchanged on 1Q13. Market reaction to the restructuring of one national banking sector was restrained amid limited direct cross-border exposures.

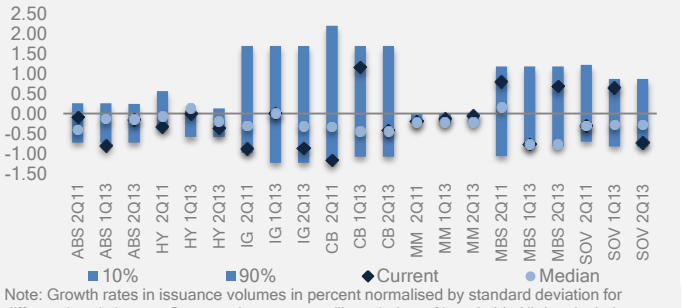
Sovereign CDS: In 2Q13, outstanding CDS net notional amounts decreased for most EA countries exposed to elevated sovereign risk and stabilized for some EA countries not associated with high sovereign risk. This development reflects the reduced clustering of individual sovereign bond markets, lower demand for sovereign debt protection in distressed markets and less inclination on the part of CDS sellers to accept the risks associated with providing insurance that exposes them to sovereign debt of distressed markets. Taking into account the tendency towards reduced bank participation in non-domestic sovereign bond markets, the contagion risks to which international counterparties are exposed increased for most markets characterised by high sovereign risk.

Sovereign risk premia: In 2Q13 sovereign risk spreads in several EA countries exposed to debt problems initially continued to narrow, before starting to increase again in May 2013. This corresponded to a temporary change in the correlations observed between some of the underlying yields. However, this contraction is neither uniform across countries nor monotonous throughout time. In particular, sovereign risk spreads for all the countries observed began to widen at the end of 1Q13 in response to the stress events characterising one national banking system. Investors remain highly sensitive to any adverse news.

Yield correlation: Correlations between the yields on ten-year sovereign benchmark bonds for European economies continue to indicate a clustering of sovereign bond markets in Europe, separating distressed from non-distressed countries. While this market clustering is a cause for concern from a single market perspective, it also mitigates contagion risk as investors are increasingly using diverging risk levels to distinguish categories of sovereign debt in the EU. However, in late 1Q13, the heterogeneity between distressed markets increased, suggesting a differentiation in the risk profiles of individual distressed countries, some of which witnessed a trend reversal from negative to positive correlation patterns with non-distressed EU markets. This signalled high sensitivity of clustering to general market trends but was also in line with the successful roll-over of debt for some individual sovereign issuers. However, shorter maturities imply more frequent roll-overs, an associated increase in funding needs and potential future upward pressures on yields.

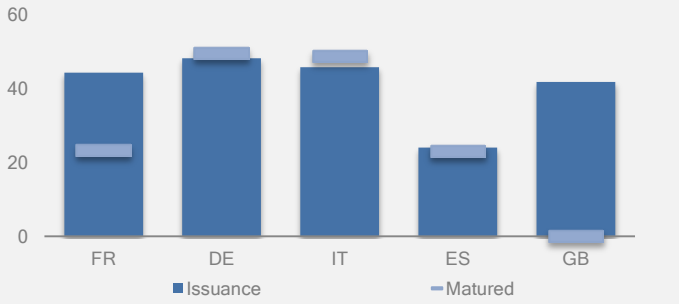
Credit risk

Growth in issuance R.17



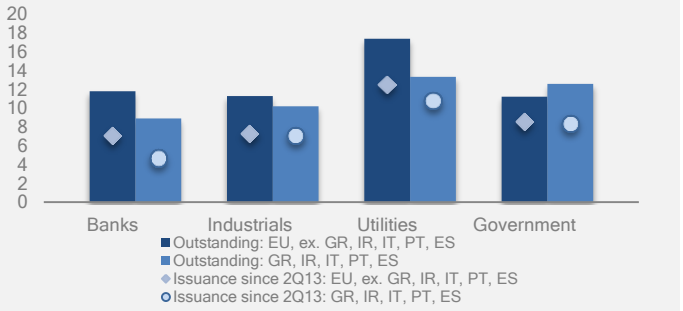
Note: Growth rates in issuance volumes in percent normalised by standard deviation for different bond classes. Computations over a rolling window of length 11. All data include securities with a maturity higher than 18 months. Bars denote the range of values between the 10% and 90% percentiles.
Sources: Dealogic, ESMA.

Some sovereigns rely on additional debt in 2Q13 R.18



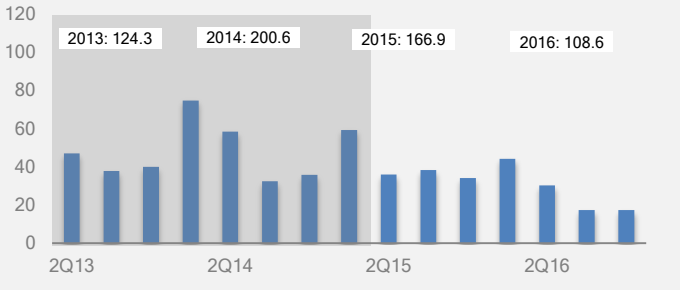
Note: Amounts of issued and matured public debt, selected EU sovereigns, EUR bn, since 2Q13.
Sources: Dealogic, ESMA.

Maturities of previous and new debt in the EU by sectors R.19



Note: Maturities of previous and new debt (YTD) by sectors, EU, years. Not adjusted for volumes.
Sources: Dealogic, ESMA.

Future EA bank redemptions imply high refinancing needs R.20



Note: Quarterly EA banks' redemptions excl. LTRO (variable expiry between Dec-12 and Mar-15), EUR bn. Grey shaded area indicates increased financing needs of approx. EUR 1,018bn.
Sources: Dealogic, ESMA.

In 2Q13, securities markets in the EU witnessed reduced issuance volumes, mainly in asset classes with higher risk and longer maturities. Sovereign debt maturity at issuance continued to fall, in particular for countries with distressed sovereign bond markets. The concentration of outstanding bank debt at shorter maturities persisted. Despite recent successful refinancing operations by debt issuers, substantial credit risks remain. Overall, credit risks did not increase further but remain at a high level.

Issuance: On average in early 2Q13, the growth in issuance of securities with a maturity of more than 18 months in the EU slowed in most market segments compared to 1Q13. Exceptions were increases in issuance of money market papers and mortgage and asset backed securities. Except for covered bonds and money market papers, the declining trends also apply in the longer run, as a comparison with 2Q11 figures shows. The capacity for successful debt issuance thus appears to be weaker than in previous quarters. The concentration of issuing in market segments shunned over the last few quarters reflects successful policy interventions to stabilise those segments, as well as improved fundamentals in the markets for underlyings. Crisis-related distortions between market segments appear to have partially abated. The renewed increase in non-financial corporate spreads observed in 2Q13 (see R.10) corroborates the signs of a reduction in issuance.

Refinancing: The main sovereign issuers have continued to use the improved market conditions to roll over their debt. The maturity of debt newly issued by sovereigns of economies in distress continued to shorten and is now similar to the shorter maturity profiles typically seen in non-distressed economies (see R.19). As a result, funding risks persist in the medium term, especially if the supply of funds to these markets remains low.

Maturities: The trend towards issuing new securities featuring a lower average maturity than current outstanding debt persists in most sectors, being more pronounced among EU countries not directly exposed to high sovereign risk. In particular, issuers traditionally emitting at longer maturities shortened the maturity of their new issues. Deviating from the general trend, sovereign debt issuance in distressed markets also saw a reduction in maturity. At the same time, with debt turnover still high, credit risk has increased. Moreover, the trend common in the EU banking sector to engage in uniform maturity reductions may be a source of additional contagion.

Bank redemptions: The maturing debt needing to be refinanced by private EA banks by the end of 2016 fell from EUR 685bn in 1Q13 to EUR 591bn. Of this total EUR 384bn needs to be refinanced by the end of 1Q15. These refinancing requirements do not include obligations to central banks, which are usually in the form of short-term debt. However, the three-year LTRO facilities provided by the ECB in December 2011 (EUR 489bn) and March 2012 (EUR 530bn) both have a maturity of three years, with early repayment possible any time after one year. For 2Q13 the ECB reported additional repayments of EUR 37bn of three-year LTRO liquidity, bringing the volume of repayments up to 274bn The remaining LTRO repayments of EUR 744bn outstanding push up European banks' refinancing needs to roughly EUR 1.1tn between late 2Q13 and 1Q15, implying that the future credit risk for Europe's banking sector remains substantial. However, factors such as deleveraging and restructuring processes, as well as the downsizing of the banking industry, may reduce banks' funding needs.

Trends
Risks
Vulnerabilities

Short Selling in the EU: Initial evidence after entry into force of the Regulation[1]

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On 1 November 2012, the Short-Selling Regulation entered into force in the EU. Among its main provisions, the Regulation introduced: a reporting requirement for short positions above specific thresholds; the possibility for National Competent Authorities to prevent short sales during periods of market stress; and a ban on uncovered sovereign CDS. This article provides a summary of ESMAs Technical Advice on the evaluation of the Regulation 236/2012 of the European Parliament and of the Council on short selling on certain aspects of credit default swaps (ESMA/2013/614). The article analyses the impact of temporary short selling bans and investigates the impact of the ban on sovereign CDS on liquidity.

Short positions reported

Background

The Regulation sets out disclosure requirements for market participants holding short positions on European shares and sovereign bonds. Each market participant has to compute its net economic short position (i.e. including short positions through derivatives) into an asset at the end of each trading session.

A short position held on a share has to be notified to the relevant Competent Authority when it is equal to or greater than 0.2% of the issued share capital, and has to be publicly disclosed when it is equal to or greater than 0.5% of the issued share capital. The Competent Authority must be notified when an existing short position reaches, falls below or crosses the aforementioned thresholds. Additionally, any modification of an existing position of 0.1% or more must be notified.

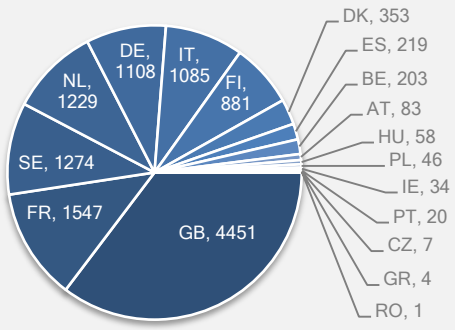
The thresholds for notification of short positions held on sovereign debt are 0.1% when the total amount of issued debt outstanding is between zero and EUR 500bn and 0.5% when the total amount of issued debt outstanding is greater than EUR 500bn. Short positions held on sovereign debt are not subject to public disclosure. In sum, a notification to a Competent Authority corresponds either to a "newly created" short position, or to a modification (change) of an existing one, which is the breakdown used below to analyse the data.

The Regulation provides for exemptions of market making activities that allow relevant entities to build short positions without being obliged to notify the relevant Competent Authority or to locate the financial instruments in case of short sales or to enter into uncovered sovereign CDS transactions without infringing the prohibitions set forth in the Regulation. Similar exemptions are provided for the operations by primary dealers in sovereign debt instruments. Both market makers and primary dealers have to notify the relevant Competent Authorities of their intention to use these exemptions for a particular instrument.

Short positions on shares

Between 1 November 2012 and 28 February 2013, 12,603 notifications were made to NCAs on 970 shares in 18 countries. They were split up into 4,001 short positions and 8,602 modifications made to these positions. As shown in Chart V.01, the bulk of the notifications concerned shares listed in the UK.

Number of notifications V.01



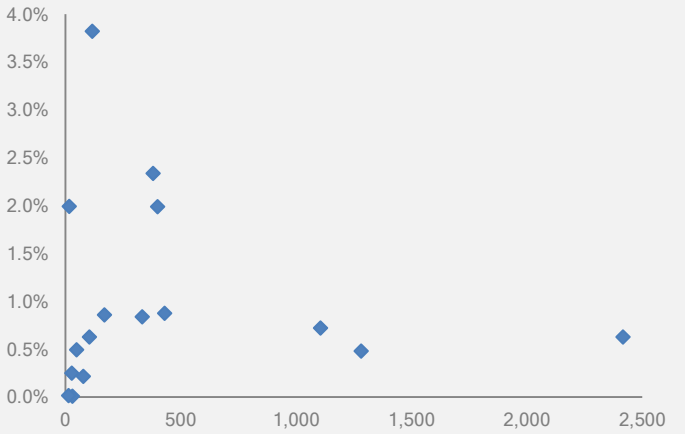
Note: Number of notifications counted by Reporting Competent Authority, 1/11/2012 to 28/2/2013.
Sources: National Competent Authorities, ESMA.

Chart V.02 plots the average monetary equivalent of all short positions reported to a Competent Authority relative to the corresponding national market capitalisation, as a relative measure of the short-selling activity under a given NCA's remit. On average, short positions add up to approximately 1% of a country's broad market capitalisation, including two outliers (IT and FI) for which they amount to 2.3% and 3.8% of the national market capitalisation.

A total of 460 holders reported their positions to Competent Authorities during the period. The top ten holders accounted for 28% of all the short positions reported, indicating a significant degree of concentration. Otherwise, overall holdings of short positions reported were fairly diluted, with 75% of holders short on seven different shares or fewer; only 15 market participants were shorting 50 different shares or more, and four were short on more than 100 shares. This suggests that relatively few players were actually using short-selling as an active strategy for their trading activities.

[1] This article summarises the economic analysis of "ESMA's technical advice on the evaluation of the Regulation (EU) 236/2012 of the European Parliament and of the Council on short selling and certain aspects of credit default swaps", ESMA/2013/614, 3 June 2013, pp. 58-95, "Detailed quantitative analyses", authored by Antoine Bouveret, Yanis El Omari, Marc Gillaizeau, and Julien Mazzacurati.

Total value of short positions reported V.02

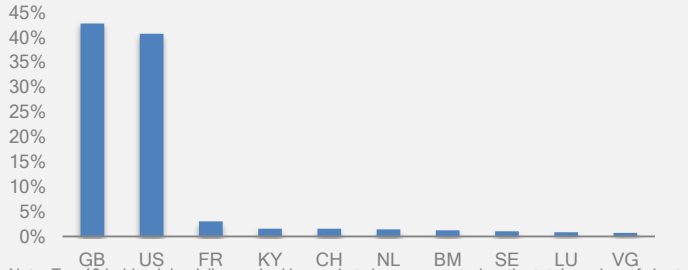


Note: National market capitalisation on the X-axis taken as market value of the Datastream national broad equity index, in EUR bn. Sum by Reporting Competent Authority of the monetary values of the average reported short positions by holder per issuer, as percentage of market capitalisation, on Y-axis, in %. One point by RCA. 1/1/2013 to 28/2/2013. For each notification, the equivalent amount of the position in EUR was computed, using the equivalent amount in shares of the net economic short position and the closing share price on that trading day. The average size of each holder's short position was then caclulated, given that the size of a single position can change over time. Finally, the sum of these average values for each Reporting Competent Authority was calculated. The equivalent amount in shares was not available for BE, and prices were not always available for the shares notified. Short positions on a specific share under the DK CA's remit were eliminated in order to obtain a consistent figure, as the amount shorted on that share represented almost 29% of the national market share (using our calculation method).
Sources: National Competent Authority, Thomson Reuters Datastream, ESMA.

Short position holders are composed mostly of hedge funds and fund management companies, with only five banks included in the 50 biggest holders (in terms of the number of different short positions). This low representation of banks among the most active short sellers might reflect the reporting exemptions available to market makers under the new SSR, as large financial institutions could be expected to fall into this category.

More than 83% of all reported short positions are held by entities domiciled in the UK or the US; Cayman Islands (KY) and Bermuda (BM) are also present in the top ten holders' domiciles (Chart V.03).

Top 10 holders' domiciles for reported short positions V.03



Note: Top 10 holders' domiciles ranked by market share, computed as the total number of short positions held by legal entities in the same country over the total number of reported short positions, in %, 1/11/2012 to 28/2/2013.
Sources: National Competent Authorities, ESMA.

From a qualitative point of view, the same conclusions hold for short positions made public. Between 1 November 2012 and 28 February 2013 there were 224 holders publicly disclosing 1,090 short positions on 427 shares, for a total of 3,508[2] notifications, with the bulk of published notifications from the UK, followed by FR and SE. On average, published short positions represented around 0.5% of a country's broad market capitalisation, including one outlier for whom they represented around 2.2% of the national market capitalisation (FI). The average size of published short positions was around EUR 52.1mn[3], and on average the total value of published short positions amounted to almost half the value of all short positions.

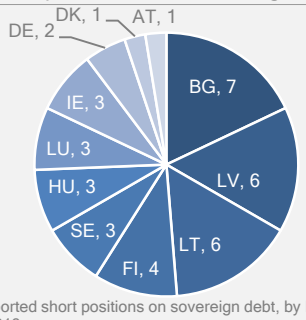
The top 50 holders in terms of the number of net short positions published also comprised mainly hedge funds and fund management companies and only three banks. 37% of the published notifications were from ten holders only. More than 90% of the published positions were notified by entities domiciled in four countries belonging to the top ten holders' domiciles.

Short positions on bonds

Between 1 November 2012 and 28 February 2013, 148 notifications were made to NCAs on 13 sovereign issuers in 11 countries (Chart V.04).

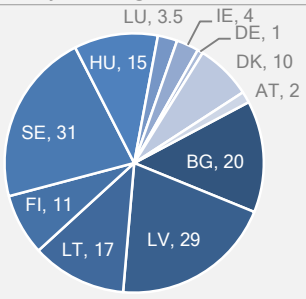
A total of 26 holders reported 39 short positions on EU sovereign debt. SE, LV and BG debt was subject to the most active short-selling (Chart V.05).

Net economic short positions on EU sovereigns V.04



Note: Number of reported short positions on sovereign debt, by Reporting Competent Authority, 1/11/2012 to 28/2/2013.
Sources: National Competent Authorities, ESMA.

Number of notifications by sovereign issuer notified V.05



Note: Number of notifications on sovereign debt, by Reporting Competent Authority, 1/11/2012 to 28/2/2013.
Sources: National Competent Authorities, ESMA.

[2] This number stands for new short positions that were created "directly" above the threshold, as well as existing short positions that were modified and crossed the threshold (upwards or downwards), and any modification of an existing short position of 0.1% or more above the threshold.

[3] See chart for details on calculations.

For illustrative purposes, the average size of short positions held on European sovereign debt was around EUR 2.89bn, while the average short position reported on shares totalled around EUR 28.3mn[4].

The number of notifications received on shares (12,603) and the number of notifications received on sovereign debt (148) differ very strongly. The low number of notifications received on sovereign debt relative to the number of notifications received on shares may, in fact, not accurately reflect the actual short-selling activity on the former. The differences in the statistics are likely to result from the reporting threshold levels and the computation of duration-adjusted short positions on sovereign debt, as a consequence of which reporting thresholds are less likely to be surpassed.

Temporary short selling bans

The Short Selling Regulation grants National Competent Authorities (NCAs) the power to introduce temporary short selling restrictions on financial instruments after significant price falls (10% in the case of liquid shares)[5]. This part of the analysis focuses on evidence from the seven short selling restrictions imposed between entry into force of the Regulation on 1 November 2012 and end-March 2013 (see Table T.02 for specifications), and their observed market impact.

The short-selling restrictions under consideration were introduced with a non-trivial delay relative to the relevant deterioration in market conditions. For bans that were introduced during trading hours this corresponds to the time lag between the moment the 10% threshold is crossed and the announcement of the ban (Table T.01). By the time a supervisor announces the restriction and the news is relayed, the sell-off has typically already levelled out, prices have stabilized or rebounded and transaction volumes have started to normalise.

Timing of temporary bans T.01

	Threshold	Ban
Finmeccanica	09:45	11:30
Intesa San Paolo	11:30	12:15
Banca Carige	09:05	13:20
Monte dei Paschi	10:40	14:30

Note: Threshold is the time at which the share price dropped 10% or more relative to previous close, using 5-minute price data.

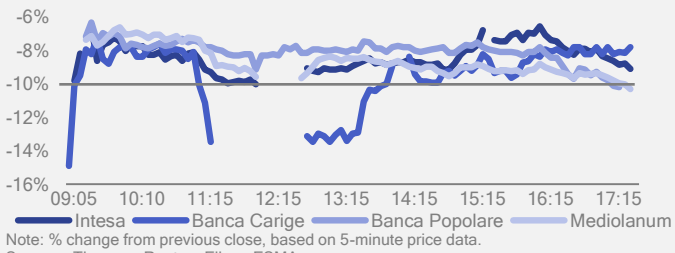
Sources: Thomson Reuters Eikon, ESMA.

Circuit breakers

As evidenced by the absence of data for various frequencies before or around the time short-selling bans were imposed, there is overlap between so-called "circuit breakers" (i.e. automatic trading interruption mechanisms maintained by trading venues) and temporary bans imposed by supervisory authorities.

For, example, in the case of *Borsa Italiana*, any change greater or equal to 5% relative to the *static price* (the pre-auction price or price of previous close) of a share, and 3.5% relative to the *dynamic price* (the previous transaction) triggers an automatic interruption in trading in that share by the trading venue. On 26 February 2013, trading in Banca Carige, Intesa San Paolo and Mediolanum shares was interrupted at least once due to successive sell-offs. (Chart V.06).

IT bank stocks and trading interruption on 26/02/2013 V.06



Note: % change from previous close, based on 5-minute price data.

Sources: Thomson Reuters Eikon, ESMA.

Volume of transactions

Share transaction volumes tend to decrease during temporary short-selling bans relative to the pre-ban sell-off. However, observed trading volumes, based on 30-minute data, exhibit the following trends:

— transaction volumes peak during the initial sell-off (on market opening);

— volumes progressively decrease as prices stabilize, but remain above average;

— a short-selling ban is imposed and trading volumes decrease further. The exact impact of bans on volumes is thus difficult to disentangle from a simple normalisation of trading post sell-off.

[4] Comparison of the numbers needs to be treated with great care because short positions held on sovereign debt are duration-adjusted. More precisely, the "cash" part of the position is adjusted by duration and the part of the position held through derivatives is delta-adjusted only.

[5] Article 23 of the Regulation issues powers to Competent Authorities to temporarily restrict short selling or otherwise limit transactions in a financial instrument on a trading venue where the price of a financial instrument on that trading venue has fallen significantly during a single trading day from the closing price on the previous trading day. The levels of intraday price fall which trigger consideration of whether to exercise these powers are set for liquid shares in the Regulation itself and for other types of share and other types of financial instrument in Commission Delegated Regulation (EU), No. 918/2012. No trigger thresholds have yet been set for UCITS or commodity derivatives. During the reporting period under consideration, this power to temporarily restrict short selling or otherwise limit transactions in a financial instrument was exercised seven times by one single Member State. In addition to temporary restrictions, the Regulation equips NCAs with emergency powers of intervention. Article 20 enables them to prohibit or impose conditions on entering into a short sale or equivalent transaction. Such action may be taken in respect of all financial instruments, a specific class of financial instrument or a specific financial instrument. Since application of the Regulation, two Competent Authorities have used the powers of intervention granted under Article 20. In one case, the measure concerns a temporary prohibition on short selling shares and in the second case a temporary prohibition on entering into short positions in specified shares. While the temporary prohibition on short selling was partially lifted, the temporary prohibition on entry into short positions expired at the end of January 2013.

These steps can be observed for stocks on which a ban was imposed during trading sessions for Finmeccanica, Intesa San Paolo, Banca Carige and Saipem. For the others (i.e. Banco Popolare and Mediolanum), while trading volumes also decreased following the initial sell-off, they remained relatively high and peaked again later in the day as a second sell-off brought prices below the -10% threshold, triggering the supervisory reaction.

Average transaction volumes before and during ban T.02

	Normal times	Pre-ban	Ban
Saipem	282,378	3,439,112	967,644
Finmeccanica	456,128	3,750,746	1,095,615
Intesa San Paolo	9,395,944	38,071,910	10,570,548
Banca Carige	166,671	1,637,999	244,298
Banco Popolare	948,657	1,845,809	761,558
Mediolanum	147,303	524,554	110,965
Monte dei Paschi	10,539,990	27,017,762	9,525,206

Notes: Average number of transactions per 30 minutes; normal times = five days before and after the ban. Pre-ban defined as period between sell-off and ban introduction.
Sources: Thomson Reuters Eikon, ESMA.

The average number of transactions per 30 minutes during the pre-ban period is somewhere between two and 12 times higher than during normal times. There is a correlation between the extent of price drop and the increase in transaction volumes, with Saipem and Banca Carige experiencing both the sharpest sell-offs (-37.6% and -14.9%) and the largest percentage increases in transaction volumes; in contrast, Banco Popolare and Mediolanum only crossed the 10% threshold towards the end of the relevant trading day, while transaction volumes increased only two or threefold.

After introduction of the short-selling restriction, average transaction volumes fell sharply relative to the pre-ban period (-71.8%). Volumes tended to remain higher than during normal times, but this is not true of all stocks (i.e. for Banco Popolare and Mediolanum, transaction volumes dropped below volumes in normal times; however the initial trading peak during the sell-off was relatively smaller than for the other stocks).

Price formation

Temporary bans do not seem to have a significant impact on price formation[6]. For each share, we calculated the first-order autocorrelation on five-minute price returns, called AR(1) (30-minute price returns did not produce any useful results), in order to determine whether returns in T may affect returns in T+1. A significant impact would be synonymous with a slow price formation process. The observation period covers five business days before and after the bans, divided into three sub-periods: pre-ban, ban and post-ban. We then compared the AR(1) of the sub-periods with a Chow breakpoint test, in order to determine whether there is a structural breakpoint induced by the introduction of a ban that would result in slower price formation:

— For one share (Mediolanum) there is a significant difference, with AR(1) becoming significant upon introduction of the ban; however, AR(1) remains significant even after the ban is lifted.

— For three shares out of seven we find a significant AR(1) for the period as a whole. However, for two of them (Intesa, Carige) there was no significant difference between coefficients during or outside of the ban; for the last one (Finmeccanica), the AR(1) becomes non-significant during the ban.

— For the other shares (Banco Popolare, Monte dei Paschi, Saipem) the AR(1) is non-significant throughout the time period.

In summary, the ban significantly slowed the price formation process in only one of the seven cases, with price formation remaining slow even after the ban was lifted. We tested for robustness by changing the ban introduction and lift times and obtained similar results.

On volumes, since temporary bans are imposed by national supervisors on the instruments' main platform without an obligation for other EU supervisors to follow suit on alternative trading venues, a substitution effect that would increase the volume of transactions on platforms where short-selling is still allowed could be expected *ceteris paribus*.

While uneven data granularity does not allow for a comparison of similar platforms, e.g. Milan and Frankfurt exchanges, due to much lower trading volumes of IT stocks on the latter, comparisons can be drawn with Multilateral Trading Facilities such as Chi-X (Table T.03). Here again, the analysis focuses on transaction volumes per 30 minutes. For stocks under restriction on both the main (Milan) and the alternative venue (Chi-X), volumes after the sell-off decrease at a comparable scale once the ban is introduced: -70.9% on average for Chi-X versus -71.8% for Milan; for stocks without restrictions on the alternative venue, volumes dropped by 61.5%. This is consistent with the idea that short-selling bans may reduce trading volumes.

Similar differences can be observed for volumes during the ban relative to volumes in normal times: The trading volume of stocks under ban on Chi-X was on average 7.8% lower than in normal times, while volumes for stocks without a ban on Chi-X (but banned in Milan) remained 48.6% higher. However, it would be premature to conclude that a substitution effect is significantly impacting volumes: The unrestricted shares on Chi-X also display higher volumes on the Milan exchange than during normal times, despite the short-selling ban in place. This seems to reflect stock specificity rather than a general effect.

[6] The analysis is confined to observing auto-correlation, relative transaction volumes and price behaviours, as the periodicity of bid and ask price data (daily) does not permit assessment of intraday market liquidity using bid-ask spreads.

Chi-X: Average transaction volumes T.03

	Normal times	Pre-ban	Ban
Stocks with ban			
Saipem	80,925	291,962	89,614
Intesa San Paolo (27/02)	1,971,840	7,822,907	1,564,923
Banca Carige (27/02)	9,280	58,983	13,900
Banco Popolare	170,984	244,499	136,888
Mediolanum	18,865	51,617	7,759
Stocks without ban			
Finmeccanica	56,459	201,255	105,250
Intesa San Paolo (26/02)	1,971,840	7,822,907	2,839,492
Banca Carige (26/02)	9,280	58,983	17,990
Banca Monte dei Paschi	232,836	638,576	251,206

Notes: Avg. volume of transactions per 30 minutes for stocks under short-selling ban in Milan. Short sales of Intesa San Paolo and Banca Carige shares were allowed on 26 Feb but banned on 27 Feb 2013.

Sources: Thomson Reuters Eikon, ESMA.

Diffusion time of ban news T.04

	Ban	Newswire
Intesa San Paolo	12:15	12:19
Banca Carige	13:20	13:31
Banca Monte dei Paschi	14:30	14:44

Note: The "Ban" column shows the official start date of the short-selling ban; the "Newswire" column shows what time the information was first relayed on newswires.

Sources: Thomson Reuters Eikon, ESMA.

On prices, based on minute-by-minute data on the most liquid shares, the imposition of short-selling bans does not seem to introduce a significant delay in the price reaction to new information (Chart V.07).

Banca Monte dei Paschi trading prices V.07

Note: Minute-by-minute prices on selected trading venues; gaps in the Chi-X line are due to the lower volume of transactions and therefore the absence of price data. Orange line indicates imposition of ban.

Sources: Thomson Reuters Eikon, ESMA.

Market participants may be faced with uncertainty stemming from the decision of EU supervisors of other trading venues where the relevant shares are traded as well to either (i) introduce a short-selling restriction on the trading venues under their jurisdiction, or (ii) take no action at all. From this, two reservations may affect the analysis and therefore our conclusions:

— There is a possibility of market participants stopping short sales on all trading venues after a ban is introduced by the supervisor on the home platforms; in that case the ban may also impact metrics such as liquidity and price formation on other trading venues.

— If market participants do choose to proceed with short sales on other trading venues, they retain the possibility to arbitrage with prices on the home platforms where the emergency measure is in place; this may affect the price formation analysis.

Price returns and volatility

Temporary bans do not seem to have a significant impact on price volatility, and have a small positive impact on returns (at the limit of significance) of the shares under short-selling restriction.

First, the announcement of short-selling restrictions does not appear to increase volatility. For bans introduced during trading sessions, there was on average a five to 15-minute lag before the news of a short-selling ban was relayed by newswires (Table T.04). Although this could be explained partially by the news diffusion time, with market participants reacting non-simultaneously, there were no apparent changes in transaction volumes (using five-minute data) or unusual price movements (using tick data) either upon announcement of the ban or diffusion of the news.

Second, the econometric analysis suggests that temporary bans do not trigger significant changes in price volatility for stocks subject to the ban — i.e. the size and direction of the impact on volatility is too uncertain to be conclusive. Although volatility is lower during the ban, this is explained mainly by lower overall stock market volatility as measured by the volatility of MIB returns and a composite IT financial sector index (Table T.05).

Temporary restrictions and volatility of returns T.05

	No ban	Pre-ban	Ban
MIB	0.50%	1.49%	0.37%
Index of financial sector	0.60%	2.28%	0.44%
Intesa San Paolo	0.77%	2.61%	0.51%
Banca Carige	0.94%	4.15%	0.64%
Banco Popolare	0.91%	1.60%	0.90%
Mediolanum	0.58%	1.83%	0.37%

Notes: Standard deviation of 30-minute returns around elections in IT; temporary bans were introduced on the four bank stocks included above.

Sources: Thomson Reuters Eikon, ESMA.

A model used to calculate abnormal returns (Box) shows that short-selling restrictions may increase returns marginally: During temporary bans, the 30-minute returns on shares under restriction are on average 0.1 percentage points higher than on those in an IT financial sector composite index. This might be explained by some short-sellers unwinding their positions, or by the bans limiting the number of new net short positions, thereby supporting prices.

Measuring abnormal returns

The analysis focuses on the abnormal 30-minute returns on four bank shares (Intesa San Paolo, Banca Carige, Banco Popolare and Mediolanum) on which temporary short-selling bans were introduced on 26 and 27 February 2013.

The returns observed on the four bank stocks are regressed on a set of control variables (returns of the financial sector index calculated by Thomson Reuters) and on a dummy variable

$$R_i = \alpha + \beta * I_i + \gamma * Ban_i + \varepsilon$$

where R_i is the observed return in period i, α is a constant, I_i is the financial sector index return in period i, and Ban_i is a variable equal to 1 during the short-selling ban and 0 otherwise.

An alternative method is also used, in which the observed returns on the four banks are regressed on the financial sector index in order to determine the correlation with observed bank returns; excess returns are then calculated by subtracting predicted returns from the observed returns; then excess returns are regressed on the ban:

$$R_i = \alpha + \beta * I_i + \varepsilon \quad \overline{R_i} = R_i - \alpha - \beta * I_i \quad \overline{R_i} = \nu + \mu * Ban_i + \varepsilon$$

where R_i is the observed return in period i, α and ν are constants, I_i is the financial sector index return in period i, $\overline{R_i}$ is the predicted return in period i, Ban_i is a variable equal to 1 during short-selling bans and 0 otherwise.

Both panel regressions use fixed effects to capture the individual characteristics of the four bank returns. The coefficients of γ in method 1 and ι in method 2 are very close, small and at the limit of significance.

Analysis of the impact of the ban on uncovered sovereign CDS in the EU

The Regulation prohibits a natural or legal person from entering into an uncovered sovereign CDS (SCDS) position. In order to buy EU SCDS, market participants therefore need to hold the underlying bonds. Some market participants, and international institutions such as the International Monetary Fund (IMF), indicated that such a ban could have detrimental effects on the liquidity of the CDS market as well as on the ability of market participants to hedge their portfolios. This section analyses the impact of the Regulation on the liquidity of the CDS market and assesses whether proxy hedging was negatively affected by the entry into force of the Regulation.

Effect on CDS spreads

Isolating the specific effects of the Regulation is a complex exercise. Two main approaches were used:

— difference-in-difference methods that rely on the comparison with a control group; and

— insertion of control variables to account for third factors, where possible.

For the effect of the Regulation on CDS spreads, we compared EU spreads to non-EU spreads before and after the Regulation. In addition, we selected three control variables: the debt-to-GDP ratio as a proxy for the solvency risk to the country; domestic stock market indices as proxies for domestic financial market developments; and a business sector activity indicator, namely business sales. Taking this into account, the ban was found to have caused a slight reduction of around 26 basis points in the CDS spread of countries subject to the Regulation (only significant at the 10% confidence level), but there was no effect on the sovereign bond market (Table T.06).

Effect of introduction of the ban T.06

	Coefficient	P-value	Significant
CDS spreads	-26.585*	0.075	Yes
10Y yields	-0.069	0.567	No

Note: diff-in-diff estimator, controlling for debt to GDP ratio, national stock market indices and retail sales indices. * indicates that the parameter is significant at the 10% level.
Sources: Thomson Reuters Eikon, Thomson Reuters Datastream, ESMA.

Effects on the liquidity of the CDS market

The ban on uncovered SCDS could have a detrimental impact on the liquidity of the CDS market through different channels. By preventing market participants from expressing a negative view on the creditworthiness of EU sovereigns, the Regulation may lead to a reduction in volumes (measured by gross and net notionals) and trading activity and an increase in bid-ask spreads. In particular, according to the IMF[7]: "[I]n the wake of the European ban, SCDS market liquidity already seems to be tailing off, although the direct effects of the ban are hard to distinguish from the influence of other events [...]".

Trading volumes on CDS markets T.07

	Gross Notionals		
Mean	Before	After	Difference
EU Sovereigns	1465.64	1593.88	128.25
Non-EU Sovereigns	1108.60	1107.25	-1.35
SovX WE	167.29	146.07	-21.22
iTraxx WE Senior Financials	523.81	584.18	60.37
EU Financial CDS	888.43	885.07	-3.36
	Net Notionals		
Mean	Before	After	Difference
EU Sovereigns	129.09	105.90	-23.19
Non-EU Sovereigns	93.71	89.16	-4.55
SovX WE	8.71	8.02	-0.69
iTraxx WE Senior Financials	46.01	39.82	-6.19
EU Financial CDS	53.88	51.54	-2.34

Note: Mean values of gross and net notional amounts outstanding on selected CDS markets on balanced timespans before and after entry into force of the ESSR on 1 November 2012, EUR bn. EU financial CDS is an aggregate on iTraxx WE Senior Financial individual components.

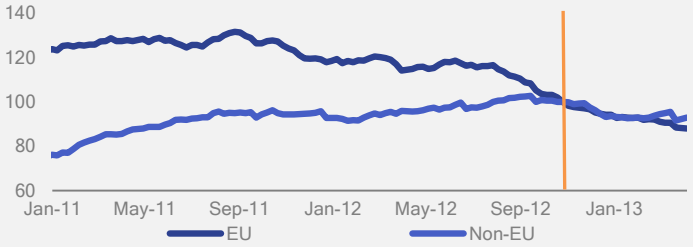
Sources: Thomson Reuters Eikon, ESMA.

As shown in Table T.07, gross notionals have increased for EU sovereigns. While net notionals have decreased, this trend began in August 2011, i.e. before the Regulation came into force. Moreover, there was a similar decline in net notional contracts on non-EU sovereigns, as illustrated in Chart V.08. For CDS indices on EU sovereigns, the decline

7 "A New Look at the Role of Sovereign Credit Default Swaps", Global Financial Stability Report, Chapter 2, April 2013.

in net notionals was substantial. Even though most of this occurred before September 2012, the possibility cannot be ruled out that the ban did have a significant impact, as market participants willing to buy the SovX WE index are required to hold the sovereign bonds of its 14 components. Overall, since entry into force of the Regulation volumes in SCDS do not seem to have been adversely affected in the EU, with the exception of sovereign CDS indices.

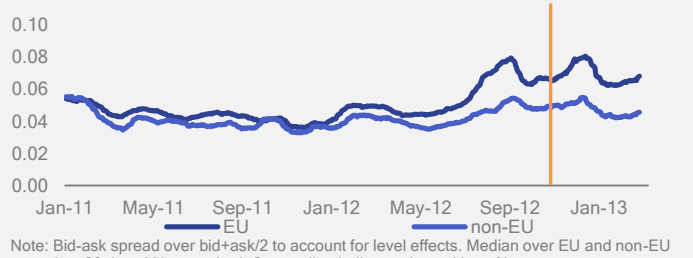
Sovereign CDS: Net notionals outstanding V.08



Note: Net notional, USD bn. Orange line indicates imposition of ban.
Sources: DTCC, ESMA.

Bid-ask spreads are another proxy for the liquidity of CDS markets. As illustrated in Chart V.09, spreads increased since July 2012, both for EU and non-EU SCDS. There was no significant change in spreads before and after the Regulation came into force, as indicated by means equality tests.

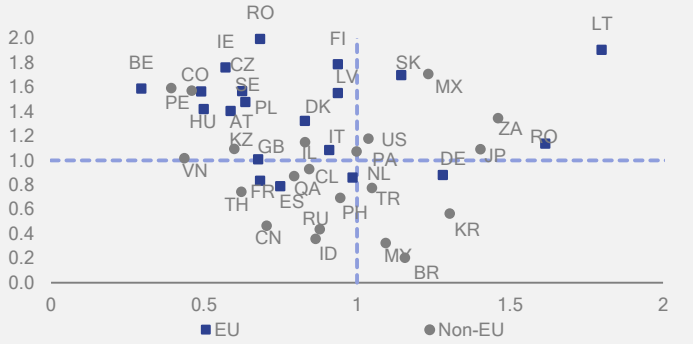
Median bid-ask spread for EU and non-EU SCDS V.09



Note: Bid-ask spread over bid+ask/2 to account for level effects. Median over EU and non-EU countries, 20 days MA smoothed. Orange line indicates imposition of ban.
Sources: Bloomberg, ESMA.

For individual EU and non-EU sovereigns, both the change in bid-ask spreads and the change in market activity were analysed (Chart V.10).

Liquidity indicators V.10



Note: The vertical axis is the ratio of the average bid-ask spreads over 2010-2011 to that in the post ban period. The horizontal axis is the ratio of the average number of trades per week during the period September 2010-February 2012 to that in the post-ban period.
Sources: Bloomberg, DTCC, ESMA calculation.

The evolution of liquidity (y-axis) is measured by the ratio of average bid-ask spread (specifically, bid-ask spread over mid-spread) after the ban (from 1 November 2012 to 1 April 2013) over the average in 2010 and 2011. A ratio higher than one indicates that the average bid-ask spread was higher after November, therefore liquidity deteriorated after entry into force of the Regulation compared to 2010 and 2011. For trading volumes, we took the ratio of the average number of contracts per week after the ban (September 2012 to February 2013) over the same measure during the period September 2010 to February 2012. We can observe a majority of European countries in the top left of the graph, where both liquidity and market activity deteriorated; however these differences are not statistically significant.

Has the ban affected the ability to use proxy hedging?

Proxy hedging is a market practice that consists of buying insurance against the risk of default by an entity which, although the hedger is not directly exposed to it, has a high correlation with the hedger's exposure. For example, an investor exposed to the credit risk of large financial companies in a given country might buy the SCDS of that country without holding the underlying sovereign debt. There have been concerns among market participants that hedging strategies might be hampered by the Regulation due to the ban on uncovered SCDS.

There are three alternatives to proxy hedging through SCDS:

— directly hedging the credit risk inherent in a specific long position by buying a CDS contract on the very reference entity on which the position is held; but such a strategy will presumably entail substantial costs, or

— using CDS on major financial companies as a proxy for hedging a country risk, as these entities' credit risk is often highly correlated to that of the State, or

— using future contracts on sovereign debt[8].

We try to assess whether trading volumes on these markets could give some insight into a potential re-allocation of proxy hedging activities from SCDS markets towards financial CDS or sovereign future contracts, which would be expected to create large movements in volumes.

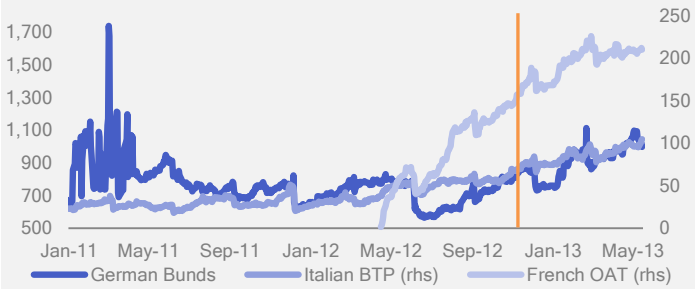
As previously observed, gross notionals on EU SCDS increased between early 2012 and May 2013. However, the number of contracts outstanding was around the same level as a year ago and net notional outstanding amounts decreased almost continuously from late August 2011 to less than EUR 100bn. Given that the market has expanded, as illustrated by the increase in gross notionals, this net decline reflects a re-balancing between counterparties' long and short positions in favour of the latter, which could be due to a drop in holdings of uncovered CDS.

As of May 2013, there were fewer contracts outstanding on EU major financial CDS, and also on financial CDS indices, than in September 2012. Net notionals outstanding

[8] However, futures contracts embed both credit risk and interest rate risk, so they would have to be combined with other derivatives such as interest rate swaps in order to replicate the protection offered by a CDS contract.

decreased from EUR 65bn in late August 2011 to EUR 51bn in early May 2013. This would contradict the claim that financial CDS absorbed the demand for proxy hedging and were used as a substitute for SCDS. Indeed, in this case, we would expect an increase in net notionals as more investors would hold long positions in uncovered financial CDS in order to hedge their portfolios. Another argument in support of this is that gross notionals of financial CDS did not increase after 1 November 2012 either, suggesting that the total size of the market did not expand, although outstanding amounts were more volatile than for the SCDS market[9].

Future contracts on sovereign bonds V.11



Note: Number of open interests through future contracts held on selected EU sovereigns, in thousand. Orange line indicates imposition of ban.
Sources: Thomson Reuters Eikon, ESMA.

As mentioned earlier, an alternative strategy to proxy hedging through SCDS is to sell futures contracts on sovereigns. Turning to the evolution of futures markets, Chart V.11 exhibits quite a steady upward trend in the number of open interests in IT futures contracts since early 2012. As for DE Bunds, the number of open interests through futures contracts dropped significantly in June 2012, started recovering slowly as from July 2012 and has increased almost continuously since then, reaching levels similar to 1Q11 (a very volatile period). The exponential growth in the number of open interests held on FR OAT through futures contracts is due to the fact that the contract was launched in April 2012. The increase is almost perfectly correlated with a time trend (at 97%) which makes the analysis of this series unreliable. Even though the increases in IT and DE open interests could potentially be taken as an indication that sovereign future contracts have partially replaced sovereign CDS for proxy hedging purposes, these upward trends are not very pronounced and began long before implementation of the Regulation (fully ten months prior to it for IT)[10].

Lastly, trading volumes on derivatives markets in different asset classes do not suggest that transactions for proxy hedging re-allocated from SCDS to CDS on major financials or to sovereign futures contracts. Therefore, the ban might have hampered the ability to use SCDS for proxy hedging purposes.

Conclusion

Overall, liquidity in the EU sovereign CDS market did not decrease significantly after the Regulation entered into force. However, a few specific countries and instruments (sovereign indices) did experience a significant deterioration. Furthermore, we did not find evidence of significant rebalancing through proxy hedging. While it is too early to assess the overall impact of the Regulation on the CDS market due to the limited time span, initial evidence does not substantiate some of the concerns expressed by market participants. Most of the findings presented here and surveys from the NCAs have contributed to a quantitative impact study as part of overall evaluation - including recommendations - of the Short-Selling Regulation. Short selling activity in EU equity and sovereign bond markets will continue to be monitored in the future in the Trend section of this Report.

9 The same investigation was conducted on EU major non-financial companies which can also be closely linked to the state. Gross notionals showed a contraction in the total size of the market since February 2012; the number of contracts outstanding followed the same evolution as net notionals. These observations do not serve the potential claim that big corporate CDS might be used for proxy hedging.

10 The number of long-term open interests held on GB debt through the LIFFE market is subject to the same conclusions. The series is not displayed here.

Contagion and the network structure of CDS exposures on European reference entities[1]

Contact: Yanis El Omari (yanis.elomari@esma.europa.eu)

Based on a unique data set referencing positions on single name credit default swaps (CDS) on European reference entities, we analyse the potential for contagion risk stemming from the CDS market. We first describe the main characteristics and developments of the market over the past four years. We then resort to network analysis to study the structure of bilateral CDS exposures, building rankings of the most interconnected market participants by means of network centrality indicators. The potential "super-spreaders" of financial contagion identified consist mostly of banks; to complete our contagion risk analysis, we therefore use balance sheet data to try and ascertain the financial resilience of the key bank players identified in the CDS market. We find that for some banks net CDS exposures may be particularly large relative to their total common equity. The structural features revealed suggest that the network of CDS exposures would, in most cases, be resilient to failure. However, should more than one major player be affected, the network would possibly lose its connectedness, hence its capacity to function.

This paper studies the topology of the networks of CDS exposures on European reference entities. We rely on a unique data set provided to ESMA in its capacity as European markets supervisor by the Depository Trust & Clearing Corporation (DTCC). The latter records the notional value of CDS positions outstanding on each week from 4 January 2008 until 27 January 2012. These positions are used to reconstruct 213 networks (one per each Friday for which positions are registered) of net bilateral exposures. In each network, net bilateral sellers or buyers of CDS protection represent the *nodes*; a *link* is defined if an institution is a net buyer of protection from another. More specifically, links are directed (they point to the net seller of CDS protection), and four different network representations are considered corresponding to different levels of CDS aggregation (Financials, Non-Financials, Sovereigns, and the CDS market as a whole).

A complete analysis of the amounts at risk in derivatives contracts would also necessitate considering the price level or volatility of the reference entity, the duration and liquidity of contracts, the creditworthiness of counterparties and, last but not least, the availability and extent of risk-mitigation mechanisms (such as collateralisation, collateral netting agreements and close-out netting). Such an analysis is beyond the scope of this study. Nevertheless, the nominal values outstanding, and thus bilateral and multilateral net positions, seem to be an adequate metric for the purpose of studying the structural properties of networks of CDS exposures and obtaining insights into the potential impact of their complexity and interconnectedness on systemic risk.

With regard to the relevance of the aggregate market representations considered for definition of the networks (Financials, Non-Financials, Sovereigns, and the CDS market as a whole), this would indeed be very questionable if the scope of this paper was to assess the contagion stemming from the default of individual reference entities. However, aggregating CDS positions across different references belonging to the same market sector appears more reasonable if the aim is to understand counterparty risk and the resilience of the CDS market to the default of one of its participants is of greater concern. It is also worth noting that the growing importance of risk-mitigation mechanisms in OTC derivatives markets has probably contributed to shaping CDS networks as graphs highly structured around bi-directional gross CDS exposures, i.e. widely used mechanisms such as close-out netting may have reinforced the importance of bilateral relationships in the CDS market. In this respect, the aggregation of CDS positions across different market sectors allows us to focus more clearly on the risks related to counterparty failure.

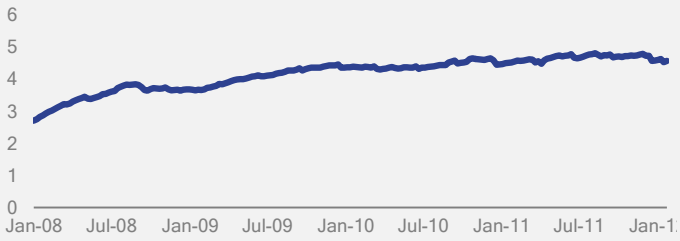
This study forms part of an increasing body of literature that looks at the role of CDS as transmitters of contagion through the large and complex network of financial linkages they create across financial institutions. As a background, and taking advantage of the granularity of the dataset provided by the DTCC, we first present the main characteristics and recent developments of the CDS market for European reference entities as well as an overview of the type of market players involved on the selling and buying side. Then using centrality measures and financial soundness indicators, we identify the most central nodes in the networks, which we refer to as potential "super-spreaders", and try to assess their role in potentially amplifying financial shocks.

Aggregate market developments

Chart V.01 plots the gross and net notional amount of outstanding CDS positions on EU reference entities registered in DTCC's Warehouse. The gross value of the market, i.e. the total of all reference entities, grew by 32% from 2008 until the beginning of 2012, climbing from an average of USD 3.5tn in 2008 to USD 4.6tn in the first weeks of 2012 (left-hand chart). A break in the uptrend in CDS sales can be seen to occur in September 2008, related to the default of Lehman Brothers. This credit event resulted in the closure of outstanding positions involving the failed investment bank, reducing the gross notional outstanding. Thereafter, the market continued to grow, but at a slower pace than in 2008.

[1] This article summarises: Laurent Clerc, Silvia Gabrieli, Steffen Kern, Yanis El Omari, "Assessing contagion risk through the network structure of CDS exposures on European reference entities", joint Banque de France and ESMA Working Paper, No. 1, 2013, forthcoming.

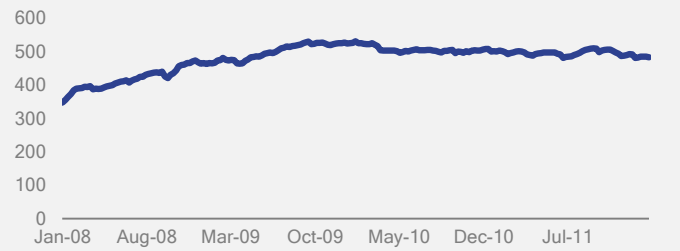
Gross notional amounts of CDS on EU reference entities V.01



Note: USD tn.
Sources: DTCC, ESMA .

While gross values provide an important indication of the size and growth of market activity, they are not the best suited for assessing the risks stemming from participants' exposures. For this purpose, net CDS notional exposures are more interesting to look at. The net notional outstanding also witnessed an uptrend, at least until the third quarter of 2009; but the pace of increase was much slower than for gross notional (V.02).[2]

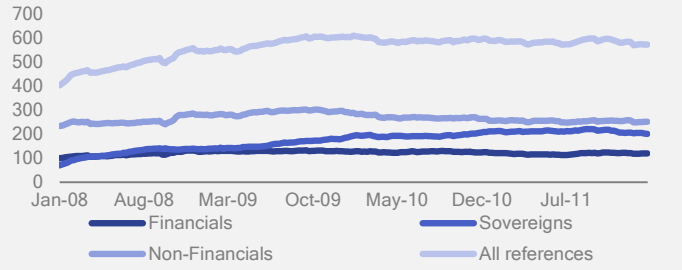
Net notional amounts of CDS on EU reference entities V.02



Note: USD bn.
Sources: DTCC, ESMA .

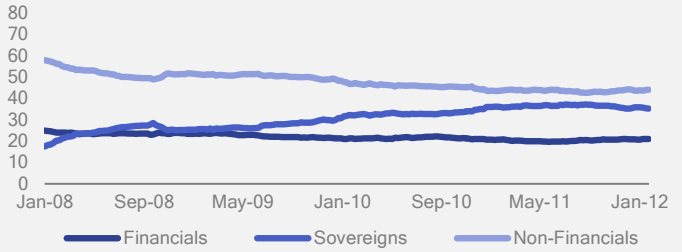
The scale of the vertical axis in the two charts plainly shows that net notional amounts are significantly lower than the gross transaction value. Chart V.03 illustrates more clearly that CDS exposures continued to increase in net terms only until October 2009, flattening out thereafter and even declining slightly in the course of 2011. This development was driven by the reduction in net CDS positions written against non-financial reference entities, which more than compensated the sustained increase in the amount of CDS protection sold against the risk of default by EU sovereigns (V.04). The share of net notional outstanding on financial reference entities remained roughly constant or dipped slightly throughout the sample. This evidence may hint at the presence of moral hazard in the European financial system: the beginning of the most intense phase of the financial crisis, in September 2008, coincides with a shift in CDS positions from European financials to European sovereigns. The steady rise in gross volumes coupled with stabilisation of the net notional outstanding indicates that as from autumn 2009 more protection started to be bought on EU entities. This related mainly to the EU sovereign debt crisis. At the same time, however, the market share of sovereign CDS does not seem to have experienced any notable break (for instance in relation to the international financial assistance provided to Greece); indeed, it grew steadily over time. If a small peak was registered, that – again – seems to be related to the demise of Lehman.

Net CDS notional amount outstanding by market sector V.03



Note: USD bn.
Sources: DTCC, ESMA.

Shares of net notional positions outstanding by market sector V.04

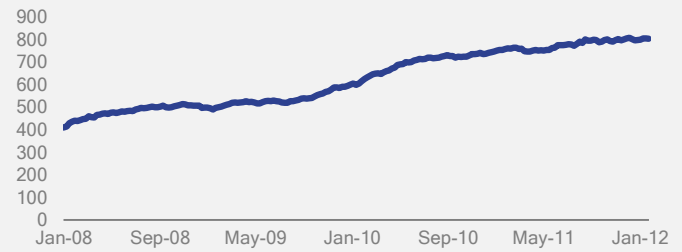


Note: Market share of net notional outstanding per market sector, in percent.
Sources: DTCC, ESMA.

Types of market participants

The strong and rapid growth of the CDS market is linked to a rapid increase in the number of market participants (V.05), which soared from an average of 480 in 2008 to an average of 802 at the beginning of 2012.

Number of CDS market participants V.05

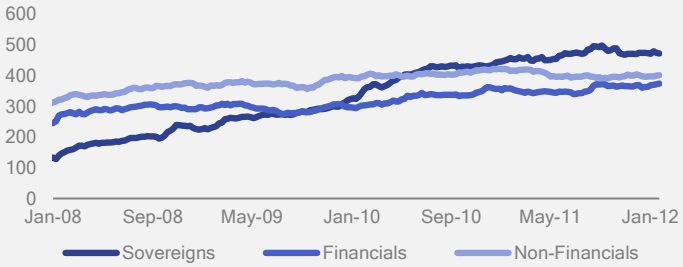


Note: Number of institutions.
Sources: DTCC, ESMA.

The number of both protection buyers and sellers on EU reference entities grew remarkably over the sample period. The upward trend in the number of buyers was driven by financial, corporate and sovereign reference entities alike until September 2008 (V.06). Thereafter, it starts to be driven mainly by buyers of CDS on EU sovereigns. The same pattern emerges for the number of sellers (V.07).

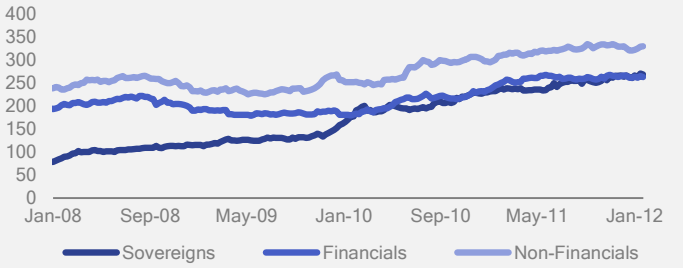
[2] 2007 figures should be considered with caution due to the lack of coverage by DTCC.

CDS buyers by reference entity market sector V.06



Note: Number of institutions.
Sources: DTCC, ESMA.

CDS sellers by reference entity market sector V.07

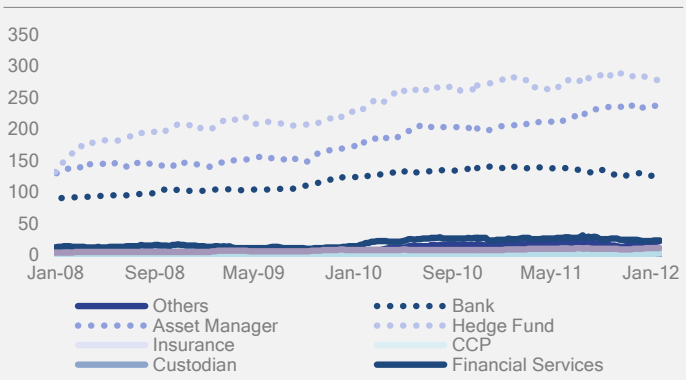


Note: Number of institutions.
Sources: DTCC, ESMA.

Unsurprisingly, the number of sovereign-CDS sellers started to gather pace after autumn 2009, i.e. following the release of negative news on Greece's public finances. This significantly lower number of sellers compared to buyers (almost half) is an indication of the prominent role played by the former in this market.

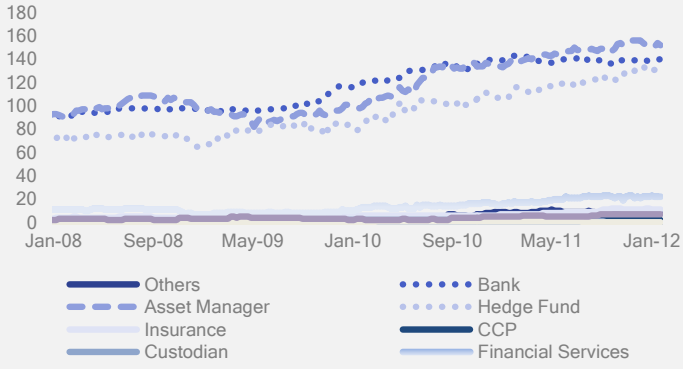
The data provided by DTCC enables us to see which categories of market participants buy/sell CDS protection on EU reference entities. Hedge funds represented 40% of the total number of buyers at the beginning of 2012, asset managers slightly more than 33%, and banks 18% (V.08). The remaining 10% is represented by financial services companies, "other" institutions, some pension plans and insurance companies. The first Central Clearing Counterparties (CCP) entered the market in September 2009, the second end-December 2009. As from January 2008 – well ahead of the most intense phase of the financial crisis in September 2008 – the number of hedge funds buying CDS on EU references increased much faster than the number of asset managers. The number of hedge funds, asset managers and banks started to rise more rapidly in the fourth quarter of 2009, probably in the context of the Greek crisis.

Buyers of CDS contracts by institution type V.08



Note: Number of institutions
Sources: DTCC, ESMA.

Sellers of CDS contracts by institution type V.09

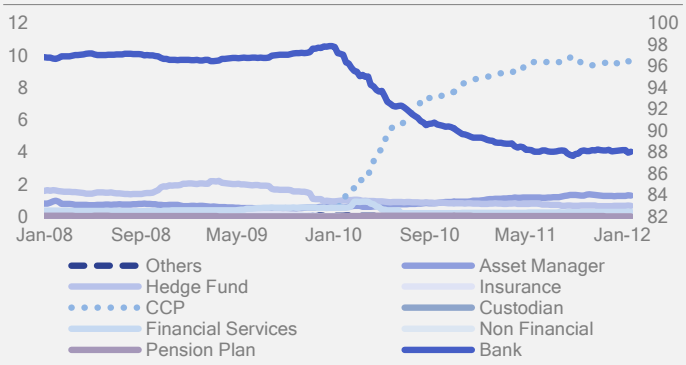


Note: Number of institutions.
Sources: DTCC, ESMA.

On the sell side, the same three categories of institutions – hedge funds, asset managers and banks – dominate the market. However, each of them represents approximately 30% of the total of sellers. In the other categories, about 11 insurers appear as CDS sellers (more than as buyers), while only seven pension plans are active on the sell-side.

The number of institutions active in CDS trading does not capture the highly concentrated nature of the market. But this is illustrated sharply by a consideration of participants' market shares in terms of the amounts of protection sold (V.10). Notwithstanding the very high number of asset managers and hedge funds selling CDS, these institutions account (on average) for a mere 2.1% of the total notional outstanding over the sample period. By contrast, banks (blue line, right-hand scale) represent more than 96% of gross CDS sales until the end of 2009 and about 88% at the beginning of 2012. Banks are therefore the most prominent players in this market.

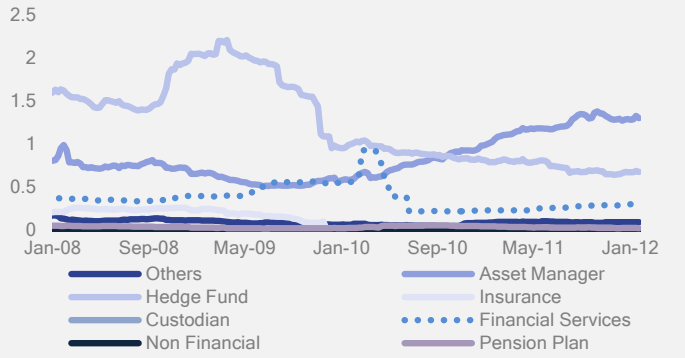
CDS issuance by banks in decline since Jan 2010 V.10



Note: Shares of gross CDS sales by seller type, %. Banks on the right-hand scale, others on the left.
Sources: DTCC, ESMA.

This decline follows the regulatory move to centralised clearing for standardised OTC derivatives. Accordingly, the percentage of contracts sold by CCP rose rapidly from less than 1% in January 2010 to almost 10% at the beginning of 2012. As noted above, until CCP entered the market, hedge funds had captured the second largest sales share, at around 1.3%, with asset managers and financial services on less than 1%.

Volatile CDS issuance by hedge funds V.11



Note: Shares of gross CDS sales by seller type excluding banks and CCP, %.
Sources: DTCC, ESMA.

Excluding banks and CCPs (V.11), we can see hedge funds stepping up their selling activity in CDS on EU entities after the demise of Lehman and scaling it back progressively since the second half of 2009. Also noteworthy is that from September 2010 asset managers became more active than hedge funds, although their volumes continued to represent less than 1.5% of total market sales.

Structural properties and evolution of the network of CDS exposures

The CDS gross notional outstanding on EU references grew from an average of USD EQ 3.5tn in 2008 to 4.6tn in 2012 (end-2011 the gross notional of all deals stood at USD 23tn according to DTCC). This continuous expansion is likely due to the euro area debt crisis and the need for investors to hedge against sovereign default risk.

The number of institutions participating in the CDS market on EU references increased from an average of 480 in 2008 to an average of 802 at the start of 2012. Since September 2008, the trend has been driven mostly by CDS on EU sovereigns, whose rate of growth accelerated after November 2009.

Hedge funds represented 40% of the total number of buyers in 2012, asset managers 33% and banks 18%. The remaining 10% was made up of financial services companies, pension plans and insurance companies. On the sell side, it was again hedge funds, asset managers and banks that dominated the market, each with a share of around 30%.

Notwithstanding the high number of hedge funds and asset managers selling CDS, they only account for a mere 2.1% of the total gross notional outstanding, while banks represent more than 96% of gross CDS sales up to the end of 2009 and about 88% in 2012. The slight decline in the banks' share follows the regulatory move to centralised clearing for standardised OTC derivatives: Central Clearing Counterparties' (CCP) share rose from less than 1% in January 2010 to almost 10% in 2012.

As regards the topology of the CDS market, with 800 nodes and 3,704 links (net buyer-net seller ordered pairs) in the opening weeks of 2012 the overall CDS network stands as a large and complex system. For all-reference networks (the CDS market as a whole), connectivity stood at about 1% on average over the sample period. Networks are thus highly sparse, with participants typically being directly exposed to a small pool of other firms: in 2012 most were holding net positions only vis-à-vis another five counterparties. There is a strong negative correlation between connectivity among market participants and net value outstanding, reflecting an increasing level of concentration. However, this trend came to something of a halt in the first quarter of 2010 and saw a slight reduction in the closing months of 2011.

This topological characterisation of the market reveals that bilateral CDS exposures trace growing "scale-free" networks. These are highly sparse; they display a high concentration of links and a highly skewed distribution of the number of connections of market participants; they exhibit a very short average distance between any two nodes in the system, a relatively high tendency to cluster (although this decreases over time), and a strong *dis*-assortativeness (i.e. institutions with many counterparties tend to be linked to institutions with few and vice-versa). Moreover, statistical tests confirm that net CDS exposures follow a heavy-tailed (power-law) distribution in all the years from 2008 to 2012. All in all, the networks studied in this paper can be described as consisting of a low number of highly interconnected "hubs" – the net sellers of CDS protection, which we refer to as "super-spreaders"– and a high number (increasing over time) of peripheral/less connected CDS buyers.

"Super-spreader" identification

Network centrality

Basic concepts

A network or graph is defined by two nonempty sets: the set N = {1,..., n} of nodes and the set L of unordered pairs of elements (i , j) called links that express the connections among the nodes. A graph may be denoted by g ≡ g(N, L) and represented mathematically by its adjacency matrix G(g) = {g_{ij}}, i.e. the N-square matrix that keeps track of the direct connections in the network. Thus, if a node i has a direct link to node j then g_{ij} = 1; otherwise g_{ij} = 0.

If two vertices i and j are directly linked, i.e. g_{ij} = 1, then i and j are neighbours or adjacent. If i and j are not directly linked, i.e. g_{ij} = 0, they may nonetheless be connected if there is a path from i to j. A path is an ordered sequence of nodes [i_0, i_1, …, i_k] starting from i and terminating at j (i.e. i_0 = i and i_k = j) such that $g_{i,i+1}$ =1 for all 0 ≤ s ≤ k-1. Thus, a path is an ordered set of nodes where node i_s and node i_{s+1} are directly linked. Finally, a weighted graph can also be represented, next to G(g), by the weighted adjacency matrix W(g) = {w_{ij}}, where w_{ij} is, in our specific case, the size of each net bilateral position between a net buyer and a net seller.

Degree

In a directed graph the out-degree of a node is the number of links originating from it; the in-degree is the number of links terminating at it

$$.g_i^{in} = \sum_j g_{ji} \text{ and } g_i^{out} = \sum_j g_{ij}$$

In the CDS networks discussed in this paper, the in-degree is thus the number of participants to whom an institution is a net seller of protection (meaning that the in-degree is zero for net buyers), while the node out-degree is the number of participants from whom it is a net buyer of protection. Thus both indicators provide a means of identifying the participants that may play a more crucial role for contagion in the CDS market.

Weighted degree or strength

Possibly more suited to our purposes are the weighted versions of a node in- and out-degree, namely its in-strength and out-strength. More specifically,

$$in-strength_i = \sum_j w_{ji}^{net\ amount\ sold}$$

represents the sum of the net bilateral *selling* positions of node *i* (i.e. the sum of the bilateral positions in which node *i* is a net seller); while

$$out-strength_i = \sum_j w_{ij}^{net\ amount\ bought}$$

represents the sum of the net bilateral *buying* positions of node *i* (i.e. the sum of the bilateral positions in which node *i* is a net buyer).

Thus,

$$net-strength_i = \sum_j w_{ji}^{net\ amount\ sold} - \sum_j w_{ij}^{net\ amount\ bought}$$

represents the net multilateral position of node *i*.

Indicators of "global" centrality

The centrality indicators presented so far are also known in the literature as measures of "local" centrality because they take into account only a node's direct links, i.e. the node centrality in its local neighbourhood. In order to capture the prominence of CDS players in the whole network structure, in the analysis presented in this section, we consider two additional indicators: betweenness and eigenvector centrality. These are also known as measures of "global" centrality because they take into account both a node's direct and indirect links.

Betweenness centrality

A node with high betweenness is a node that is often situated on the shortest paths connecting other nodes. This measure thus provides an indication of the "exclusivity" of the position of a node *i* in the overall network by counting the number of paths between any originating and any terminating node that pass through node *i*. It could be important for identifying the nodes whose removal may have the greatest impact on network resilience

Eigenvector centrality

All the centrality indicators described so far are "path-based", i.e. they rest on the restrictive premise that a given node (or a given link) can appear only once in the sequence connecting two nodes; that is, nodes are connected via *paths*. This means that in the CDS networks in this paper all the centrality measures described so far identify the most central market players under the assumption that, for example, a shock could spread through net CDS exposures (links) by passing each node/exposure only once.

However, other indicators developed in graph theory place no restrictions on the number of times that a node (or a link) can appear in the sequence connecting two nodes; in this case, nodes are connected via *walks*. One of these measures is eigenvector centrality. In the context of assessing contagion stemming from CDS exposures, this measure could provide an indication of which nodes would be more important in the propagation of a shock when taking into account the knock-on effects that may follow the shock, i.e. considering indirect network connections beyond those due to the direct links (exposures) between participants. Mathematically, eigenvector centrality is defined as the principal eigenvector of the adjacency matrix that represents the (internally connected) network. The defining equation of an eigenvector is

$$\lambda v = Gv$$

where *G* is the adjacency matrix of the graph, λ is a constant (the eigenvalue), and *v* is the eigenvector. The equation lends itself to the interpretation that a node has a high eigenvector score if it is adjacent to nodes that are themselves high scorers. Basically, in its unweighted and undirected form (the one we use in the analysis), it represents an iterative version of degree centrality, according to which a node's centrality in the network depends iteratively on the centrality of its counterparties.

The more interconnected nodes in the networks in terms of the number of counterparties that they deal with (on the buy or on the sell side) and of their aggregate net bilateral selling or buying positions are the "fourteen families" (i.e. bank-type global derivatives dealers). However, the G14 (or G15 from 2011) are not necessarily the 15 most highly interconnected firms in terms of their net multilateral position (the aggregated net position of an institution vis-à-vis all its counterparts on the CDS market), nor in terms of more complex centrality indices.

While the analysis of centrality indicators confirms bank-type dealers' potential as "super spreaders" of financial contagion in CDS networks, it also points to a variety of other non-bank/non-dealer market participants with super-spreader potential (in particular, some asset managers and some hedge funds).

Starting out from this collection of identified "superspreaders", their centrality was related to financial soundness indicators taken from their balance sheets, in order to assess their potential role in spreading financial shocks through the networks of CDS exposures.

Assessing contagion risks in the CDS market

The analysis suggests that the correlation between more complex indicators, which are possibly more suited to capturing the extent of feedback effects following a shock at one market participant, and the other most common centrality measures point to the potentially key role played in the spread of contagion by

— net sellers to many counterparties, since they indirectly connect many participants not otherwise directly exposed to each other; and

— large net bilateral buyers which, because of their links to large net sellers, pose a greater risk that a shock hitting one of the key players could rapidly spread to more key players, thus endangering the connectedness of the whole network.

The analysis of the (linear and rank) correlation between network centrality and balance sheet items indicates the following:

— banks with the largest aggregate net bilateral selling and buying positions in 2011 tended to be bigger institutions (in terms of total assets);

— the largest net bilateral buyers tended to hold more common equity and cash items, which was not the case for the largest net bilateral sellers;

— banks selling net protection to a higher number of participants tended to have a higher market value;

— the largest bank dealers tended to be perceived as safer by the market (lower CDS spread).

Banks with larger net multilateral exposures tended to perform worse in the stock market in 2011 and to be less well capitalised. From 2008 to 2010 their equity to assets ratio was on average 20% lower than at other non-super-spreader banks; the difference narrowed in 2011.

With regard to their financial soundness, by computing the ratio of top players' (average) net multilateral selling exposure in 2011 to the level of their total common equity, we explored these firms' risk-bearing capacity in the "Armageddon" (highly implausible) scenario in which all their counterparties default. We found that some ratios were alarmingly high, especially for some buyside (i.e. non-dealer) banks.

Finally, we looked into the average size of each link connecting a top player to any of their counterparties. Interestingly, this indicator makes it easy to detect some non-bank/non-dealer firms. The relatively low number of counterparties to which these firms are exposed might imply a less important role in potentially spreading contagion; the reverse of the coin, however, is that their exposure towards each individual counterparty may be remarkably high.

Conclusion

Our results underline the importance of regularly monitoring outstanding CDS positions. Furthermore, the similarities uncovered between networks of CDS exposures and so-called "scale-free" complex systems much studied by scientists and engineers suggest that the most interconnected market participants – the hubs – constitute both the strength and weakness of the networks. Ensuring their safety is potentially the best way to safeguard the system's resilience to failures.

The EU UCITS industry: An overview

Contact: Jean-Baptiste Haquin (jean-baptiste.haquin@esma.europa.eu)

We provide a brief overview of the UCITS industry and its inherent financial stability challenges. The analysis is based on a sample of 15,000 primary funds managing more than EUR 10mn of assets, out of a total estimated population of around 60,000 funds. UCITS represent by far the bulk of the EU fund industry, with an estimated market share exceeding 70% in terms of assets under management. But they are also very diverse, since the UCITS label encompasses a wide range of fund types, including bond, equity, money market, mixed assets and exchange traded funds, and even some alternative funds. Since 1985 the UCITS Directive has proved a sound framework for investors and delivered financial stability. Funds in particular demonstrated their resilience during the crisis and have recovered, both in terms of assets under management and profitability. In this regard, rules on the eligibility of assets and investor protection have helped to limit risks and sustain investors' confidence. However on-going financial market development, in terms of risks, financial innovation and interconnectedness, poses a constant challenge to the framework.

The UCITS Market

At the end of March 2013 the entire EU UCITS sector managed EUR 6.7tn of assets and 72% of all the fund assets in Europe. Around 90% of those mutual fund investments are directly or indirectly (via intermediaries) attributable to retail investors [1].

Box1: UCITS Directive shapes the European funds market

UCITS (Undertakings for Collective Investment in Transferable Securities) are open-end collective investment schemes set up in accordance with the UCITS Directive (adopted in 1985). The Directive provides a harmonised legal framework to facilitate the cross-border offer of investment funds to retail investors and to develop an integrated European single market for investment funds. With the European passport, funds authorised in one EU member state can register and operate in any other EU country.

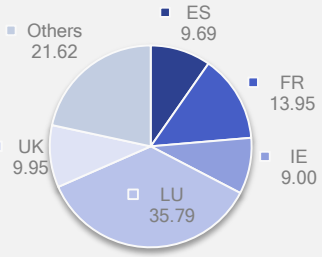
UCITS are subject to very stringent rules aimed at protecting investors. Under this regulation, funds may only invest in *eligible assets*, which include securities listed on a regulated market, money market instruments, deposits, selected plain vanilla derivatives or other investment funds (UCITS or equivalent). In addition, they are not allowed to use certain investment techniques, such as short selling.

The UCITS framework has been very successful, with most EU funds now registered under this regulation. Thanks to its high level of investor protection, this framework has also gained public trust. UCITS has thus become a label appreciated by investors even outside the EU.

The UCITS framework is still evolving: UCITS IV was implemented in July 2011 and UCITS V is currently under development.

75% of UCITS funds are domiciled in only five countries, with Luxembourg showing by far the highest concentration. Given the wide geographical dispersion of fund shareholders throughout the EU this indicates substantial integration of the fund segment within a Single European Market.

More than 75% of EU UCITS domiciled in one of 5 countries V.01

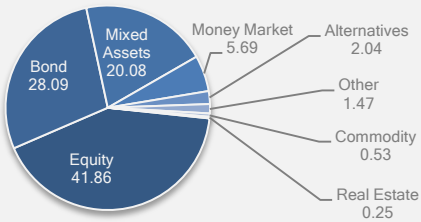


Note: Number of primary EU UCITS with NAV of more than EUR 10mn, percentage points.
Sources: Thomson Reuters Lipper, ESMA.

1) The UCITS framework allows diversity of assets and strategies.

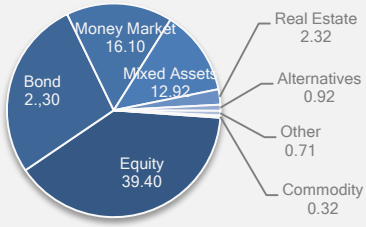
All types of funds are eligible for the UCITS label, provided they invest in "eligible assets". In terms of NAV and fund numbers, UCITS mainly take the form of equity funds (42% of the funds), bond funds (28%) and mixed assets funds (20%). Money market funds are numerically less dominant but hold a high share (16%) of total NAV. As is to be expected, other entities, such as alternatives or real estate funds, are less likely to comply with the restriction on assets imposed by the UCITS regulation.

Most UCITS are equity, bond and balanced funds V.02



Note: Number of primary EU UCITS with NAV of more than EUR 10mn, percentage points.
Sources: Thomson Reuters Lipper, ESMA.

UCITS NAV mainly in equity, bond and money market funds V.03

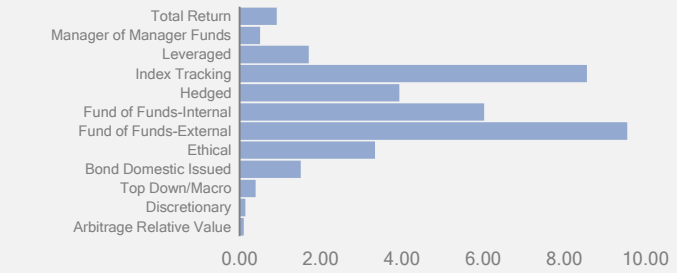


Note: NAV of primary EU UCITS with NAV of more than EUR 10mn, percentage points.
Sources: Thomson Reuters Lipper, ESMA.

[1] According to the European Commission impact assessment for UCITS V Directive.

Diversification seems to be the predominant investment strategy of UCITS: 17% are funds of funds, far more than funds following index tracking strategies (8.5%, of which 5.5% are ETF) and hedge funds (4%) (Cf. V.04). However, the development of index tracking funds in the form of ETF is representative of more sophisticated products (with respect to the investment techniques used) in general. Hence, the increase in the number of ETF from about 400 in 2007 to more than 1,300 in 4Q12 (mostly UCITS) indicates strong dynamics in the development of this industry segment.

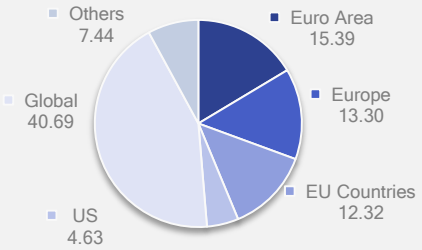
Funds of funds are most frequent UCITS strategy V.04



Note: Number of primary EU UCITSs with NAV of more than EUR 10mn, percentage points.
Sources: Thomson Reuters Lipper, ESMA.

Regarding the regional focus of EU UCITS investments, the Eurozone (15.4% of the funds), other EU countries (12.3%) and Europe as a broader region (13.3%) represent important destinations. However the general UCITS market is well diversified, as regions outside Europe attract the majority of the funds (56.1%).

EU UCITS regional focus mainly on Europe V.05



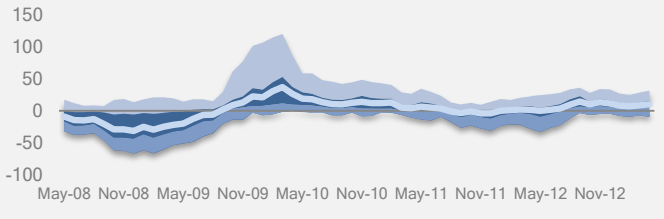
Note: Number of primary EU UCITS with NAV of more than EUR 10mn, percentage points.
Sources: Thomson Reuters Lipper, ESMA.

2) UCITS have been resilient during the crisis

Like other financial institutions, UCITS suffered from the crisis, with negative returns for the majority of the fund sample in 2007 and 2008. In the meantime, the total net asset value decreased by a third in terms of assets over two years, before staging a progressive recovery (Cf. T.48).

Between 2008 and 2009 the return rates were at a relatively high level, but very scattered: the spread between the first and the third quartile was four times higher than early 2013. This indicates that even for a regulated trading activity involving mainly non-complex products, prudent risk management is a key determinant of profitability at times of crisis. Since then, most of the industry has returned to positive levels, with limited dispersion around the median.

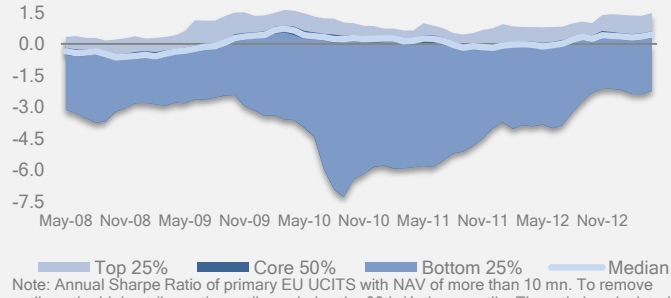
Profitability above pre-crisis level V.06



Note: Annual compound return rates ex. dividends of EU UCITS with NAV of more than EUR 10 mn, percentage points. To remove outliers, the highest (lowest) quartile excludes the 99th (1st) percentile. The rate of return is calculated as a 1Y-MAV.
Sources: Thomson Reuters Lipper, ESMA.

Evolution in the Sharpe ratios flags even greater dispersion between the funds and underlines the prudent risk management argument, as the majority of funds experienced positive excess returns throughout the recent crisis, while a substantial minority seriously underperformed relative to the risk-free rate.

Risk adjusted excess returns above pre-crisis levels V.07



Note: Annual Sharpe Ratio of primary EU UCITS with NAV of more than 10 mn. To remove outliers, the highest (lowest) quartile excludes the 99th (1st) percentile. The ratio is calculated as a 1Y-MAV.
Sources: Thomson Reuters Lipper, ESMA.

Regulation and regulatory implications

UCITS are subject to legal restrictions aimed at increasing investor protection and fostering confidence in UCITS products. However, like any other financial market there are channels through which risks to financial stability could still materialise.

1) Regulation promotes risk diversification of assets and redeemability of share units

The exposure of UCITS to market risk is lessened by the aforementioned eligibility rules. In addition, the funds have to ensure risk diversification by observing quantitative thresholds that limit their exposure to a single issuer or to specific asset classes.

In terms of liquidity, the regulation provides protection for investors. Funds must appoint a depositary to safe-keep their assets and safeguard at all times valuation and redeemability of the share units at NAV. Nevertheless, UCITS still remain exposed to liquidity risk. In the case of a run, for example, funds may not be able to sell their portfolio under tight time constraints. Institutional investors are likely to be the first to take flight, triggering a

broader run on the industry. For this reason, in exceptional cases that cause liquidity to dry up, such as unexpected political or economic events, UCITS managers may restrict redemption requests and delay repayments over several days.

2) Financial innovation can present challenges to risk comprehension of investors

Financial innovation can be a positive development for investors seeking access to sophisticated products, such as index-tracking funds (including ETF), alternative funds and structured funds, even in a UCITS environment. Indeed, more than 90% of ETF in the EU are UCITS. However, there is a contrast between the apparent simplicity of these products that replicate well-known indices (72% track stock indices; 22% track bond indices) and the complexity of the techniques used (like synthetic replication).

Making the right investment decisions can consequently be very challenging for investors. Furthermore, the ESMA report on retailisation in the EU[2] indicated that the assets under management by alternative UCITS have experienced significant growth since 2007, from EUR 20bn to EUR 85bn at end-2012. Empirical analysis showed the volatility of the returns on these funds to have been high, especially so during the 2007-2008 financial turmoil.

On the other hand, ESMA's report also signifies that alternative UCITS are safer than non-UCITS hedge funds, delivering lower returns but exposing investors to less volatility and expected loss severity during downturns. Indeed, even complex products are obliged to comply fully with the restrictions in the Directive, based on risk control and asset restrictions, in order to merit UCITS registration. In this context ESMA plays a role in ensuring sound implementation of the Directive and pushing for the disclosure of comprehensive information on the risks inherent in complex UCITS (e.g. with its Guidelines on ETFs and Other UCITS Issues, December 2012). To alleviate the problem of the complexity of certain products for investors, all funds now have to publish standardized and synthetic information on risk and reward in the "Key Investor Information Document" (KIID).

3) Interconnectedness difficult to assess

As regards strategies, geographic focus and the size of the funds, the UCITS industry looks diversified. The top one hundred individual funds account for 16% of the total assets. We do not therefore observe a single UCITS capable of making a significant impact on the market on its own. However, the interconnectedness of the market is difficult to assess. For one thing, at a consolidated level asset management companies may be more systemically relevant than single funds. Moreover, the predominance of funds of funds could potentially increase funds' interconnectedness, their capacity to impact asset prices and the transmission of difficulties from one fund to another. Finally, UCITS may be connected to other financial institutions, which may be their client or their parent company. Indeed, banking groups constitute the most frequent parent category for asset management companies (including UCITS), with large differences across countries (18% of ownership in UK, 59% in Germany). Institutional investors also account for 69% of the clientele, mainly pension funds and insurers[3].

Conclusions

The development in UCITS funds has been very successful and fostered development of the single market. UCITS funds have offered a variety of products to investors within a protective environment. It is also worth mentioning that the sector proved resilient during the crisis. However, the size of the UCITS market does make it systemic in terms of financial stability, while constant financial innovation exposes the framework to new risks. These concerns make a compelling argument for ESMA to monitor developments in this market segment, while a new UCITS Directive is already in preparation. The Trend section in this Report assesses the development of the funds industry, including UCITS. It monitors on an on-going basis the evolution of funds' assets under management, flows, investment strategies and leverage.

Finally, it is worth noting that non-UCITS funds are also regulated at national level in many EU Member States, while at the EU level managers of these funds are regulated through the Alternative Investment Fund Managers Directive (AIFMD). The AIFMD was published in July 2011 and must be transposed into national law by July 2013. It applies to the managers of most of the European investment funds that are not UCITS-certified, including hedge funds, private equity funds, real estate funds and retail investment funds with UCITS-like traits. Like the UCITS directive, the AIFMD creates a harmonised legal framework to facilitate the cross-border offer of investment funds and improve investor protection. In comparison to UCITS, the AIFMD impose fewer restrictions on the use of leverage, the assets in which AIF can invest and their redemption rules (e.g. closed-end funds are permitted). However, AIFMD imposes new standards for the conduct of business, including risk management rules and a sound remuneration policy that does not incentivize risk taking. It makes the appointment of a depositary mandatory. The new Directive also increases the disclosure of information to investors and regulators. In particular, funds must communicate on their risk and liquidity management, as well as their leverage.

[2] ESMA Economic Report on Retailisation in the EU, May 2013.

[3] EFAMA, Asset Management in Europe, May 2012.

Bail-in and contingent capital securities

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A class of hybrid securities is in the process of emerging with features that combine fixed income and equity securities. They have been created to meet the emergency capital funding needs of financial institutions driven by both regulatory and market pressures. Those securities that fall under regulatory oversight and are guided by statutory powers are commonly called bail-in securities, whereas those securities that have contractual agreements tied to the issue and issuer are typically termed contingent capital securities. While the securities' trigger points are set at different levels, both provide the issuer with a capital cushion and serve to mitigate the need to rely upon public funding. The exact supply and demand forces for these securities are not yet known as the regulatory legislation driving their creation has not been finalized.

Introduction

During the recent financial crisis regulators seeking to avoid widespread economic disruption had few if any tools available, short of using public funds to support failing institutions. In response, there has emerged a class of hybrid securities that are designed to mitigate the need for public funding should a systemically important financial institution fail. A hybrid security with characteristics of both debt and equity instruments has been proposed to meet both the resolution and the market needs.

ESMA is interested in these securities as they are both innovative and complex and could create some issues in terms of investor protection. The market for these hybrids is immature with very limited issuance to date. The regulatory framework from the EU is still in development.[1] It is however expected that these instruments could fill a material portion of required banking capital needs. Such instruments may be converted into equity or be written-down to recapitalise the issuer, in this sense they combine the characteristics of traditional fixed income securities, convertible instruments and equities, and are considered complex.

Bail-in framework vs. Contingent Capital

There are two types of hybrid securities that are discussed below. First, those securities that fall under the regulatory oversight of national authorities and are guided by statutory powers are called bail-in. Second, securities that have contractual agreements uniquely tied to a given issue are named contingent capital securities. The definitions employed are those of the Basel Committee on Banking Supervision, as bail-in refers to the point of non-viability (PONV) when the relevant authority exercises mechanisms for write-down/conversion.[2] When an institution has reached a PONV, the authorities may force its recapitalization, either through the conversion of certain debt to equity or through the write down of debt. In general, it does so in the following order: any contractual contingent capital instruments that have not already been converted to equity, subordinated debt, and unsecured senior debt. As a resolution tool, bail-in is accompanied by the power of the resolution authority to change bank management.

On the other hand, instruments converting upon pre-defined triggers are known as contingent capital. Contractual contingent capital instruments, like bail-in securities, have write-off or conversion features that require creditor-financed recapitalization. However, contingent capital securities, such as contingent convertibles or 'CoCos', are private financial contracts with principal and scheduled coupon payments that can be halted when a predetermined trigger event occurs. Contingent capital instruments contain early/high automatic triggers allowing the issuer to convert the issue to equity/or write down the issue to provide capital injection and debt relief. The trigger is set at a point when the institution remains a going concern entity and has not reached a PONV.[3]

A statutory bail-in regime and contractual contingent convertibles (especially those with high capital ratios as triggers) may form a complementary supportive approach, with contingent capital as the first line of defence and bail-in instruments converting if the entity remains distressed after the conversion of contingent capital. In short, these hybrid securities will allow government authorities to transfer at least part of the financial burden of a bank rescue to investors and make government support for banks less likely. They will do this through burden sharing as liability for a failing bank moves up the capital structure of the bank's balance sheet.

The securities represent junior claims against an issuer and are designed to be available to absorb losses either on a going-concern or gone-concern basis. In general the former are governed by contractual terms while the latter are governed by statutory authority. However, the demarcation between securities that absorb losses on a going-concern and gone-concern basis can be blurred, especially for low-trigger contingent capital. In principle though, going concern loss absorption is achieved where loss-absorption features kick in before a bank becomes non-viable. It is most commonly achieved via coupon deferral or omission,

[1] Proposal for a Directive of the European Parliament and of the Council establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directives 77/91/EEC and 82/891/EC, Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC and 2011/35/EC and Regulation (EU) No 1093/2010 ('the Directive').

[2] The PONV trigger is defined by the BCBS as the earlier of: (1) a decision that a write-off, without which the firm would become non-viable, is necessary, as determined by the relevant authority; and (2) the decision to make a public-sector injection of capital, or equivalent support, without which the firm would have become non-viable, as determined by the relevant authority.

[3] Investors in CoCos are typically rewarded for the higher trigger with a better yield than that of the bail-in securities.

but may also include write-down or conversion features. Tier 1, upper Tier 2, high-trigger contingent capital and certain deferrable dated Tier 2 securities are examples of instruments with going-concern loss absorption characteristics.

Gone-concern loss absorption arises where instruments are only designed to absorb losses when the bank has become non-viable and then, for example, either enters into some form of insolvency or resolution process or receives extraordinary support that prevents a default. Lower Tier 2 securities are examples of gone-concern hybrid securities. Low-trigger contingent capital is a grey area, as some triggers may be so low as to be virtually indistinguishable from the point at which a bank becomes non-viable and faces intervention and some form of resolution, meaning their loss absorption is in practice gone-concern.

Most market observers believe it is the statutory bail-in market that is expected to increase materially in size, with lower expectations for the contractual contingent capital market. Depending on the scope and use of the bail-in tool, downgrades may be possible, since the tool would reduce the likelihood of government support that is currently factored into ratings.

Supply: Regulatory issues

In April 2012, the IMF weighed into the discussion with a paper supportive of proposals encouraging regulators to create bail-in rules for systemically important financial institutions (SIFIs). The IMF paper recognizes the importance of restoring confidence of the short term credit markets in SIFIs. It goes further to discuss the type of short term debt that would need to be excluded from the bail-in proposals, such as those needed for clearance and settlement operations. This would serve to avoid government intervention in counterparty default issues resulting from unsettled trades. The IMF paper places the burden of bail-in firmly in the arms of the long term senior unsecured debt holders, after equity, subordinated and convertible debt has been written off.

In June 2012, the European Commission ('EC') issued a proposed Directive seeking to establish a framework for the recovery and resolution of financial institutions. Bail-in was given a material amount of discussion with the understanding that regulators were to be given statutory powers at a known trigger point (PONV) to write off equity, and to convert or write off bank liabilities. The proposal recognizes that to make the Directive effective, ex ante transparency around the priority of claims and the trigger point are critical. The proposed Directive also served to reduce allowable liabilities excluded from bail-in vis-à-vis an earlier 2011 draft, allowing senior unsecured bondholders to share losses with a wider group.

Among other topics, the proposal served to emphasize that the goal of the bail-in regime is to ensure that Common Equity Tier 1 ratio of a bank post-bail-out is sufficient to stand alone. As to the necessary amount of bail-in debt needed, it is not explicitly outlined in the discussion; however, the proposal suggests a figure of 10% of total liabilities.[4]

With that as an indicator, the table provides an early indication of the likely size of the market for representative institutions.

Expected market supply of bail-in requirements V.01

Bank name	Total liabilities	Bail-in requirements 15%	10%	5%
Deutsche Bank	1,957,919	290,829	193,886	96,943
Lloyds	1,082,884	159,403	106,269	53,134
Santander	1,185,302	175,489	116,992	58,496
SocGen	1,196,599	178,548	119,032	59,516
Credit Suisse	730,735	107,725	71,817	35,908
UniCredit	860,374	126,701	84,467	42,234
UBS	1,001,645	148,776	99,184	49,592
Nordea	649,204	96,584	64,389	32,195
Commerzbank	608,844	89,506	59,671	29,835
Stan Chart	447,422	65,141	43,428	21,714
Danske Bank	448,621	66,182	44,121	22,061
Swedbank	202,802	30,238	20,158	10,079

Note: Liabilities as of 2012, EUR mn.
Sources: Bloomberg, ESMA.

In October 2012 the EC's High Level Expert Group led by Erkki Liikanen published a report on 'Reforming the Structure of the EU Banking Sector'. In it, the Group strongly endorsed the required use of bail-in instruments. They also stressed the need from an investor's standpoint for clear transparency as to the capital hierarchy of the instruments in the event of resolution.

On 27 June 2013 the European Council delivered the text of the Council's general approach to the proposed EC Directive. In it, the Council outlined the need for 'bail-in tools' so that resolution authorities could write off or convert into equity an institution's liabilities after the institution entered into resolution. The Council's text did not call for the explicit issuance of 'bail-in' securities but instead outlined the types of liabilities that would be 'bailed-in', while articulating those liabilities that would be excluded from bail-in.[5] In this most recent text, the suggested need for 'loss absorption' or necessary 'bail-in' is 8%. The next step is for 'trilogues' to start with the European Parliament, with the expectation of a final agreement in place by year-end.

[4] As an example, and on the basis of evidence from the recent financial crisis and of performed model simulations, an appropriate percentage of total liabilities which could be subject to bail-in could be equal to 10% of total liabilities (excluding regulatory capital).

[5] See Articles 37-39 of the European Council's general approach to the proposed EC Directive, 28 June 2013.

Demand: Transparency driven

A material question facing both issuers and regulators is the likely demand for instruments carrying either statutory or contractual write-down conditions. Structured instruments that were not appropriately structured would introduce to the investor a level of complexity and lack of transparency that make understanding the risks difficult. The more discretion given to either the regulator or the issuer increases the uncertainty associated with potential losses, recovery rates, and ultimately initial pricing of the instruments.

Demand for the debt, either statutory or contractual, will depend upon reducing the information asymmetry between the regulator and issuer on the one hand and the investor on the other. Clarity and timeliness around the allowable discretion of the trigger mechanism seem to be key. Trigger points that are transparently consistent with existing analytical frameworks for pricing a debt instrument will allow for a smoother entry into the debt markets. For instance, signalling that the trigger PONV is approximate to what the debt markets analytically assume as the default probability point will allow for greater convergence and acceptance. Similarly, making clear ex ante the priority of claims in the event of default to the investor will greatly improve the analytical assessment of the issue.

Investors could be inhibited from purchasing instruments that are not only unrated, but do not achieve a minimum acceptable rating. This could be the case especially for debt instruments needing to meet index eligibility requirements. Structural transparency appears critical for demand. It seems likely that investors would prefer to see an alignment of the PONV trigger with the investors' analytical expectation of an event of default.

To date, issuance of hybrid securities has come solely in the form of contingent convertibles and has been limited to a handful of banks, and in turn the exact supply and demand features remain in play[6]. Bail-in issuance awaits the proposed European Union regulatory framework. Demand too is uncertain, with at present a very selective and narrow investor base. The asset management community is as yet not welcoming these instruments into its debt indices, owing to their hybrid nature and the comparative complexity of analysis needed. Real money investors such as mutual and pension funds are shying away from bail-in securities until there is greater regulatory clarity and they too are comfortable with the return for bearing bail-in risk.

Conclusions

It seems likely that the development of a hybrid security market, bail-in or contingent, statutory or contractual, will happen. There appears to be a common perception that both regulators and market participants realise that the status quo of taxpayer-based financing for strategically necessary bankrupt financial institutions is increasingly difficult to maintain. As can be seen from Table 1, it has the potential to become a material asset class. However, exactly how wide and deep the market becomes from the standpoint of investors will depend heavily on the clarity of the underlying terms and conditions. It is in the interest of both issuers and investors that there is transparency around the terms of the triggers, the level of haircut or conversion, and the priority of claims, for only then will market participants be able to properly assess the return required for bearing the risk.

[6] There have been eight known European based contingent capital/bail-in issues: Allied Irish Bank, Bank of Ireland, Credit Suisse, KBC, USB, Lloyds, Rabobank and Barclays.


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