European Securities and Markets Authority

ESMA Risk Dashboard

No. 4, 2016

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ESMA Risk Dashboard

R.1
Main risks

Risk segments	Risk	Outlook	Risk categories	Risk	Outlook	Risk sources	Outlook
Overall ESMA remit	●	→	Liquidity	●	→	Macroeconomic environment	↗
Systemic stress	●	→	Market	●	→	Low interest rate environment	→
Securities markets	●	→	Contagion	●	→	EU sovereign debt markets	→
Investors	●	→	Credit	●	→	Market functioning	→
Infrastructures and services	●	→	Operational	●	→	Political and event risks	↗

Note: Assessment of main risks by risk segments for markets under ESMA remit since last assessment, and outlook for forthcoming quarter. Assessment of main risks by risk categories and sources for markets under ESMA remit since last assessment, and outlook for forthcoming quarter. Risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high risk, red=very high risk. Upward arrows indicate an increase in risk intensities, downward arrows a decrease, horizontal arrows no change. Change is measured with respect to the previous quarter; the outlook refers to the forthcoming quarter. ESMA risk assessment based on quantitative indicators and analyst judgement.

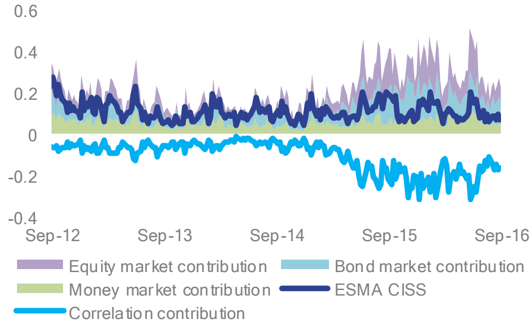
ESMA's 3Q16 overall risk assessment remains unchanged from 2Q16. Market developments at the beginning of 3Q16 were dominated by the strong reactions to the outcome of the UK referendum, reflecting high economic and political uncertainty. In the same manner, markets were taken by surprise and briefly disrupted by the outcome of the US Presidential Election in early November. Investment fund liquidity remained a concern following the temporary redemption suspensions by several open-ended UK real estate funds. From mid-July volatility abated and equity prices recovered, yet concerns about financials remained with banks' valuations reaching historical lows. While main risks remain high, our outlook for market, liquidity and contagion risk is now assessed to be stable. From a wider perspective, the low yield environment and related sustained concerns with regard to excessive risk taking persisted. Geopolitical and economic uncertainty impacted on macroeconomic forecasts, weakening the EU economic growth outlook in the medium-long term.

Risk summary

In 3Q16, risks in the markets under ESMA remit remained at high levels, reflecting very high risk in securities markets, and elevated risk for investors, infrastructures and services. Our assessment of the individual risk categories did not change from 2Q16, with market and credit risk remaining very high due to the persisting low-interest rate environment, high uncertainty in EU growth prospects and geopolitical developments and due to recent turmoil in the banking market. Liquidity risk in 3Q16 is still assessed as high, as liquidity pressures were registered in equity and corporate bond markets as well as in segments of the fund industry. Contagion risk remains high, driven by high levels of interconnectedness between different segments of financial markets amplified by the low-yield environment and associated incentives for high risk taking. The risk outlook is stable across all risk categories, reflecting market signs of absorption of the uncertainty and volatility following the UK referendum in early 3Q16.

Systemic stress declined in 3Q16 after having ticked up in late June following the UK referendum. The improvements in both equity and bond markets, with valuations reinforced by supportive EA monetary policy, explained most of the reduction in the composite indicator of systemic stress (CISS) (R.2). Despite this, key risk sources remained, including the weak and uneven economic growth outlook in the EU, slow implementation of national structural reforms and uncertainty related to the political developments around the outcome of the UK referendum.

R.2
ESMA composite systemic stress indicator
Systemic risk decreased in first part of 3Q16



Note: ESMA version of the ECB-CISS indicator measuring systemic stress in securities markets. It focuses on three financial market segments: equity, bond and money markets, aggregated through standard portfolio theory. It is based on securities market indicators such as volatilities and risk spreads.
Sources: ECB, ESMA.

Risk sources

Macroeconomic environment: Economic recovery in 3Q16 proceeded at a moderate pace in EU, with persisting growth divergences across EU Member States. Particularly in the UK, the outlook for growth in the short to medium term has weakened. As a result, the GPB depreciated significantly, falling more than 15% against the EUR since the UK referendum. UK slower growth may weigh also on the euro area export growth in the longer term. In the Eurozone signals on the impact of the UK referendum vote were mixed. In July 2016 the Purchasing Managers Index reached a seven-month high – however with divergences between Member States. On the other hand, uncertainty is expected to slow private consumption and investment growth. Overall, the cumulated GDP loss associated with the UK leaving the EU is expected to be in the range of 1 to 2.75% in the UK, and of 0.25 to 0.5% in the Eurozone, according to simulations by the European Commission.[1] In the medium-to-long term economic outlook risk sources are Brexit-related political developments and the potential prospect of monetary policy inside and outside the EU becoming less accommodative.

Low-interest rate environment: Risks stemming from the low-interest environment persisted as monetary policies in the EU remained accommodative. ECB and BoE continued with outright purchases of investment-grade bonds issued by non-financial corporates. Both EU corporate and sovereign bond spreads continued on average to decrease in 3Q16 (R.8 and R.12). Sustained search-for-yield strategies thus remained a source of concern. Particularly, in 3Q16 investments into emerging market equity and bond funds have increased markedly, with inflows of EUR 27.3bn, the highest since 3Q14. Conversely, redemptions from equity funds investing in EU increased by 25bn, as recent EU bank equities' performance may have weighed on investors' appetite for EU equity funds (R.25). Funds investing in EU bonds registered instead inflows of EUR 2.9bn in 3Q16 (R.26); towards the end of the reporting period, signs of a potential trend-reversal emerged and need to be monitored. In this context, excessive risk-taking and capital misallocation coupled with the economic and political uncertainty following the UK referendum are potential risk sources in the medium-term outlook.

EU sovereign debt markets: Long-term EU sovereign bond risk premia, on average, edged down in 3Q16, reflecting the results of the combination of investors seeking safer assets, given heightened uncertainty after the UK referendum, the low-interest rate environment and supportive monetary policy. Issuance of sovereign bond with long-dated maturities increased. Related to the ultra-low interest rate environment, investors preferred the added yield of long dated maturities and at the same time EU governments were extending the average life of their public debt locking in low borrowing rates.

Market functioning: No significant disruptions in the functioning of EU markets were observed in 3Q16. EU financial markets proved to be resilient during the period of high market volatility observed at the beginning of 3Q16. In 3Q16 the new EU Benchmark Regulation entered into force and the Euribor was designated as a critical benchmark. As such, it is now subject to a college of supervisors for the key decisions. In 3Q16 two banks ceased contributing to the Euribor, with now 20 banks contributing.

Political and event risk: The UK EU referendum created substantial uncertainty regarding the future economic outlook and EU institutional arrangements, with key aspects to be negotiated over the coming months, and possibly years. Focus on the news flow and announcements may result in intensified political and event risk, contributing to uncertainty and greater asset price volatility in EU markets. An indication of this market reactiveness is the recent and sustained fall in the GBP, triggered by the announcement of the UK Prime Minister that the procedure to leave EU will be started by March 2017. In November, financial markets experienced a period of additional volatility in the run-up to the US Presidential elections as electoral uncertainties weighed on market sentiment. The unexpected election outcome triggered initial falls in global markets, which were however quickly reversed. Going forward, additional market uncertainties may result from important electoral events in some EU Member States.

Risk categories

Market risk – very high, outlook stable: Market risk remained very high, yet now with a stable outlook. Markets continued to be highly reactive to political and event risks. At the beginning of 3Q16 equity prices decreased in the wake of the UK referendum outcome, yet rebounded from the second week of July (R.17). EU financial sector equity prices were particularly affected after the

[1] European Commission (DG ECFIN) (2016), "The economic outlook after the UK referendum: a first assessment for the Euro Area and the EU", Institutional Paper 032, July.

referendum, but also in the two days following the EBA stress test results (-6.7%) and towards the end of 3Q16. Here, additional concerns related to the level of non-performing loans in some banks and concerns related to bank business models in a low-interest rate environment contributed to price pressures. Volatility in equity and foreign exchange markets followed a similar pattern. Market expectation of equity price volatility 1MVSTOXX increased (+10% at the beginning of July reaching 28%, against a long-term average of 25%), but reverted in the remainder of 3Q16 (19% at end 3Q16) (R.7). In the foreign exchange market, implied volatilities for 3M options on main exchange rates increased slightly in the first week of July before falling back to the downward trend initiated after the peak of mid-June (R.6).

Liquidity risk – high, outlook stable: Liquidity risk remained high, yet now with a stable outlook. Equity market illiquidity increased, reaching a level above the two-year moving average (R.4). Similarly, EU corporate bond markets continued to register liquidity pressures for most of 3Q16 (R.13). In the wake of the UK referendum signs of stress in the government bond collateral markets were also observed with increased levels of repo specialness (R.11). On the other hand, sovereign bid-ask spreads decreased slightly (R.9). Market liquidity concerns emerged also in the recent price developments in UK property markets and related redemption suspensions or withdrawal discounts of several real estate funds observed in July 2016. The AuM of UK real estate funds in August 2016 stood at EUR 33.5bn, 10% less than their value before the UK referendum. This highlighted the potential vulnerability of funds that offer daily redemption while investing in potentially illiquid assets. Additionally, in 3Q16 UK-domiciled equity funds saw redemptions of EUR 4.2bn.

Contagion risk – high, stable outlook: Contagion risk remained high, yet now with a stable outlook as tensions after the UK referendum have eased. Concerns remained regarding the increasing interconnectedness of the asset management sector with the banking and insurance sectors and the associated potential for spillovers. High correlation in market valuation across sectors continued to being observed at the beginning of 3Q16 (R.27). Both correlations between the yields on ten-year German sovereign benchmark bond and other EU countries' sovereign bond yield and their dispersion increased in early 3Q16, before reverting at the end of the reporting period (R.16). Within the hedge fund industry intra-sectorial contagion increased following the UK referendum, in particular with regard to funds reinforcing the sector's performance trend.

Credit risk – very high, outlook stable: Credit risk remained at a very high level, with a stable outlook. In 3Q16 high yield bond issuance amounted to EUR 21bn (+50% compared to 3Q15) and investment grade bond issuance amounted to EUR 161.8bn (+48% from June 2016). Corporate bond spreads decreased on average by 25.6% in 3Q16 across all rating categories except for AAA-rated bonds whose spread increased from 15bps in 2Q16 to 20bps in 3Q16. The difference between AAA-rated and BBB-rated bond yield spreads decreased by 31bps to 92bps (R.12). However, high valuations in the corporate bond markets fuelled by the combination of the accommodative monetary policy and search-for-yield strategies may indicate inadequately low default risk premia. An indication for this is the recent decoupling of spreads in the corporate bond and corporate CDS markets. In 3Q16 corporate bond spreads decreased by about 20 bps while corporate CDS spreads declined by about 10 bps.

Operational risk – elevated, stable outlook: Operational risk remained elevated, with a stable outlook. Technology and conduct risks remain a key concern both within and outside the EU. Regarding cyber-security CPMI/IOSCO released guidance on cyber resilience for financial market infrastructures[2] and the EU Parliament approved the adoption of the first EU-wide rules on cybersecurity[3], which impose a minimum level of security for digital technologies, networks and services across all EU Member States. Conduct risk issues emerged in the context of a US lawsuit against a group of international banks accused of manipulation on the main Australian benchmark rate. Additionally, in September 2016 the U.S. Department of Justice has proposed a very high settlement for Deutsche Bank for its alleged mis-selling of residential mortgage-backed securities before the 2008 financial crisis. On a positive note, the EU financial market infrastructure proved to be resilient through the period of high volatility registered in early 3Q16. However, on 6 October 2016 the GBP suffered a sudden fall of 6.1% in two minutes on Asian venues against the USD before recovering most of its losses. Causes are still investigated, however this "flash-crash" style event highlights the importance of appropriate trading halt mechanisms.

[2] CPMI-IOSCO: Guidance on cyber resilience for financial market infrastructures.

[3] Directive on security of network and information systems.

Securities markets

R.3

Risk summary

Risk level

Risk change from 2Q16

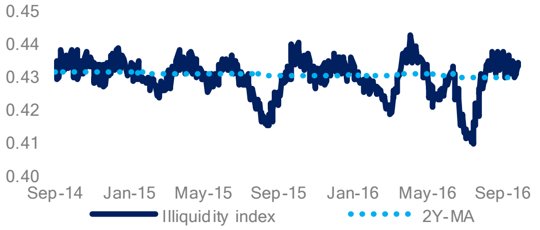
Outlook for 4Q16

Risk drivers

– Asset re-valuation and risk re-assessment.
– Low-interest-rate environment and excessive risk taking.
– Low inflation and uneven EU growth.
– Weak market confidence related to the banking sector.
– Political and event risks.

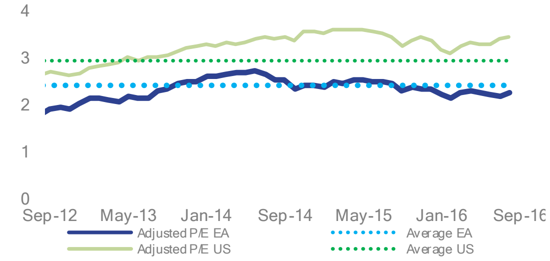
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high risk, red=very high risk. Upward arrows indicate a risk increase, downward arrows a risk decrease. ESMA risk assessment based on quantitative indicators and analyst judgement.

R.4
Equity illiquidity
Illiquidity increasing above long-term average



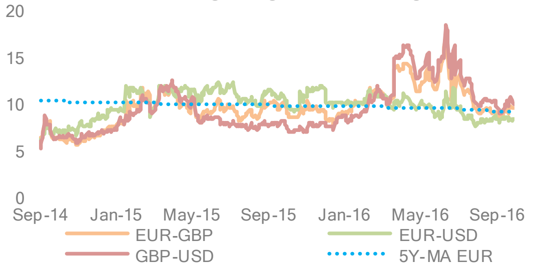
Note: Composite indicator of illiquidity in the equity market for the current Eurostoxx 200 constituents, computed by applying the principal component methodology to six input liquidity measures (Amihud illiquidity coefficient, bid-ask spread, Hui-Heubel ratio, turnover value, inverse turnover ratio, MEC). The indicator range is between 0 (higher liquidity) and 1 (lower liquidity).
Sources: Thomson Reuters Datastream, ESMA.

R.5
Equity valuation
Below long term average in EA



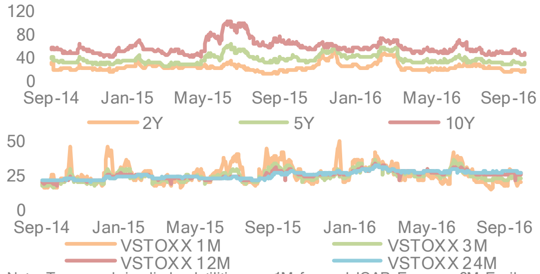
Note: Monthly earnings adjusted for trends and cyclical factors via Kalman filter methodology based on OECD leading indicators; units of standard deviation; averages computed from 8Y.
Sources: Thomson Reuters Datastream, ESMA.

R.6
Exchange rate volatilities
Decrease, reaching long-term average



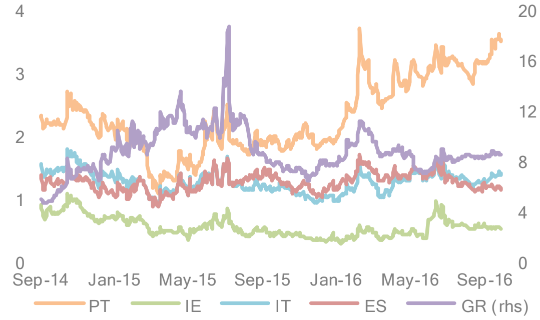
Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is the five-year moving average of the implied volatility for 3M options on EUR-USD exchange rate.
Sources: Bloomberg, ESMA.

R.7
Financial instruments volatilities
Volatility increased for equity in early 3Q16



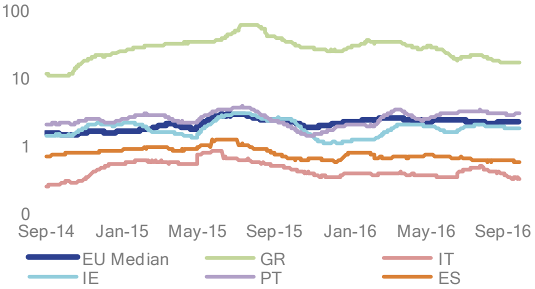
Note: Top panel: implied volatilities on 1M forward ICAP Euro vs. 6M Euribor swaptions based on the Normal volatility model, in bp; low panel: Eurostoxx50 implied volatilities, measured as the difference in ask and bid yields, in %.
Sources: Thomson Reuters Datastream, ESMA.

R.8
Sovereign risk premia
Decreasing for most EA countries



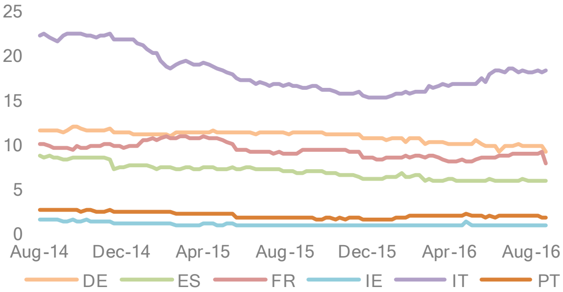
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %.
Sources: Thomson Reuters Datastream, ESMA.

R.9
Sovereign bond liquidity
Slight decrease in 3Q16



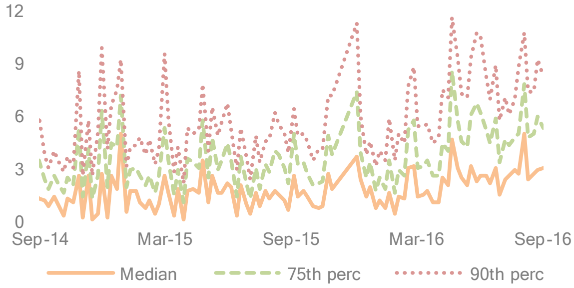
Note: Liquidity measured as difference of ask and bid yields for 10Y sovereign bonds, in basis points. EU Median computed using data for 24 countries. Logarithmic scale.
Sources: Bloomberg, ESMA.

R.10
CDS volumes
Broadly stable, increasing for IT



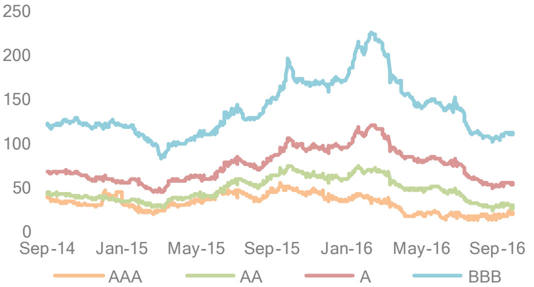
Note: Value of outstanding net notional sovereign CDS for selected countries; USD bn.
Sources: DTCC, ESMA.

R.11
Repo markets specialness
Signs of tension in sovereign repo markets



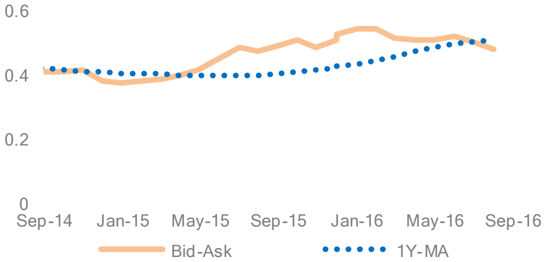
Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in selected countries.
Sources: RepoFunds Rate (BrokerTec, MTS, ICAP), ESMA.

R.12
Corporate bond spreads
Decline continued in 3Q16 except for AAA bonds



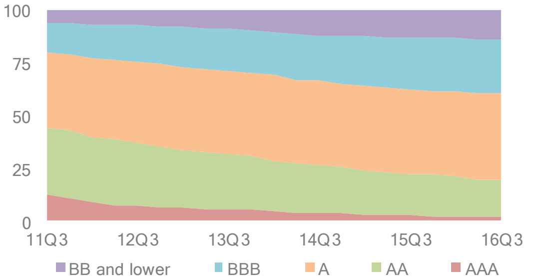
Note: EA non-financial corporate bond spreads by rating between iBoxx non-financial corporate yields and ICAP Euro Euribor swap rates for different maturities, basis points.
Sources: Thomson Reuters Datastream, ESMA.

R.13
Corporate bond bid-ask spreads
Decline towards the end of 3Q16



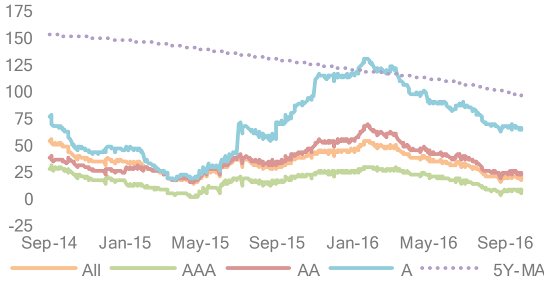
Note: EUR Markit Iboxx corporate bond index bid-ask spread in %, computed as the weighted average of the bid-ask spread of its components in the current composition. 1Y MA = one-year moving average.
Sources: Markit, ESMA.

R.14
Outstanding long term debt
Deterioration in credit quality



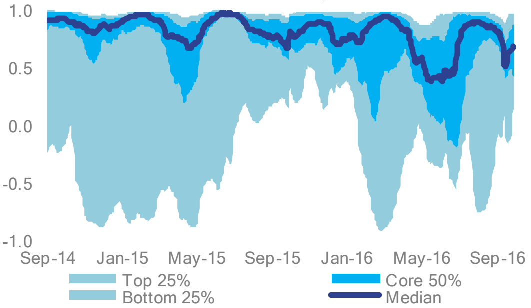
Note: Outstanding amount of corporate bonds as of issuance date by rating category, in % of the total.
Sources: Dealogic, ESMA.

R.15
Covered bond spreads
Reduction in spreads continued



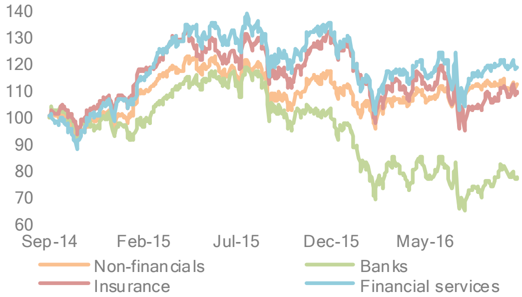
Note: Asset swap spreads based on iBoxx covered bond indices, basis points. 5Y-MA=five-year moving average of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

R.16
Dispersion in sovereign yield correlation
Increase in correlation and dispersion



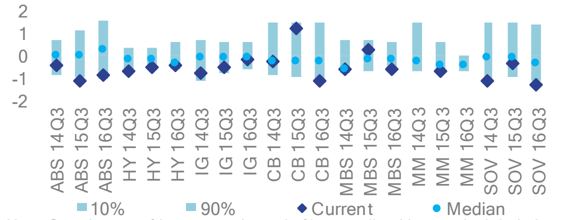
Note: Dispersion of correlations between 10Y DE Bunds and other EU countries' sovereign bond redemption yields over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

R.17
Equity prices
Recovery, except for financial sector



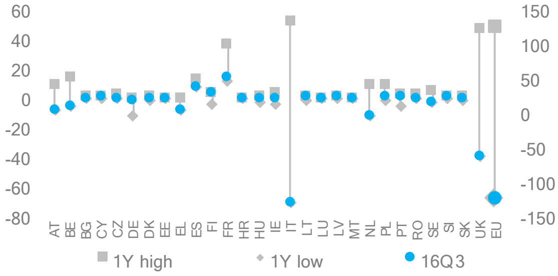
Note: STOXX Europe 600 equity total return indices, indexed with 01/09/2014
Sources: Thomson Reuters Datastream, ESMA.

R.18
Debt issuance growth
Negative HY issuance growth rates



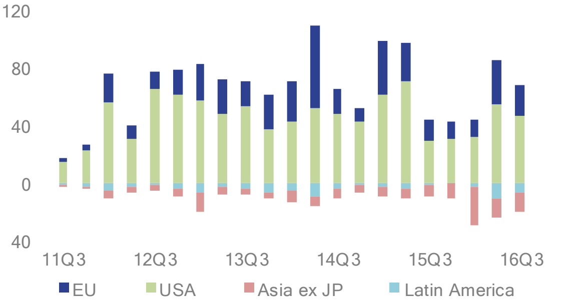
Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes: asset backed securities (ABS); high-yield (HY); investment grade (IG); covered bonds (CB); mortgage backed securities (MBS); money market (MM); sovereign (SOV). Percentiles computed from 12Q rolling window. All data include securities with a maturity higher than 18M. Bars denote the range of values between the 10th and 90th percentiles. A missing diamond indicates no issuance for the previous quarter.
Sources: Dealogic, ESMA.

R.19
Net sovereign debt issuance
Negative for EU



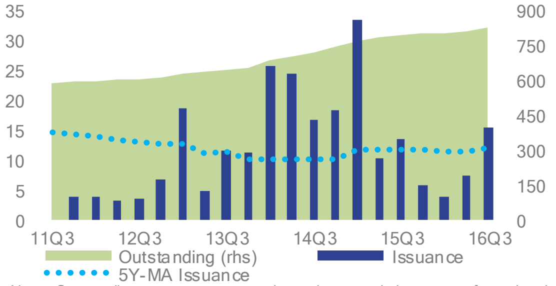
Note: Quarterly net issuance of EU sovereign debt by country, EUR bn. Net issuance calculated as the difference between new issuance over the quarter and outstanding debt maturing over the quarter. Highest and lowest quarterly net issuance in the past year are reported. EU total on right-hand scale.
Sources: Dealogic, ESMA.

R.20
HY issuance
Sustained but lower in 3Q16



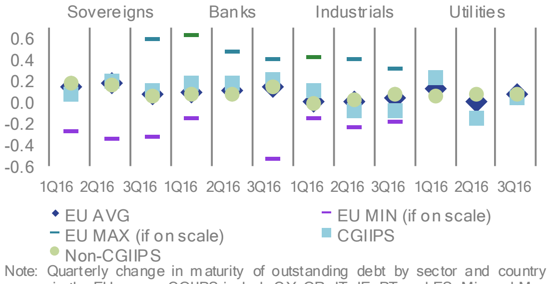
Note: Quarterly data on high-yield corporate bond issuance by region of issuance, in EUR bn.
Sources: Dealogic, ESMA.

R.21
Hybrid capital issuance and outstanding
Increased issuance



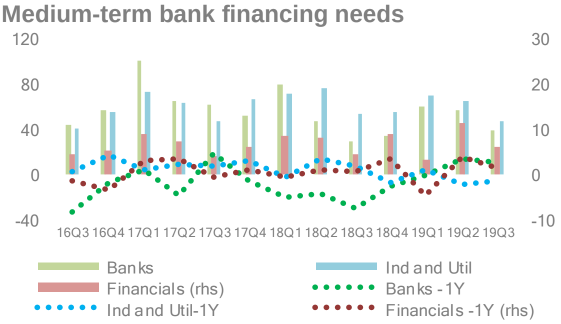
Note: Outstanding amount computed as the cumulative sum of previously issued debt minus the cumulative sum of matured debt prior to reference date, EUR bn. According to Dealogic classification, hybrid capital refers to subordinated debt Tier 1 capital mainly with perpetual maturity.
Sources: Dealogic, ESMA.

R.22
Debt maturity
Lengthened maturity profile



Note: Quarterly change in maturity of outstanding debt by sector and country groups in the EU, years. CGIIPS include CY, GR, IT, IE, PT and ES. Min and Max may not be displayed where they are out of the scale provided in the graph.
Sources: Dealogic, ESMA.

R.23
Debt redemption profile
Medium-term bank financing needs



Note: Quarterly redemptions over a 3Y-horizon by European private corporates (banks, non-bank financials, and industrials and utilities), current and change over last year (dotted lines), EUR bn. Excluding bank redemptions to central banks.
Sources: Dealogic, ESMA.

Investors

R.24

Risk summary

Risk level

Risk change from 2Q16

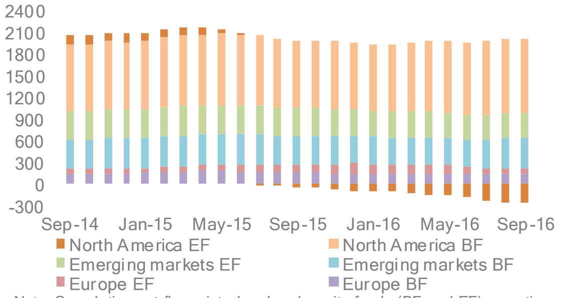
Outlook for 4Q16

Risk drivers

- Sustained search for yield.
- Correlation in asset prices and increase in redemptions.
- Deterioration of quality of securities in portfolios.
- Uncertainty on economic outlook and political developments in EU.

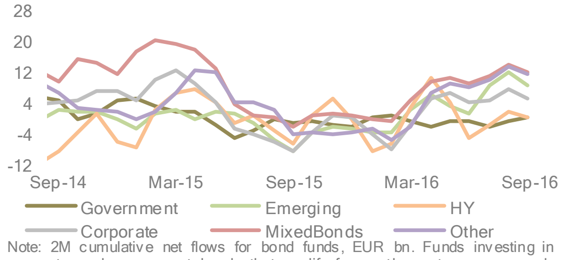
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high risk, red=very high risk. Upward arrows indicate a risk increase, downward arrows a risk decrease. ESMA risk assessment based on quantitative indicators and analyst judgement.

R.25
Cumulative global investment fund flows
Inflows for EM funds, outflows for EU equity funds



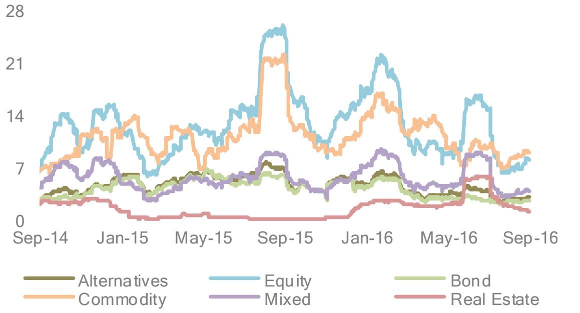
Note: Cumulative net flows into bond and equity funds (BF and EF) over time since 2004 by regional investment focus, EUR bn.
Sources: Thomson Reuters Lipper, ESMA.

R.26
EU bond fund net flows
Increasing inflows into HY and EM funds



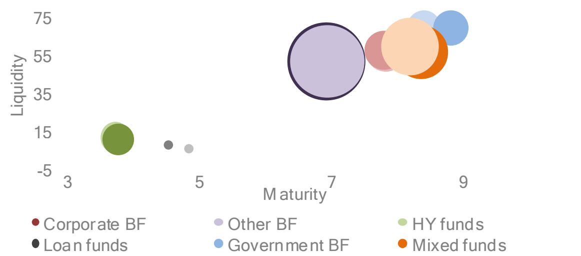
Note: 2M cumulative net flows for bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once (e.g. funds investing in emerging government bonds will be reported as emerging; funds investing in HY corporate bonds will be reported as HY).
Sources: Thomson Reuters Lipper, ESMA.

R.27
RoR volatilities by fund type
Volatilities rebounded in 3Q16



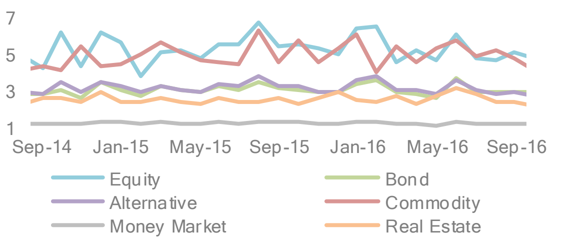
Note: Annualised 40D historical return volatility of EU domiciled mutual funds, in %.
Sources: Thomson Reuters Lipper, ESMA.

R.28
Liquidity risk profile of EU bond funds
Stable liquidity and mixed maturity changes



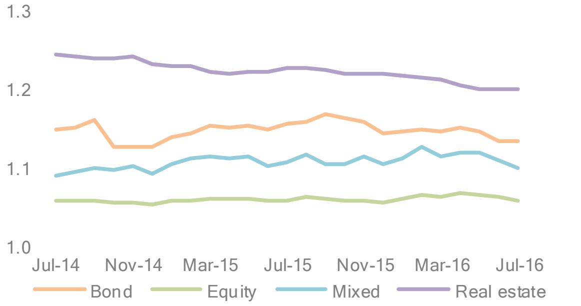
Note: Fund type is reported according to their average liquidity ratio, as a percentage (Y-axis), the effective average maturity of their assets (X-axis) and their size. Each series is reported for 2 years, i.e. 2015 (mid tones) and 2016 (hue).
Sources: Thomson Reuters Lipper, ESMA.

R.29
Retail fund synthetic risk and reward indicator
Risks decreasing across fund types



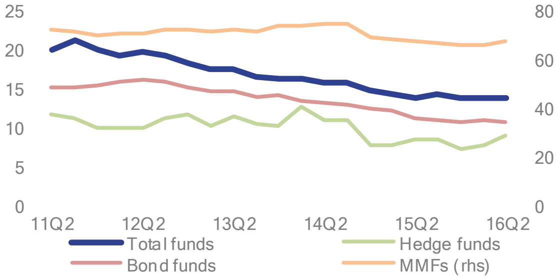
Note: The calculated Synthetic Risk and Reward Indicator is based on ESMA SRRI guidelines. It is computed via a simple 5Y annualised volatility measure which is then translated into categories 1-7 (with 7 representing higher levels of volatility).
Sources: Thomson Reuters Lipper, ESMA.

R.30
Leverage by investment fund type
Leverage declined for mixed and real-estate funds



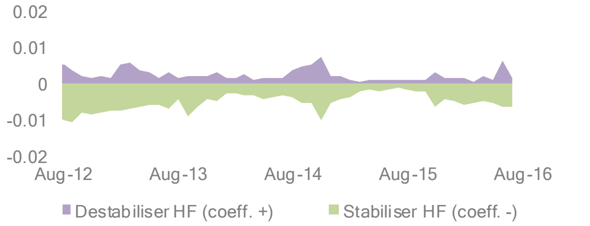
Note: EA Investment funds' leverage by fund type computed as the AuM/NAV ratio.
Sources: ECB, ESMA.

R.31
Financial market interconnectedness
Increase for hedge funds and MMFs



Note: Loan and debt securities vis-à-vis MFI counterparts, as a share of total assets. EA investment funds and MMFs, in %. Total funds includes: bond funds, equity funds, mixed funds, real estate funds, hedge funds, MMFs and other non-MMFs investment funds. Data until 16Q2..
Sources: ECB, ESMA.

R.32
Hedge fund interconnectedness
Interconnectedness increased for destabilising HFs



Note: Systemic stress indicator based on products of fractions of regressions with positive (negative) estimated coefficient individual fund return's impact on average return of sector significant at 99% level and respective average estimators. Coefficients stem from VAR models regressing individual fund returns on lags and general financial market indices. Measures aggregated across individual regressions. Data until September 2015.
Sources: Barclayhedge, Eurekahedge, TASS, HFR, ESMA.

Infrastructures and services

R.33

Risk summary

Risk level

Risk change from 2Q16

Outlook for 4Q16

Risk drivers

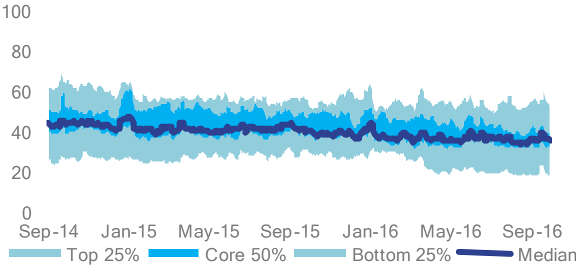
– Operational risks, incl. insufficient technology management, cyber-attacks, integrity of benchmark panel.

– Conduct risk, incl. intentional or accidental behaviour by individuals, market abuse.

– Systemic relevance of individual operations, incl. market share, complexity of operations, interconnectedness with other infrastructures or financial activities, system substitutability.

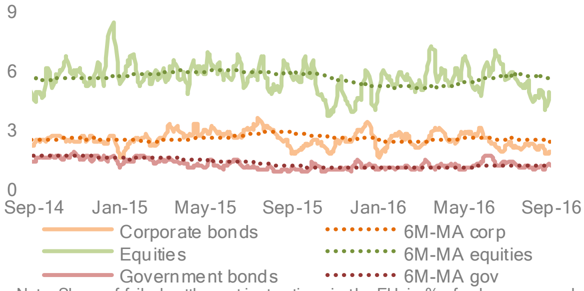
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high risk, red=very high risk. Upward arrows indicate a risk increase, downward arrows a risk decrease. ESMA risk assessment based on quantitative indicators and analyst judgement.

R.34
Market concentration
Dispersion among equity indices increased



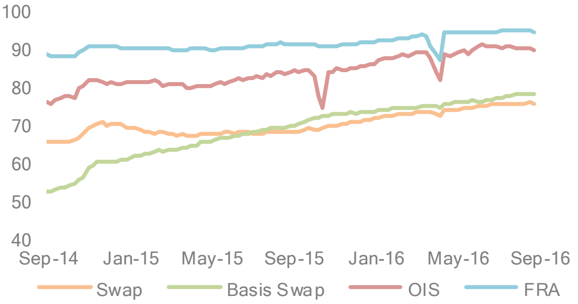
Note: Concentration of notional value of equity trading by national indices computed as a 22D-MA of the Herfindahl-Hirschmann Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX.
Sources: BATS, ESMA.

R.35
Settlement fails
Fails less volatile for government bonds



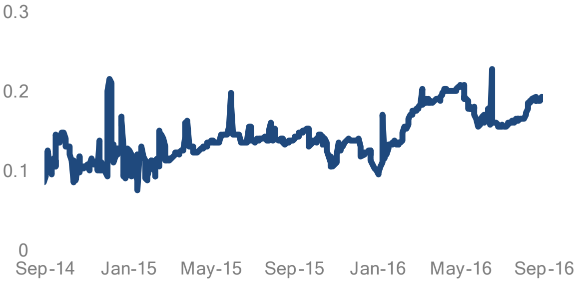
Note: Share of failed settlement instructions in the EU, in % of value, one-week moving averages. 6M-MA=six-month moving average. Free-of-payment transactions not considered.
Sources: National Competent Authorities, ESMA.

R.36
IRS clearing
Clearing decreased for OIS



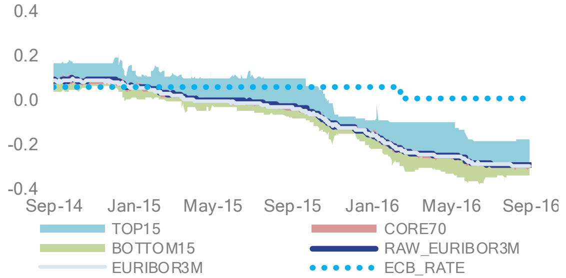
Note: OTC interest rate derivatives cleared by CCPs, in % of total notional amount.
Sources: DTCC, ESMA.

R.37
Euribor – Dispersion in contributions
Ticked up in early 3Q16



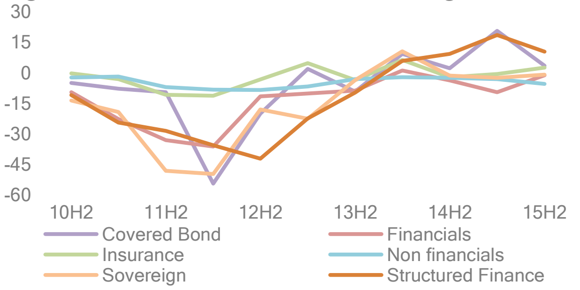
Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the 8 Euribor tenors.
Sources: European Money Markets Institute, ESMA.

R.38
Euribor – Dispersion of submission levels
Stable in 3Q16



Note: Dispersion of 3M Euribor submissions, in %. The "Raw 3M Euribor" rate is calculated without trimming the top and bottom submissions of the panel for the 3M Euribor.
Sources: European Money Markets Institute, ESMA.

R.39
Rating changes
Negative for non-financials and sovereigns



Note: Drift of ratings from all credit rating agencies, excluding CERVED and ICAP, by asset class computed as percentage number of upgrades minus percentage number of downgrades. Data until end 2015.
Sources: CEREP, ESMA.

European Securities and Markets Authority