European Securities and Markets Authority

ESMA Risk Dashboard

No. 4, 2017

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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		↘	Infrastructure disruptions, incl. cyber risks	↗
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.

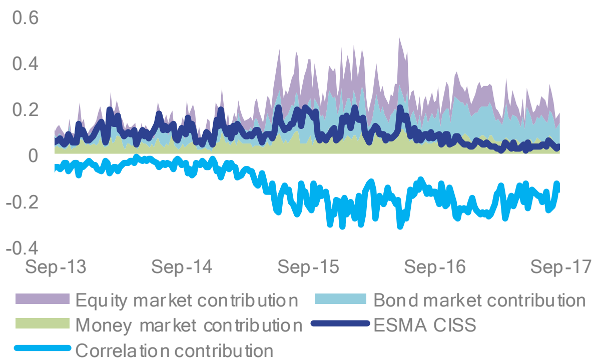
Overall, ESMA's 3Q17 risk assessment remained unchanged from 2Q17. EU financial markets remained relatively calm, although reactive to global geopolitical events. This reactiveness was reflected in increased market expectations of the near-term volatility following global political tensions. While market and credit risks remain very high, our outlook for credit risk decreases reflecting improvements in our risk indicators. The outlook for liquidity and contagion risk is stable. Operational risk continued to be elevated, with an increasing outlook due to mounting concerns over potential cyber-attacks. The main sources of risk remain a potential repricing of risk premia and geopolitical events whose effects can spill over to global financial markets.

Risk summary

Risks in the markets under ESMA's 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 2Q17, with market and credit risk very high due to the persisting low interest rate environment, repricing of risk premia and uncertainty on future geopolitical developments. However, our outlook for credit risk decreases, reflecting lower credit spreads as well as positive rating actions for some EA sovereigns and non-financial corporations. Liquidity risk in 3Q17 continued to be at a high level, even if our indicators show some improvements in the corporate and sovereign market segments. Contagion risk remained high, driven by the potential for increasing interconnectedness between different segments of financial markets amplified by the low interest rate environment and associated incentives for high risk-taking. Operational risk remained elevated, yet with an increased risk outlook as concerns are mounting over potential cyber risk attacks. The risk outlook is stable across the market, liquidity and contagion risk categories, reflecting an improved macroeconomic environment as well as the non-materialisation of risk premia reversals.

Systemic stress remained at very low levels in 3Q17 (R.2). Among the bond, equity and money markets, the bond market registered the highest contribution to the systemic stress measure. Risks linked to the macroeconomic environment (GDP, inflation) decreased, although market uncertainty surrounding global geopolitical events still prevail.

R.2
ESMA composite systemic stress indicator
Systemic risk broadly stable



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: EU economic recovery in 3Q17 is expected to continue. Household spending is rising and remains an important driver of the ongoing expansion. Investments remain relatively weak, affecting potential growth in the near to medium term. Business survey data point to a slight slowdown of the expansion in EA business activities in July and August, with the composite index reaching a six-month low of 55.7, down from 56.3 in June, before fully recovering in September (56.7). The economic sentiment indicator continues to rise in the euro area and the EU reaching 113 points in both regions, the highest level since summer 2007. Overall, EU GDP is expected to grow by 1.9% in 2017 and 2018. Significant downside risks for the EU economic growth outlook are linked to global geo-political events, including the US economic and foreign policies as well as Brexit negotiations.

Low interest-rate environment: In 3Q17, the ECB and BoE monetary policies remained accommodative. Euro area government bond yields rose slightly in the reporting period, reflecting the positive macroeconomic outlook. Despite that, the low-yield environment persists with related risks concerning search-for-yield strategies. An indication for this comes from the fund industry, which continues to register net inflows across all asset classes. In 3Q17 the cumulative year-to-date inflows stood at EUR 44bn. At the global level, a particular source of concern stems from funds investing in Emerging Markets, which globally registered a peak of EUR 4bn net inflows in the first week of August, reaching a cumulative level of EUR 75bn net inflows in 2017. Therefore, excessive risk-taking and capital misallocation remain relevant risk sources in the medium-term outlook. Abruptly increasing yields could lead to losses for investment position and generate volatility spikes in asset prices.

EU sovereign debt markets: Ten-year EU sovereign bond risk premia edged down in 3Q17 amid low interest rates and supportive monetary policy. Yields levels in the EU sovereign bond market started to increase in 2017, matching gradual improvement in the macroeconomic context. In the medium to long-term, rising yields could represent a source of risk in countries with high levels of public debt. Sovereign bond market liquidity increased in 3Q17, driven by higher turnover values. This is shown by the ESMA illiquidity index that keeps its rising trend observed since March, and stands at levels above its long-term average (R.11).

Market functioning: No significant disruptions in the functioning of EU markets were observed. During the reporting period, the number of circuit breaker occurrences decreased markedly, registering a weekly aggregate of 39 occurrences on average, compared to 134 circuit breakers triggered weekly in 2Q17 (R.39). Central clearing remained at high levels in 3Q17, as the implementation of mandatory clearing is ongoing. In August, the second delegated regulation requiring mandatory clearing of certain index CDS took effect for financial counterparties and AIFs above the EUR 8bn threshold of gross amounts outstanding. On 18 September, the final migration wave to T2S was completed, with four markets connecting to T2S: Estonia, Latvia, Lithuania and Spain. The number of CSDs currently connected to T2S reached 20, representing 20 European markets. T2S contributes to the integration of post-trade processes across participating markets. The total value of settled transactions in the EU increased since the beginning of the migration to T2S in June-August 2015. The share of settlement fails decreased in September this year (R.42). Cyber risk is increasingly becoming a concern for financial market institutions especially with respect to their business continuity and the integrity of proprietary data, as illustrated by recent global ransomware attacks.

Political and event risk: In the EU, Brexit is among the most important political risks. The ongoing negotiations between the EU27 and the UK on the withdrawal terms represent a high source of uncertainty for financial markets, which proved to be sensitive to Brexit-related news. News flow and announcements may translate into uncertainty and greater asset price volatility in EU markets. In particular, a scenario in which negotiations remain inconclusive or end in a disorderly fashion could result in negative cliff effects in financial markets. ESMA is calling on market participants to thoroughly review any potential exposure to Brexit cliff effects risks and include their handling as part of their risk management. Globally, political and event risks include geopolitical developments and the rise of nationally oriented policy agendas which may affect the commitment to international financial market policy cooperation.

Risk categories

Market risk – very high, outlook stable: In 3Q17 financial markets continue to be highly reactive to political risks. In particular, market expectation of equity price volatility VSTOXX1M ticked up at beginning of August and at end-September reacting to political events, while remaining overall at historically low levels. EU equity prices have slightly increased in 3Q17 by 2.3%, despite being slightly under pressure in early September as the EUR stepped up to a two-year high against the USD and the EUR-USD implied volatility went 7% higher than 2Q17 levels. Within the financial sector, banks overperformed gaining 4.3% since 2Q17, while financial services firms and insurance firms gained 2.5% and 3.7% respectively. In the medium to long-term outlook, sources of concern derive from political uncertainty in the Brexit negotiation and from valuation risk. Elevated prices in the context of the low-yield environment could be exposed to losses due to a swift repricing of risk premia, should the expectations of a gradual phasing out of expansionary monetary policy materialise.

Liquidity risk – high, outlook stable: Liquidity in equity markets varied throughout 3Q17, with the ESMA composite equity illiquidity indicator oscillating around its long term average (R.4). On the sovereign bond market, we observe ameliorating market liquidity in 3Q17, driven by higher turnover levels and tighter bid-ask spreads, after having deteriorated in early July (R.10, R.11). Similar patterns are registered in the corporate bond market, where the bid-ask spread has been decreasing throughout 3Q17 and hovers below its long-term average (R.16). In the repo market collateral scarcity premia, defined as the difference between general collateral and special collateral repo rates, increased in late 3Q17 reflecting potential high-quality collateral shortages which may endanger financial stability by increasing liquidity risk, volatility in funding costs.

Contagion risk – high, stable outlook: In the sovereign bond market, the correlation between German and other EU countries' bond yields increased markedly in 3Q17, on average stepping up to 0.75 from 0.33 registered at 2Q17. However, dispersion levels increased as well, with one peripheral country registering negative correlation to the German bond (R.19). In the medium to long term outlook contagion risks may derive from swift repricing in the bond markets leading to high redemptions and triggering forced selling into illiquid markets. Intra-sectoral fund interconnectedness for HFs slightly increased in 3Q17 while MMFs' interconnectedness rises back to last year's level. Potentially MMF fund returns' higher interconnectedness reflects the build-up of risk buffers against the ongoing trend of asset price inflation (R.32).

Credit risk – very high, outlook improving: In 3Q17 corporate bond spreads decreased considerably from 2Q17 across all rating categories, in the range from 11.6 bps for the BBB class to 5.4 bps for the AAA class (R.15). Credit quality in the reporting period slightly deteriorated, though at lower pace compared to 1H17 levels (R.17). The significant net inflows for EU funds investing in emerging markets reveal the persistence of search for yield strategies in the context of a low interest rate environment. The risk outlook for 4Q17 is improving, reflecting lower credit spreads as well as recent positive rating actions for EA sovereign and non-financials. In addition, going forward mandatory clearing for certain derivatives classes is expected to significantly reduce credit risk.

Operational risk – elevated, deteriorating outlook: Conduct and system risks remained a key concern both within and outside the EU. On conduct risk, overall volumes of complaints regarding financial instruments reported directly to NCAs in our sample saw an uptick in 2Q17 to around 1,700, following a steady downward trend from 2Q16 to 1Q17, at the start of which period total volumes had been almost 2,600. One driver of the previous downward trend had been a continuing reduction in complaints regarding contracts for difference and options, futures and swaps, following actions taken by NCAs in relation to some firms providing these products. Complaints relating to mutual funds increased in absolute terms in 2Q17 compared to the previous quarter (R.37). On system risks, in 3Q17 no major trading disruptions were observed on EU trading venues, whose trading volumes are at around 22% of the two-year peak observed following the UK referendum (R.40). The dispersion of Euribor submission quotes narrowed further in 3Q17 (R.45). This reflected the sharp drop of the maximum difference between the submitted quotes and the actual Euribor in early 3Q17, as the submission of one panel bank converged to the rest of bank quotes in the six-month tenor rate (R.44). In the post trading activity, lower settlement fails were registered recently in particular in equity instruments (R.42). Regarding cyber risks, in the medium to long term outlook concerns increase, especially in light of a recent cyber attack to a large bank, where account holder information has been stolen.

Securities markets

R.3

Risk summary

Risk level

Risk change from 2Q17

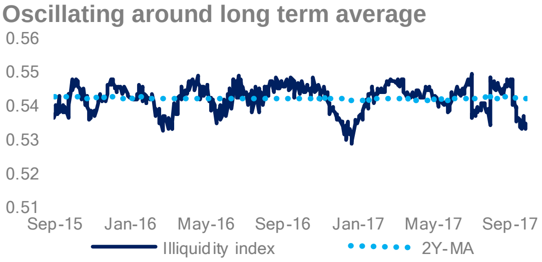
Outlook for 4Q17

Risk drivers

– Asset re-valuation and risk re-assessment
– Low interest rate environment and excessive risk taking
– Geopolitical and event risks
– Potential scarcity of collateral

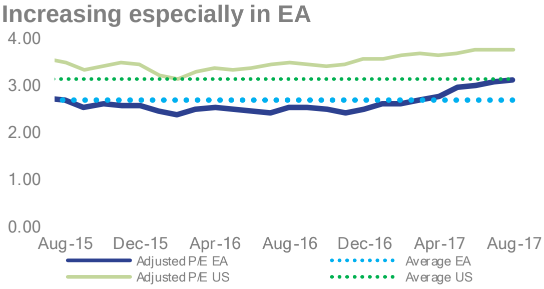
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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
ESMA composite liquidity index
Oscillating around long term average



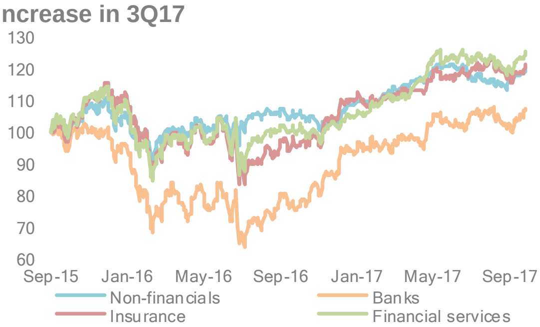
Note: Composite indicator of illiquidity in the equity market for the current Eurostoxx 200 constituents, computed by applying the principal component methodology to six input liquidity measures (Amihud illiquidity coefficient, bid-ask spread, Hui-Heubel ratio, turnover value, inverse turnover ratio,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

R.5
Equity valuation
Increasing especially in EA



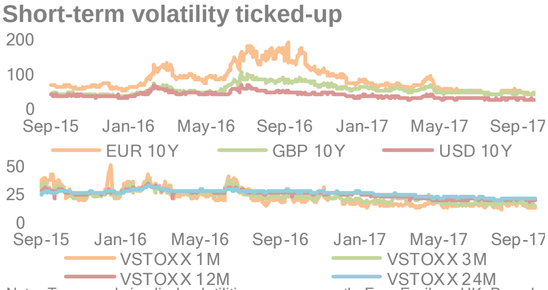
Note: Monthly earnings adjusted for trends and cyclical factors via Kalman filter methodology based on OECD leading indicators; units of standard deviation; averages computed from 8Y. Data available until the end of September 2017.
Sources: Thomson Reuters Datastream, ESMA.

R.6
Equity prices
Increase in 3Q17



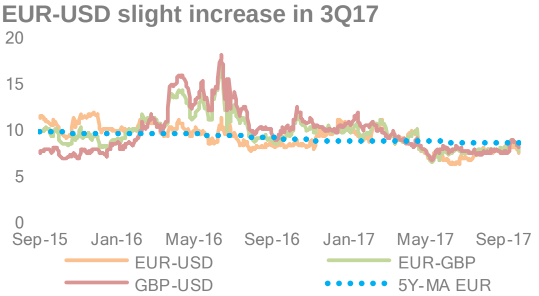
Note: STOXX Europe 600 equity total return indices. 01/09/2015=100.
Sources: Thomson Reuters Datastream, ESMA.

R.7
Financial instruments volatilities
Short-term volatility ticked-up



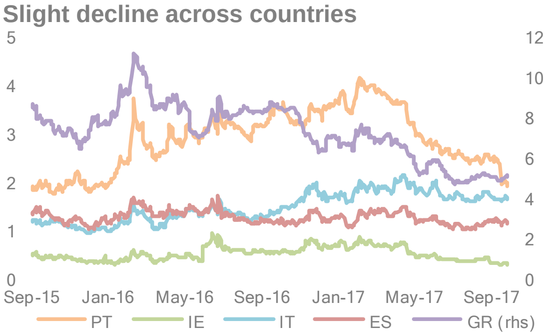
Note: Top panel: implied volatilities on one-month Euro-Euribor, UK Pound Sterling-GBP Libor and US Dollar-USD Libor swaptions measured as price indices, in %; bottom panel: Euro Stoxx 50 implied volatilities, measured as price indices, in %.
Sources: Thomson Reuters EIKON, Thomson Reuters Datastream, ESMA.

R.8
Exchange rate volatilities
EUR-USD slight increase in 3Q17



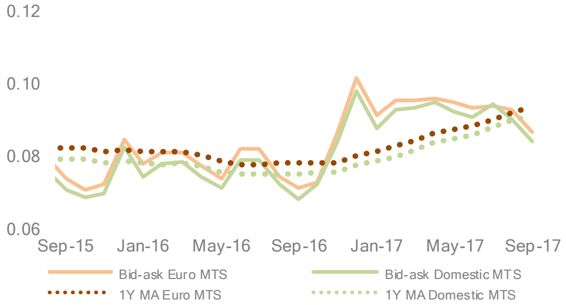
Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is the five-year moving average of the implied volatility for 3M options on EUR-USD exchange rate.
Sources: Bloomberg, ESMA.

R.9
Sovereign risk premia
Slight decline across countries



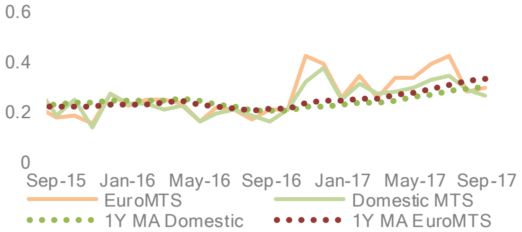
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %.
Sources: Thomson Reuters Datastream, ESMA.

R.10
Sovereign bond bid-ask spreads
Spreads decrease



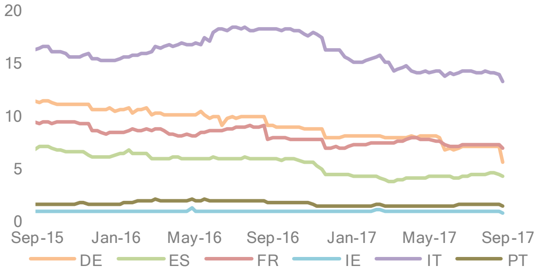
Note: Bid-ask spread as average bid ask spread throughout a month across ten EU markets, Domestic and Euro MTS, in %. 1Y MA = one-year moving average.
Sources: MTS, ESMA.

R.11
ESMA composite sovereign bond illiquidity index
High turnover drives ameliorated liquidity



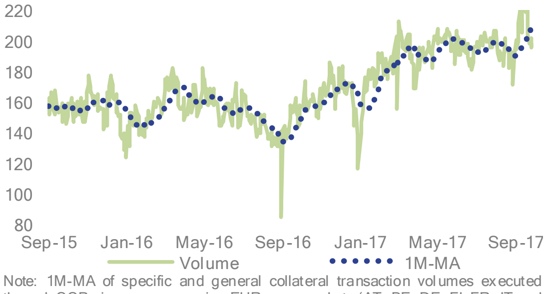
Note:Composite indicator of market liquidity in the sovereign bond market for the domestic and Euro MTS platforms, computed by applying the principal component methodology to four input liquidity measures (Amihud illiquidity coefficient, Bid-ask spread, Roll illiquidity measure and Turnover). 1Y MA = one-year moving average. The indicator range is between 0 (higher liquidity) and 1 (lower liquidity).
Sources: MTS, ESMA.

R.12
Sovereign CDS volumes
Stable or decreasing



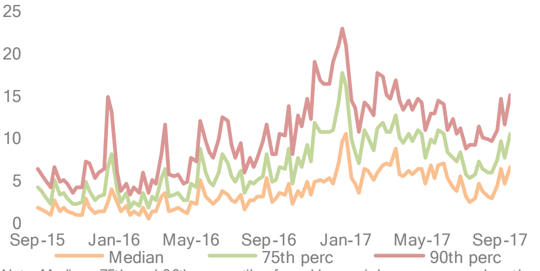
Note: Value of outstanding net notional sovereign CDS for selected countries; USD bn.
Sources: DTCC, ESMA.

R.13
Sovereign repo volumes
Hovering at high levels



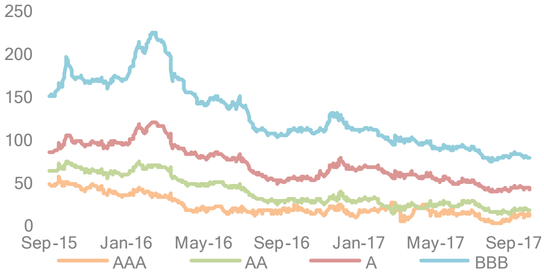
Note: 1M-MA of specific and general collateral transaction volumes executed through CCPs in seven sovereign EUR repo markets (AT, BE, DE, FI, FR, IT and NL), EUR bn. Index volumes filter out atypical transactions.
Sources: RepoFunds Rate, ESMA.

R.14
Repo markets specialness
Increased levels in late 3Q17



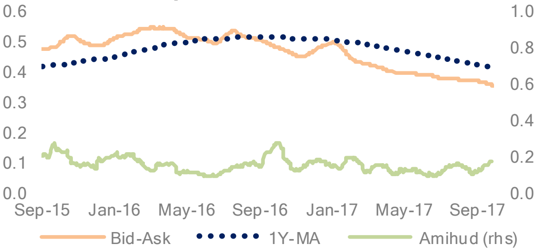
Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in selected countries.
Sources: RepoFunds Rate, ESMA.

R.15
Corporate bond spreads
Decrease continued in 3Q17



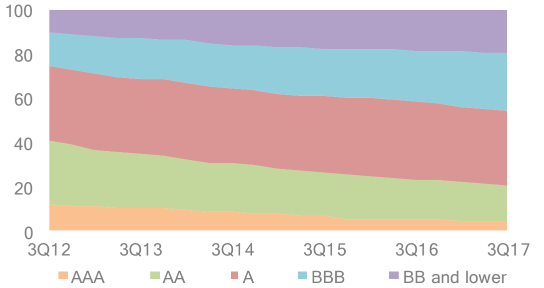
Note: EA non-financial corporate bond spreads by rating between iBoxx non-financial corporate yields and ICAP Euro Euribor swap rates for maturities from 5 to 7 years, in bps.
Sources: Thomson Reuters Datastream, ESMA.

R.16
Corporate bond bid-ask spreads and Amihud indicator
Amihud ticks-up, bid-ask narrows



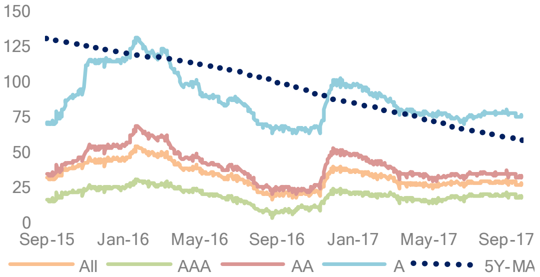
Note: EUR Markit iBoxx corporate bond index bid-ask spread, in %, computed as a one-month moving average of the iBoxx components in the current composition. 1Y-MA=one-year moving average of the bid-ask spread. Amihud liquidity coefficient index between 0 and 1. Higher value indicates less liquidity.
Sources: IHS Markit, ESMA.

R.17
Outstanding long term corporate debt
Broadly constant amount by rating



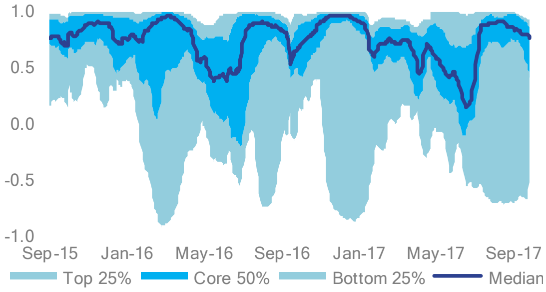
Note: Outstanding amount of corporate bonds in the EU as of issuance date by rating category, in% of the total.
Sources: Thomson Reuters EIKON, ESMA.

R.18
Covered bond spreads
Broadly stable in 3Q17



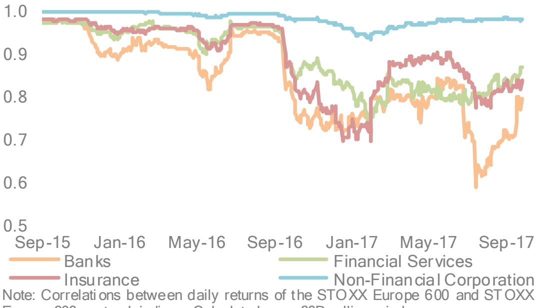
Note: Asset swap spreads based on iBoxx covered bond indices, in bps. 5Y-MA=five-year moving average of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

R.19
Dispersion in sovereign yield correlation
High level of correlation



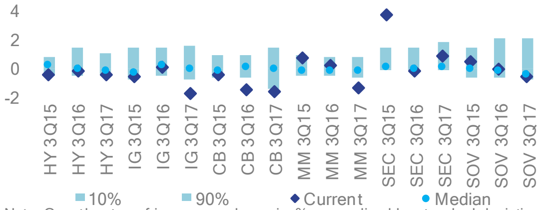
Note: Dispersion of correlations between 10Y DE Bunds and other EU countries' sovereign bond redemption yields over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

R.20
Sectoral equity indices correlation
Rebounding in 3Q17



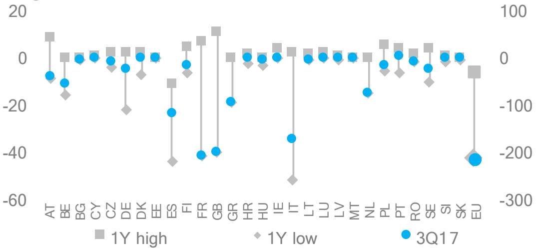
Note: Correlations between daily returns of the STOXX Europe 600 and STOXX Europe 600 sectoral indices. Calculated over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

R.21
Debt issuance growth
Negative issuance growth rates



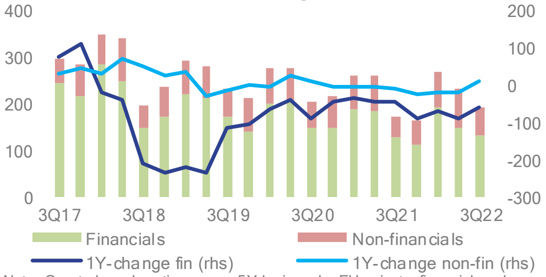
Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes: high yield (HY); investment grade (IG); covered bonds (CB); money market (MM); securitised (SEC); sovereign (SOV). Percentiles computed from 12Q rolling window. All data include securities with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

R.22
Net sovereign debt issuance
Negative net issuance in the 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: Thomson Reuters EIKON, ESMA.

R.23
Debt redemption profile
Lower short-term financing needs for financials



Note: Quarterly redemptions over 5Y-horizon by EU private financial and non-financials corporates, EUR bn. 1Y-Change=difference between the sum of this year's (four last quarters) and last year's (8th to 5th last quarters) redemptions.
Sources: Thomson Reuters EIKON, ESMA.

Investors

R.24

Risk summary

Risk level

Risk change from 2Q17

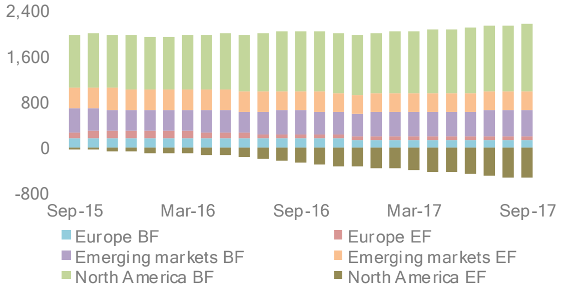
Outlook for 4Q17

Risk drivers

– Sustained search-for-yield
– Asset re-valuation and risk re-assessment
– Correlation in asset prices
– Continued inflow into EU fund industry and their potential event-related reversals

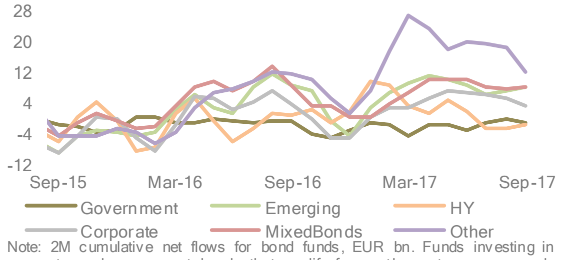
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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
Strong inflows except for funds investing in US



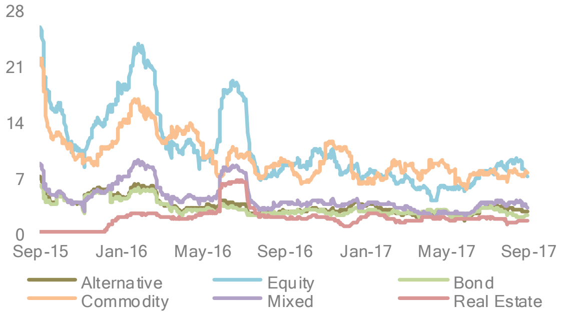
Note: Cumulative net flows into bond and equity funds (BF and EF) over time since 2004 by regional investment focus, EUR bn. Data until May 2016.
Sources: Thomson Reuters Lipper, ESMA

R.26
EU bond fund net flows
High for funds investing in emerging



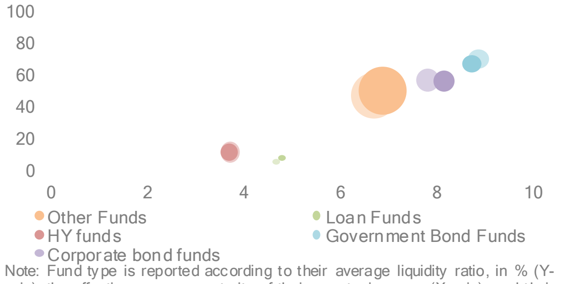
Note: 2M cumulative net flows for bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once (e.g. funds investing in emerging government bonds will be reported as emerging; funds investing in HY corporate bonds will be reported as HY).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

R.27
RoR volatilities by fund type
Equity increases, stable for the other asset types



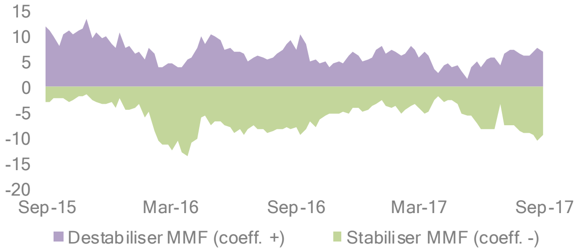
Note: Annualised 40D historical return volatility of EU domiciled mutual funds, in %.
Sources: Thomson Reuters Lipper, ESMA.

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



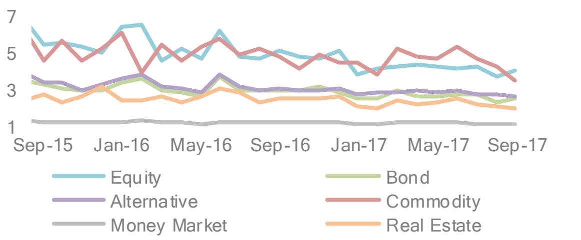
Note: Fund type is reported according to their average liquidity ratio, in % (Y-axis), the effective average maturity of their assets, in years (X-axis), and their size. Each series is reported for two years, i.e. 2016 (light colours) and 2017 (dark colours).
Sources: Thomson Reuters Lipper, ESMA.

R.29
Money market fund interconnectedness
Increasing in 3Q17



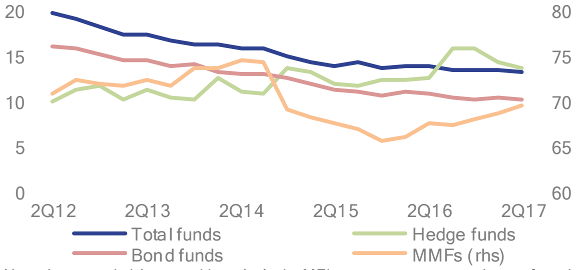
Note: Systemic stress indicator based on products of fractions of regressions with positive (negative) estimated coefficients for individual fund returns' impact on the mean sector return and respective estimators. Coefficients stem from VEC models regressing individual fund returns and moments of the entire industry's return distribution on lags and general financial market indices. Measures aggregated across individual regressions.
Sources: Thomson Reuters Lipper, Thomson Reuter Datastream, ECB, ESMA.

R.30
Retail fund synthetic risk and reward indicator
Decreasing for commodity funds



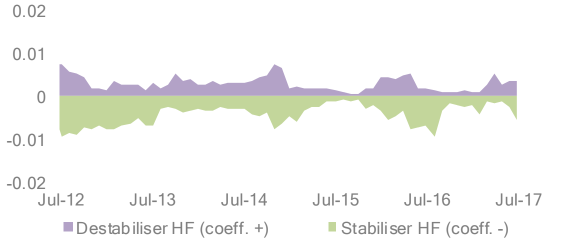
Note:The calculated Synthetic Risk and Reward Indicator is based on ESMA SRRI guidelines. It is computed via a simple 5 year annualised volatility measure which is then translated into categories 1-7 (with 7 representing higher levels of volatility).
Sources:Thomson Reuters Lipper, ESMA.

R.31
Financial market interconnectedness
Increase for MMFs, decreasing for HFs



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.
Sources: ECB, ESMA.

R.32
Hedge fund interconnectedness
Low intra-sector interconnectedness



Note: Systemic stress indicator based on products of fractions of regressions with positive (negative) estimated coefficients for individual fund returns' 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.
Sources: Barclayhedge, Eurekahedge, TASS, HFR, ESMA.

Infrastructures and services

R.33

Risk summary

Risk level

Risk change from 2Q17

Outlook for 4Q17

Risk drivers

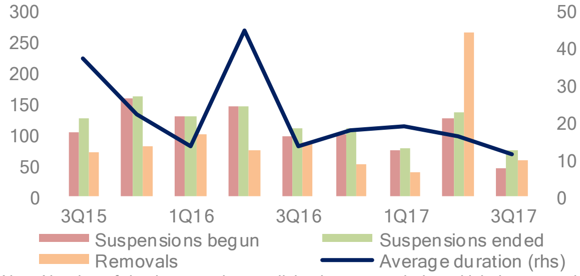
– Operational risks, incl. cyber risks

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

– Systemic relevance, interconnectedness between infrastructures or financial activities, system substitutability

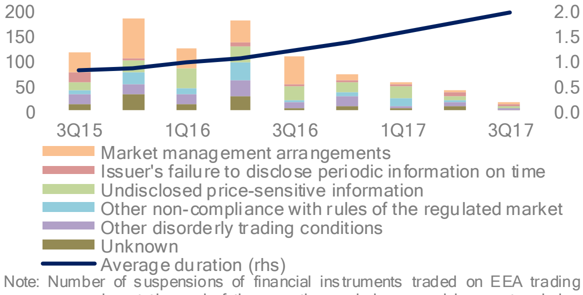
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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
Trading suspensions – lifecycle and removals
Low number of suspensions and removals



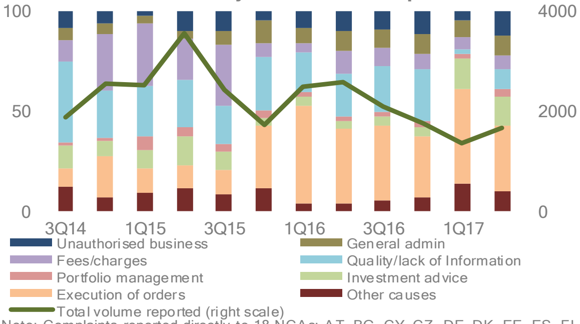
Note: Number of dead suspensions, split by the quarter during which they started and ended, and removals of financial instruments traded in EEA trading venues. Average duration of dead suspensions, in days, computed as the mean of the difference between the end-of-quarter date and the issuance date.
Sources: ESMA Registers.

R.35
On-going trading suspensions by rationale
Few suspensions in 3Q17



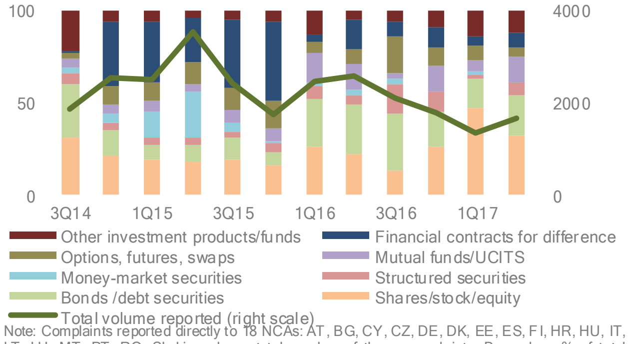
Note: Number of suspensions of financial instruments traded on EEA trading venues on-going at the end of the reporting period, grouped by quarter during which they started and by rationale. Average duration, in years, computed as the mean of the difference between the end-of-quarter date and the start date.
Sources: ESMA Registers.

R.36
Complaints indicator by rationale
Execution of orders major cause of complaints



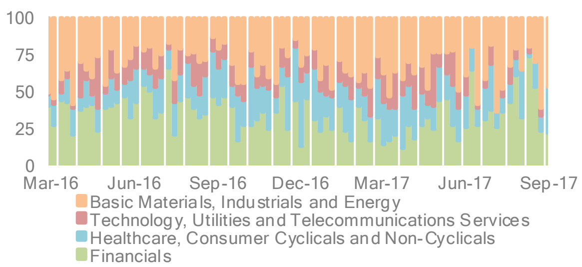
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total volume of these complaints. Bars show % of total volume by cause. Data collected by NCAs.
Sources: ESMA complaints database

R.37
Complaints indicator by instrument
Mostly on shares



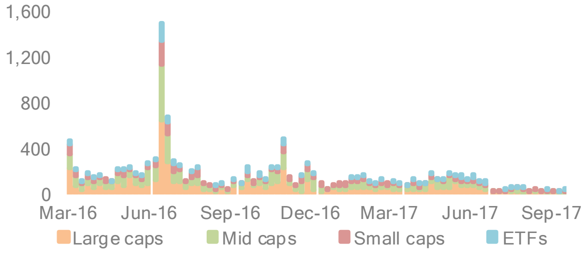
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total number of these complaints. Bars show % of total volume by type of financial instrument.

R.38
Circuit breaker trigger events by sector
No major market events



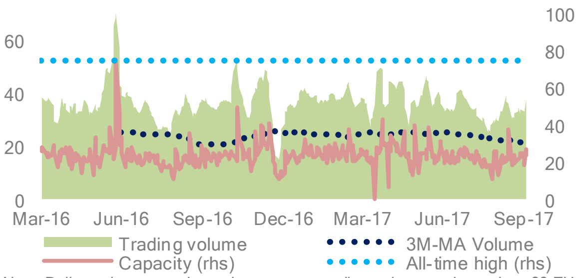
Note: Percentage of circuit breaker trigger events by economic sector. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe 200 Large/Mid/Small caps and a large sample of ETFs tracking the STOXX index or sub-index.
Sources: Morningstar Real-Time Data, ESMA.

R.39
Circuit breaker occurrences by market capitalisation
Low levels



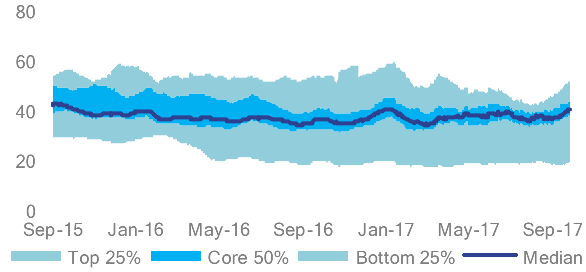
Note: Number of daily circuit breaker trigger events by type of financial instrument and by market cap. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe 200 Large/Mid/Small caps and a large sample of ETFs tracking the STOXX index or sub-index.
Sources: Morningstar Real-Time Data, ESMA.

R.40
Trading system capacity proxy
Hovering at around 22%



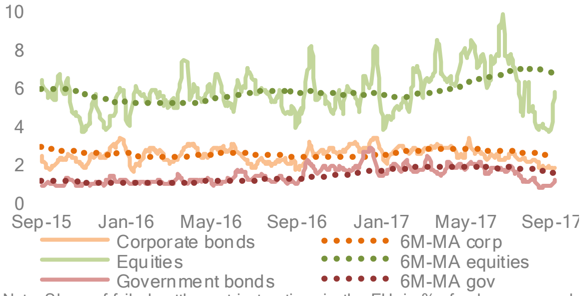
Note: Daily and one-month moving average trading volume registered on 36 EU trading venues, EUR bn. Capacity computed as a one-week moving average of the average ratio across trading venues of daily trading volume over maximum volume observed since 31/03/2016, in percentage.
Sources: Morningstar Realtime, ESMA.

R.41
Equity market concentration
Concentration slightly increased



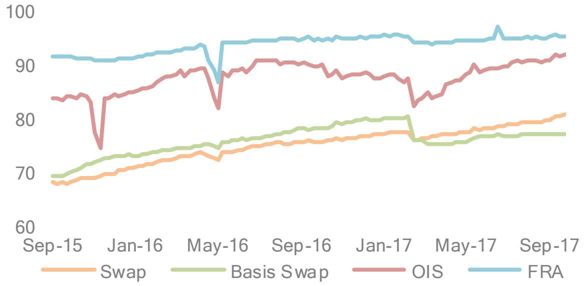
Note: Concentration of notional value of equity trading by national indices computed as a 1M-MA of the Herfindahl-Hirschman Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX.
Sources: BATS, ESMA.

R.42
Settlement fails
Lower settlement fails, particularly for equities



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.43
IRS CCP clearing
OIS and swap increasing

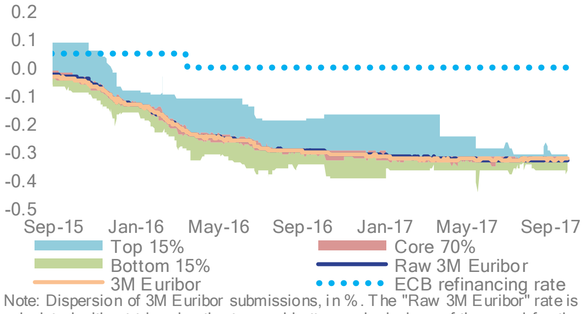


Note: OTC interest rate derivatives cleared by CCPs captured by Dealer vs. CCP positions, in % of total notional amount. Spikes due to short-term movements in non-cleared positions.
Sources: DTCC, ESMA.

R.44
Difference between the Euribor and the maximum contribution
Sharp decline in early 3Q17

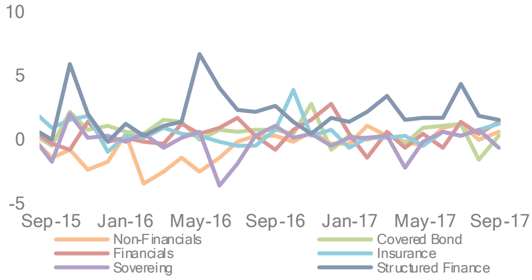
Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the 8 Euribor tenors.
Sources: European Money Markets Institute, ESMA.

R.45
Euribor – Dispersion of submission levels
Decrease dispersion



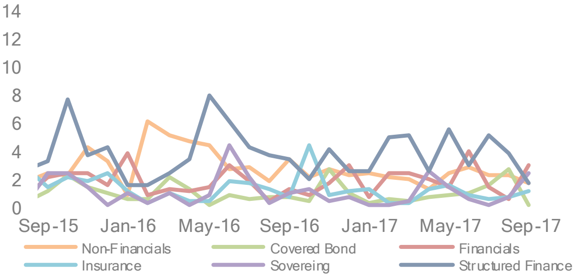
Note: Dispersion of 3M Euribor submissions, in %. The "Raw 3M Euribor" rate is calculated without trimming the top and bottom submissions of the panel for the 3M Euribor.
Sources: European Money Markets Institute, ESMA.

R.46
Rating changes
Positive for structured finance



Note: Net change of ratings from all credit rating agencies, excluding CERVED and ICAP, by asset class computed as a percentage number of upgrades minues percentage number of downgrades over number of outstanding ratings.

R.47
Rating volatility
More volatile structured finance ratings



Note: Volatility of ratings by all credit rating agencies, excluding CERVED and ICAP, by asset class computed as number of rating changes over number of outstanding ratings.
Sources: RADAR, ESMA.

European Securities and
Markets Authority