European Securities and Markets Authority

ESMA Risk Dashboard

No. 2, 2017

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 The reporting period of this document is 1 January 2017 to 31 March 2017, unless indicated otherwise. 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 third-party data used in this publication may be subject to provider-specific disclaimers, especially regarding its ownership, its reuse by non-customers and, in particular, the accuracy, completeness or timeliness of the data provided and the provider's liability related to those. Please consult the websites of the individual data providers, whose names are detailed throughout this report, for more details on these disclaimers.

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ESMA Risk Dashboard

R.1
Main risks (1Q17)

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.

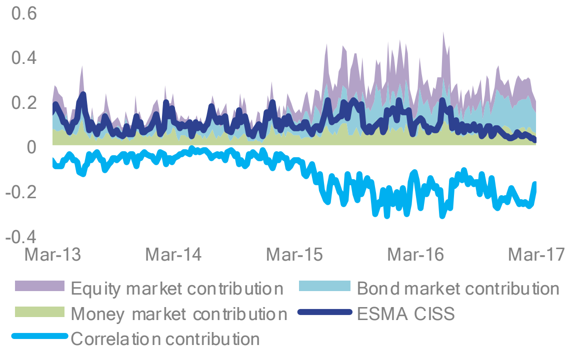
ESMA's 1Q17 overall risk assessment remains unchanged from 4Q16. In 1Q17, EU financial markets remained relatively calm with stable volatility and increasing equity market prices. EU sovereign bond yields continued to increase in 1Q17 by around 19 bps on average mirroring US government bonds. However, yield developments were heterogeneous with potential reactivity to political events reflected in higher than average yield increases for some member states. Investment fund liquidity remained a concern with strong bond and equity funds inflows, potentially subject to event-related reversals. While main risks remained high, our outlook for market, liquidity, credit and contagion risk is stable. The low yield environment and related sustained concerns with regard to excessive risk taking and asset pricing persisted. Going forward, we consider political uncertainties, incl. the Brexit negotiations and the election calendar in the EU, as the most important potential sources of risk in 2017.

Risk summary

In 1Q17, 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 4Q16, with market and credit risk remaining very high due to the persisting low-interest rate environment, continued weaknesses in the EU banking sector and geopolitical developments. Liquidity risk is still assessed as high, with liquidity pressures in segments of the fund industry and in repo markets. Contagion risk remained high, driven by high levels of interconnectedness between different segments of financial markets amplified by the low-yield environment and associated incentives for risk-taking. Finally, operational risk remained a key concern. The risk outlook is stable across all risk categories, reflecting the stabilised macroeconomic environment and the non-materialisation of risk premia reversals following recent US monetary policy actions.

Systemic stress was broadly stable in 1Q17, decreasing slightly at the beginning of the reporting period (R.2), with bond markets as the main risk contributor. Risks linked to the macroeconomic environment (GDP, inflation) stabilised, although market uncertainty over potential changes in the European monetary policy stance are still prevailing. Political events could bring additional uncertainty to financial markets (Brexit, important elections in EU Member States, US policy agenda).

R.2
ESMA composite systemic stress indicator
Systemic risk broadly stable in 1Q17



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: The EU economic recovery is expected to continue in 1Q17 with, for the first time in a decade, GDP growth expected in all EU member states. Domestic demand is set to remain the main growth driver, supported by sustained improvements in employment and a rise in nominal wage growth. Investment is expected to continue growing only moderately. Inflation in the EA has recently increased and is expected to be at a higher levels in 2017, though still falling short of the 2% target level over the medium term. The aggregate EA public deficit and government debt-to-GDP ratio are expected to fall further in 2017. However, significant downside risks for the EU economic growth outlook remain. This is due to important elections to be held in a number of EU member states, the upcoming Article 50 negotiations with the UK[1] and the US policy agenda.

Low-interest rate environment: The ECB and BoE monetary policies remained highly accommodative. In this context, despite the general increase in sovereign yields since 2H16, which continued in 1Q17, the low-interest environment and related search for-yield strategies still represent a source of concern. This is illustrated by strong issuance of high-yield bonds (R.18) and strong positive inflows for EU funds investing in emerging market and high yield fixed-income products (EUR 19bn and 18bn, respectively) in 1Q17. On the other hand, government bond funds registered net outflows (EUR -8.8bn) (R.24). In this context, excessive risk-taking and capital misallocation remain risk sources in the medium-term outlook.

EU sovereign debt markets: In 1Q17, EU sovereign bond yields continued to increase mirroring the behaviour of US government bonds following the outcome of the US Presidential elections and the US Fed interest rate increase. Ten-year EU government bond yields rose by 19bps to 1% on average for the main EU countries at the end of March, above the 0.9% five-year moving average. Net sovereign debt issuance was negative over the same period. Sovereign bond bid-ask spreads seem to have converged to higher levels since the end of 2016, which, together with widely dispersed sovereign risk premia could be a sign of a decoupling among member states on sovereign bond markets.

Market functioning: No significant disruptions in the functioning of EU markets were observed in 1Q17. Central clearing remained at a high level following the entry into force of the clearing obligation on G4 currency IRS in 2016 and on Index Credit Default Swaps on 9 February 2017. Settlement fails remained at a low level after the adoption by the EC of a package of legislative acts improving securities settlement[2]. Further T2S migrations including the one of the German market in February are expected to increase the volumes on this platform and to contribute to the integration of post-trade processes across participating EU markets. Finally, cyber risk is considered as one of the major risks facing financial markets institutions, both with respect to their business continuity and the integrity of proprietary data. Financial market infrastructures (FMIs) such as trading venues, CSDs, TRs and CCPs are becoming more and more central to the financial system, for example on derivatives markets. Thus, the size of these institutions, as well as the potential for contagion make a proper monitoring of cyber risk essential to the stability of financial markets. Furthermore, the intertwining of Fintech and FMIs, for example through DLT, anchors technology risk as a long term but rapidly evolving risk for these companies.

Political and event risk: Uncertainties around the Brexit negotiations are the most important source of political risk in the EU financial market. Negotiation outcomes and related news flow may result in intensified political and event risk going forward, with greater asset price volatility in EU markets as a potential effect. The election calendar in EU member states is a second source of political uncertainty (incl. parliamentary elections in France and Germany), even if the French presidential election, as a source of significant market nervousness in the run-up, was concluded and met with benign equity and bond market reactions. Policy issues at international level, incl. uncertainty over the future direction of global financial market policy coordination, as well as geostrategic risks continue to weigh on market sentiment in the EU.

[1] European Commission, "European Economic Forecast", winter 2017.

[2] Regulation (EU) No 909/2014 on improving securities settlement in the EU and on central securities depositories.

Risk categories

Market risk – very high, outlook stable: In 1Q17 EU equity market prices continued to increase, e.g. for financials excl. banks (+8.7%) and non-financials (+6.6%). Nevertheless, these developments were less pronounced than in the US after the presidential election as illustrated by P/E ratios in the EU still far below the ones in the US (R.5). Implied volatilities on the other hand remained at a low level, for example for short-term swaps. The GBP exchange rate implied volatility peaked in January around the announcements that made a hard Brexit scenario more probable, only to decrease later on. In this context of high political uncertainty with past elections and their still uncertain consequences as well as several elections in EU member states in 2017, markets are still prone to strong reactions and are likely to remain so during the coming months.

Liquidity risk – high, outlook stable: Liquidity in equity markets slightly deteriorated with the composite equity illiquidity indicator (R.4) increasing in 1Q17. On corporate bond markets the picture was mixed with lower bid-ask spreads as signal for increased liquidity, but a more volatile Amihud illiquidity indicator[3], though remaining at low levels (R.14). The sharp drop in repo rates observed at the end of 2016 resulted in greater dispersion between the scarcity premia on bonds that are in very high demand (the highest percentiles) and the median premium. The dispersion then reduced in 1Q17, though remains at comparatively high levels (R.12). The reduction can be partly linked to the December ECB's QE announcement, but high dispersion levels reflect potential high-quality collateral shortages that could impede overall liquidity. Sovereign bond bid-ask spreads remained stable overall but increased for most of the more vulnerable member states. Covered bond spreads, after having also ticked up in December, reversed slowly toward lower levels.

Contagion risk – high, stable outlook: In sovereign bond markets, the correlation between the German and other EU countries' ten-year bond yields decreased at the beginning of 1Q17 while the dispersion increased across member states. However, one peripheral country sovereign bond market was driving the bottom 25% dispersion (R.17). Dispersion then decreased towards the end of 1Q17. Concerns over banking sector balance sheet issues and their potential contagion to other sectors such as insurance and pensions or funds are still present.

Credit risk – very high, outlook stable: At the beginning of 2017, corporate bond spreads remained around their 4Q16 levels. Issuance of high-yield, securitised products as well as money market and sovereign bonds was higher in 1Q17 than during the previous quarter (R.18) while the credit quality of the outstanding corporate bond debt continued to deteriorate (R.15). Redemption needs for banks over the medium term (from 3Q17 to 4Q18) are at a lower level than last year but are still a short-term source of risk.

Operational risk – elevated, stable outlook: Technology and conduct risks remain a key concern both within and outside the EU. In 1Q17, no trading disruptions were observed on EU financial markets. However, operational risk issues were highlighted by the GBP flash-crash on 7 October 2016 and enquiries into its causes continued. According to a BIS report, the combination of fragile market conditions, poorly controlled algorithms and inexperienced staff created a "mechanical cessation of trading on the futures exchange and the exhaustion of the limited liquidity on the primary spot FX trading platform, which encouraged further withdrawal of liquidity by providers reliant on data from those venues"[4]. Finally, the increased dispersion in Euribor contributions (R.35) underlines the importance of sound and well managed financial benchmarks.

[3] The Amihud illiquidity ratio is a widely used measure of stock market illiquidity and measures the price impact of trading. It is calculated as the daily ratio of absolute stock returns to its volume, averaged over the chosen period. A smaller value of the coefficient means lower price impact and so higher liquidity.

[4] BIS, *The sterling 'flash event' of 7 October 2016*, January 2017.

Securities markets

R.3

Risk summary

Risk level

Risk change from 4Q16

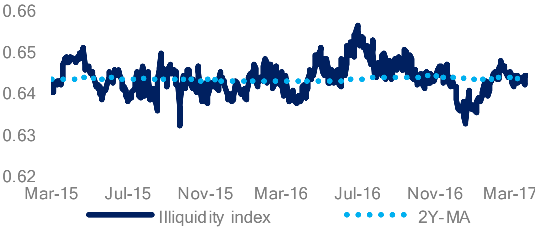
Outlook for 2Q17

Risk drivers

- Asset re-valuation and risk re-assessment.
- Low-interest-rate environment and excessive risk taking.
- Uneven EU growth.
- Banking sector balance sheet issues.
- Political and event risks.
- Potential scarcity of collateral.

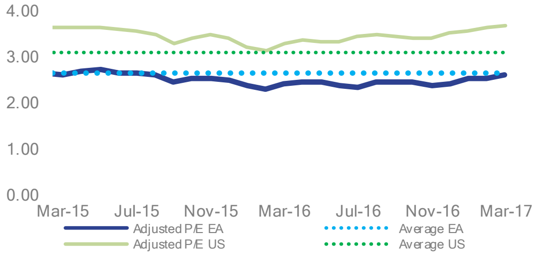
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high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



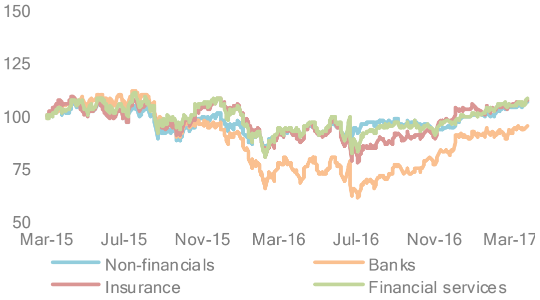
Note: Composite indicator of illiquidity in the equity market for the current Eurostoxx 200 constituents, computed by applying the principal component methodology to six input liquidity measures (Amihud illiquidity coefficient, bid-ask spread, Hui-Heubel ratio, turnover value, inverse turnover ratio,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

R.5
Equity valuation
Reached long-term average in the EA



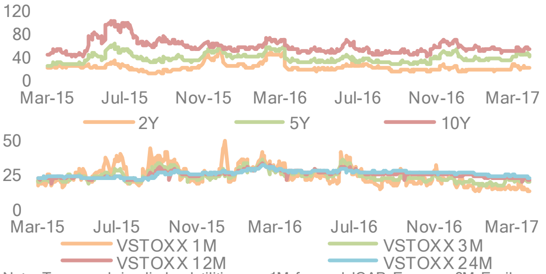
Note: Monthly earnings adjusted for trends and cyclical factors via Kalman filter methodology based on OECD leading indicators; units of standard deviation; averages computed from 8Y. Data available until the end of March 2017.
Sources: Thomson Reuters Datastream, ESMA.

R.6
Equity prices
Continued increase in 1Q17



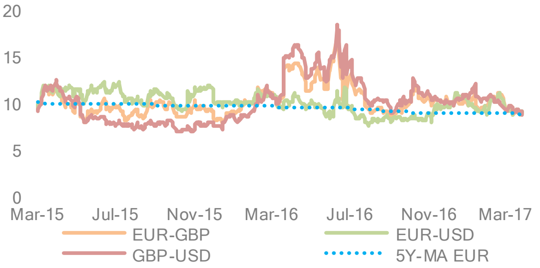
Note: STOXX Europe 600 equity total return indices. 01/01/2015=100.
Sources: Thomson Reuters Datastream, ESMA.

R.7
Financial instruments volatilities
Stable volatility



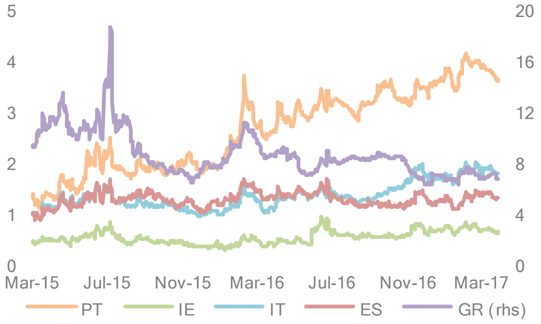
Note: Top panel: implied volatilities on 1M forward ICAP Euro vs. 6M Euribor swaptions based on the Normal volatility model, in bp; low panel: Euro Stoxx 50 implied volatilities, measured as price indices, in %.
Sources: Bloomberg, Thomson Reuters Datastream, ESMA.

R.8
Exchange rate volatilities
Brexit-related GBP peak in early 1Q17



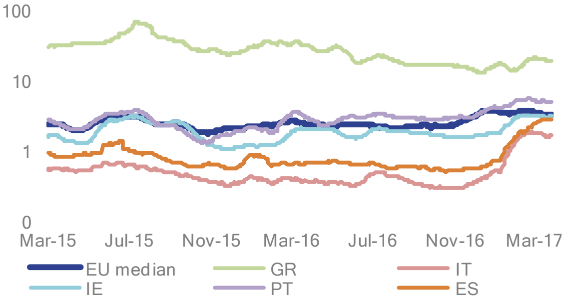
Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is the five-year moving average of the implied volatility for 3M options on EUR-USD exchange rate.
Sources: Bloomberg, ESMA.

R.9
Sovereign risk premia
Mixed development across countries



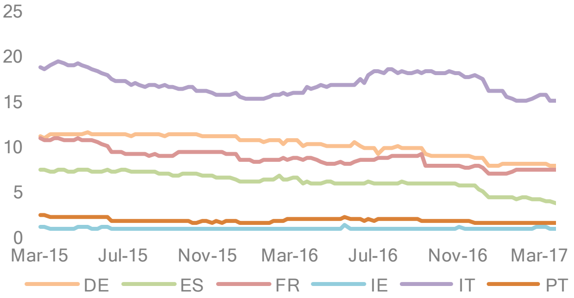
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %.
Sources: Thomson Reuters Datastream, ESMA.

R.10
Sovereign bond bid-ask spread
Increasing for more vulnerable countries



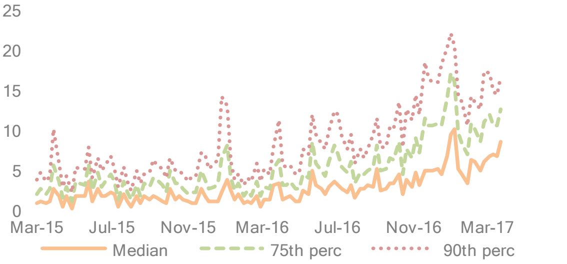
Note: Liquidity measured as the one-month moving average of the difference of ask and bid yields for 10Y sovereign bonds, in basis points. EU Median computed using data for 25 countries. Logarithmic scale.
Sources: Bloomberg, ESMA.

R.11
CDS volumes
Stable or slightly decreasing



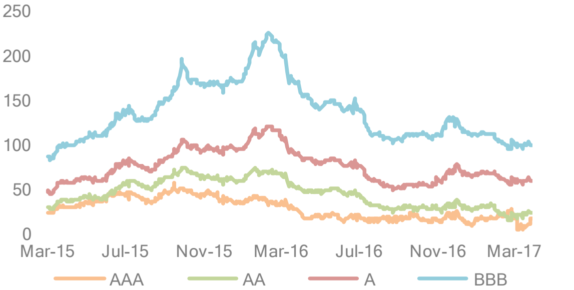
Note: Value of outstanding net notional sovereign CDS for selected countries; USD bn.
Sources: DTCC, ESMA.

R.12
Repo markets specialness
Reduced dispersion, though still at high levels



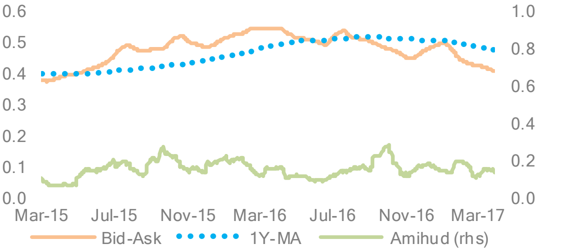
Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in selected countries.
Sources: RepoFunds Rate (BrokerTec, MTS, ICAP), ESMA.

R.13
Corporate bond spreads
Broadly stable in 1Q17



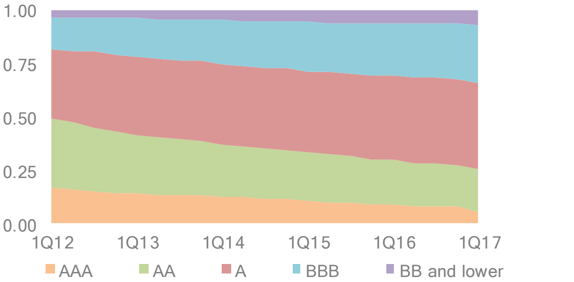
Note: EA non-financial corporate bond spreads by rating between iBoxx non-financial corporate yields and ICAP Euro Euribor swap rates for maturities from 5 to 7 years, basis points.
Sources: Thomson Reuters Datastream, ESMA.

R.14
Corporate bond bid-ask spreads and Amihud indicator
Bid-ask spread decreased, volatile Amihud



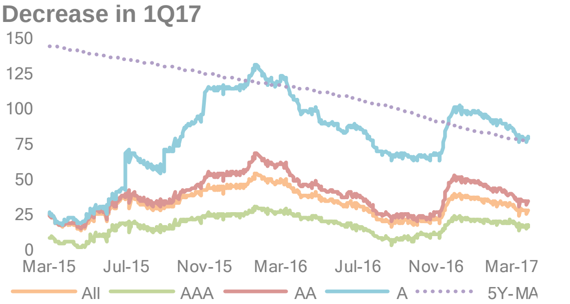
Note: EUR Markit iBoxx corporate bond index bid-ask spread, in %, computed as a one-month moving average of the iBoxx components in the current composition. 1Y-MA=one-year moving average of the bid-ask spread. Amihud liquidity coefficient index between 0 and 1. Higher value indicates less liquidity.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

R.15
Outstanding long term corporate debt
Increased share of BBB and lower



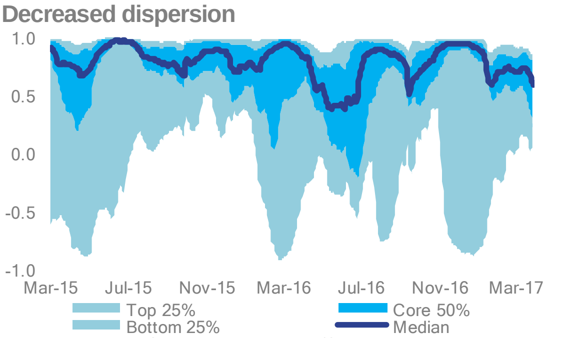
Note: Outstanding amount of corporate bonds as of issuance date by rating category, in % of the total.
Sources: Thomson Reuters Eikon, ESMA.

R.16
Covered bond spreads
Decrease in 1Q17



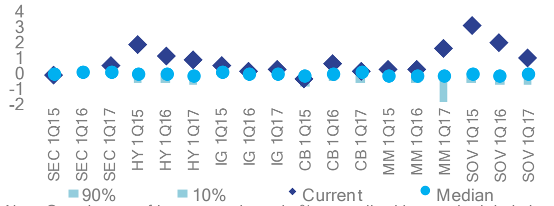
Note: Asset swap spreads based on iBoxx covered bond indices, basis points.
5Y-MA=five-year moving average of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

R.17
Dispersion in sovereign yield correlation
Decreased dispersion



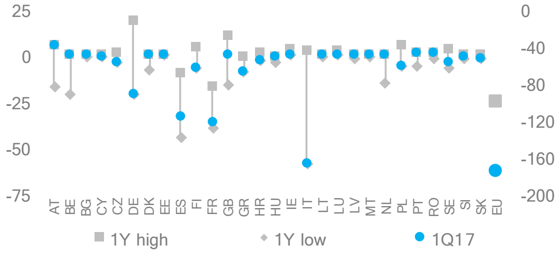
Note: Dispersion of correlations between 10Y DE Bunds and other EU countries' sovereign bond redemption yields over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

R.18
Debt issuance growth
Higher issuance for HY, MM and SOV



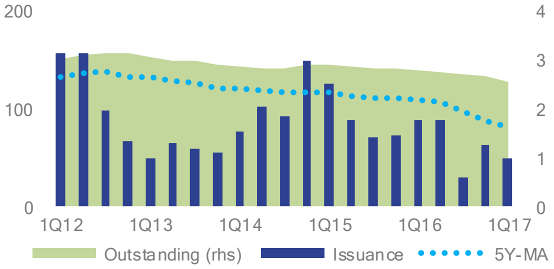
Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes, following Eikon classification: securitised (SEC); high-yield (HY); investment grade (IG); covered bonds (CB); money market (MM); sovereign (SOV). Percentiles computed from 12Q rolling window. 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: Thomsons Reuters Eikon, ESMA.

R.19
Net sovereign debt issuance
Negative net issuance in the EU



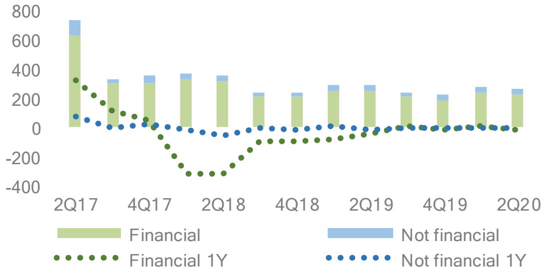
Note: Quartely net issuance of EU sovereign debt by country, EUR bn. Net issuance calculated as the difference between new issuance over the quarter and outstanding debt maturing over the quarter. Highest and lowest quarterly net issuance in the past year are reported. EU total on right-hand scale.
Sources: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

R.20
Hybrid capital issuance and outstanding
Close to 5Y MA



Note: Outstanding amount computed as the historical cumulative sum of the difference between issuance and maturity of covered bonds, EUR tn. Issuance in EUR bn. 5Y-MA = five-year moving average of issuance.
Sources: Thomson Reuters Eikon, ESMA.

R.21
Debt redemption profile
Bank short-term financing needs



Note: Quarterly redemptions over 3Y-horizon by EU private financial and non-financial corporates, current (column) and change over one year (dotted lines), EUR bn.
Sources: Thomson Reuters Eikon, ESMA.

Investors

R.22

Risk summary

Risk level

Risk change from 4Q16

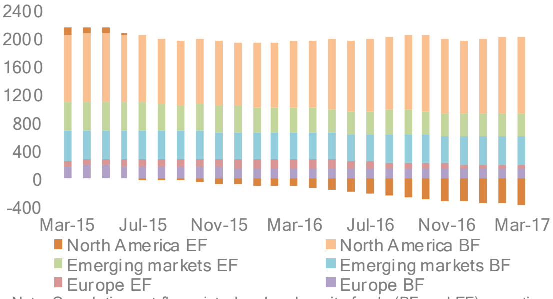
Outlook for 2Q17

Risk drivers

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

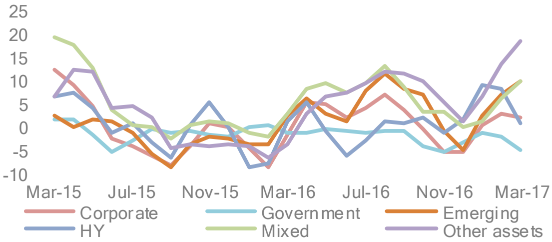
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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.23
Cumulative global investment fund flows
Inflows for EU equity and bond funds



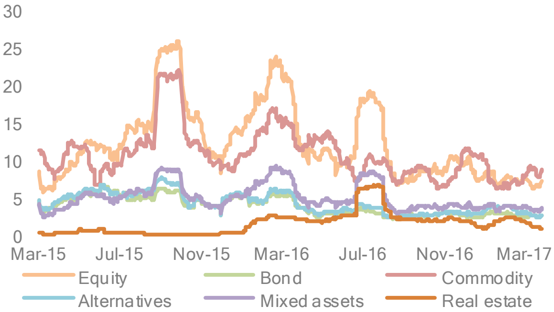
Note: Cumulative net flows into bond and equity funds (BF and EF) over time by regional investment focus, EUR bn.
Sources: Thomson Reuters Lipper, ESMA.

R.24
EU bond fund net flows
Inflows for all but government-bond funds



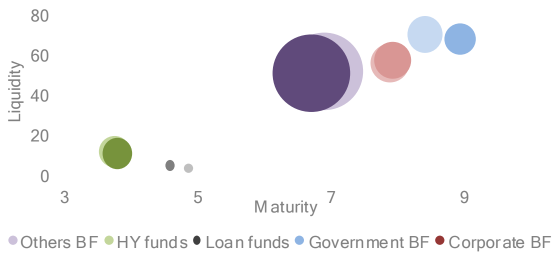
Note: 2M cumulative net flows for bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once (e.g. funds investing in emerging government bonds will be reported as emerging; funds investing in HY corporate bonds will be reported as HY).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

R.25
RoR volatilities by fund type
Stable volatilities



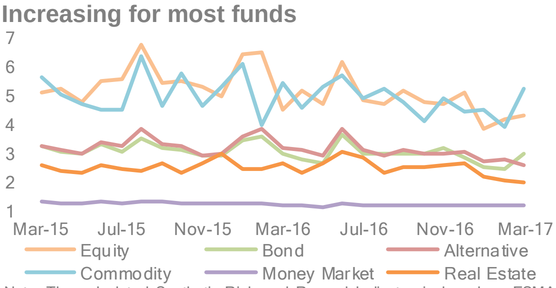
Note: Annualised 40D historical return volatility of EU-domiciled funds, in %.
Sources: Thomson Reuters Lipper, ESMA

R.26
Liquidity risk profile of EU bond funds
Stable liquidity and mixed maturity changes



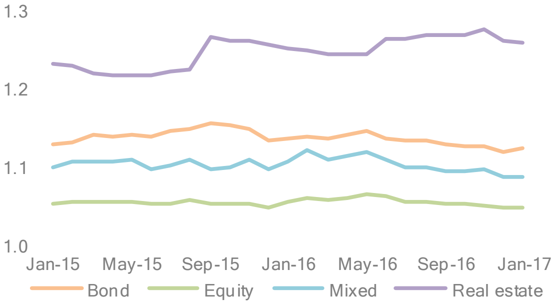
Note: Fund type is reported according to their average liquidity ratio, as a percentage (Y-axis), the effective average maturity of their assets (X-axis) and their size. Each series is reported for 2 years, i.e. 2015 (mid tones) and 2016 (hue).
Sources: Thomson Reuters Lipper, ESMA.

R.27
Retail fund synthetic risk and reward indicator
Increasing for most funds



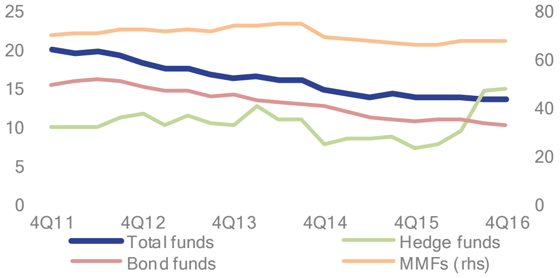
Note: The calculated Synthetic Risk and Reward Indicator is based on ESMA SRRI guidelines. It is computed via a simple 5Y annualised volatility measure which is then translated into categories 1-7 (with 7 representing higher levels of volatility).
Sources: Thomson Reuters Lipper, ESMA.

R.28
Leverage by investment fund type
Slightly decreased leverage, except bond funds



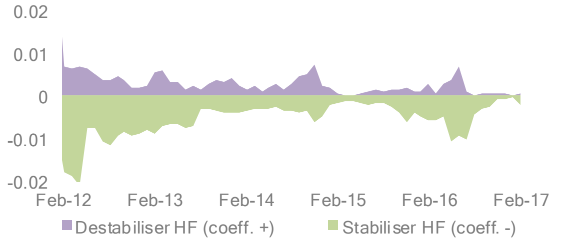
Note: EA investment funds leverage by fund type computed as the AuM/NAV ratio.
Sources: ECB, ESMA.

R.29
Financial market interconnectedness
Increase for hedge funds



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.30
Hedge fund interconnectedness
Intra-sector interconnectedness remained low



Note: Systemic stress indicator based on products of fractions of regressions with positive (negative) estimated coefficient 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.31

Risk summary

Risk level

Risk change from 4Q16

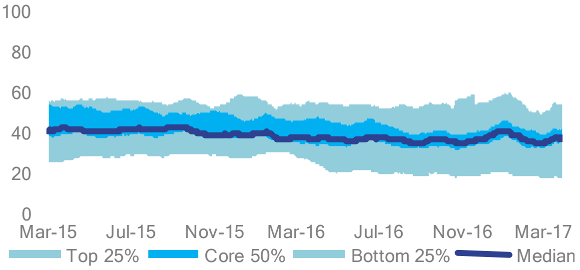
Outlook for 2Q17

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.
- Uncertainty around international regulatory agenda.

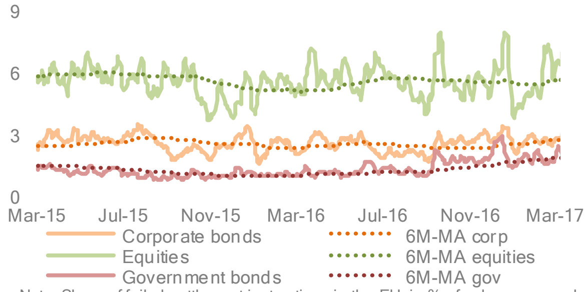
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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.32
Equity market concentration
Concentration slightly decreased



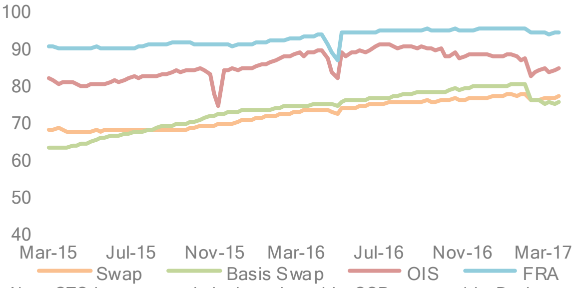
Note: Concentration of notional value of equity trading by national indices computed as a 1M-MA of the Herfindahl-Hirschman Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX.
Sources: BATS, ESMA.

R.33
Settlement fails
Higher 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.34
IRS CCP clearing
OIS and basis swap decrease in February

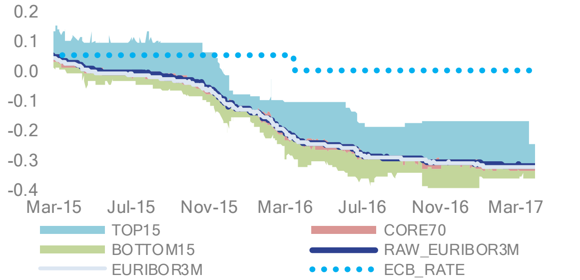


Note: OTC interest rate derivatives cleared by CCPs captured by Dealer vs. CCP positions, in % of total notional amount. Spikes due to short term movements in non-cleared positions.
Sources: DTCC, ESMA.

R.35
Euribor – Dispersion in contributions
Slight increase in 1Q17

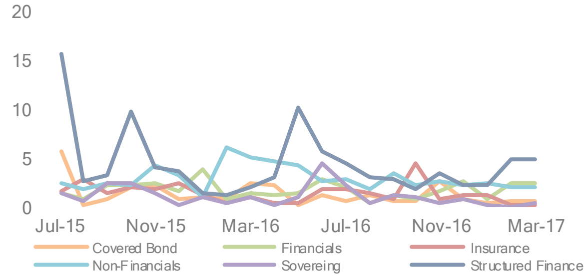
Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the 8 Euribor tenors.
Sources: European Money Markets Institute, ESMA.

R.36
Euribor – Dispersion of submission levels
Stable in 1Q17



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.37
Rating changes
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