European Securities and Markets Authority

ESMA Risk Dashboard

No. 2, 2018

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ESMA Risk Dashboard

R.1
Main risks

Risk segments	Level	Outlook	Risk categories	Level	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	→

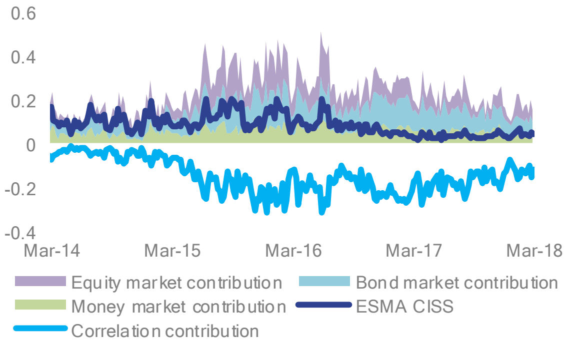
Note: Assessment of main risks by risk segments for markets under ESMA remit since last assessment, and outlook for forthcoming quarter. Assessment of main risks by risk categories and sources for markets under ESMA remit since last assessment, and outlook for forthcoming quarter. Risk assessment based 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.

In 1Q18, equity markets in the EU and elsewhere saw significant price corrections, with a 6% drop in EU stock prices in the week of 5 February alone, and the return of market volatility. The episode confirms our concerns that market risks are and will continue to be very high, resulting from ambitious asset valuations in equities as well as market uncertainty as the period of ultra-low interest rates draws to a close. Our outlook for liquidity, contagion and credit risk remains unchanged. Operational risk continues to be elevated, with a deteriorating outlook, as Brexit-related risks to business operations and vulnerabilities to cyber-attacks rise. Investor risks have been mounting across a range of products, and ESMA has, following our earlier risk alert on Initial Coin Offerings (ICOs)[1], issued a pan-EU warning to consumers regarding the risks of buying Virtual Currencies[2]. Moreover, under the MiFIR product intervention powers, the ESMA Board agreed on a temporary prohibition of Binary Options and restrictions on Contracts for Difference (CFDs)[3], respectively.

Risk summary

Valuation risk materialised in early February with strong correction on global equity markets, starting in the US, and spreading into other jurisdictions, including the EU. Even though markets stabilised since, this episode pays tribute to the valuation risks and fragility of securities markets highlighted by ESMA in its previous risk assessments. Against this background, market risk remained at a very high level in 1Q18, and other ESMA risks categories remained at high levels, reflecting very high risk in securities markets and elevated risk for investors, infrastructures and services. The level of credit and liquidity risk remained high with a deterioration in outstanding corporate ratings, deteriorating corporate bond liquidity measures and with potential collateral scarcity signs still present. Operational risk was elevated, with the rapid growth in the number of VCs and ICO campaigns as a source of risk for investors. On this matter, the ESAs issued a joint warning to consumers in February. Cyber risk also remains a major concern.

R.2
ESMA composite systemic stress indicator
Low, with equity driven spikes



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

1 https://www.esma.europa.eu/sites/default/files/library/esma50-157-829_ico_statement_investors.pdf
2 https://www.esma.europa.eu/sites/default/files/library/esma50-164-1284_joint_esas_warning_on_virtual_currencies.pdf
3 https://www.esma.europa.eu/sites/default/files/library/esma35-43-1000_additional_information_on_the_agreed_product_intervention_measures_relating_to_contracts_for_differences_and_binary_options.pdf

Macroeconomic environment: Growth forecasts in the EU have been raised by the European Commission in its Winter 2018 Interim Economic Forecast[4]. In the US, the annual rate of headline inflation (2.1% in January) was stronger than the consensus forecast, reigniting investors' fears of more aggressive interest rate increases. The macroeconomic environment and its interaction with market expectations, notably over future monetary policy actions, played an active role in February's market correction and remain a significant risk source going forward.

Low interest-rate environment: During 1Q18 markets showed signs of a risk premia reversal related to a move out of the low interest rate environment. Starting in the US, stronger than expected economic recovery, inflation figures and salary increases as well as a recent tax cut plan have renewed concerns over a more aggressive monetary policy tightening than anticipated. This triggered a global equity sell off in February In the high-yield (HY) segment, yields on the main benchmark, which had been declining since early 2016 started to increase at the end of 2017, potentially reflecting a curbing of search for yield behaviour[5]. HY bond funds also experienced net outflows over the reporting period (R.25). Markets reactions to monetary policy actions and the phase-out of the low interest rates environment will be interlinked going forward. Hence, our risk outlook for this category is deteriorating.

EU sovereign debt markets: Liquidity on sovereign bond markets, as measured by bid-ask spreads (R.10) and the ESMA composite illiquidity indicator (R.11) remained relatively low in 1Q18 compared to historical levels. Fiscal fragilities remain at country level and repricing risk in sovereigns following a more general risk premia reversal in global markets still holds. This risk has started to materialise at the beginning of February in equity markets and with increasing sovereign bond risk premia with respect to the DE bund around the equity sell-off, although sovereign bond spreads decreased later on. Sovereign yields decreased across jurisdictions, by 18 bps on average for ten-year bonds since the end of January.

Market functioning: MiFIDII/MiFIR entered into force on 3 January 2018 with preliminary analysis showing that the new regulatory framework has been implemented successfully with long-term impacts to be investigated. In relation to dark trading, ESMA published the first Double Volume Cap (DVC) data on 7 March. Volumes for the affected securities declined by 10% in March, in particular in dark pools (-85%). Generally, markets did not suffer major disruptions in 1Q18, including the episode of high equity price volatility at the beginning of February. Nevertheless, the number of circuit breakers occurrences, which averaged at 104 occurrences per week in January, jumped to 400 occurrences during the week of 5 February. Overall, the average weekly number of circuit breaker occurrences was 169, around long-term averages (R.35). Regarding market infrastructures, central clearing continued to increase as the implementation of the clearing obligation for derivatives is ongoing. With respect to securities settlement systems, following completion of to the final migration wave to T2S, EU CSDs have applied for authorisation under CSDR. Two CSDs have already been authorised and the process is ongoing for most of the others. Although the total value of settled transactions in the EU remained around the same levels, the share of settlement fails increased for equities at the end of 1Q18 (R.38). Finally, cyber risk remained a concern for financial market institutions especially with respect to their business continuity and the integrity of proprietary data, as data theft is still the main source of breaches in the financial sector (R.43)

Political and event risk: In the EU, Brexit remains among the most important political risks. Continuity of contracts and access to financial market infrastructures will be crucial to avoid potential cliff-edge effects upon Brexit. Growing uncertainty around trade and global market policies could also pose a threat to the continued improvement of trade and capital market integration in the EU and in other jurisdictions.

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4 https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/winter-2018-economic-forecast

5 ICE Benchmark Administration Limited (IBA), ICE BofAML Euro High Yield Index Effective Yield [BAMLHE00EHYIEY], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BAMLHE00EHYIEY, April 18, 2018.

Risk categories

Market risk – very high, outlook stable: Markets were mainly driven by reignited fears of a more aggressive rise in interest rates by the Federal Reserve this year, and the potential divergence in directing rates across jurisdictions. Equity markets first increased in January, remaining on their ascending trend of 2017, but decreased sharply after the publication of stronger than anticipated economic, inflation and wage increase indicators in the US. This market correction confirmed our ongoing concerns over high equity valuations and market uncertainty as the period of ultra-low interest rates draws to a close. The EuroStoxx 50 lost 6% between end January and the end of 1Q18. Short-term expectations of equity price volatility ticked up from 11.2% to close to 50% over these concerns, reaching multi-year highs (R.7). Exchange rate volatilities also ticked-up, reflecting the appreciation of the EUR, notably against the USD (R.8).

Liquidity risk – high, outlook stable: Across markets, episodes of deteriorating liquidity occurred, especially since the February market corrections. The ESMA composite equity liquidity index deteriorated in February before returning to its long-term average (R.4). For sovereign bonds, liquidity improved in 1Q18 although it started deteriorating toward the end of the quarter (R.10, R.11). Liquidity as measured by the Amihud indicator deteriorated in February and corporate bond bid-ask spreads also deteriorated since then (R.16). The trading volume of centrally cleared repos increased in January and February, and started decreasing after (R.13). Collateral scarcity premia (i.e. the difference between general collateral and special collateral repo rates) remained reactive to market events. High levels of collateral scarcity premia reflect possible shortages of high-quality collateral (R.14). This may increase liquidity risk, volatility in funding costs and reduce overall market confidence.

Contagion risk – high, stable outlook: On sovereign bond markets, the median correlation between Germany and other EU countries' bond decreased during the first half of 1Q18 although it remained above 0.9. Dispersion levels were mainly driven by low-rated member states which were subject to credit rating improvements during the quarter (R.19). As the repricing of equity has partly materialised during 1Q18, contagion to other markets could occur via the high interconnectedness of hedge funds to more traditional banking activities (R.29). Financial contagion can also occur via derivative exposures. On derivative markets, CCPs play an important risk mitigation role but can have the potential to cause serious systemic risk in case of failure. In its second EU-wide CCP stress test, ESMA tested the resilience of 16 European CCPs. The results showed that overall the system of EU CCPs is resilient to multiple clearing member defaults and extreme market shocks.

Credit risk – high, outlook stable: In 1Q18, non-financial corporate bond spreads increased for low-ratings (BBB) starting in February as a result of asset reallocation and following market movements for equities and bonds. Spread increases were more pronounced for low-rated bonds, which could be considered as a sign of shifting risk perceptions linked to risk premia reversals. Spreads stood in the range of 79 bps for BBB-rated securities to 5.8 bps for the AAA class (R.15). At the same time, credit quality of outstanding corporate bonds continued to deteriorate (R.17).

Operational risk – elevated, outlook deteriorating: ESMA recently identified several significant investor protection and conduct risk concerns in the EU. The ESAs issued on 6 February a pan-EU warning to consumers regarding the risks of buying Virtual Currencies. Risks highlighted include volatility and bubble risk, the lack of a robust secondary market, operational disruptions as well as the lack of price transparency. Furthermore, virtual currency platforms are not regulated under EU law, and consumers do not enjoy any of the specific safeguards and legal protections that are associated with regulated financial services. In relation to Contracts for Differences (CFDs) and binary options offered to retail investors, ESMA's Board of Supervisors has agreed on 27 March product intervention measures under Article 40 of MiFIR on the prohibition / restriction of marketing, distribution or sale of binary options and CFDs to retail investors. Regarding cyber risks, concerns are expected to intensify in the medium to long term as financial data breaches are more and more frequent when compared to breaches in other sectors (R.43); as a result, the risk outlook for operational risk is deteriorating. Finally, the total volume of market participants' complaints decreased over the reporting period, with their majority remaining linked to order execution for bond and equity securities (R.32-R.33). The dispersion of Euribor submission quotes increased in early 1Q18 (R.41), driven by the submissions of one bank.

Securities markets

R.3

Risk summary

Risk level

Risk change from 4Q17

Outlook for 2Q18

Risk drivers

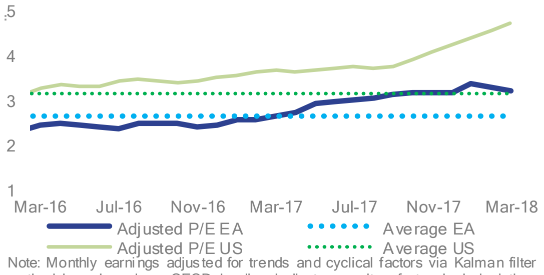
– Risk-premia reversal
– Geopolitical and event risks
– Potential scarcity of collateral

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 equity liquidity index
Around long term average

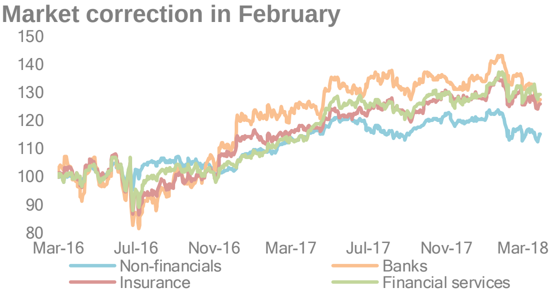
Note: Composite indicator of illiquidity in the equity market for the current Eurostoxx 200 constituents, computed by applying the principal component methodology to six input liquidity measures (Amihud illiquidity coefficient, bid-ask spread, Hui-Heubel ratio, turnover value, inverse turnover ratio,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

R.5
Equity valuation
Returning to average in EU



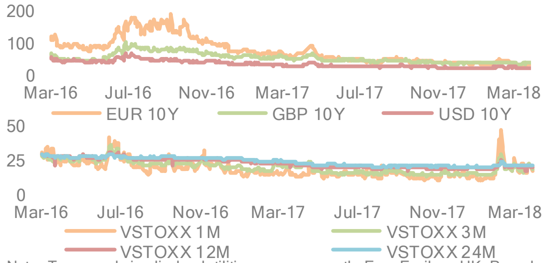
Note: Monthly earnings adjusted for trends and cyclical factors via Kalman filter methodology based on OECD leading indicators; units of standard deviation; averages computed from 8Y.
Sources: Thomson Reuters Datastream, ESMA.

R.6
Equity prices
Market correction in February



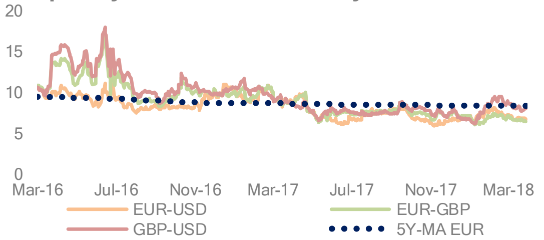
Note: STOXX Europe 600 equity total return indices. 01/03/2016=100.

R.7
Financial instruments volatilities
February spike, remaining at higher levels since



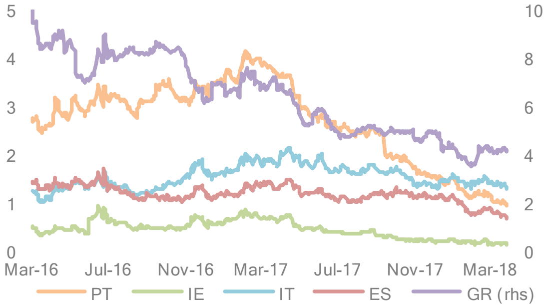
Note: Top panel: implied volatilities on one-month Euro-Euribor, UK Pound Sterling-GBP Libor and US Dollar-USD Libor swaptions measured as price indices, in %; bottom panel: Euro Stoxx 50 implied volatilities, measured as price indices, in %.
Sources: Thomson Reuters EIKON, Thomson Reuters Datastream,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

R.8
Exchange rate volatilities
Temporary increase in February across rates



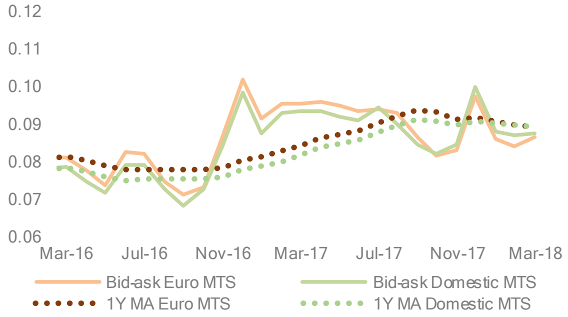
Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is the five-year moving average of the implied volatility for 3M options on EUR-USD exchange rate.
Sources: Thomson Reuters EIKON, ESMA.

R.9
Sovereign risk premia
Spike in February across countries



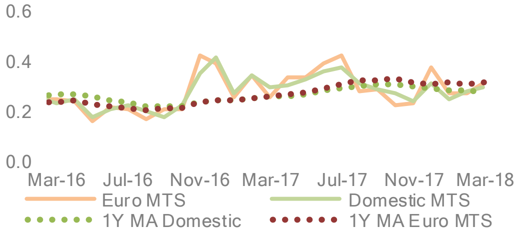
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %.
Sources: Thomson Reuters Datastream, ESMA.

R.10
Sovereign bond bid-ask spreads
Return to average in 1Q18 after year-end spike



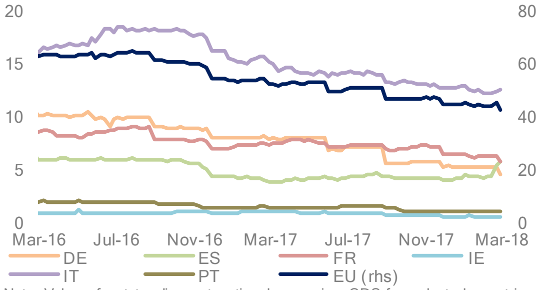
Note: Bid-ask spread as average bid ask spread throughout a month across ten EU markets, Domestic and Euro MTS, in %.
Sources: MTS, ESMA.

R.11
ESMA composite sovereign bond illiquidity index
Relatively low liquidity levels remain



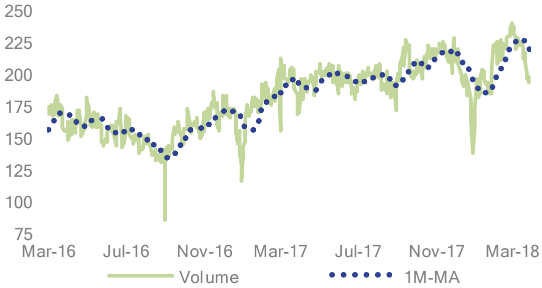
Note: Composite indicator of market liquidity in the sovereign bond market for the domestic and Euro MTS platforms, computed by applying the principal component methodology to four input liquidity measures (Amihud illiquidity coefficient, Bid-ask spread, Roll illiquidity measure and Turnover). 1Y MA = 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



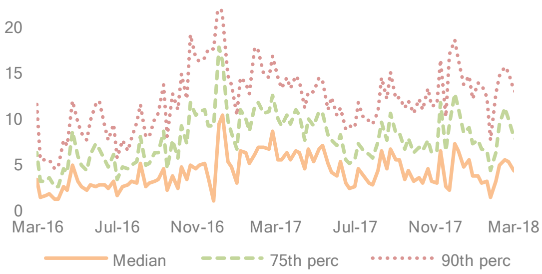
Note: Value of outstanding net notional sovereign CDS for selected countries; USD bn.
Sources: DTCC, ESMA.

R.13
Sovereign repo volumes
Increase until end-February, decline afterward



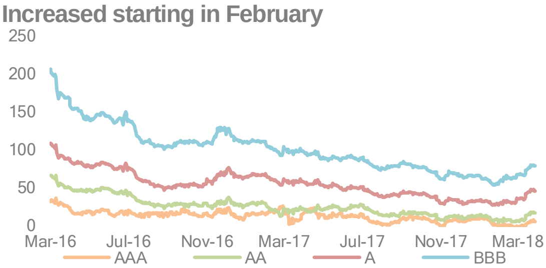
Note: Repo transaction volumes executed through CCPs in seven sovereign EUR repo markets (AT, BE, DE, FI, FR, IT and NL), EUR bn.
Sources: RepoFunds Rate, ESMA.

R.14
Repo markets specialness
Reactive to February market events



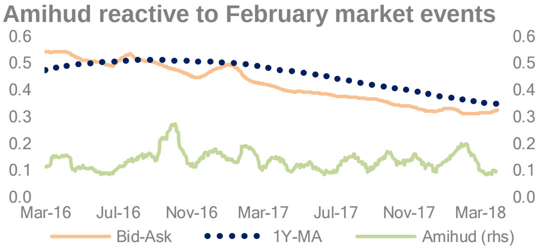
Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in selected countries.
Sources: RepoFunds Rate (BrokerTec, MTS, ICAP), ESMA.

R.15
Corporate bond spreads
Increased starting in February



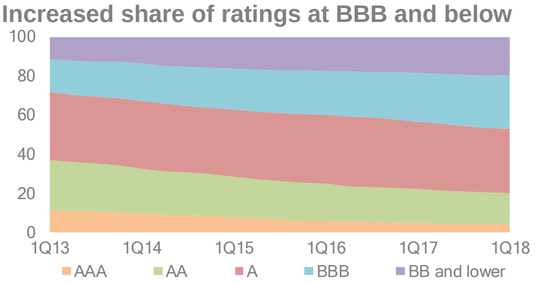
Note: EA non-financial corporate bond spreads by rating between iBoxx non-financial corporate yields and ICAP Euro Euribor swap rates for maturities from 5 to 7 years, in bps.

R.16
Corporate bond bid-ask spreads and Amihud indicator
Amihud reactive to February market events



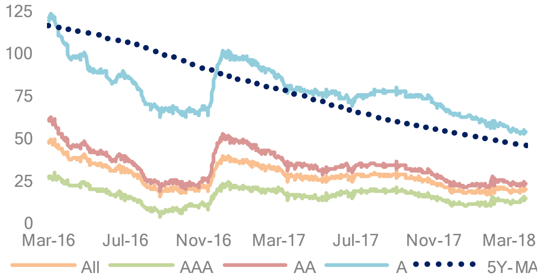
Note: EUR Markit iBoxx corporate bond index bid-ask spread, in %, computed as a one-month moving average of the iBoxx components in the current composition. 1Y-MA=one-year moving average of the bid-ask spread. Amihud liquidity coefficient index between 0 and 1. Higher value indicates less liquidity.

R.17
Outstanding long term corporate debt
Increased share of ratings at BBB and below



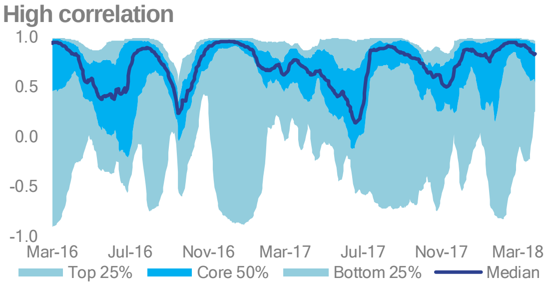
Note: Outstanding amount of corporate bonds in the EU as of issuance date by rating category, in% of the total.

R.18
Covered bond spreads
Increase in February



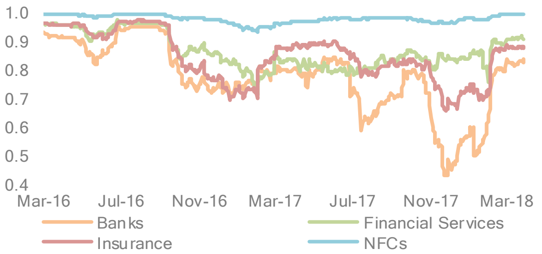
Note: Asset swap spreads based on iBoxx covered bond indices, in bps. 5Y-MA=five-year moving average of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

R.19
Dispersion in sovereign yield correlation
High correlation



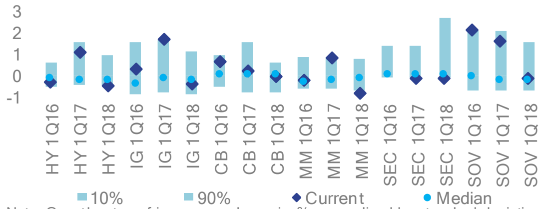
Note: Dispersion of correlations between 10Y DE Bunds and other EU countries' sovereign bond redemption yields over 60D rolling windows.

R.20
Sectoral equity indices correlation
Higher cross-sectoral correlations



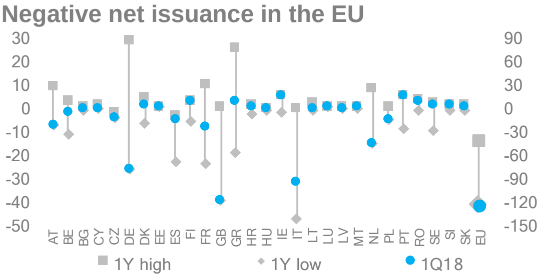
Note: Correlations between daily returns of the STOXX Europe 600 and STOXX Europe 600 sectoral indices. Calculated over 60D rolling windows. NFCs stands for Non-Financial Corporations.
Sources: Thomson Reuters Datastream, ESMA.

R.21
Debt issuance growth
Decline in issuance across bond classes



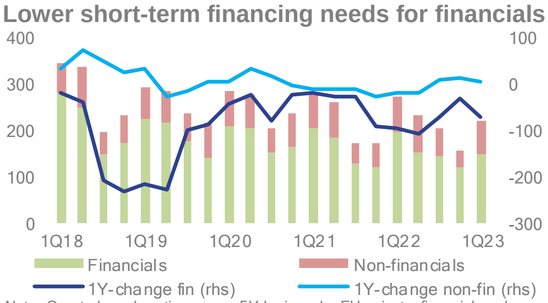
Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes: high yield (HY); investment grade (IG); covered bonds (CB); money market (MM); securitised (SEC); sovereign (SOV). Percentiles computed from 12Q rolling window. All data include securities with 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 4Q17

Outlook for 2Q18

Risk drivers

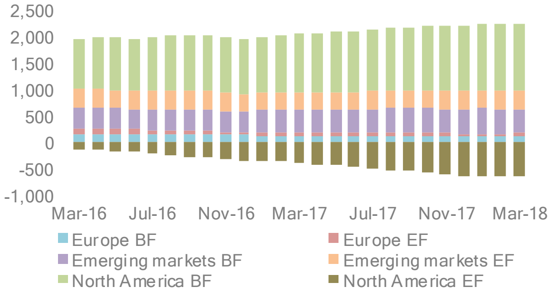
- Asset re-valuation and risk re-assessment
- Correlation in asset prices
- Risky market practices: VCs, ICOs

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 into EM funds

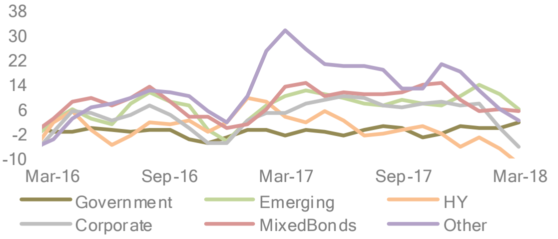


Note: Cumulative net flows into bond and equity funds (BF and EF) over time since 2004 by regional investment focus, EUR bn.
Sources: Thomson Reuters Lipper, ESMA.

R.26

EU bond fund net flows

Net outflows for HY and corporate bond funds

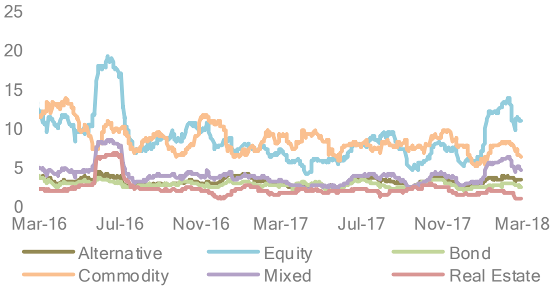


Note: Two-month cumulative net flows for bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once e.g. funds investing in emerging government bonds reported as Emerging; funds investing in HY corporate bonds reported as HY).
Sources: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

R.27

RoR volatilities by fund type

Spike in volatility, especially for equity funds

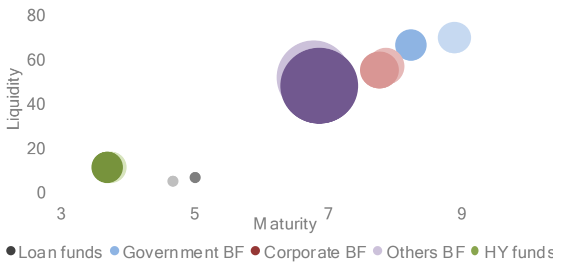


Note: Annualised 40D historical return volatility of EU domiciled mutual funds, in %.
Sources: Thomson Reuters Lipper, ESMA.

R.28

Liquidity risk profile of EU bond funds

Stable liquidity and mixed maturity changes

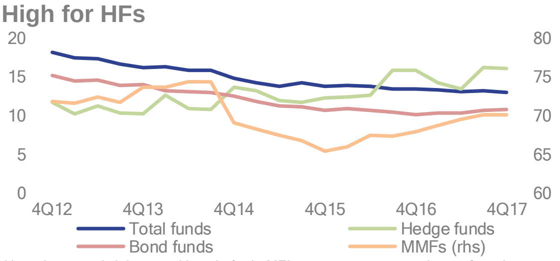


Note: Fund type is reported according to their average liquidity ratio, as a percentage (Y-axis), the effective average maturity of their assets (X-axis) and their size. Each series is reported for 2 years, i.e. 2016 (bright colours) and 2017 (dark colours).
Sources: Thomson Reuters Lipper, ESMA.

R.29

Financial market interconnectedness

High for HFs

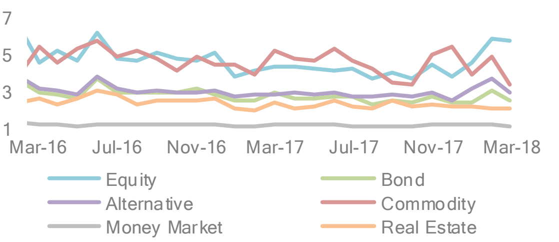


Note: Loan and debt securities vis-à-vis MFI counterparts, as a share of total assets. EA investment funds and MMFs, in %. Total funds includes: bond funds, equity funds, mixed funds, real estate funds, hedge funds, MMFs and other non-MMFs investment funds.

R.30

Retail fund synthetic risk and reward indicator

Higher for equity 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.

Infrastructures and services

R.31

Risk summary

Risk level

Risk change from 4Q17

Outlook for 2Q18

Risk drivers

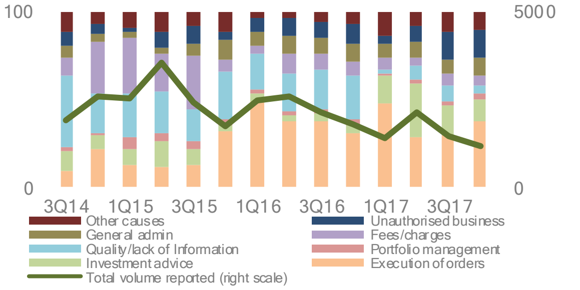
– Operational risks, incl. cyber risks

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

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

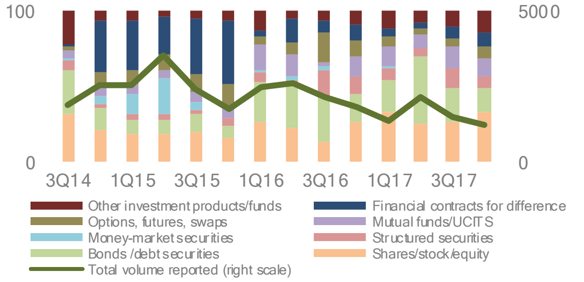
Note: Assessment of main risk categories for markets under ESMA remit since past quarter, and outlook for forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green=potential risk, yellow=elevated risk, orange=high 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.32
Complaints indicator by rationale
Execution of orders main cause for complaint



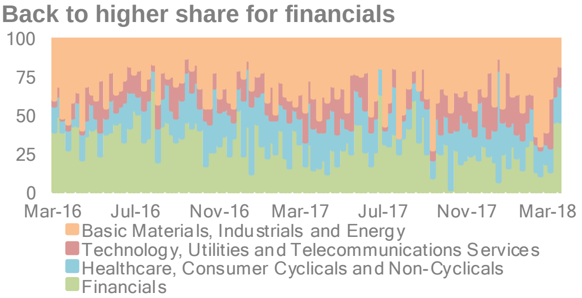
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total volume of these complaints. Bars show % of total volume by cause. Data collected by NCAs.
Sources: ESMA complaints database

R.33
Complaints indicator by instrument
Mostly related to equity and bond instruments



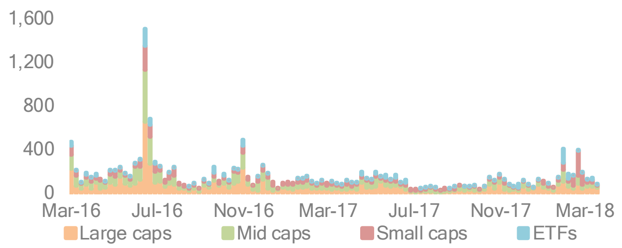
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total number of these complaints. Bars show % of total volume by type of financial instrument.
Source: ESMA complaints database

R.34
Circuit breaker trigger events by sector
Back to higher share for financials



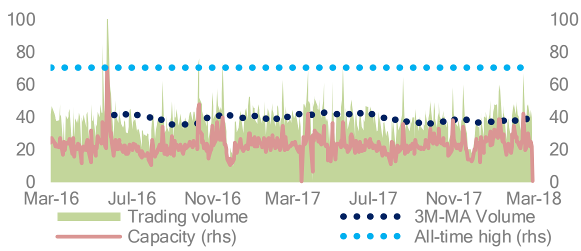
Note: Percentage of circuit breaker trigger events by economic sector. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe 200 Large/Mid/Small caps and a large sample of ETFs tracking the STOXX index or sub-index.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

R.35
Circuit breaker occurrences by market capitalisation
Peaking in February



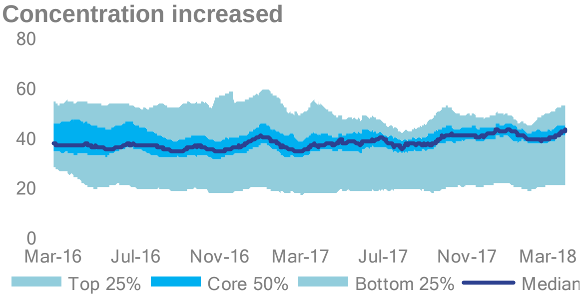
Note: Number of daily circuit breaker trigger events by type of financial instrument and by market cap. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe 200 Large/Mid/Small caps and a large sample of ETFs tracking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

R.36
Trading system capacity proxy
Volumes at 25% of capacity on average



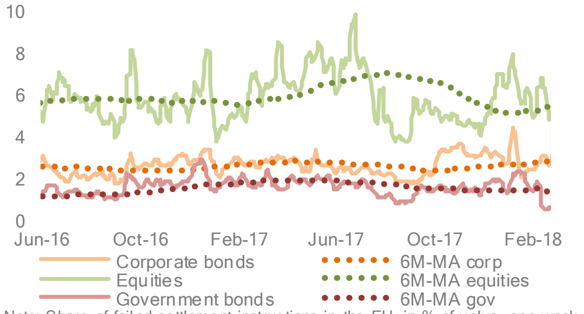
Note:Daily and three-month moving average trading volume registered on 36 EU trading venues, EUR bn. Capacity computed as the average across trading venues of the raio of daily trading volume over maximum volume observed since 31/03/2016, in %.

R.37
Equity market concentration
Concentration increased



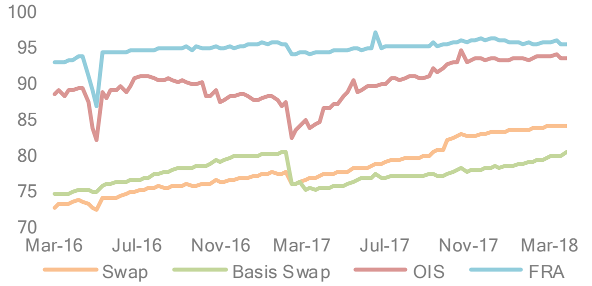
Note: Concentration of notional value of equity trading by national indices computed as a 1M-MA of the Herfindahl-Hirschman Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX.
Sources: BATS, ESMA.

R.38
Settlement fails
Higher for equities



Note: Share of failed settlement instructions in the EU, in % of value, one-week moving averages.
Sources: National Competent Authorities, ESMA.

R.39
IRS CCP clearing
Basis and regular swap clearing rates increase

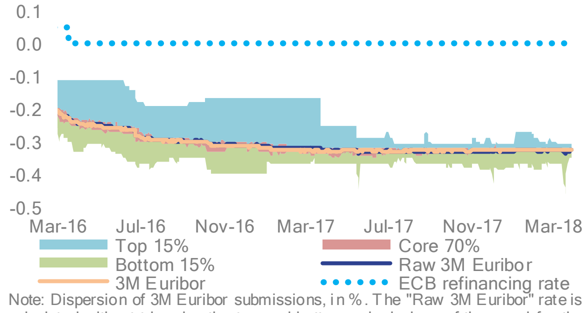


Note: OTC interest rate derivatives cleared by CCPs captured by Dealer vs. CCP positions, in % of total notional amount. Spikes due to short-term movements in non-cleared positions.
Sources: DTCC, ESMA.

R.40
Difference between the Euribor and the maximum contribution
Returned to low levels after end-of the year spike

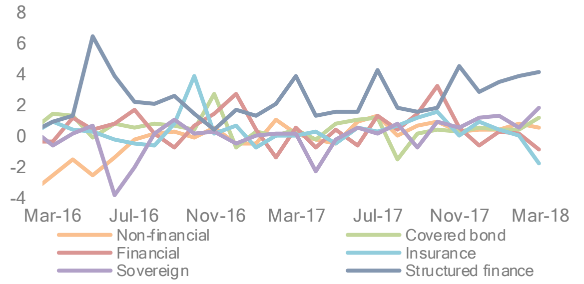
Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the 8 Euribor tenors.
Sources: European Money Markets Institute, ESMA.

R.41
Euribor – Dispersion of submission levels
Low and stable overall dispersion



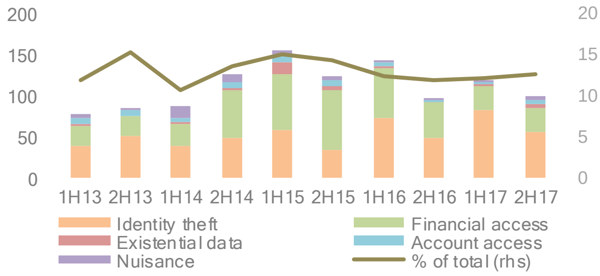
Note: Dispersion of 3M Euribor submissions, in %. The "Raw 3M Euribor" rate is calculated without trimming the top and bottom submissions of the panel for the 3M Euribor.
Sources: European Money Markets Institute, ESMA.

R.42
Rating changes
Positive for structured finance instruments



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

R.43
Financial services data breaches
Mostly related to identity thefts



Note: Estimated number of data breaches, financial services only, worldwide, by type. Breaches in financial services sector as % of total data breaches across all sectors (secondary axis). Both series as reported by the Gemalto Breach Level Index. The underlying data were gathered by Gemalto from publicly available reports of information breaches.
Sources: Gemalto Breach Level Index, ESMA.

European Securities and Markets Authority