European Securities and Markets Authority

ESMA Risk Dashboard

No. 1, 2019

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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	🔴	→	Interest rate environment	↗
Securities markets	🔴	→	Contagion	🟠	→	EU sovereign debt markets	→
Investors	🟡	→	Credit	🟠	→	Infrastructure disruptions, including cyber risks	↗
Infrastructures and services	🟡	→	Operational	🟡	↗	Political and event risks	↗

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

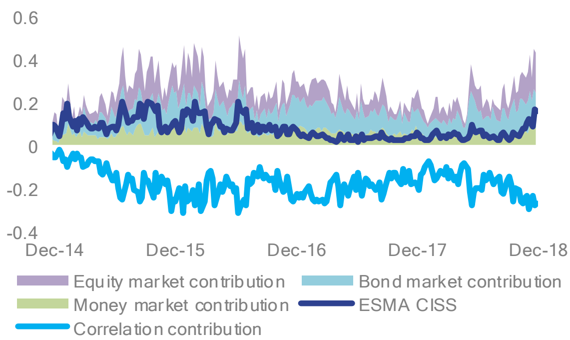
4Q18 was characterised by increasing market nervousness and sensitivity amid global trade tensions, weakening growth prospects, reduced global monetary policy stimulus and political uncertainty in the EU. In this context in 4Q18, volatility on equity and sovereign bond markets increased, equity prices continued to decrease, repricing on corporate and sovereign bond markets continued, and regional developments led to localised sell-offs and increased short-selling activity. Market risk thus remains very high. Our outlook for liquidity, contagion and credit risk remains unchanged. Operational risk remains elevated with a negative outlook, as cyber threats and Brexit-related risks to business operations continue to be a major concern. Going forward, political and geopolitical tensions coupled with weakening growth prospects will likely be the main drivers of volatility. As the Brexit deadline approaches, concerns over a potential no-deal withdrawal increasingly weigh on economic and market expectations.

Risk summary

Market risk remained at a very high level in 4Q18, accompanied by very high risk in securities markets and elevated risks for investors, infrastructures and services. Equity and bond volatility remained high, reflecting sensitivities to events such as trade discussion and geopolitical tensions and the underlying risk of reversal of risk premia. The level of credit and liquidity risk remained high, with a deterioration in outstanding corporate debt ratings and still relatively low corporate and sovereign bond liquidity. Operational risk was elevated as cyber threats and Brexit-related risks to business operations remained major concerns. Investor risks persisted across a range of products and, under the MiFIR product intervention powers, ESMA recently extended the prohibition of binary options and the restrictions on CFDs to retail investors. Going forward, EU financial markets can be expected to become increasingly sensitive to mounting political and economic uncertainty from diverse sources, such as global trade discussions, emerging market capital flows, Brexit negotiations and others. Assessing business exposures and ensuring adequate hedging against these risks will be a key concern for market participants in the coming months.

Systemic risk as measured by the ESMA version of the composite systemic indicator increased to high levels that have been unseen since early 2016. The largest contribution to the increase came from equity markets.

R.2
ESMA composite systemic stress indicator (CISS)
Multi-quarter high, driven by equities



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: Growth forecasts have become more subdued, with downward revisions of the European Commission's EU GDP growth forecast to 1.5% (down from 2.0%) in 2019. Global economic growth has also been revised with projected GDP growth rates of 3.5% for 2019). As regards global economic growth, the expansion has become less balanced and downside risks to global growth have risen in the past six months and have become more differentiated across regions.[1] In the US, stronger-than-anticipated inflation initially reignited investors' fears of more aggressive interest-rate increases. However, in early 2019, the US Federal Reserve put further interest rate rises on hold, citing downside risks to global growth. The macroeconomic environment and its interaction with market expectations, notably over future monetary policy actions, played an active role in recent market sell-offs such as the October equity market price drop. This remains a significant source of risk going forward. Appreciation of the EUR against the USD continued – albeit at a slower pace – with divergences in monetary policies on both sides of the Atlantic.

Interest-rate environment: Risks of a low interest-rate environment now lie the pace of the quantitative easing tapering policies, in the EA and abroad. While search-for-yield behaviour by investors and potential mispricing of assets remain a concern in the short to medium term, market anxiety over signs of a reversal in risk premia was reflected in the global equity sell-off in October. Risk premia on bond markets (both sovereign and corporate) have started showing signs of risk reallocation. Ten-year EA sovereign spreads to the DE Bund increased by 9 bps on average in between the start and the end of 4Q18 (R.9) standing now at a relatively high level. Corporate bond spreads with respect to risk-free rates (as measured by Euribor swap rates) increased significantly for all ratings (R.15), but even more so for lower rated ones, a sign of increased risk premia on these markets. Potential curbing of search-for-yield behaviour is also reflected in the continued net outflows from most fund categories in 4Q18 (R.25, R26). Event risk, for example related to potential escalation of uncertainties in trade discussions is affecting market expectations, thus weighing on the economic outlook and potentially changing anticipations around future monetary policy. In this environment, markets could be more vulnerable to risk premia repricing, hence our continued deteriorating outlook for this risk.

EU sovereign debt markets: In 4Q18, EU sovereign bond yields were characterized by high volatility during short periods of political uncertainty, especially in Italy. Ten-year sovereign yields decreased by 0.2 percentage point on average, although with increases for GR (+0.2 ppt). The Italian ten-year sovereign yield spread to the German Bund climbed above 300 bps several times during 4Q18, higher than at any time since the euro sovereign crisis.

Market functioning: Markets continue to be subject to technical issues as shown by the recent delayed market opening of a German trading venue (15 October). The number of circuit-breaker occurrences was similar to long-term averages over the reporting period, with an average of 129 interruptions per week, and a peak at 295 during the second week of October (compared with a weekly average of 57 during 3Q18, R.35), potentially reflecting higher market volatility. Regarding market infrastructures, central clearing continued to increase amid ongoing implementation of the clearing obligation for derivatives. Central clearing rates for all outstanding OTC credit derivatives grew from 25% to 27% in 2017[2]. For OTC IRDs, central clearing rates grew from 40% in 1Q17 to 58% in 4Q17. On 11 September, following a large divergence in spreads between Nordic and German power markets, a Norwegian power market trader clearing its own trades at Nasdaq Clearing was not able to meet intraday margin calls and declared default. Its positions were subject to a second auction process on 12 September and the cost of the default was at the time covered by the default resources that were available to the CCP including the defaulter's collateral, CCP's own capital (EUR 7mn) and default fund contributions of non-defaulting clearing members (EUR 107mn).

Political and event risk: In the EU, the political risk of a no-deal Brexit, and related developments both in the UK and in the EU remains the most significant risk. At the same time, discussions around the IT budget saw short-lived market reactions, while tensions around potential future reforms in France might be a source of instability. Globally, trade discussions between the US and China were an important driver of equity market volatility, while comments on the future stance of US monetary policy authorities was followed by equity and bond market reactions throughout 4Q18.

Risk categories

Market risk – very high, outlook stable: Equity market price decreased globally in 4Q18.

1 International Monetary Fund, World Economic Outlook Update, January 2019, and European Commission, Winter 2019 economic forecast.

2 ESMA Annual Statistical Report – EU Derivatives Markets, 2018

Markets sensitivity to event risks remained high, as a sell-off in US equity markets (–5% in two days) from growing trade tensions and expectations of tighter US monetary policy spread to other regions. EU equities fell heavily this quarter (–13%). Volatility was high on equity (16% at end 4Q18, up from 8% at the beginning of the quarter) and commodity markets (27% at end 4Q18, up from 14% at the beginning of the quarter) this quarter, in what seems to be an end to the artificially low volatilities seen in recent years. Political developments in Europe, together with geopolitical events and discussions over international trade arguments were driving market volatility. On foreign-exchange markets, volatility was high in 4Q18 for the GBP, as Brexit approaches, and for the USD amid a strong US economy and expectations of further monetary tightening from the Federal Reserve, although in early 2019 the central bank signalled that it would put further interest rate increases on hold. Against the EUR, the USD continued to depreciate over the course of the quarter – albeit at a slower pace. As discussed in other sections, interest rate risk represents one of the main market risks in the future.

Liquidity risk – high, outlook stable: Liquidity on equity markets, as measured by the ESMA illiquidity index, started deteriorating during the first half of 4Q18, only to return to its initial level at the end of the quarter (R.4). Sovereign bond market liquidity continued to recover from its very low level of 2Q18, where it was affected by the May sovereign market movements in the EU. Spikes of illiquidity nevertheless occurred in October and December (R.11). On corporate bond markets, the Amihud indicator recovered from September levels, signalling enhanced liquidity; on the other hand, bid-ask spreads first decreased, before increasing again towards the end of the quarter. Trading volumes of centrally cleared repos were subject to seasonal movements only in 4Q18, with long-term growth of volumes appearing to slow down (R.13). Collateral scarcity premia (i.e. the difference between general collateral and special collateral repo rates) increased in December. High levels of collateral scarcity premia reflect possible shortages of high-quality collateral (R.14). This may fuel liquidity risk and 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 yields was high in 4Q18, while the dispersion between Member States has widened (R.19). This is usually a sign of differentiation between a set of core countries and a periphery on EU sovereign markets. Market movements on Italian sovereign bonds only moderately spread to other markets, showing signs of a high but contained contagion risk. Across sectors, the correlation between equity sectoral indices started to increase again in 4Q18 (R.20). Finally, interconnectedness between the non-banking sector, in particular hedge funds, and the banking sector remained at a relatively high level (R.29).

Credit risk – high, outlook stable: In 4Q18, non-financial corporate bond spreads continued to increase largely for lower-rated IG bonds (BBB) but also for other ratings, clearly showing signs of risk premia adjustments. This mainly reflects a repricing of risk given the growth slowdown and political uncertainty in the context of ECB tapering of corporate bond net purchases, which ended in December. Spreads stood within a range of 179bps for BBB-rated securities to 32bps for the AAA class, in comparison with the much narrower range of 66bps to 9bps at end-2017 (R.15). At the same time, the credit quality of outstanding corporate bonds continued to deteriorate, albeit at a slower pace (R.17).

Operational risk – elevated, outlook deteriorating: ESMA recently identified several significant investor protection and conduct risk concerns in the EU. Since 2 July 2018, there has been a ban on the marketing, distribution or sale of binary options to retail investors, which was renewed on 2 January 2019 for a further three months. In addition, since 1 August 2018, CFDs have been subject to a restriction in their marketing, distribution or sale to retail investors, which has been renewed for a further three months, from 1 February 2019 onwards. Risks related to Brexit, and its uncertain impact on an array of complex legal and regulatory issues, continue to pose a significant operational risk to EU financial markets, for both investors and infrastructures, as the possibility of no agreement is significant. Regarding cyber risks, concerns are expected to intensify in the medium to long term, especially with respect to business continuity and the integrity of proprietary data as financial data breaches are increasingly frequent in comparison with breaches in other sectors (R.43.). Finally, the dispersion of Euribor submission quotes decreased slightly in 4Q18 (R.41).

Securities markets

R.3

Risk summary

Risk level

Risk change from 3Q18

Outlook for 1Q19

Risk drivers

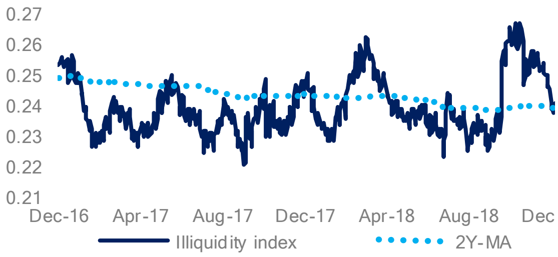
- Reversal of risk-premia
- Political risk
- Geopolitical and event risks, especially Brexit
- Potential scarcity of collateral

Note: Assessment of the main risk categories for markets under ESMA's remit since the past quarter, and outlook for the 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 and downward arrows a risk decrease. ESMA risk assessment based on quantitative indicators and analyst judgement.

R.4

ESMA composite equity illiquidity index

Illiquidity spike at the beginning of 4Q18

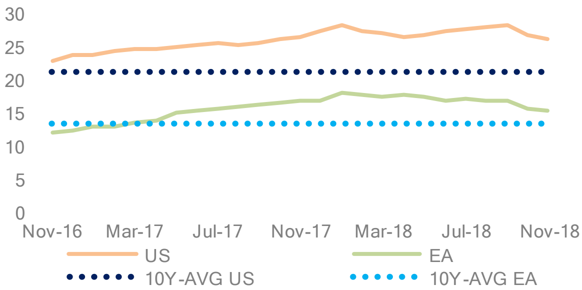


Note: Composite indicator of illiquidity in the equity market for the cur Eurostoxx 200 constituents, computed by applying the principal compor methodology to six input liquidity measures (Amihud illiquidity coefficient, bid- spread, Hui-Heubel ratio, turnover value, inverse turnover ratio, MEC). indicator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

R.5

Equity valuation

Downward trend for EA, decrease in November for the US

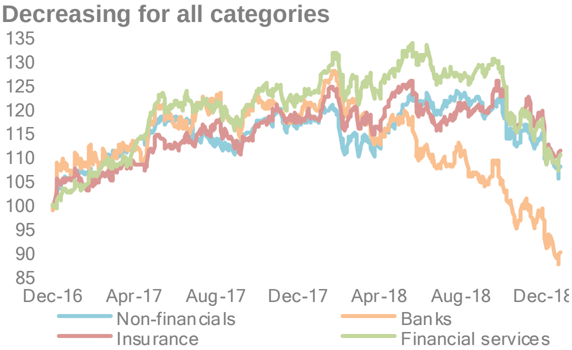


Note: Price-earning ratios based on average inflation-adjusted earnings from the previous 10 years (cyclically adjusted price-earning ratios). Averages computed from the most recent data point up to 10 years before.
Sources: Thomson Reuters Datastream, ESMA.

R.6

Equity prices

Decreasing for all categories

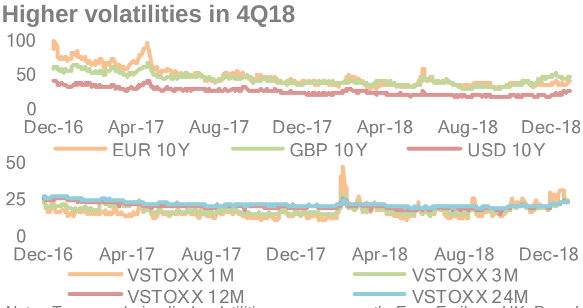


Note: STOXX Europe 600 equity total return indices. 01/12/2016=100.
Sources: Thomson Reuters Datastream, ESMA.

R.7

Financial instrument volatilities

Higher volatilities in 4Q18

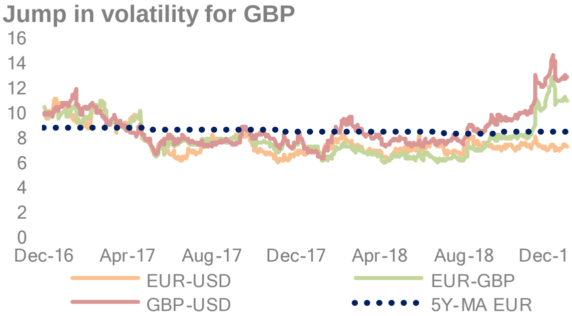


Note: Top panel: implied volatilities on one-month Euro-Euribor, UK Pound Sterling-GBP Libor and US Dollar-USD Libor swaptions measured as price indices, in %; bottom panel: Euro Stoxx 50 implied volatilities, measured as price indices, in %.
Sources: Thomson Reuters EIKON, Thomson Reuters Datastream,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

R.8

Exchange rate volatilities

Jump in volatility for GBP

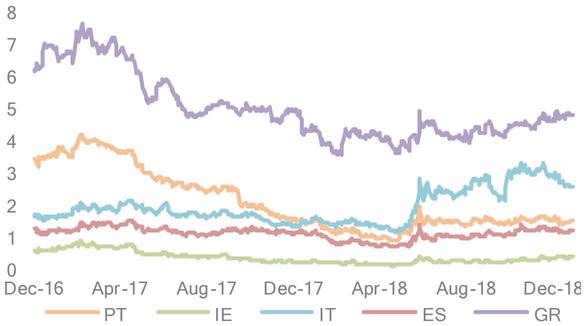


Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is tł five-year moving average of the implied volatility for 3M options on EUR-US exchange rate.
Sources: Thomson Reuters EIKON, ESMA.

R.9

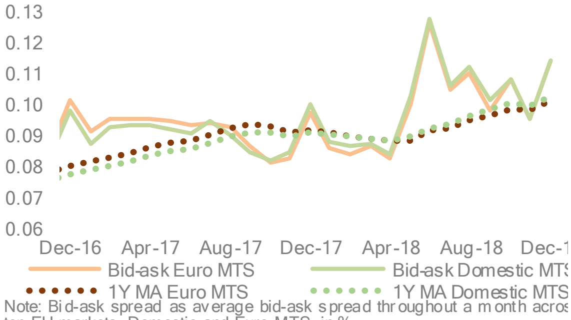
Sovereign risk premia

Higher since May 2018



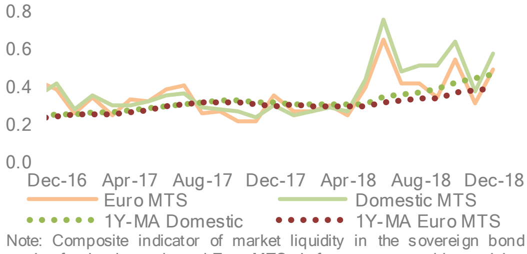
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %.
Sources: Thomson Reuters Datastream, ESMA.

R.10
Sovereign bond bid-ask spreads
Subject to spikes



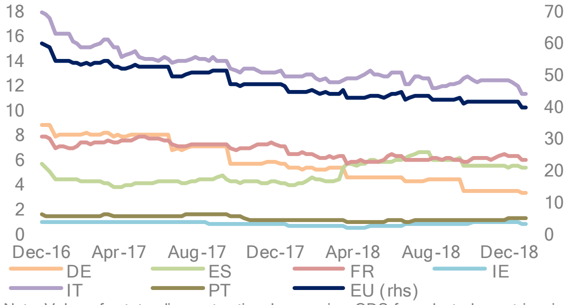
Note: Bid-ask spread as average bid-ask spread throughout a month across ten EU markets, Domestic and Euro MTS, in %.
Sources: MTS, ESMA.

R.11
ESMA composite sovereign bond illiquidity index
Illiquidity spikes in October and December



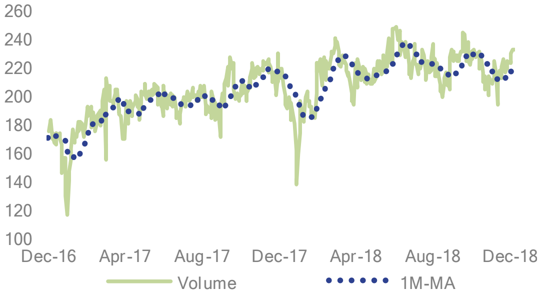
Note: Composite indicator of market liquidity in the sovereign bond market for the domestic and Euro MTS platforms, computed by applying the principal component methodology to four input liquidity measures (Amihud illiquidity coefficient, Bid-ask spread, Roll illiquidity measure and Turnover). The indicator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

R.12
Sovereign CDS volumes
Stable



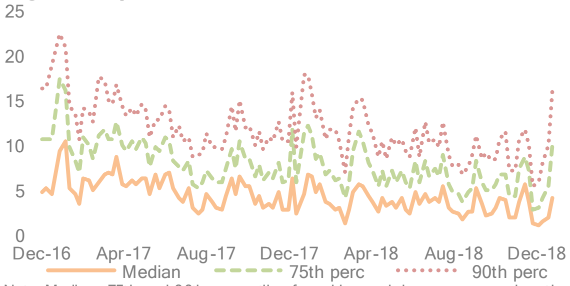
Note: Value of outstanding net notional sovereign CDS for selected countries, in USD bn.
Sources: DTCC, ESMA.

R.13
Sovereign repo volumes
Seasonal movements



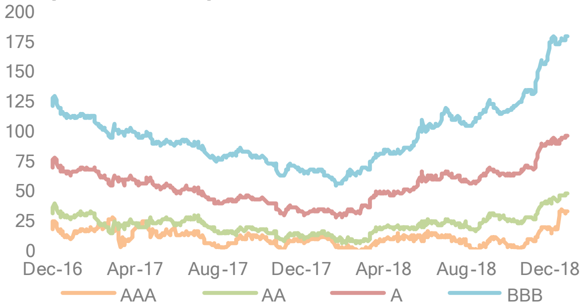
Note: Repo transaction volumes executed through CCPs in seven sovereign EUR repo markets (AT, BE, DE, FI, FR, IT and NL), EUR bn.
Sources: RepoFunds Rate, ESMA.

R.14
Repo market specialness
Higher dispersion in December



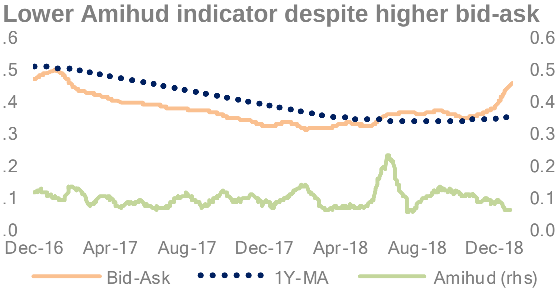
Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in selected countries.
Sources: RepoFunds Rate, ESMA.

R.15
Corporate bond spreads
Sharp increase in spreads



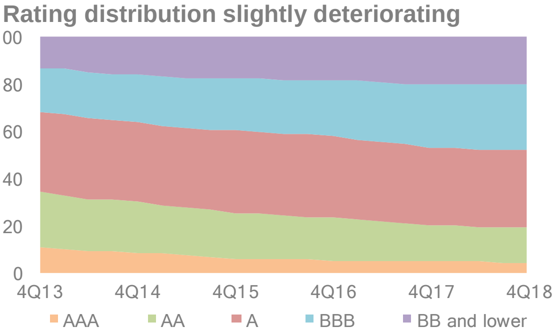
Note: EA corporate bond spreads by rating between iBoxx corporate yields and ICAP Euro Euribor swap rates for maturities from 5 to 7 years, in bps.
Sources: Thomson Reuters Datastream, ESMA.

R.16
Corporate bond bid-ask spreads and Amihud indicator
Lower Amihud indicator despite higher bid-ask



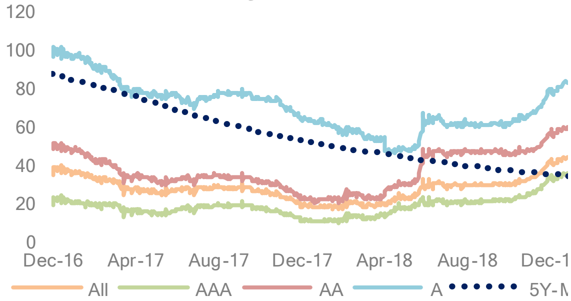
ote: EUR Markit iBoxx corporate bond index bid-ask spread, in %, computed as one-month moving average of the iBoxx components in the current omposition. 1Y-MA=one-year moving average of the bid-ask spread. Amihud uidity coefficient index between 0 and 1. Higher value indicates less liquidity.
ources: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

R.17
Long-term corporate debt outstanding
Rating distribution slightly deteriorating



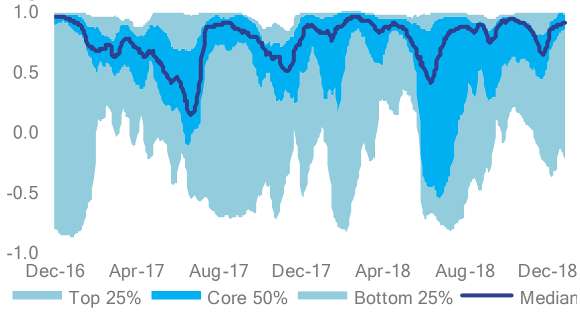
ote: Outstanding amount of corporate bonds in the EU as of issuance date by ating category, in % of the total.
ources: Thomson Reuters EIKON, ESMA.

R.18
Covered bond spreads
Further increase in 4Q18



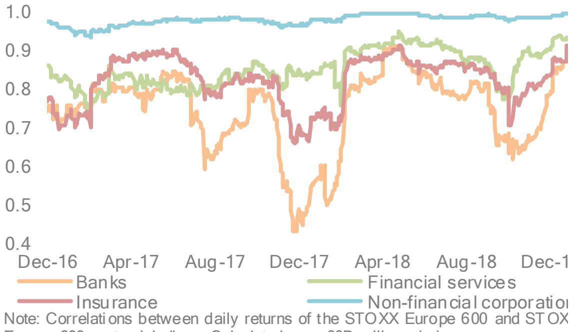
Note: Asset swap spreads based on iBoxx covered bond indices, in bps. 5Y-MA=five-year moving average of all bonds.
Sources: Thomson Reuters Datastream, ESMA.

R.19
Dispersion in sovereign yield correlation
High correlation



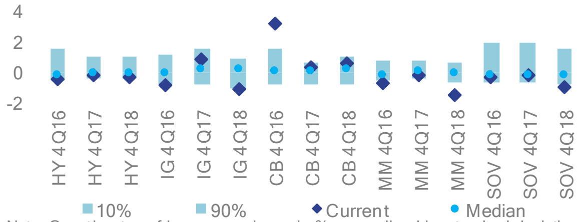
Note: Dispersion of correlations between 10Y DE Bunds and other EU countries' sovereign bond redemption yields over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

R.20
Sectoral equity indices correlation
Increasing correlations



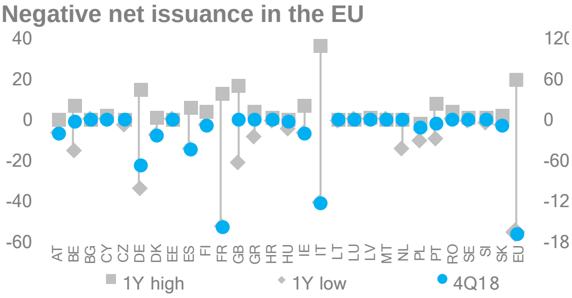
Note: Correlations between daily returns of the STOXX Europe 600 and STOXX Europe 600 sectoral indices. Calculated over 60D rolling windows.
Sources: Thomson Reuters Datastream, ESMA.

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



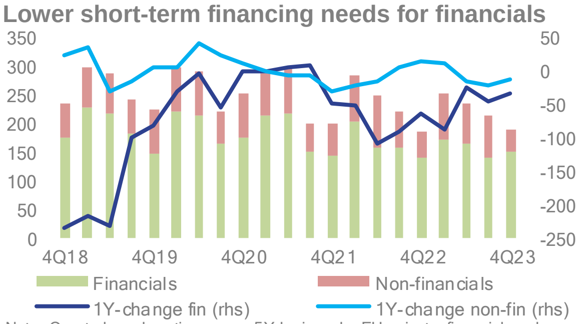
Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes: high yield (HY), investment grade (IG), covered bonds (CB), money market (MM), sovereign (SOV). Percentiles computed from 12Q rolling window. All data include securities with a maturity higher 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-financial 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 3Q18

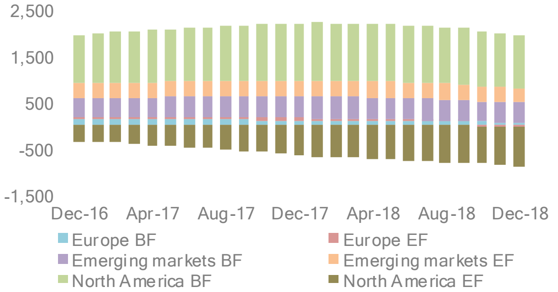
Outlook for 1Q19

Risk drivers

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

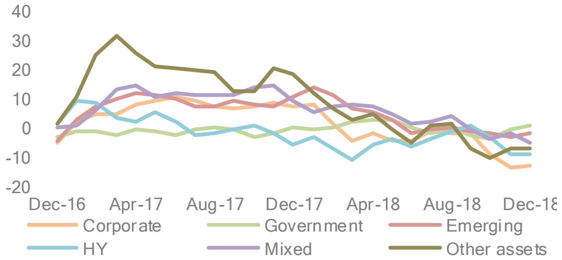
Note: Assessment of the main risk categories for markets under ESMA's remit since the past quarter, and outlook for the forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green = potential risk, yellow = elevated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

R.25
Cumulative global investment fund
Outflows from all fund categories in 4Q18



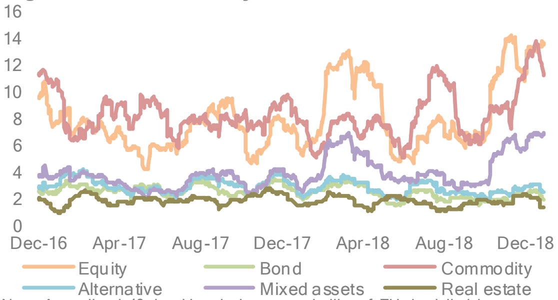
Note: Cumulative net flows into bond and equity funds (BF and EF) over time since 2004 by regional investment focus, EUR bn.
Sources: Thomson Reuters Lipper, ESMA.

R.26
EU bond fund net flows
Net outflows for most categories



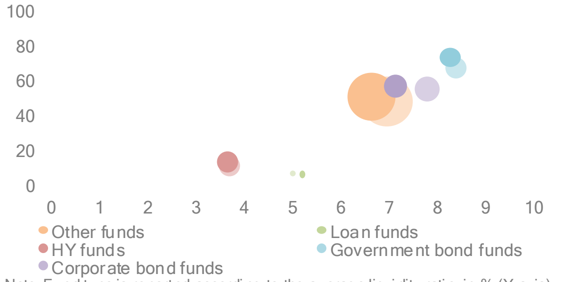
Note: Two-month cumulative net flows for bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once (e.g. funds investing in emerging government bonds reported as emerging; funds investing in HY corporate bonds reported as HY).
Sources: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

R.27
Rate of return volatilities by fund type
Higher return volatility



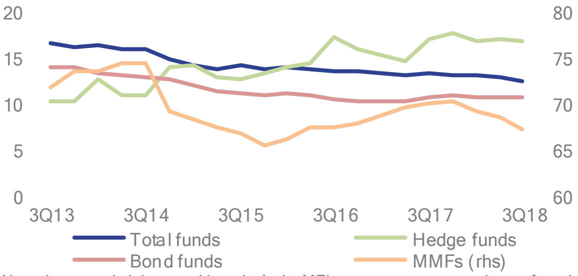
Note: Annualised 40-day historical return volatility of EU-domiciled investment funds, in %.
Sources: Thomson Reuters Lipper, ESMA

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



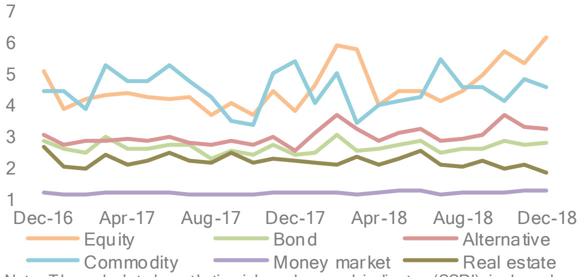
Note: Fund type is reported according to the average liquidity ratio, in % (Y-axis), the effective average maturity of assets, in years (X-axis), and the size. Each series is reported for two years, i.e. 2017 (pale colours) and 2018 (dark colours).
Sources: Thomson Reuters Lipper, ESMA.

R.29
Financial market interconnectedness
High for hedge funds, decreasing for MMFs



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

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



Note: The calculated synthetic risk and reward indicator (SSRI) 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 3Q18

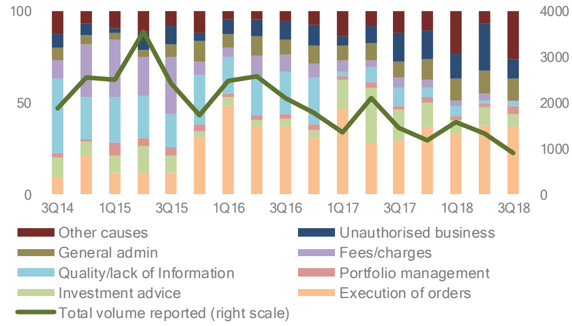
Outlook for 1Q19

Risk drivers

– Operational risks, including cyber and Brexit-related risks
– Conduct risk, including intentional or accidental behaviour by individuals, market abuse
– Systemic relevance, interconnectedness between infrastructures or financial activities, system substitutability

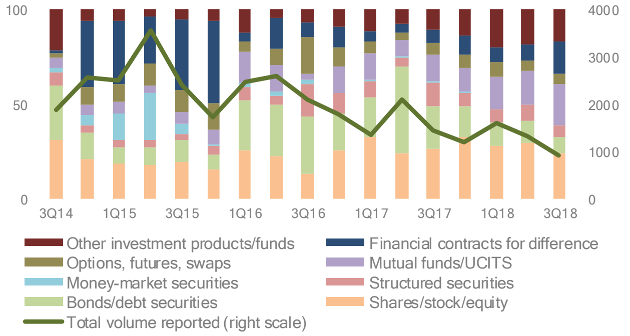
Note: Assessment of the main risk categories for markets under ESMA's remit since the past quarter, and outlook for the forthcoming quarter. Systemic risk assessment based on categorisation of the ESA Joint Committee. Colours indicate current risk intensity. Coding: green = potential risk, yellow = elevated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

R.32
Complaints indicator by rationale
Execution of orders as the main cause for complaints



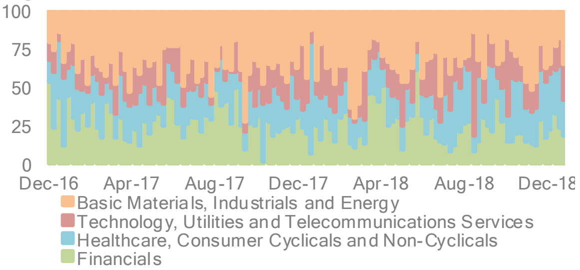
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total volume of these complaints. Bars show % of total volume by cause. Data collected by NCAs.

R.33
Complaints indicator by instrument
Complaints regarding debt securities decline



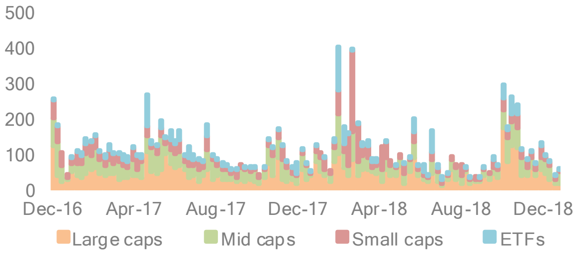
Note: Complaints reported directly to 18 NCAs: AT, BG, CY, CZ, DE, DK, EE, ES, FI, HR, HU, IT, LT, LU, MT, PT, RO, SI. Line shows total number of these complaints. Bars show % of total volume by type of financial instrument.
Source: ESMA complaints database

R.34
Circuit-breaker-trigger events by sector
Higher share for healthcare



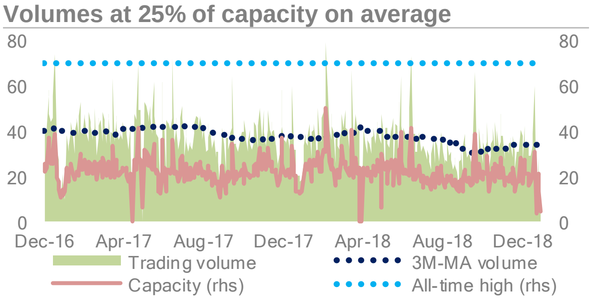
Note: Percentage of circuit-breaker trigger events by economic sector. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe Large/Mid/Small 200 and a large sample of ETFs tracking the STOXX index or sub-index.
Sources: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

R.35
Circuit-breaker occurrences by market capitalisation
Increased number of circuit-breaker triggered



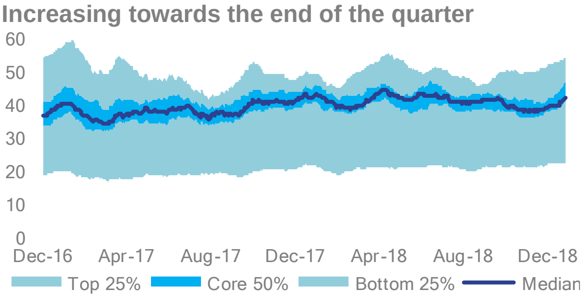
Note: Number of daily circuit-breaker trigger events by type of financial instrument and by market cap. Results displayed as weekly aggregates.The analysis is based on a sample of 10,000 securities, including all constituents of the STOXX Europe Large/Mid/Small 200 and a large sample of ETFs tracking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

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 %.
Sources: Morningstar Realtime, ESMA.

R.37
Equity market concentration
Increasing towards the end of the quarter

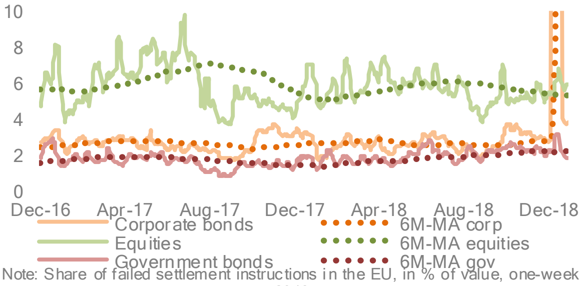


Note: Concentration of notional value of equity trading by national indices computed as a 1M-MA of the Herfindahl-Hirschman Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX.
Sources: BATS, ESMA.

R.38

Settlement fails

Decrease for equities, higher for corporates

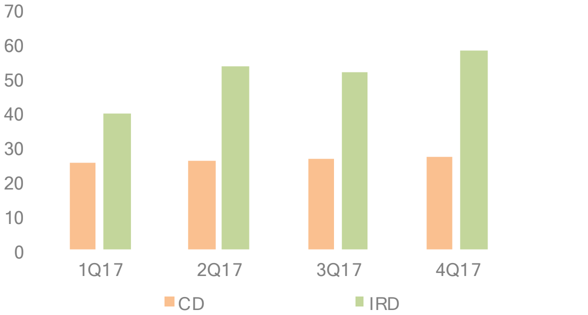


Note: Share of failed settlement instructions in the EU, in % of value, one-week moving averages. Jump in December 2018 due to a single transaction instructed on 10 December with settlement requested on the same day which was finally cancelled on 18 December 2018 (amount of EUR 500bn).
Sources: National Competent Authorities, ESMA.

R.39

OTC central clearing rates

Increasing for credit derivatives and IRDs in 2017

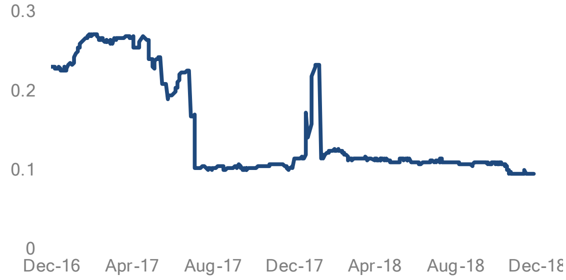


Note: Share of gross notional amount outstanding for credit derivatives (CD) and interest rate derivatives (IRD), in %.
Sources: TRs, ESMA.

R.40

Difference between the Euribor and the maximum contribution

Slightly lower levels in December

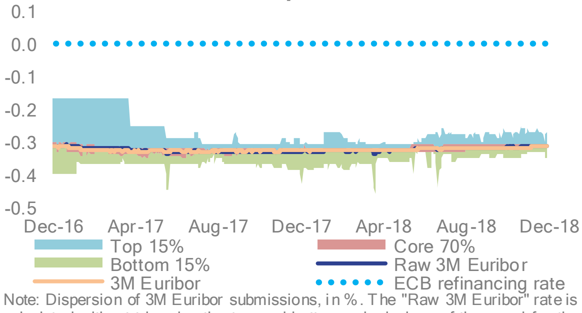


Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the eight Euribor tenors.
Sources: European Money Markets Institute, ESMA.

R.41

Euribor – dispersion of submission levels

Low and stable overall dispersion

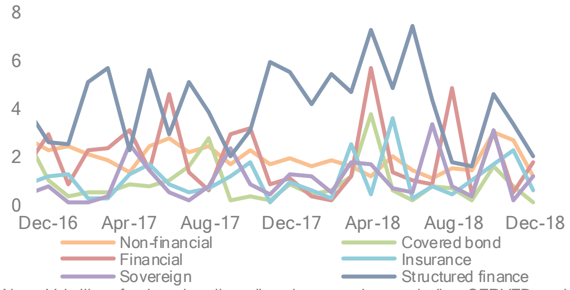


Note: Dispersion of 3M Euribor submissions, in %. The "Raw 3M Euribor" rate is calculated without trimming the top and bottom submissions of the panel for the 3M Euribor.
Sources: European Money Markets Institute, ESMA.

R.42

Rating changes

High rating volatility in October

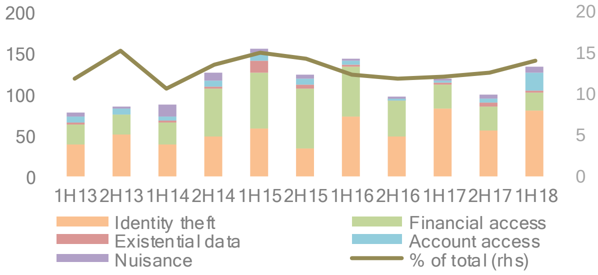


Note: Volatility of ratings by all credit rating agencies, excluding CERVED and ICAP, by asset class computed as number of rating changes over number of outstanding ratings.
Sources: RADAR, ESMA.

R.43

Financial services data breaches

Increasing share for financials



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