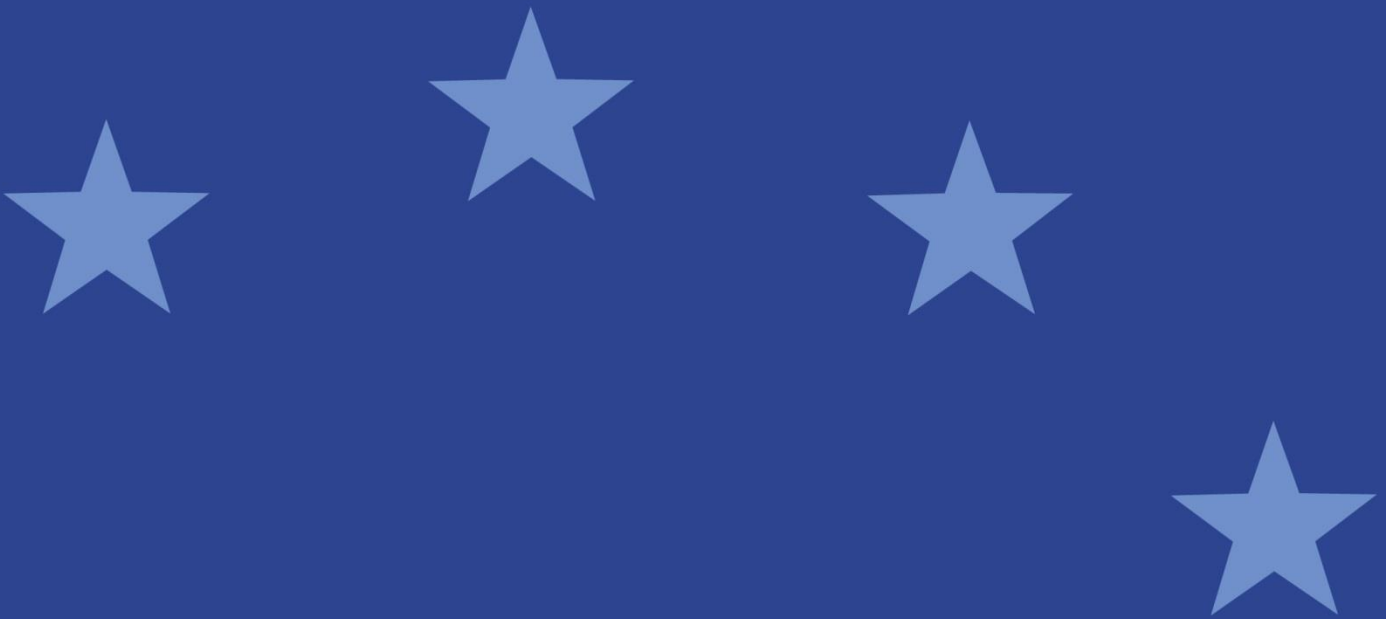




European Securities and
Markets Authority

ESMA Risk Dashboard

No. 1, 2017



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ESMA Risk Dashboard

R.1

Main risks

Risk segments	Risk		Risk categories		Risk sources		Outlook	
	Intensity	Outlook	Intensity	Outlook	Intensity	Outlook		
Overall ESMA remit	Orange	→	Liquidity	→	Orange	→	Macroeconomic environment	↗
Systemic stress	Yellow	→	Market	→	Red	→	Low interest rate environment	→
Securities markets	Red	→	Contagion	→	Orange	→	EU sovereign debt markets	→
Investors	Yellow	→	Credit	→	Red	→	Market functioning	→
Infrastructures and services	Yellow	→	Operational	→	Yellow	→	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 4Q16 overall risk assessment remains unchanged from 3Q16. In 4Q16 EU financial markets remained relatively calm, although very reactive to political events. An example was the US election. High reactivity was reflected in increased market expectations of near-term equity volatility. Investment fund liquidity remained a concern, with bond funds registering outflows after the US election. While market and credit risks remain very 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 persisted. In an environment of high valuation risks, uncertainties around the growth outlook for the EU and the global economy, together with the confluence of political events, including the expected commencement of negotiations on the exit of the UK from the EU as well as several elections in EU Member States, as important risk drivers for 2017.

Risk summary

In 4Q16, 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 3Q16, with market and credit risk remaining very high due to the persisting low-interest rate environment, high uncertainty over EU growth prospects and geopolitical developments, and due to recent pressures in the sovereign bond market. Liquidity risk in 4Q16 is still assessed as high, as liquidity pressures were registered in equity markets and in segments of the fund industry. Contagion risk remains high, driven by high levels of interconnectedness between different segments of financial markets amplified by the low-yield environment and associated incentives for high risk taking. The risk outlook is stable across all risk categories, reflecting market signs of absorption of the uncertainty and volatility following the UK referendum and US Presidential election.

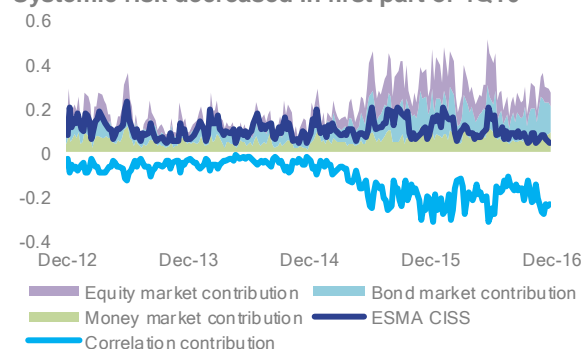
Systemic stress was broadly stable in 4Q16, abating slightly only after the US Presidential

election outcome (R.2). However, in the medium-term outlook, risks may arise from the macroeconomic environment. Market uncertainty over potential changes in the European monetary policy stance prevailed. EU economic growth is still weak and uneven, and political events could create additional uncertainty for financial markets (Brexit, important elections in EU Member States, geopolitical events).

R.2

ESMA composite systemic stress indicator

Systemic risk decreased in first part of 4Q16



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

Sources: ECB, ESMA.

Risk sources

Macroeconomic environment: EU economic recovery in 4Q16 is forecast to continue at a moderate and steady pace, although uneven across EU Member States. Investments started to pick up in the second part of 2016 and EA inflation reached 1.1% in December 2016, its highest level since September 2013. Employment is growing, driven by the sustained expansion in domestic demand and moderate wage growth, as well as fiscal policy measures and structural reforms implemented in some Member States. However, downside risks to the EU economic growth outlook have intensified: high uncertainty over geopolitical developments inside and outside the EU as well as slower growth in non-EU advanced economies.¹

Low-interest-rate environment: In 4Q16, ECB and BoE monetary policies remained highly accommodative, not least to mitigate the financial market impact of the UK EU referendum. In this regard, the low-interest-rate environment and related search-for-yield strategies still represent a source of concern. In 4Q16 EU funds investing in emerging market and high-yield fixed-income products registered positive flows (EUR 4.3bn and 1.9bn, respectively), albeit decreasing towards the end of the quarter. On the other hand, government bond funds recorded high net redemptions (EUR -12bn) (R.26). Investments in EU equity funds fell in early 4Q16, as the high reactivity of equity markets to political events may have reduced investors' appetite for this type of funds. In this context, excessive risk-taking and capital misallocation remain sources of risk in the medium-term outlook.

EU sovereign debt markets: In 4Q16, EU sovereign bond yields increased sharply, mirroring the behaviour of US government bonds following the outcome of the US Presidential elections. After the elections, ten-year EU government bond yields quickly rose by 50 to 80bps versus compared to their 3Q16 levels and the yield curve steepened slightly. In December 2016 EU sovereign bond yields remained at this higher level, following the developments on the US markets after the US Fed interest rate increase.

Market functioning: No significant disruptions in the functioning of EU markets were observed in 4Q16. In November 2016, the European

Commission adopted a package of legislative acts² to ensure that central securities depositories are prudentially sound, have high-quality risk management and corporate governance standards and meet appropriate capital requirements. The new rules also set penalties for settlement failures and put in place measures to ensure the transparency of internalised settlements which take place outside central securities depositories.

Political and event risk: The UK EU referendum created substantial uncertainty about the future economic outlook and EU institutional arrangements, with the exit and post-exit conditions planned to be negotiated over the coming months. Focus on the news flow and announcements may result in intensified political and event risk, contributing to uncertainty and greater asset price volatility in EU markets. In November, financial markets experienced a period of additional market volatility in the run-up to the US Presidential elections as electoral uncertainties weighed on market sentiment. The unexpected election outcome triggered initial falls in equity markets, which were however quickly reversed, and a potential uptrend in US sovereign bonds yields, with spill-overs to EU sovereign bond yields. Going forward, additional market uncertainties may result from important electoral events in some EU Member States (Dutch parliamentary elections in March 2017, French presidential elections in April and May 2017, German parliamentary elections in autumn 2017) and from broader geopolitical risks.

Risk categories

Market risk – very high, outlook stable: In particular, markets continued to be highly reactive to political and event risks. In 4Q16 EU equity markets were relatively calm, with the financial sector completely recovering the losses reported after the UK referendum (+ 32% from 27 June 2016) (R.6). Some short-lived volatility was registered before the electoral events in 4Q16 as investors quickly adjusted their positions reacting to news. The near-term volatility VSTOXX1M rose by 50% in the week before the US elections and by 20% before the Italian referendum (R.7). On the day after the unexpected US election outcome, EU markets opened 3.4% down, before recovering during the day. Similarly, the outcome of the Italian referendum had a short-lived impact

¹ European Commission, "European Economic Forecast, Autumn 2016".

² European Commission "Adoption of a delegated act as well as regulatory and implementing technical standards for Regulation (EU) No 909/2014 on improving securities

settlement in the EU and on central securities depositories", 11 November 2016.

on equity prices. In both cases the banking sector was the most affected. In options markets, implied volatility for GBP increased in 4Q16 (+8% on average from 3Q16), peaking in the days following the GBP flash crash of 7 October, when the GBP fell by more than 6% versus the USD in less than ten minutes in early Asian trading. However, volatility levels remained moderate compared with the moves seen around the UK referendum; for example, the three-month tenor GBP-EUR implied volatility rose from 10% at end-3Q16 to 12% after the GBP flash crash, compared with a high of 17.2% in the run-up to the UK referendum (R.8).

Liquidity risk – high, outlook stable: In 4Q16 the equity market illiquidity index increased above the two-year moving average (R.4). On the other hand, equity bid-ask spreads were stable at 6.7 basis points, below their long-term average of seven basis points. EU corporate bond markets registered slightly better liquidity conditions over the reporting period, despite the Amihud illiquidity indicator flagging a temporary episode of illiquidity in early 4Q16 (R.14). Sovereign bid-ask spreads increased on average by 50% in 4Q16 across EU countries (R.10). Signs of stress were observed in EA government bond collateral markets, with the collateral scarcity premia increasing again in 4Q16 (R.12). The sharp drop in repo rates observed at the end of the year (T.19) resulted in greater dispersion between the scarcity premia on bonds that are in very high demand (the highest percentiles) and the median premium. Liquidity pressures were observed in the EU investment fund industry, where both equity and bond fund categories registered net redemptions of EUR 14bn each in 4Q16. Developments in the volatility of investment fund returns were mixed in 4Q16, with commodity and real estate fund return volatility registering the highest increase (+19%) and decrease (-50%) respectively.

Contagion risk – high, stable outlook: In the sovereign bond market, the correlation between German and other EU countries' ten-year bond yields increased throughout 4Q16. However, one

peripheral country's sovereign bond market was driving the bottom 25% dispersion at the end of the reporting period with a negative correlation (-0.8) to German bond yields (R.17). In the asset management industry, concerns remained over the asset management sector's interconnectedness with the banking and insurance sectors and the associated potential for spillovers. Within the hedge fund industry intra-sectorial contagion decreased in 4Q16, following the previous quarter marked increase in reaction to the UK referendum result (R.32).

Credit risk – very high, outlook stable: In 4Q16 issuance of high-yield securities decreased by 48% from 3Q16 and 7% from 4Q15. Corporate bond spreads remained at 3Q16 levels, although ticking up in early December 2016 ahead of the ECB meeting. High valuations in the corporate bond markets fuelled by the combination of the accommodative monetary policy and search-for-yield strategies may indicate inadequately low default risk premia. In fact, in 4Q16 spreads in the corporate bond and corporate CDS markets remained decoupled (-50bps and -11bps since the start of the ECB's Corporate Purchase Programme).

Operational risk – elevated, stable outlook: Technology and conduct risks remain a key concern both within and outside the EU. In 4Q16, a small UK bank suffered from a significant cyber-attack: 20,000 current accounts were hacked with loss of client money, while suspicious activity was reported on another 20,000 accounts. On a positive note, in 4Q16 no trading disruptions were observed on EU financial markets. However, operational risk issues were highlighted by the latest flash-crash event: On 7 October 2016 the GBP suffered a sudden fall of 6% in two minutes on Asian venues against the USD before recovering most of its losses. Although the dynamics in foreign exchange markets differ markedly from those in securities markets, this flash-crash-style event does highlight the importance of appropriate trading halt mechanisms.

Securities markets

R.3

Risk summary

Risk level

Risk change from 3Q16

Outlook for 1Q17



Risk drivers

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

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

R.4

Equity illiquidity

Illiquidity index above long-term average

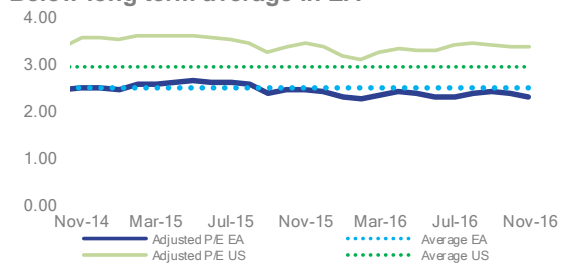


Note: Composite indicator of illiquidity in the equity market for the current Eurostoxx 200 constituents, computed by applying the principal component methodology to six input liquidity measures (Amihud illiquidity coefficient, bid-ask spread, Hui-Heubel ratio, turnover value, inverse turnover ratio,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

R.5

Equity valuation

Below long term average in EA

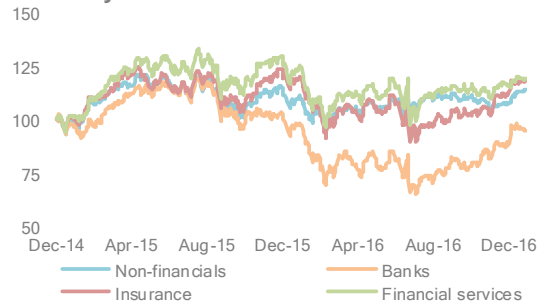


Note: Monthly earnings adjusted for trends and cyclical factors via Kalman filter methodology based on OECD leading indicators; units of standard deviation; averages computed from 8Y. Data available until the end of November 2016. Sources: Thomson Reuters Datastream, ESMA.

R.6

Equity prices

Recovery continued in 4Q16

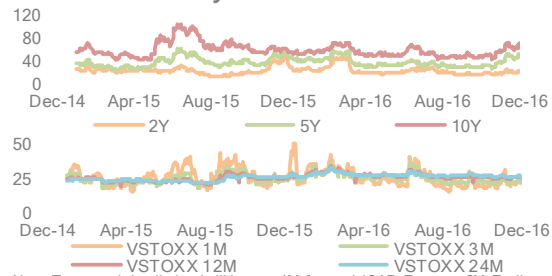


Note: STOXX Europe 600 equity total return indices. 03/11/2014=100. Sources: Thomson Reuters Datastream, ESMA.

R.7

Financial instruments volatilities

Increased volatility around market events

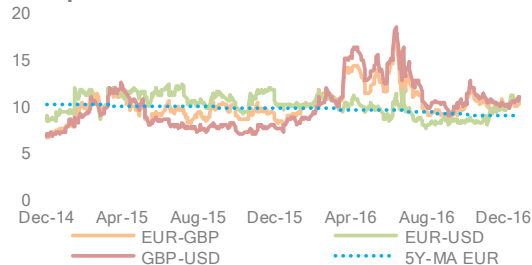


Note: Top panel: implied volatilities on 1M forward ICAP Euro vs. 6M Euribor swaps based on the Normal volatility model, in bp; Bottom panel: Euro Stoxx 50 implied volatilities, measured as price indices, in %. Sources: Bloomberg, Thomson Reuters Datastream, ESMA.

R.8

Exchange rate volatilities

GBP peaked around the flash-crash event

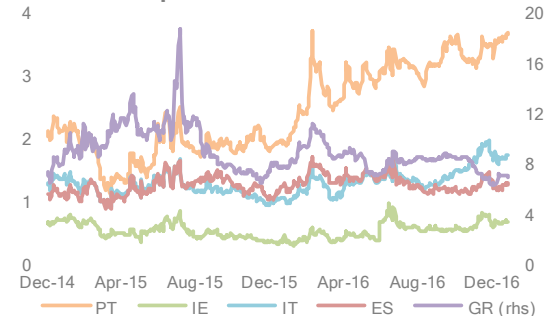


Note: Implied volatilities for 3M options on exchange rates. 5Y-MA EUR is the five-year moving average of the implied volatility for 3M options on EUR-USD exchange rate. Sources: Bloomberg, ESMA.

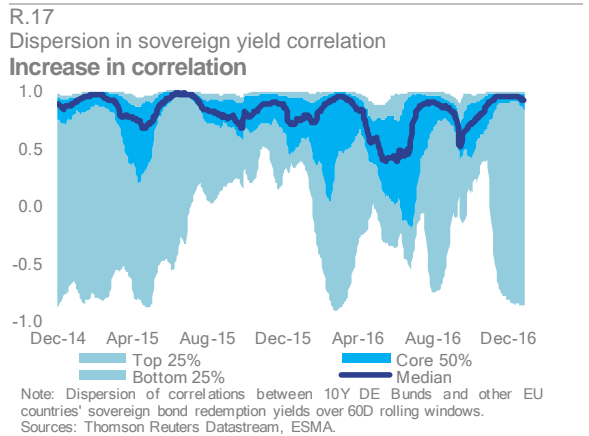
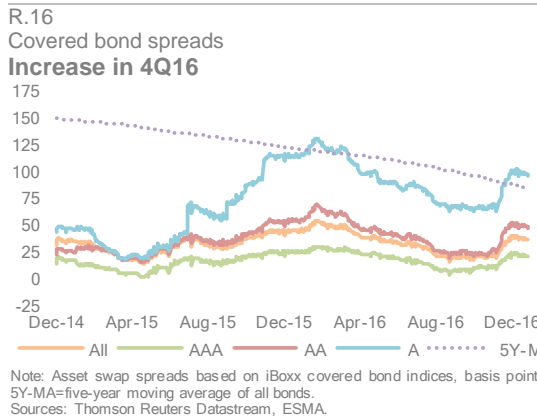
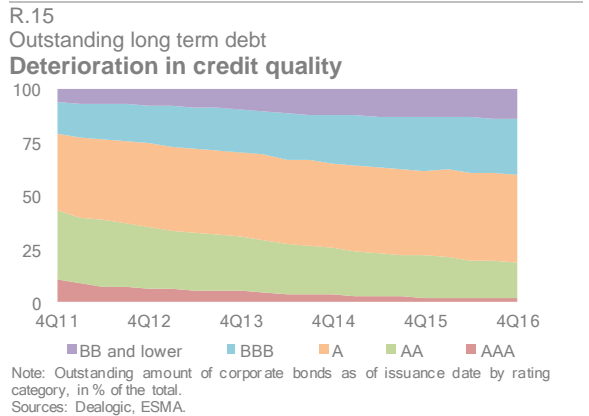
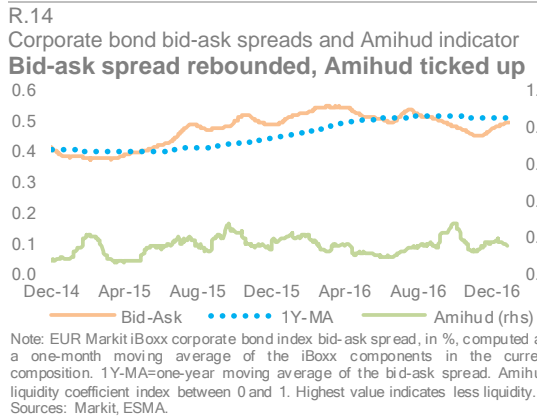
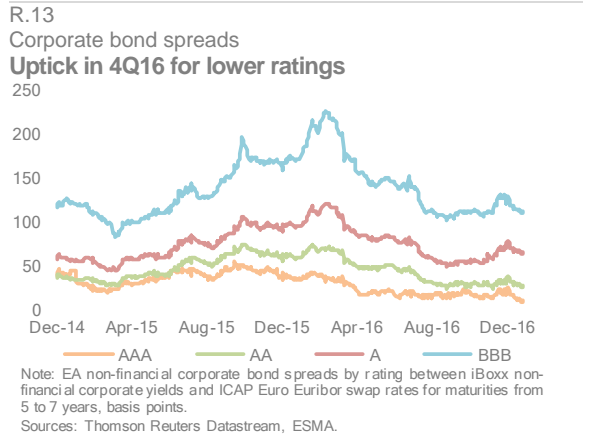
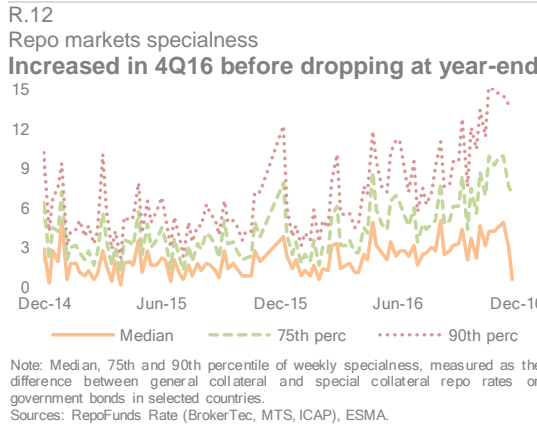
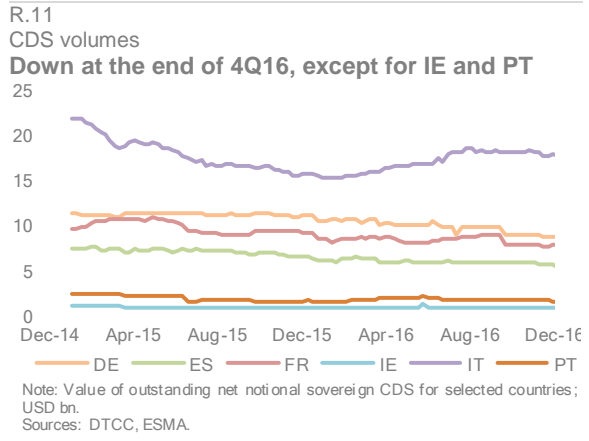
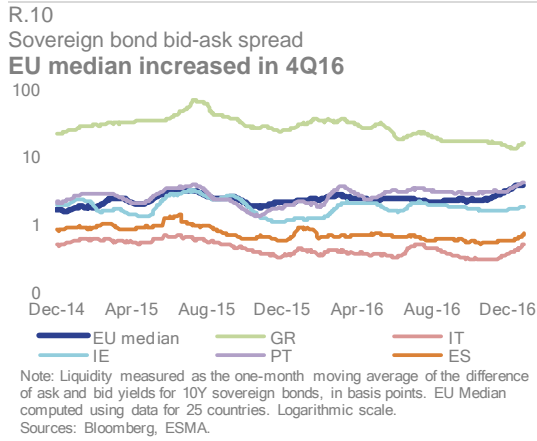
R.9

Sovereign risk premia

Mixed development across EA countries



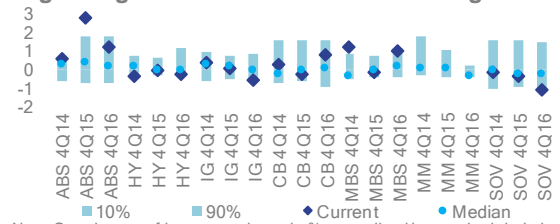
Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %. Sources: Thomson Reuters Datastream, ESMA.



R.18

Debt issuance growth

Negative growth rate in 4Q16 for sovereign

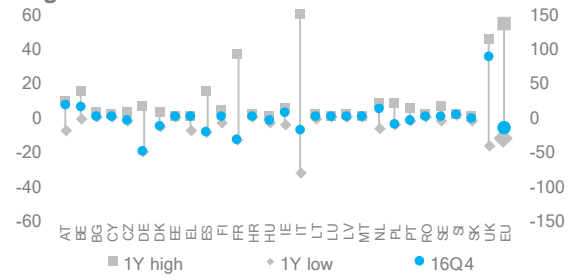


Note: Growth rates of issuance volume, in %, normalised by standard deviation for the following bond classes: asset backed securities (ABS); high-yield (HY); investment grade (IG); covered bonds (CB); mortgage backed securities (MBS); money market (MM); sovereign (SOV). Percentiles computed from 12Q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

R.19

Net sovereign debt issuance

Negative for EU

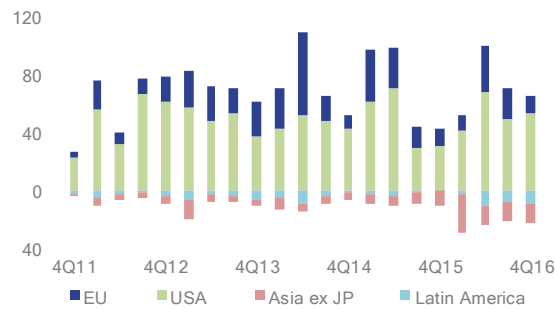


Note: Quarterly net issuance of EU sovereign debt by country, EUR bn. Net issuance calculated as the difference between new issuance over the quarter and outstanding debt maturing over the quarter. Highest and lowest quarterly net issuance in the past year are reported. EU total on right-hand scale.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

R.20

HY issuance

Marked reduction in EU HY issuance

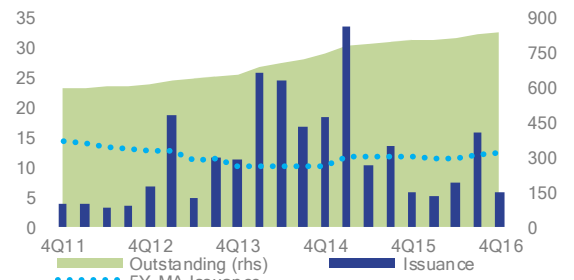


Note: Quarterly data on high-yield corporate bond issuance by region of issuance, in EUR bn. Sources: Dealogic, ESMA.

R.21

Hybrid capital issuance and outstanding

Reduced issuance

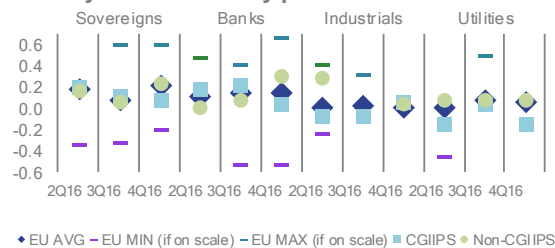


Note: Outstanding amount computed as the cumulative sum of previously issued debt minus the cumulative sum of matured debt prior to reference date, EUR bn. According to Dealogic classification, hybrid capital refers to subordinated debt Tier 1 capital mainly with perpetual maturity. Sources: Dealogic,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

R.22

Debt maturity

Broadly stable maturity profile

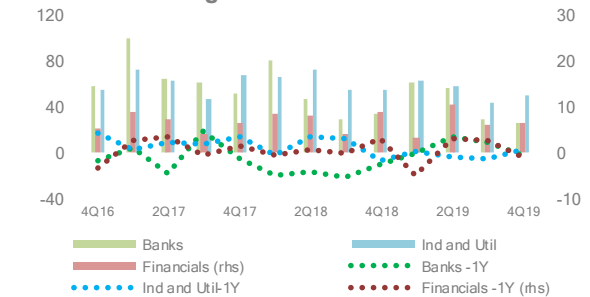


Note: Quarterly change in maturity of outstanding debt by sector and country groups in the EU, years. CGIIPS include CY, GR, IT, IE, PT and ES. Min and Max may not be displayed where they are out of the scale provided in the graph. Sources: Dealogic, ESMA.

R.23

Debt redemption profile

Banks' financing needs in the medium-term



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

Investors

R.24

Risk summary

Risk level

Risk change from 3Q16

Outlook for 1Q17



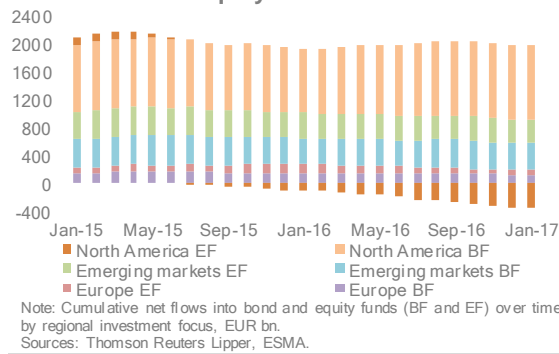
Risk drivers

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

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

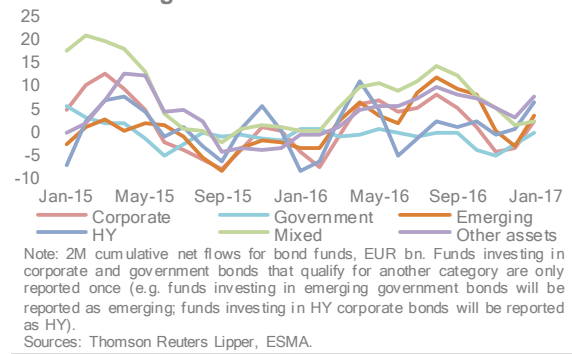
R.25

Cumulative global investment fund flows Outflows for EU equity and bond funds



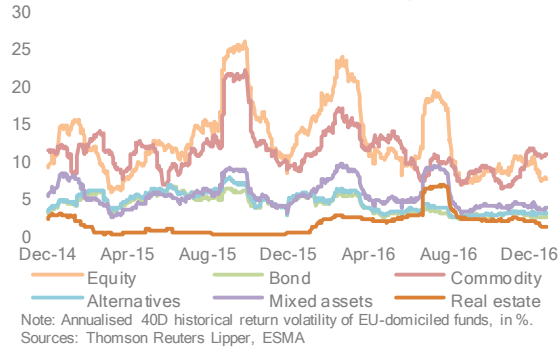
R.26

EU bond fund net flows Outflows for government bond funds



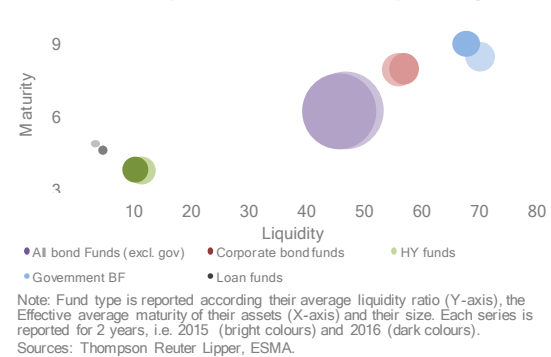
R.27

RoR volatilities by fund type Volatilities increased for commodity funds



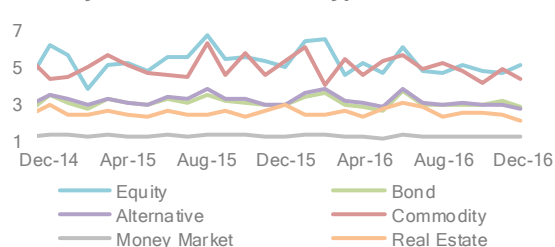
R.28

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



R.29

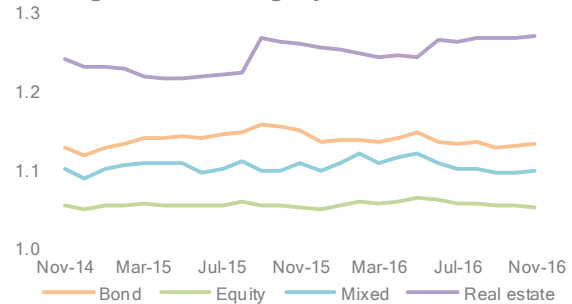
Retail fund synthetic risk and reward indicator Broadly stable across fund types



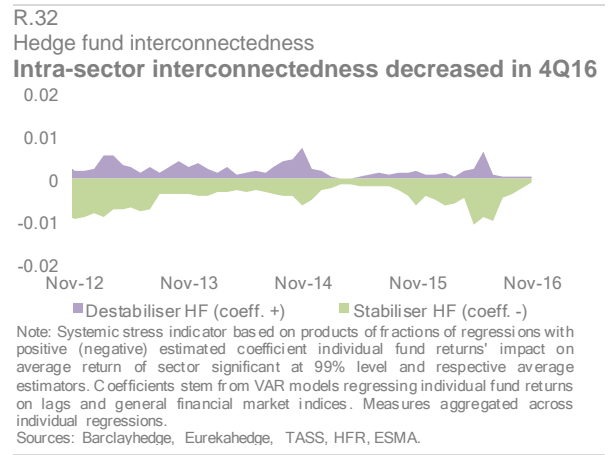
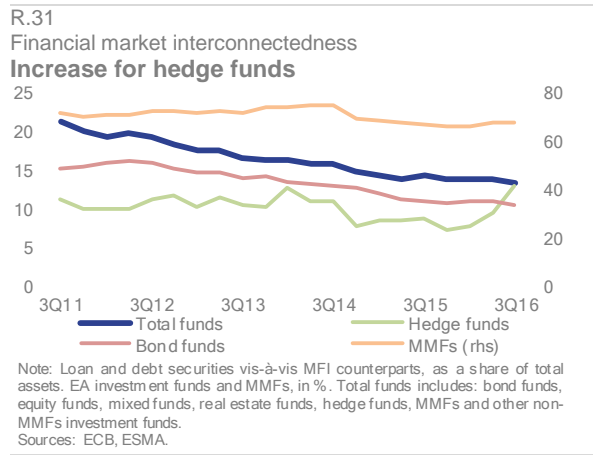
Note: The calculated Synthetic Risk and Reward Indicator is based on ESMA SRRI guidelines. It is computed via a simple 5 year annualised volatility measure which is then translated into categories 1-7 (with 7 representing higher levels of volatility).
Sources: Thomson Reuters Lipper, ESMA.

R.30

Leverage by investment fund type Leverage increased slightly for real-estate funds



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



Infrastructures and services

R.33

Risk summary

Risk level

Risk change from 3Q16

Outlook for 1Q17



Risk drivers

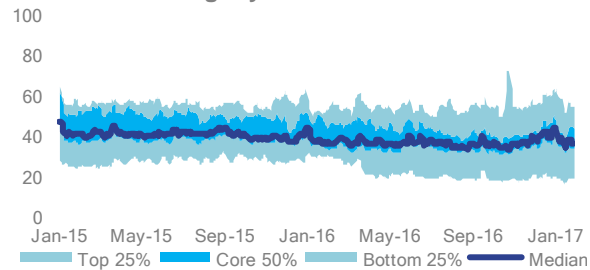
- Operational risks, incl. insufficient technology management, cyber-attacks, integrity of benchmark panels.
- Conduct risk, incl. intentional or accidental behaviour by individuals, market abuse.
- Systemic relevance of individual operations, incl. market share, complexity of operations, interconnectedness with other infrastructures or financial activities, system substitutability.

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

R.34

Equity market concentration

Concentration slightly increased

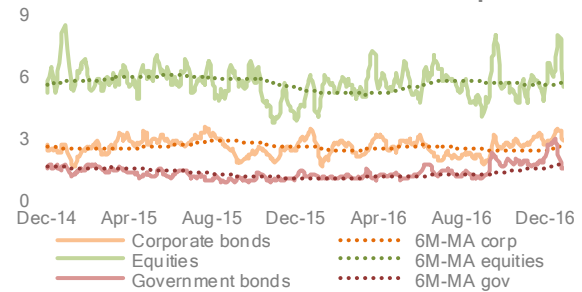


Note: Concentration of notional value of equity trading by national indices computed as a 1M-MA of the Herfindahl-Hirschman Index, in %. Indices included are FTSE100, CAC40, DAX, FTSE MIB, IBEX35, AEX, OMXS30, BEL20, OMXC20, OMXH25, PSI20, ATX. Sources: BATS, ESMA.

R.35

Settlement fails

Return to lower levels after end of 2016 spike

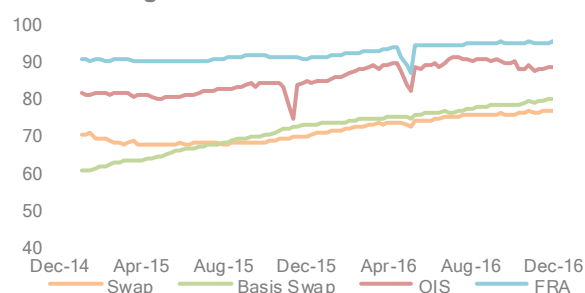


Note: Share of failed settlement instructions in the EU, in % of value, one-week moving averages. 6M-MA=six-month moving average. Free-of-payment transactions not considered. Sources: National Competent Authorities, ESMA.

R.36

IRS CCP clearing

CCP clearing decreased for OIS



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 out of the Dealer vs CCP positions. Sources: DTCC, ESMA.

R.37

Euribor contributions

Slightly higher dispersion

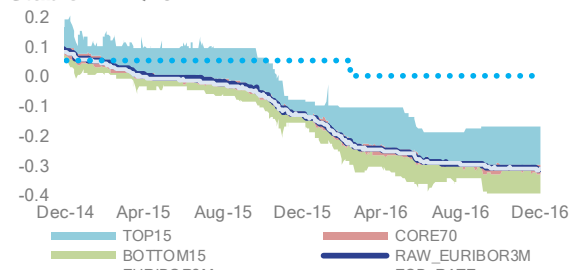


Note: Normalised difference in percentage points between the highest contribution submitted by panel banks and the corresponding Euribor rate. The chart shows the maximum difference across the 8 Euribor tenors. Sources: European Money Markets Institute, ESMA.

R.38

Euribor – Dispersion of submission levels

Stable in 4Q16

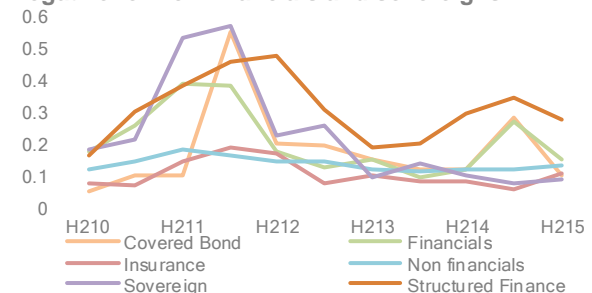


Note: Dispersion of 3M Euribor submissions, in %. The "Raw 3M Euribor" rate is calculated without trimming the top and bottom submissions of the panel for the 3M Euribor. Sources: European Money Markets Institute, ESMA.

R.39

Rating changes

Negative for non-financials and sovereigns



Note: Volatility of ratings by all credit rating agencies, excluding CERVED and ICAP, for corporates, financials, insurances, sovereigns and structured finance, computed as number of rating changes over number of outstanding ratings. Sources: CEREP, ESMA.

