

## **Financial Stability Review**

November 2017

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- Improved euro area growth prospects and reduction of imbalances – the euro area is more resilient to shocks
- Exceptionally low volatility persists in global financial markets, coupled with depressed risk premia in some segments
- Worldwide price corrections may be triggered by a reassessment of expectations about inflation or growth, developments in monetary policy normalisation and further geopolitical events
- Lingering structural challenges for euro area banks, despite improvements
- Stress in sovereign debt markets is abating but high public and private debt levels remain a concern

## Composite indicators of systemic stress in financial markets and sovereign bond markets and the probability of default of two or more banking groups

(Jan. 2011 – Nov. 2017; the vertical line represents the publication of the previous FSR on 24 May 2017)

- probability of default of two or more LCBGs (percentage probability; left-hand scale)
- composite indicator of systemic stress in financial markets (right-hand scale)
- composite indicator of systemic stress in sovereign bond markets (right-hand scale)



Sources: Bloomberg and ECB calculations.

Note: "Probability of default of two or more LCBGs" refers to the probability of simultaneous defaults in the sample of 15 large and complex banking groups (LCBGs) over a one-year horizon.

KEY RISKS FOR THE EURO AREA FINANCIAL SYSTEM	Current level and change*
1. Abrupt and sizeable repricing of risk premia in global financial markets – triggered e.g. by a policy expectation shock – leading to a tightening of financial conditions	<b>—</b>
2. Adverse feedback loop between weak bank profitability and low nominal growth, amid structural challenges in the euro area banking sector	<b>—</b>
3. Public and private sector debt sustainability concerns amid a potential repricing of risk premia and increased political fragmentation	
4. Liquidity risks in the non-bank financial sector with potential spillovers to the broader financial system	<b>→</b>
pronounced systemic risk medium-level systemic risk potential systemic risk	

\* The colour indicates the cumulated level of risk, which is a combination of the probability of materialisation and an estimate of the likely systemic impact of the identified risk over the next 24 months, based on the judgement of the ECB's staff. The arrows indicate whether the risk has increased since the previous FSR.

Abrupt and sizeable repricing of risk premia in global financial markets – triggered e.g. by a policy expectation shock – leading to a tightening of financial conditions

#### **Risk 1 – Stock and real estate markets**

- Mixed valuations of global stock prices
- No generalised signs of overvaluation in the euro area, but prices high vis-à-vis fundamentals in some real estate segments

Cyclically adjusted price/earnings (CAPE) ratio (Jan. 1985 – Nov. 2017, monthly data)

## Valuation estimates of residential and prime commercial property prices at the euro area level

(Q1 2001 – Q2 2017, percentages, average valuations, minimum-maximum range across valuation estimates)



Sources: Thomson Financial Datastream and ECB calculations. US CAPE ratio from Robert Shiller's homepage: (http://www.econ.yale.edu/~shiller/).



Sources: ECB and ECB calculations.

#### **Risk 1 – Bond markets**

- Low term premia embedded in global long-term rates
- Bond spreads in the euro area are compressed

## Decomposition of euro area and US ten-year interest rates



(Jan. 2006 – Nov. 2017, percentages per annum)

### Sources: Thomson Reuters Datastream, Federal Reserve Bank of New York and ECB calculations.

Notes: The US decomposition is based on zero-coupon yield data. The euro area decomposition is based on ten-year overnight index swap (OIS) rates. For further details, see the note to Chart 2.10 in the FSR.

## Spreads and excess bond premia (EBP) for euro area non-financial corporations (NFCs)

(Jan. 2007 - Oct. 2017, percentage points)



Spread (NFCs)EBP (NFCs)

#### Sources: Bloomberg and ECB calculations.

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Note: The EBP is the deviation of corporate credit spreads from the measured default risk of the issuer. For more details, see De Santis, R., "Credit spreads, economic activity and fragmentation", Working Paper Series, No 1930, ECB, July 2016.

#### Risk 1 – Volatility

High risk appetite in markets amid low asset price volatility

## Implied volatility for US and euro area stock markets and US and German ten-year bond markets

(Jan. 2015 – Nov. 2017, annualised volatility in percentage points)



Sources: Bloomberg and ECB calculations.

Note: Implied volatility for the S&P 500 index, the EURO STOXX 50 index, and US and German ten-year bond futures.

#### **Global asset price volatility**

(Jan. 2000 – Oct. 2017, monthly data, annualised volatility in percentages)



Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.

Notes: FX volatility: implied volatility for EUR/USD, GBP/USD and JPY/USD. Stock markets: implied volatility for the S&P 500 index and EURO STOXX 50 index. Bond markets: realised volatility for US, German and UK ten-year sovereign bonds. Equal weights are applied.

Adverse feedback loop between weak bank profitability and low nominal growth, amid structural challenges in the euro area banking sector

#### Risk 2 – Bank profitability

• Banks' profitability improved in H1 2017, mainly driven by higher non-interest income

Decomposition of the change in euro area significant banks' aggregate return on equity (ROE) (H1 2016 – H1 2017, percentage points)



Sources: ECB supervisory data and ECB calculations.

Notes: Based on a balanced sample of 115 significant institutions. Green and red bars denote positive and negative contributions, respectively.

#### **Risk 2 – Banking sector developments across regions**

 Large differences in banks' stock price developments, valuations and profitability prospects across major markets

#### Stock price developments for banks (left panel), banks' price-to-book ratios (middle panel) and banks' one-yearahead ROE expectations

(left panel: Jan. 2007 – Nov. 2017, series indexed to 100 in Jan. 2007; middle panel: min., max. and interquartile ranges (for euro area countries); right panel: annual percentages, min., max. and interquartile ranges (for euro area countries))



Sources: Thomson Financial Datastream and ECB calculations. Note: The latest observations in the middle and right panels refer to November 2017.

#### Risk 2 – Bank risk-taking

- Euro area banks' asset quality slightly improved, albeit from elevated NPL levels ۲
- Banks have increased exposures to borrowers with lower probabilities of default •

#### Non-performing loans by sector and loan type (Q4 2014 – Q2 2017, guarterly data, € billions)



Source: ECB supervisory data. Note: Based on significant institutions.

#### Breakdown of change in exposures by probability of default (PD) and obligor grade categories for IRB reporting institutions

(change between Q2 2015 and Q2 2017, € billions)



Sources: ECB supervisory data and ECB calculations.

Notes: Excludes exposures in default; based on a balanced panel of 58 institutions. "Other" includes all retail exposures excluding those to households secured by immovable property (of which, qualifying 12 revolving and consumer lending).

Public and private sector debt sustainability concerns amid a potential repricing of risk premia and increased political fragmentation

#### **Risk 3 – Sovereign bond market**

- Sovereign bond market tensions have come down
- An interest rate shock would lead to a rise in average funding costs in highly indebted countries sooner

#### Composite indicator of systemic stress in euro area sovereign bond markets

(Jan. 2007 – Oct. 2017)

- euro area average
- euro area countries more affected by the crisis
- euro area countries less affected by the crisis
- minimum-maximum country range



#### Sources: ECB and ECB calculations.

Notes: The aggregation into country-specific and euro area aggregate SovCISS is based on time-varying cross-correlations between all homogenised individual stress indicators pertaining to each SovCISS variant following the CISS methodology developed in Hollo, D., Kremer, M. and Lo Duca, M., "CISS – a composite indicator of systemic stress in the financial system", Working Paper Series, No 1426, ECB, March 2012.

## Time until the average cost of government funding begins to increase (years)



#### Source: ECB calculations.

baseline

+100 bp shock

Notes: The "low debt" category covers euro area countries with public debt levels below 60% of GDP (i.e. Estonia, Latvia, Lithuania, Luxembourg, Malta and Slovakia) as at year-end 2016. Countries with public debt levels of between 60% and 90% of GDP (i.e. Austria, Finland, Germany, Ireland, the Netherlands and Slovenia) are labelled "medium debt" countries, while
14 countries with debt levels of over 90% (i.e. Belgium, Cyprus, France,

Greece, Italy, Portugal and Spain) are referred to as "high debt" countries.

# Liquidity risks in the non-bank financial sector with potential spillovers to the broader financial system

#### **Risk 4 – Investment fund sector**

- Investment funds increased their holdings of lower-rated debt securities
- Bond funds' liquidity buffers and the share of portfolios held in liquid assets have further declined

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Euro area financial institutions' holdings of debt securities, broken down by rating and sector (Q4 2013 – Q1 2017, percentage points of total assets)



Sources: ECB Securities Holdings Statistics by Sector and ECB calculations.

Notes: The legend denotes credit quality steps defined in accordance with the Eurosystem credit assessment framework (ECAF). The first category includes securities rated from AAA to AA-, the second from A+ to A- and the third from BBB+ to BBB-. A fourth category is added which includes all rated securities with a rating below credit quality step 3. The analysis is based on the nominal amounts of euro- and foreign currency-denominated securities, including "alive" and "non-alive" securities. The investment fund sector excludes money market funds.

#### Bond funds' liquidity buffers and liquid assets

(Q1 2009 – Q3 2017, percentage of total assets)

liquid debt and equity securities (right-hand scale)

liquidity buffers (left-hand scale)



Sources: ECB investment fund statistics and ECB calculations.

Notes: Liquidity buffers include loans and deposits, where the statistical classification does not allow a distinction between loans and deposits. Liquid debt and equity securities include debt securities issued by euro area governments, debt securities issued with an original maturity under one year and equities issued in the EU, Japan and the US. According to the underlying statistical classification of bond funds, these funds can hold a minor share of equities.