Overview

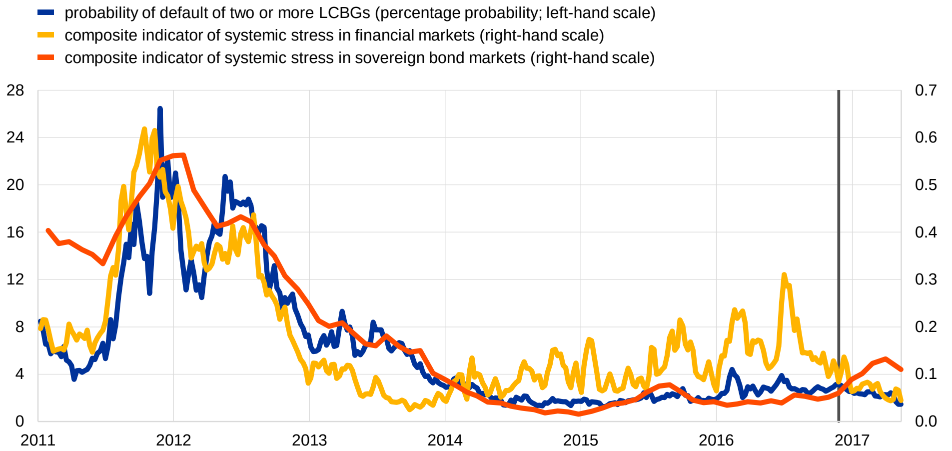
Most measures of euro area systemic stress remained at low levels over the past six months (see Chart 1). Growing optimism about economic growth prospects in the United States and Europe boosted global market sentiment in the early part of the review period. Recent developments do, however, cast some doubt on the materialisation of a significant reflation in the United States. Overall, the euro area composite indicator of financial stress hovered at low levels over the review period. Euro area bank stress also remained contained, partly on account of a perception that higher interest rates and steeper yield curves could support bank profitability going forward. Somewhat contrasting with the developments in other stress indicators, the composite indicator of systemic stress in sovereign bond markets edged up in early 2017, partly owing to higher political uncertainty in some euro area jurisdictions. In recent weeks, however, euro area spreads have narrowed and sovereign stress conditions have improved somewhat.

Chart 1

Measures of broad financial market and bank stress remained contained, but higher political uncertainty in early 2017 brought about a slight pick-up in the sovereign stress indicator

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

(Jan. 2011 – May 2017; the vertical line represents the publication of the previous FSR on 24 November 2016)



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.

Financial market sentiment improved over the review period, but risks of further repricing in bond markets remain. The outcome of the US presidential election led to upward revisions in market participants' assessments of US growth prospects, resulting in both higher stock prices and bond yields around the turn of the year. In recent months, however, stock prices and bond yields backtracked somewhat, thereby reversing part of the increases recorded earlier. In the euro area, the riskiest asset classes benefited the most from the improvement in risk appetite.

In sovereign bond markets, apart from direct spillover effects from the United States, an improvement in domestic nominal growth prospects also pushed euro area yields higher. Bond yield movements were uneven across euro area countries. In some countries where political support for pursuing fiscal and structural reforms was viewed by the markets as waning, investors required additional risk premia on sovereign bonds. Overall, risks to financial stability stemming from financial markets remain significant, mainly owing to the possibility of a further rapid repricing in global fixed income markets. Such an abrupt repricing could materialise via spillovers from higher yields in advanced economies, in particular the United States. Other possible triggers for the materialisation of this risk scenario would be a prolonged period of elevated political uncertainty contributing to higher premia being required by fixed income investors, or higher-than-expected euro area inflationary pressures causing investors to anticipate a faster normalisation of monetary policy conditions.

Euro area banks' profitability remains subdued and the outlook is still challenged by a number of cyclical and structural factors. Market pressure on euro area banks waned considerably over the review period with banks' stock prices, in particular, increasing sharply. The main triggering factor was the steepening of market yield curves across euro area countries. Markets, in general, perceived that the steeper slopes of yield curves, if sustained, could provide some support for banks' profitability, mainly via higher margins earned on their maturity transformation business. This notwithstanding, interest rates still remain at low levels and continue to challenge banks' ability to generate sustainable profits. Furthermore, in some regions, banks' profitability prospects continue to be dampened by the large stocks of non-performing loans (NPLs). A number of structural challenges also weigh on banks' longer-term profitability prospects, including overcapacity in certain banking markets, a limited degree of income diversification and cost-inefficiencies in several banking sectors.

The potential for higher bond yields may trigger renewed debt sustainability concerns. Nevertheless, higher yields are accompanied by stronger nominal growth, which helps debt sustainability in the longer term. Even though political uncertainty has abated in Europe, some countries could be affected by idiosyncratic risks that could increase the cost of debt service. Risks stemming from elevated debt levels are also material for the non-financial private sector. In particular, the indebtedness of the euro area non-financial corporate sector remains high by both historical and international standards.

The increasing size of the euro area investment fund sector has the potential to amplify financial stability risks. The growth of the investment fund sector has resumed its longer-term path, following an intermittent period of stagnation amid volatile flows in 2015. The vulnerabilities for this sector are closely linked to the above-mentioned risk of a further repricing in bond markets. In fact, the continued inflows into bond funds may raise concerns about sudden redemptions in response to a more widespread repricing in global fixed income markets, if it were to occur. Large redemption calls can have widespread amplification effects in financial markets amid signs that fixed income investment funds have increased their risk-taking in recent years via a higher asset allocation to lower-rated debt securities and an increased duration in their fixed income portfolios. At the same time, there is evidence that redemption patterns can be procyclical, which can foster adverse market dynamics when asset prices are declining.

In the prevailing environment, this issue of the FSR identifies four main risks to euro area financial stability over the next two years (see Table 1). Compared with the previous assessment published in November last year, Risk 3 has been revised upwards and is now deemed to be a "medium-level systemic risk" compared with a "potential systemic risk" in the previous assessment. All four risks are intertwined: if they were to materialise, they would have the potential to be mutually reinforcing. A common trigger for all of these risks could be weaker nominal growth than currently expected across the euro area.

Table 1

Key risks to euro area financial stability

pronounced systemic risk	
medium-level systemic risk	
potential systemic risk	
	Current level (colour) and recent change (arrow)*
1. Repricing in global fixed income markets – triggered by changing market expectations about economic policies – leading to spillovers to financial conditions	→
2. Adverse feedback loop between weak bank profitability and low nominal growth, amid structural challenges in the euro area banking sector	→
3. Public and private debt sustainability concerns amid a potential repricing in bond markets and political uncertainty in some countries	↑
4. Liquidity risks in the non-bank financial sector with potential spillovers to the broader financial system	→

* 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.

The United Kingdom's decision to withdraw from the European Union adds to the prevailing level of political uncertainty, but the "Brexit" process itself is currently not one of the main concerns for euro area financial stability. On 29 March 2017 the United Kingdom notified the European Council, in accordance with Article 50(2) of the Treaty on European Union, of its intention to withdraw from the European Union. It is to be expected that the future relationship between the UK and the EU will not compromise the integrity of the Single Market. This also applies to a potential transition period. In particular, it needs to be ensured that the rules are applied and enforced in a consistent manner.

In terms of the potentially longer-lasting effects of Brexit, it is premature to speculate about the outcome of the negotiations between the EU and the UK authorities. But it is likely to have limited implications for the euro area economy and financial stability. One channel for Brexit to affect euro area financial stability is the macroeconomic impact and the effect on the value of the overall relatively modest direct exposures of euro area financial institutions to the UK real economy.[1] Euro area financial stability could also be impacted as Brexit could create disruptions in the provision of financial services to the euro area economy. As documented in **Box 1,** a meaningful part of wholesale financial services to the euro area economy is currently provided out of the United Kingdom, even though they could be gradually transferred to the rest of the European Union.

Banks and other financial institutions need to implement transition plans to cope with Brexit in a timely manner. Overall, the risk that the euro area real economy would face restrictions in accessing wholesale and retail financial services following the UK's departure from the EU appears limited. This notwithstanding, well-managed preparations will be essential as a relocation of financial services capacity during the transition from the current situation to the new equilibrium could, in some cases, face frictions. Therefore, the ECB underlines the need for the concerned banks and other financial institutions to undertake all the necessary preparations in a timely manner.

Risk 1: Repricing in global fixed income markets – triggered by changing market expectations about economic policies – leading to spillovers to financial conditions

Over the past six months, bond yields and stock prices in most major markets increased overall, partly as a result of a reassessment of US economic growth prospects. Financial markets reacted, in general, positively to the presidential election outcome in the United States, mainly focusing on upside risks to domestic economic growth prospects, whereas signs of higher protectionism and less engagement in global cooperation did not have a material impact on asset price dynamics. In the latter part of the review period, however, bond yields edged down somewhat as markets became less optimistic regarding the potential upside to near-term nominal growth prospects in the United States (see **Chart 2**). Financial market developments in the United States spilled over to other advanced economies and emerging market economies (EMEs). In the euro area, apart from some direct spillovers from US markets, the continued gradual recovery in nominal growth prospects also contributed to lifting bond yields and stock prices higher (see **Chart 3**). At the same time, market concerns regarding the implications of the evolving political landscape for the pursuit of fiscal consolidation and structural reform sparked occasional bouts of volatility in some euro area bond markets. This is consistent with the findings of **Special Feature A**, which shows that an economic policy uncertainty shock may tighten financing conditions, all else being equal.

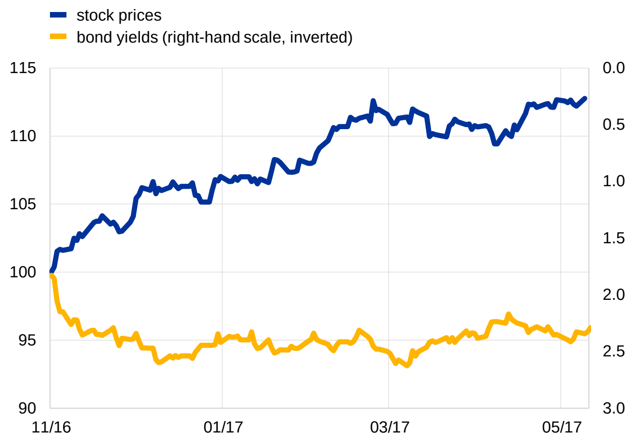
[1] Despite some reductions in medium-term growth prospects for the United Kingdom, the macroeconomic outlook both in the United Kingdom and the euro area has continued to show resilience; see e.g. *World Economic Outlook*, IMF, April 2016 and April 2017.

Chart 2

Higher bond yields and stock prices in the United States since the presidential election…

Changes in ten-year sovereign bond yields and stock prices in the United States

(7 Nov. 2016 – 16 May 2017; daily data; bond yields: percentages per annum; stock prices indexed to 100 on 7 Nov. 2016)



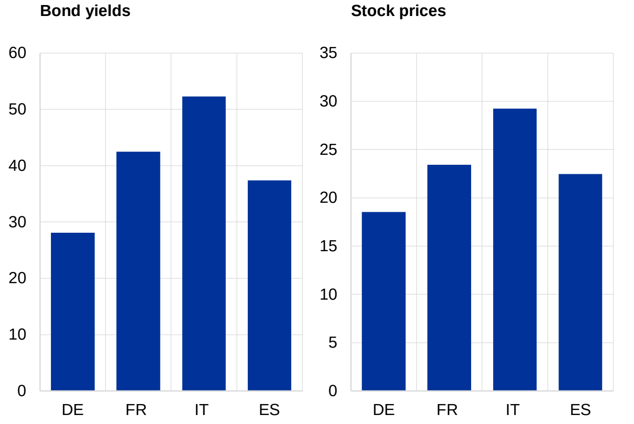
Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.

Chart 3

…with similar developments also in the euro area

Changes in ten-year sovereign bond yields (left-hand panel) and stock prices (right-hand panel) for selected euro area countries

(7 Nov. 2016 – 16 May 2017; daily data; bond yields: changes in basis points; stock prices: percentage changes)



Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.

The recent decoupling between bond prices and stock prices may signal a return to more typical cross-asset correlations. During most of the financial crisis, prices of fixed income instruments and stock prices moved in tandem in most major markets. Overall, a shift towards an environment where the prices of safer and riskier asset classes become negatively correlated is beneficial from a financial stability viewpoint, as it improves investors' capacity to diversify their portfolios. Moreover, it reduces the risk of a synchronised sell-off across different asset classes.

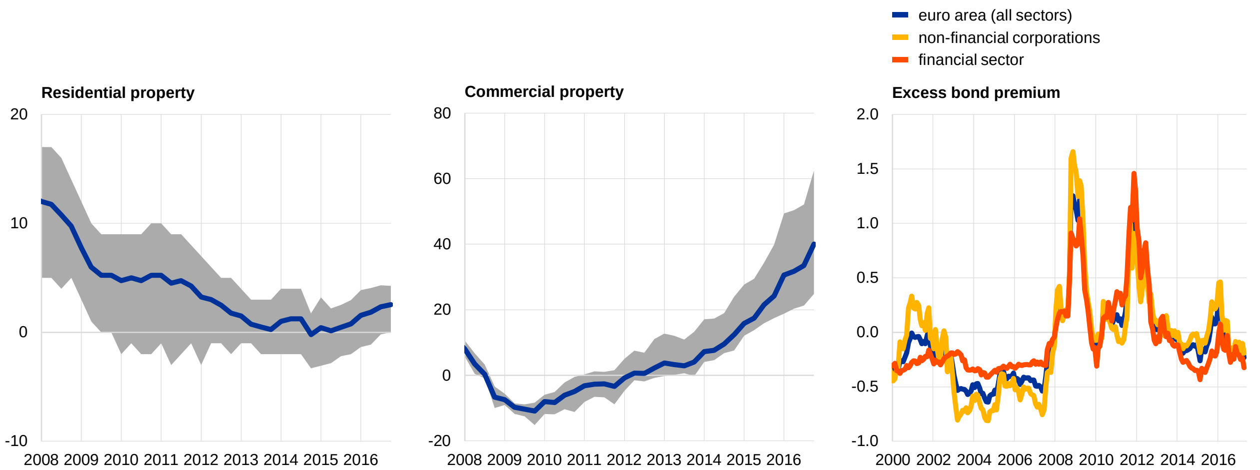
Standard valuation indicators across asset classes do not signal general misalignments in the euro area, but some segments require close monitoring. When assessing risks of a potential repricing in financial markets, it is important to gauge valuations. For instance, asset prices that significantly decouple from underlying fundamentals may, at some point, trigger abrupt and disorderly corrections, should investors perceive that the misalignments are unsustainable. Looking at standard valuation metrics across the euro area, however, asset prices seem to be fairly close to their respective fundamental benchmarks (see **Chart 4**). First, as regards tangible assets, valuation estimates for the euro area as a whole suggest that residential property prices are broadly in line with the average valuations recorded over the last decades. However, pockets of rapid price increases can be observed. For instance, residential property prices in certain euro area capital cities have experienced strong growth in recent years and the developments should be carefully monitored given the risk of potential ripple effects of prices from these cities to the respective countries at large (see **Box 3**). Similarly, valuation estimates for prime commercial properties have departed further away from their long-term average, amid continued strong price increases. Second, in the euro area corporate bond markets, the "excess bond premium" (which measures model-based deviations of corporate bond spreads from the levels implied by some measures of their inherent riskiness) is hovering slightly below the zero line across most issuer types – indicating fair to only slightly overheated corporate bond valuations. At the same time, a potential turnaround in the corporate credit cycle in the United States may push global (including euro area) corporate bond spreads higher. Third, the euro area cyclically adjusted price/earnings (CAPE) ratio is fluctuating at fairly low levels compared with its historical average. By contrast, the surge in US stock prices during the review period has overall pushed valuations up well above the norm (see **Chart 2.16** in Section 2). Finally, still subdued credit growth in the euro area would not support the view that asset price increases in the euro area have been driven by an excessive use of leverage.

Chart 4

Most euro area tangible and financial assets broadly in line with historical norms

Over/undervaluation estimates of residential and prime commercial property prices at the euro area level (left panel) and estimated excess bond premium for euro area financial, non-financial and all corporate bonds (right panel)

(left panel and middle panel: Q1 2008 – Q4 2016; percentages, average valuation and minimum-maximum range across different valuation estimates; right panel: Jan. 2000 – Apr. 2017; percentage points)



Sources: Bloomberg, ECB, Merrill Lynch, Moody's and ECB calculations.
Notes: For the left panel, over/undervaluation estimates for residential property prices are based on four different valuation methods: the price-to-rent ratio, the price-to-income ratio and two model-based methods. For the right panel, the excess bond premium is the deviation of the corporate credit spreads relative to the measured default risk of the issuer and the duration risk of the bond. It is obtained by estimating the asset swap spreads of the individual bonds on the basis of the individual duration, the coupon, the outstanding amount, credit ratings and sectoral expected default frequency, using panel fixed effect methodology. The reported aggregate measures are compiled as the mean of the individual deviations. All investment-grade and high-yield bonds from Merrill Lynch are considered. Based on De Santis, R., "Credit spreads, economic activity and fragmentation", *Working Paper Series*, No 1930, ECB, 2016.

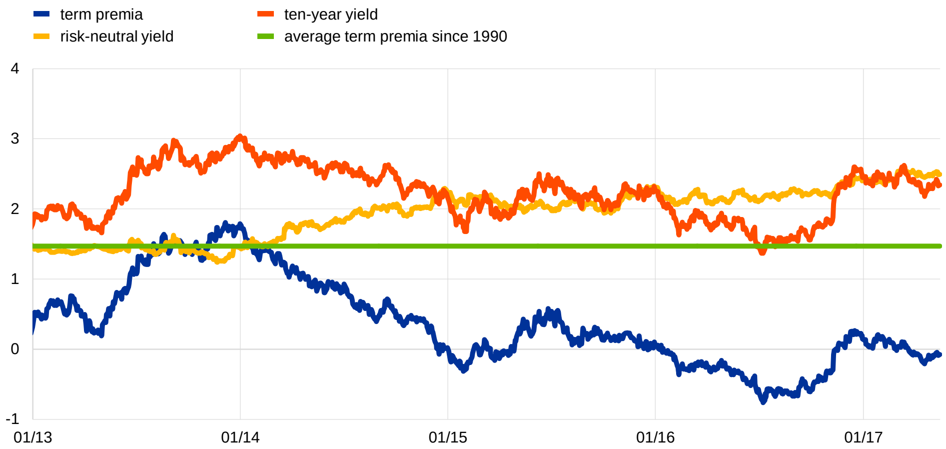
A further repricing in euro area fixed income markets cannot be ruled out. A gradual normalisation of euro area bond yields taking place in tandem with improved economic growth prospects would be beneficial from a financial stability perspective. There are, however, risks that euro area bond yields could increase abruptly without a simultaneous improvement in growth prospects. Such a scenario could materialise via spillovers from higher yields in other advanced economies, in particular the United States. For instance, further upward revisions of Federal Reserve monetary policy expectations have the potential to push longer-dated yields higher. In addition, the term premia embedded in longer-term US yields still remain low by historical standards and a further possible normalisation cannot be ruled out, particularly in the context of the expansionary fiscal policies that may be implemented by the US administration (see **Chart 5**). Owing to the high degree of market integration between the two economies, higher interest rates in the United States have the potential to spill over also to euro area bond markets. Another possible trigger is a prolonged period of elevated political uncertainty, leading to higher premia being required on fixed income instruments. Finally, this risk scenario could be triggered by higher-than-expected euro area inflationary pressures that may push bond yields higher if they were to induce investors to reassess the stance of monetary policy.

Chart 5

Potential of a further normalisation of US term premia

Long-term US sovereign bond yields decomposed into the risk-neutral yield and the term premia

(1 Jan. 2013 – 16 May 2017; daily data, percentages per annum)



Source: Haver Analytics.

A potential repricing in euro area bond markets may lead to substantial capital losses for investors with large exposures to fixed income instruments. Around 15% of euro area banks' total assets and more than one-third of insurers', pension funds' and investment funds' total assets consist of bond holdings. As a result, a potential repricing in the bond markets can lead to large capital losses. The low levels of interest rates[2], coupled with the fact that a large number of investors have gradually increased the duration of their fixed income portfolios, can aggravate potential losses in the event of an abrupt repricing (see **Chart 3.43**).[3]

Macroprudential policies are best placed to tackle challenges that could pose threats to financial stability, not least given their country and sector-specific characteristics. Such policies can bolster systemic resilience and curb financial excesses that may occur, thereby allowing monetary policy to focus on its primary objective of maintaining price stability – also to the benefit of financial stability. In the context of its macroprudential mandate, the Governing Council of the ECB has released a statement on the macroprudential policy stance of the ECB in relation to a number of country-specific risks.[4]

2 Owing to the non-linear relationship between prices and interest rates (i.e. bond convexity), there is higher price sensitivity when interest rates are very low.

3 The price sensitivity to changes in the underlying yields increases with the maturity of the instruments.

4 Link to the statement: http://www.ecb.europa.eu/press/pr/date/2016/html/pr161215_1.en.html

Risk 2: Adverse feedback loop between weak bank profitability and low nominal growth, amid structural challenges in the euro area banking sector

Euro area banks' profitability remained low in 2016, mainly due to a decline in revenues in a challenging operating environment. Net interest income dropped compared with 2015, as the compression of margins was only partly offset by still modest (albeit gradually recovering) loan growth. In addition, some banks reported losses due to sharp increases in loan impairment charges, mainly linked with increased efforts to clean up their balance sheets. With an aggregate ROE of around 3% (for significant banks), euro area banks' financial performance continues to lag behind that of most of their global peers, with US and Nordic banks reporting ROEs of 9-10% over the same period.

Market pressure on euro area banks abated over the past six months. Throughout the first half of 2016 there were a number of sharp, but short-lived, declines in global and euro area banks' equity prices (see **Chart 6**). Since July 2016, however, a sharp rebound has taken place. A number of reasons lie behind the more positive sentiment towards banks in the euro area. First, markets, in general, perceived that the increase in the slope of the yield curve, if sustained, could provide some support for banks' profitability, mainly via higher margins earned on their maturity transformation business. Second, market analysts became somewhat less concerned that the finalisation of Basel III would lead to a significant tightening of capital standards, which previously had been a common assumption despite repeated statements by authorities to the contrary. Third, part of the rebound in euro area banks' stock prices can probably also be attributed to a normalisation of bank valuations from the overly-depressed levels prevailing in July last year. Indeed, a reduction in equity risk premia can arguably explain a large part of the recent increases in stock prices for the euro area financial sector.

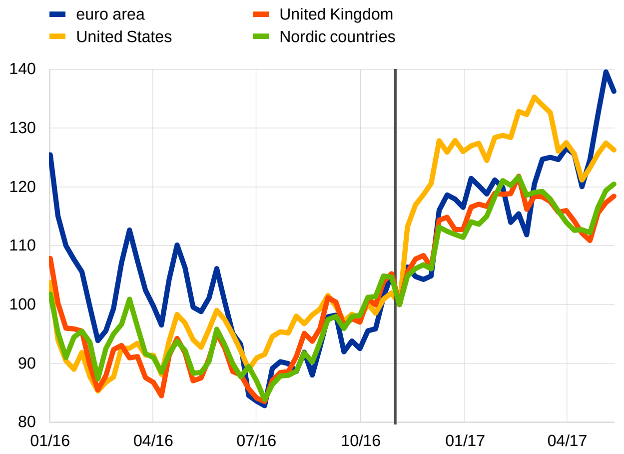
Despite a more optimistic market view of euro area banks' outlook, the persistent valuation discount vis-à-vis many of their global peers suggests that many banks continue to struggle with profitability problems. Differences in bank valuations are, to a large extent, explained by cyclical factors, as the pace of economic recovery varies both across advanced economic regions and within the euro area. Looking at recent data, banks' profitability prospects across countries are closely linked to their observed valuations, the latter measured in the form of price-to-book ratios (see **Chart 7**). Bank price-to-book ratios well below one may reflect doubts on the part of analysts regarding the ability of these banks to earn their corresponding cost of equity. As discussed below, a return to sustainable profitability will crucially depend on the way and speed at which banks are tackling remaining cyclical and structural challenges.

Chart 6

The outcome of the US election boosted global banks' stock prices

Stock price developments for banks across major markets

(Jan. 2016 – 12 May 2017; weekly data, stock price indices indexed to 100 on 7 November 2016 (the date of the US election) indicated by the vertical line)



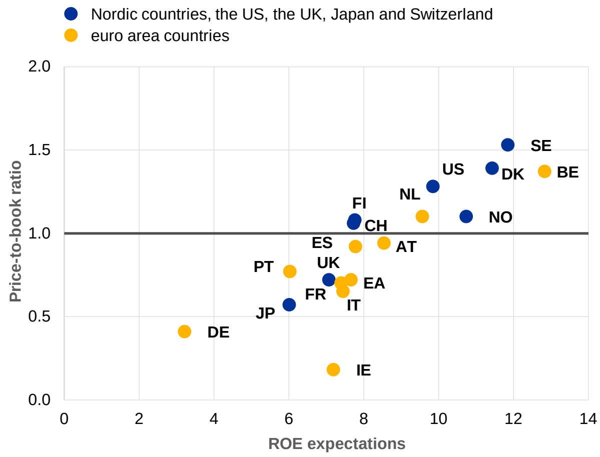
Sources: Thomson Reuters Datastream and ECB calculations.
Note: All indices are in local currency, except the index for the Nordic countries which is denominated in euro. Finland is included in the "Nordic countries" group.

Chart 7

Country dispersion of banks' valuations partly explained by profitability prospects

Twelve-month-ahead return on equity expectations and price-to-book ratio in major advanced economies

(Q1 2017; x-axis: percentages per annum; y-axis: ratio)



Source: Thomson Reuters Datastream.
Notes: The chart shows weighted averages across listed banks included in Thomson Reuters Datastream's country bank indices.

Euro area banks' risk-taking remained broadly unchanged over the past year and no significant signs of excesses can be inferred from their activities. Credit risk exposures in banks' loan books declined in 2016 as indicated by lower probabilities of default across sectors, while the average risk weight was reduced. Banks continued to diversify their loan exposures to other advanced economies and EMEs. Similarly, the home bias in euro area sovereign exposures declined in 2016 and the overall holdings of debt securities of higher credit quality rose. At the same time, banks have become more vulnerable to a swift repricing in bond markets as the average duration of debt securities holdings continued to increase in 2016.

While profitability headwinds stemming from cyclical factors should abate, structural challenges remain and need to be tackled. Subdued bank performance in some euro area jurisdictions is due to below-average operating profits either as a result of low revenue margins (i.e. revenue as a percentage of assets) or high operating costs. These can partly be explained by structural factors, such as high price competition (affecting revenues) or an excessive number of branches relative to population (affecting costs). At a bank level, insufficient diversification of revenues, for instance by activity or geographical region, can also exacerbate structural weaknesses stemming from industry-wide factors. For instance, some banks with more significant fee-generating activities and/or more geographically diversified portfolios can better offset the weaker performance of domestic retail banking operations.

Amid continued challenges to revenue growth, banks are targeting cost-efficiency gains to return to sustainable profitability, but progress to date remains limited. On aggregate, euro area banks' cost-to-income ratio has further deteriorated in recent years and these banks continue to lag well behind most of their global peers in terms of cost-efficiency (see **Chart 8**). In several euro area countries, cost-to-income ratios remain high owing to overcapacity and the high number of bank branches. Further bank consolidation may help to reduce banks' cost bases in these countries.

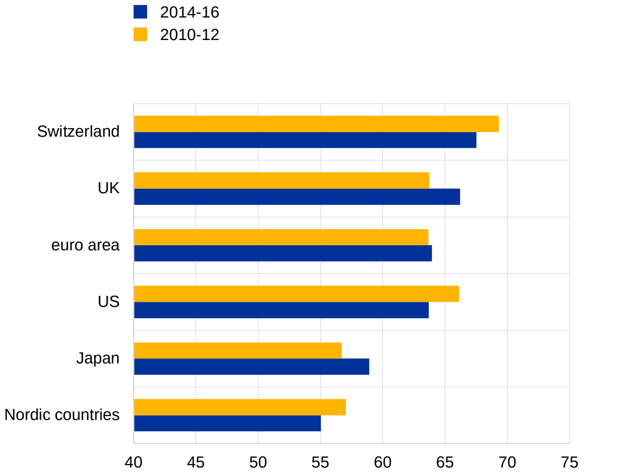
The degree of technological sophistication in banking services may be one of the differentiating factors across countries in terms of cost-efficiency. In countries where the distribution of banking products remains overly reliant on branch networks, a shift towards more use of digital distribution channels could lead to material efficiency gains. That said, banks' efforts to improve efficiency should not solely focus on the cost side; they should also be aligned with strategies to generate additional revenues (e.g. with an increased focus on fee income).

Chart 8

Scope for improvement in euro area banks' cost-efficiency

Cost-to-income ratios across major advanced economies

(2010-12 and 2014-16; percentages, average)



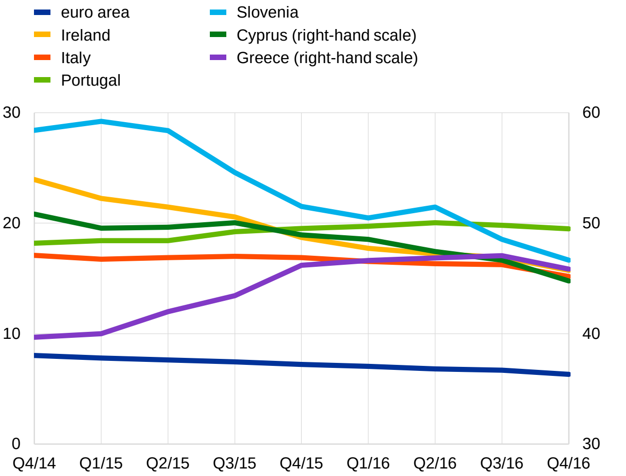
Sources: ECB, Federal Deposit Insurance Corporation, Swiss National Bank and Bank of Japan.
Note: The cost-to-income ratio for the Nordic countries is the average of country-level values for Denmark, Finland and Sweden.

Chart 9

Non-performing loans still remain high in a number of countries despite slight decreases in recent quarters

Non-performing exposure ratios across euro area countries

(Q4 2014 – Q4 2016; percentages, euro area aggregates)



Source: ECB supervisory data.

Progress in reducing the level of NPLs has been slow so far. Despite some improvement in overall asset quality metrics, progress in reducing high NPLs to manageable levels remains insufficient in some countries (see **Chart 9**). NPL ratios declined in most of the "high-NPL countries" in the second half of 2016, reflecting some pick-up in loan write-offs and NPL disposals. In some countries, however, NPL reductions compared with peak levels remain rather limited. Against this background, the recently published ECB guidance on NPLs calls on banks to implement realistic and ambitious strategies for addressing NPL problems.[5] While the guidance does not specify quantitative NPL reduction targets, it asks banks to devise strategies that could include a range of policy options such as NPL workout and portfolio sales.

[5] See "Guidance to banks on non-performing loans", ECB Banking Supervision, March 2017.

In addition to the ECB guidance, a number of policy options to address NPLs have the potential to deal with related market failures and, ultimately, facilitate workout or sale. One of the key preconditions for these options to become successful is the improvement of legal processes governing debt recovery. Amongst these options, which include the establishment of national asset management companies and asset sales with the assistance of an NPL transaction platform, **Special Feature C** highlights the potential role and benefits of several co-investment strategies (between the private sector and the state) for addressing NPLs. The main advantage of these co-investment strategies is that they may, if implemented, enable sales that, owing to the currently elevated bid-ask spreads for NPL portfolios, might otherwise not occur.

The outlook for the insurance sector is also surrounded by uncertainty amid challenges that are similar to those of the banking sector. Improved financial market sentiment helped to lift insurers' stock prices higher over the review period. At the same time, the modest growth and subdued level of interest rates may harbour vulnerabilities for the sector over the medium to long term. In particular, many life insurance companies still guarantee returns on traditional saving policies that are, on average, higher than the yields currently offered by fixed income assets. To alleviate the impact from the low-yield environment, some insurers have been shifting their portfolios towards more risky and higher-yielding assets which, however, makes them vulnerable to widening credit spreads and rating migrations. In certain euro area countries, insurers have started to readjust their business models by, for instance, becoming more active in providing loans (see **Box 7** for an illustration from the Netherlands). While this diversifies insurers' income and borrowers' funding sources, it can also entail risks, if the associated credit risks are not well appreciated and managed and if there are undue externalities, such as on bank margins.

From a policy perspective, the most pressing issue for euro area financial institutions remains the high level of NPLs, which needs to be addressed. The resolution of systemic NPL problems will take time and requires a comprehensive strategy, involving coordination of all relevant stakeholders. Such a comprehensive strategy also includes a large role for microprudential supervision in addressing NPL problems. Work has already started within several task forces which are focusing on the NPL issue from different angles (e.g. micro- and macroprudential). This should yield insights into the design of the best response and the long-term strategy for those banks and banking systems with high NPLs.

Risk 3: Public and private debt sustainability concerns amid a potential repricing in bond markets and political uncertainty in some countries

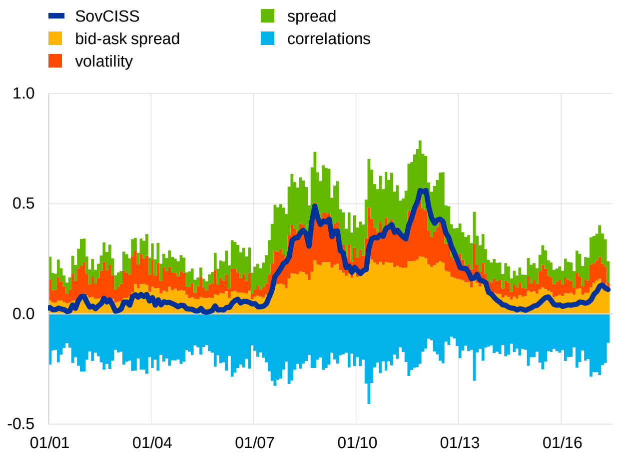
Risks to euro area sovereign debt sustainability have increased over the past six months. The ECB's standard gauge of stress in the euro area sovereign debt markets has overall picked up since November last year (see **Chart 10**). A closer look at the decomposition of this indicator reveals that the increase was driven by higher bond market volatility and somewhat deteriorating market liquidity conditions (the latter measured by bid-ask spreads). More broadly, residual concerns regarding the persistence of the sovereign-bank nexus in some countries and lingering apprehension regarding programme implementation in Greece probably contributed to higher market uncertainty. Uncertainties stemming from the (geo)political sphere (both inside and outside the euro area) also contributed to high sovereign stress conditions over the review period. In recent weeks, however, euro area spreads narrowed and sovereign stress conditions improved somewhat following the result of the presidential election in France. In addition, even though headline yields on euro area sovereign debt have fallen somewhat, this masks the fragility of public finances in a number of countries. Insufficient structural reform and fiscal adjustment efforts in combination with potentially higher long-term interest rates may put pressure on the sustainability of public finances in some countries. At the same time, the euro area economic recovery is gaining momentum and is becoming more broadly based, both in terms of country developments and across sectors. These positive signals notwithstanding, sovereign stress as perceived by the market has, overall, been revised up since the previous FSR published in November 2016.

Chart 10

Sovereign CISS indicator edged up mainly as a result of higher bond market volatility

Composite indicator of systemic stress in sovereign bond markets (SovCISS) and its main components

(Jan. 2001 – May 2017)



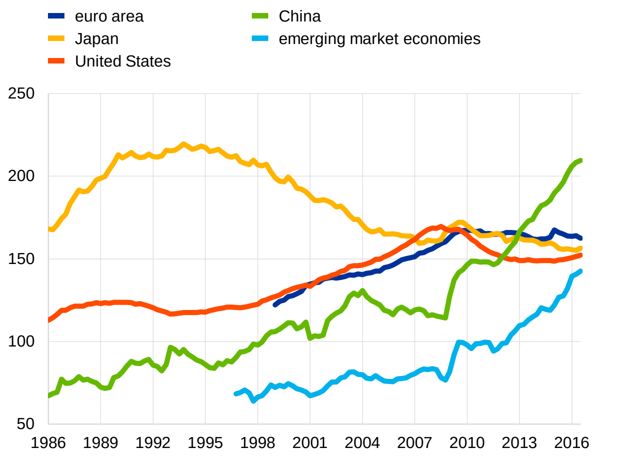
Sources: ECB and ECB calculations.

Chart 11

Euro area non-financial private sector indebtedness is high by international standards

Indebtedness of the non-financial private sector in selected advanced and emerging market economies

(Q1 1986 – Q3 2016; percentages of GDP)



Source: Organisation for Economic Co-operation and Development.
Note: Private debt refers to non-financial private sector debt, i.e. the sum of household and non-financial corporate debt.

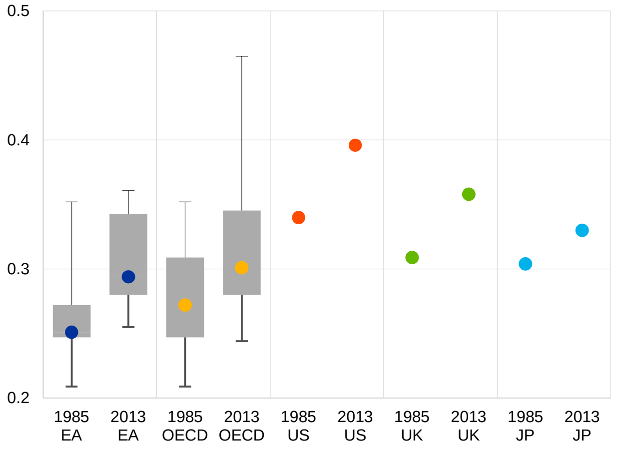
Potential debt sustainability concerns are also a risk for the non-financial private sector. Private sector indebtedness in the euro area remains high by both historical and international standards (see **Chart 11**). Corporate indebtedness has fallen somewhat in recent years, but progress has been slow despite historically low financing costs. Other leverage measures such as debt-to-total asset ratios point to more favourable developments though. In comparison to international developments, indebtedness of the household sector is less of a concern at the aggregate euro area level, although the situation remains highly heterogeneous across euro area countries. Given sectoral interlinkages, a potential intensification of vulnerabilities in one sector could spill over to other sectors and countries, with negative systemic repercussions for the banking system.

Chart 12

Increase in income inequality over the past decades

Gini coefficients for selected advanced economies

(1985 and 2013; annual data, medians; for the euro area and the OECD, maximum, minimum, median and interquartile range)



Source: Organisation for Economic Co-operation and Development.
Note: The Gini coefficient is the most commonly used measure of statistical dispersion representing the income distribution in an economy. It can range between 0 and 1. Increasing values reflect higher levels of income inequality.

Rising political and policy uncertainty may hamper economic growth and increase financing costs via higher risk premia. Taking a longer perspective, several countries across the globe have seen a trend increase in political fragmentation and polarisation in recent decades. One reason for rising political fragmentation is likely to be the increase in economic inequality observed in many economies over the past decades. OECD figures suggest that income distributions in advanced economies have become less equal since the mid-1980s (see **Chart 12**). As incomes became more dispersed, voters' preferences became more diverse, with more polarisation among electorates resulting in increased political fragmentation.

Challenges to debt sustainability are in many ways best addressed by sound macroeconomic policies. Placing debt on a sustainable path would also create space for more effective countercyclical stabilisation policies, while structural reforms would support the growth potential of the economy.

Risk 4: Liquidity risks in the non-bank financial sector with potential spillovers to the broader financial system

Investment funds' search for yield is leaving them more exposed to credit and interest rate risk, amid a rise in liquidity risk. A common pattern observed during the past few years is that some bond funds have shifted their asset allocation from higher to lower-rated debt securities and increased the duration of their portfolios. Since 2009, sector-wide indicators point, in addition, to a decrease in the most-liquid positions of bond funds, including holdings of cash, debt securities issued by euro area governments and short-term instruments (see **Chart 13**). Liquidity and maturity transformation has thus grown among bond funds, while less-liquid portfolios and lower cash holdings have resulted in smaller buffers against large outflows.

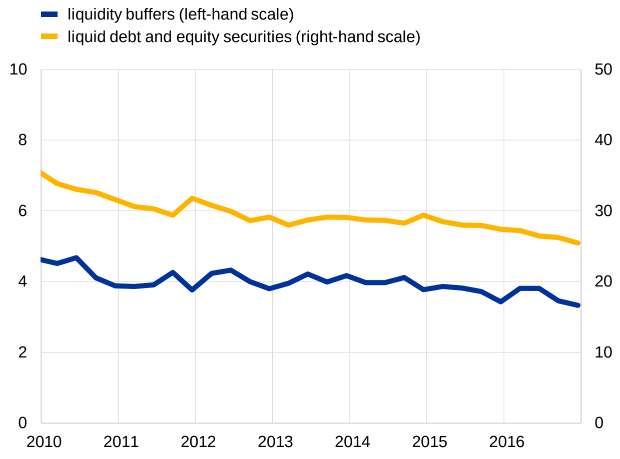
Investor flows into and out of funds tend to change in sync with past returns, thereby giving rise to a mechanism with the potential to amplify shocks in market prices. Using fund-level data, it can be shown that bond fund flows are likely to follow past returns – increasing when returns are higher and vice versa – because investors expect fund performance to persist. The correlation between flows and returns tends to increase during stress periods and in anticipation of market-moving events, as investors position themselves according to the signals they receive from fund returns (see **Chart 14**). Such shifts in correlations indicate procyclicality in investment patterns and may amplify any repricing in global fixed income markets.

Chart 13

Bond funds' liquidity buffers and the share of portfolios held in liquid assets have further declined

Bond funds' cash buffers and liquid assets

(Q1 2010 – Q4 2016; percentages of total assets)



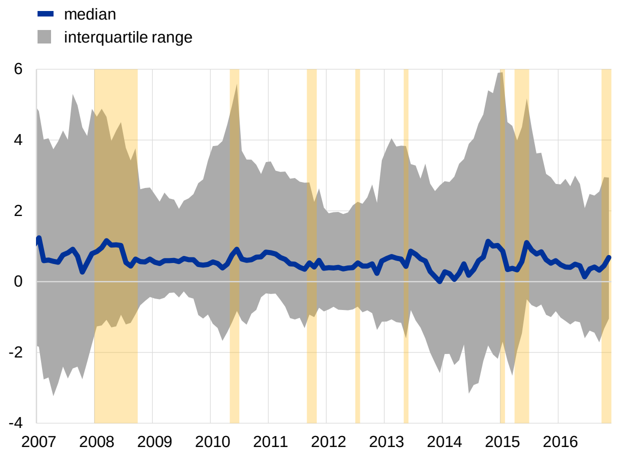
Sources: ECB investment fund statistics and ECB calculations.
Notes: Liquidity buffers include loans and deposits, where the statistical classification does not allow a distinction between loans and deposits. Liquid debt and equity securities include debt securities issued by euro area governments, debt securities issued with an original maturity under one year and equities issued in the EU, Japan and the United States.

Chart 14

Flow-return correlations increase in anticipation of market-moving events, adding to procyclicality

Estimated sensitivities of flows to past returns for euro area bond funds

(Jan. 2007 – Dec. 2016; median coefficient estimates and interquartile range, yellow shaded areas represent periods of high financial stress)



Sources: Lipper IM and ECB calculations.
Notes: Highlighted periods: acceleration of sub-prime crisis/Lehman collapses (Jan.-Sep. 2008); emergence of sovereign debt crisis/start of SMP (May/June 2010); deepening of sovereign debt crisis/Italian bond yields peak (Sep.-Oct. 2011); President's speech (26 July 2012); Fed talks of tapering (22 May 2013); PSPP announcement (22 Jan. 2015); German Bund sell-off (Apr.-May 2015); Greek sovereign crisis re-emerges (June 2015); reversal of yields/US presidential election (Oct./Nov. 2016).
The sample includes all euro area bond funds covered by Lipper IM. Estimated equation for each fund: coefficient estimates (β) for a rolling window of 12 months for each individual fund; $flows_t = \boldsymbol{\alpha_t} + \beta\, returns_{t-1} + \boldsymbol{\varepsilon_t}$,

While the investment fund sector is subject to prudential regulation, most existing rules lack a systemic perspective and may not be well-suited to preventing the build-up of sector-wide risks. Enhanced information on liquidity in stressed circumstances and on leverage (both traditional and synthetic) would be needed to adequately monitor risks as this sector grows and becomes more interconnected.

Policy considerations

The establishment of a sound and robust regulatory framework for financial institutions, markets and infrastructures has continued to be a priority for the ECB. Regarding the banking sector, key initiatives at the European level included the public consultation on the review of the EU macroprudential framework and the legislative proposal on the revision of the Capital Requirements Regulation (CRR) and Directive (CRD). At the international level, the finalisation of the Basel III framework and the review of the policy framework for global systemically important banks (G-SIBs) represented areas of high priority.

The ECB considers the revision of the EU macroprudential framework an opportunity to enhance the consistency of the current regulatory environment and to ensure that macroprudential policy can be conducted in an effective,

efficient and timely manner in the European Union. The establishment of an appropriate institutional and macroprudential policy framework is key to prevent and address imbalances within the EU in general and the euro area in particular. In a similar vein, the comprehensive revision of the CRR/CRD, which aims at completing the reforms implemented in the EU following the financial crisis, is strongly supported by the ECB. As regards international initiatives, the finalisation of the remaining elements of the Basel III framework and the review of the G-SIB framework will contribute to strengthening the resilience of the financial system as a whole, while also substantially reducing regulatory uncertainty.

Further progress has also been made in the revision of the crisis management and resolution framework. The Bank Recovery and Resolution Directive (BRRD), which introduces the minimum requirement for own funds and eligible liabilities (MREL) for all EU credit institutions, has been transposed by all Member States, ensuring that in cases of bank resolution the costs are shouldered by banks' shareholders and creditors, rather than taxpayers. In parallel to the CRR/CRD review, the European Commission also published a legislative proposal on amendments to the BRRD and the Single Resolution Mechanism Regulation with the aim of implementing the total loss-absorbing capacity (TLAC) standard in the European Union, thus contributing to the resolvability of banks and safeguarding financial stability.

Furthermore, the ECB has contributed to a number of initiatives that aim at improving the regulatory framework for the insurance sector, financial markets and financial infrastructures. These include initiatives on the prudential treatment of investment firms and the oversight requirements for systemically important payment systems. Finally, the ECB has been a strong supporter of the capital markets union (CMU) project since its inception. A well-functioning, diversified and deeply integrated capital market could facilitate the transmission of monetary policy in the euro area, contribute to macroeconomic and financial stability, and increase private risk-sharing via cross-border equity investment.