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European Financial Stability and Integration Review (EFSIR)

This document has been prepared by the Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA).

This document is a European Commission staff working document for information purposes. It does not represent an official position of the Commission on this issue, nor does it anticipate such a position. It is informed by the international discussion on financial integration and stability, both among relevant bodies as well as in the academic literature. It presents these topics in a non-technical format that remains accessible to a non-specialist public.

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LIST OF ABBREVIATIONS

Countries

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
GB	Great Britain
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom
US	United States of America

Others

APRC	Annual percentage rate of charge
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BME	Spanish Capital Markets Holding Company
BoE	Bank of England
BoP	Balance of payments
BRRD	Bank Recovery and Resolution Directive
C/I	Cost-to-income
CAPM	Capital asset pricing model
CCD	Consumer Credit Directive
CDS	Credit default swap
CEE11	Bulgaria, Croatia, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and SlovakiaK
CET1	Common Equity Tier 1
CI	Credit institution
CoCo	Contingent convertible
CoE	Cost of equity
CMU	Capital Markets Union
CRD IV	Capital Requirement Directive
CRR	Capital Requirement Regulation
DB	Defined benefit
DGS	Deposit guarantee scheme
DLT	Distributed ledger technology
DSTI	Debt service to income
DTI	Debt to income
EA	Euro area
EBA	European Banking Authority
EBAN	European Business Angel Network
EC	European Commission
ECB	European Central Bank
EDIS	European Deposit Insurance Scheme
EEA	European Economic Area
EFAMA	European Fund and Asset Management Association
EFSI	European Fund for Strategic Investments

EIB	European Investment Bank
EIOPA	European Insurance and Occupational Pensions Authority
EONIA	Euro OverNight Index Average
EPPF	European Personal Pension Framework
ESIS	European Standardised Information Sheet
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
ETF	Exchange-traded fund
EU	European Union
EU-28	European Union - 28 Member States
EUR	Euro
EURIBOR	Euro interbank offered rate
FDI	Foreign direct investment
FinTech	Financial technology
FSR	Financial stability review
FTSE	Financial Times Stock Exchange
G-SII	Global systemically important institutions
G20	Group of 20 major economies
GBP	Great Britain pound
GDP	Gross domestic product
GWP	Gross written premiums
HHI	Herfindahl-Hirschman index
HICP	Harmonised index of consumer prices
HNWI	High net worth individual
IBEX	Madrid stock exchange index
IC	Insurance corporation
ICI	Investment Company Institute
ICT	Information and communication technology
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IORP	Institutions for Occupational Retirement Provision
IOSCO	International Organisation of Securities Commissions
IPO	Initial public offering
JPY	Japanese yen
JRC	Joint Research Centre

LCR	Liquidity coverage ratio
LGD	Loss given default
LIBOR	London interbank offered rate
LP	Limited partner
LR	Leverage ratio
LTI	Loan to income
LTV	Loan to value
M&A	Mergers and acquisitions
MCD	Mortgage Credit Directive
MFI	Monetary financial institution
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
MMF	Money market fund
MREL	Minimum required for own funds and eligible liabilities
MTF	Multilateral trading facility
NFC	Non-financial corporation
NPL	Non-performing loan
OECD	Organisation for Economic Co-operation and Development
OFI	Other financial institution
OIS	Overnight index swap
OPEC	Organization of the Petroleum Exporting Countries
PAYG	Pay-as-you-go
PEPP	Pan-European personal pensions
PP	Private placement
Q3	Third quarter
q-o-q	Quarter-on-quarter
RoE	Return on equity
SAFE	Survey on access to finance of enterprises
SDD	Security and derivative dealers
SECCI	Standard European consumer credit information
SFT	Securities financing transactions
SRB	Single Resolution Board
SNL	Standard & Poor's database
SRF	Single Resolution Fund
SRM	Single Resolution Mechanism

SSM	Single Supervisory Mechanism
STOXX	Dow Jones STOXX index
STS	Simple, transparent and standardised (securitisation)
TFA	Total financial assets
TLAC	Total loss absorbing capacity
UCITS	Undertakings for the collective investment in transferable securities
USD	American dollar
y-o-y	Year-on-year

EXECUTIVE SUMMARY

The annual European Financial Stability and Integration Review (EFSIR) provides an analysis of recent developments in financial markets and the financial sector and their impact on financial stability and integration. The European Commission regularly monitors these developments and analyses the underlying structural drivers in order to assess the effectiveness of existing policy actions and gain insight into the need for future actions in view of emerging risks and opportunities.

The report first describes the recent general developments in financial markets and the financial sector (Chapters 1-3). This is followed by a more in-depth analysis of two particular policy areas that impact European financial stability and integration (Chapters 4-5). In this edition, the first focus chapter reviews the current achievements of the Banking Union and the progress towards its completion. The second focus chapter discusses the EU macro-prudential policy framework. The Banking Union and macro-prudential policy have gone a long way in providing authorities with the tools to reinforce financial stability in the EU. They will remain important policy areas in view of the need to improve risk sharing and reduce risk as part of the long-term vision to deepen the Economic and Monetary Union.

These policies are further developed and implemented in a period in which the European economy has continued to recover, despite remaining economic and political uncertainties. **Chapter 1** argues that the recovery is now well established, with private consumption as the main growth driver, supported by other drivers such as rising employment, favourable exchange rate conditions and low commodity prices. Several factors, including a better regulatory and supervisory framework as well as improved bank funding, seem to have outweighed the concerns at the beginning of 2016 of a global economic slowdown led by the US and China and increased political uncertainty.

Chapter 2 underlines the importance of securing a sustainable and healthy banking sector, as well as the need to diversify the sources of funding to the EU economy. The chapter discusses the challenges banks face to ensure a sufficient level of profitability. The combination of low interest rates, high operational costs and rising competition from non-banks could compress profit margins. This in turn could affect bank stock prices and their cost of capital. Achieving a sustainable banking sector requires banks to adjust to a changing economic and regulatory environment, focusing on diversifying income sources and containing costs. Although financial technology (FinTech) has put pressure on traditional bank business models, it also provides opportunities for banks to reduce costs. The diversification of funding sources is addressed in the ongoing work on the Capital Markets Union, which will nurture more integrated, deeper and liquid financial markets.[1]

Chapter 3 shows that EU capital markets stabilised and grew regardless of occasional volatility outbursts. Share prices rose and corporate bond yields remained low, lifted by the emerging economic recovery. Corporate bond issuance continued to expand. Investors seem to be shifting their portfolio to bonds with longer maturities and higher credit risk in search of

[1] The Capital Markets Union complements the Banking Union and as an umbrella project envisages building deeper and more integrated capital markets and increasing funding sources and investment opportunities. It will also help make the financial system more resilient and lower the cost of funding.

higher yields. Equity issues of banks shrank given that banks have largely completed strengthening their balance sheets. The latest data for alternative funding, like private equity, business angels, and crowdfunding, also showed good performance of these market segments.

Chapter 4 presents the various existing and proposed parts of the Banking Union and discusses the progress towards its completion. The measures currently in place, such as increased capital requirements and common frameworks for supervisions and resolution, have boosted financial stability with stronger balance sheets for banks and a common application of rules. Completion of the Banking Union is an ongoing project. In June 2016, EU finance ministers delivered a road map that laid out further guidelines for completing the Banking Union. To this end, the Commission delivered a comprehensive bank reform package in November 2016 to tackle remaining weaknesses, by strengthening the loss absorbency of EU banks and facilitate their resolution in case of risk of failure. The measures envisage both increased risk reduction and risk sharing and the new features try to find the right balance between these two objectives.

The chapter also attempts to gauge any progress on the overall objective of Banking Union, i.e. to break the link between banks and sovereigns. It is difficult to isolate the effects of Banking Union from other relevant factors, notably post-crisis risk aversion and the policy actions of the European Central Bank (ECB). The analysis shows there are signs that the links between sovereigns and banks have been weakened, while these links persist. It is therefore necessary to move forward to complete the Banking Union as a means to break links between banks and sovereigns.

Chapter 5 provides a perspective on how macro-prudential policies in the EU complement other economic policy measures seeking to dampen financial cycles. These financial cycles, the movements in credit and asset prices, which have been shown to be distinct from traditional business cycles, have been a source of banking crises. The chapter shows that developments in the housing market are of particular importance for macro-prudential policies. For instance, high home ownership rates and strong growth in mortgage credit can be linked to strong feedback loops between the housing market, the financial system, and the real economy.

Understanding the drivers of developments in real estate markets is key to designing an appropriate policy response. Many structural characteristics linked to the housing market, including home ownership rates and mortgage characteristics, vary profoundly across Member States and are at the centre of social, fiscal and income policies. The macro-prudential policy can therefore not be set in isolation, as it is just one of numerous interacting policies contributing to the sustainability of the financial system. In the context of a robust European coordination and oversight framework, it also follows that it is essential to take into account specific national characteristics to prevent spill-overs and ensure the good functioning of the single market. As such, the macro-prudential policy framework will need to be permanently assessed and improved so that it can respond to continuously changing financial structures in the EU.

Chapter 1 MACRO-ECONOMIC AND FINANCIAL DEVELOPMENTS

In 2016, the European economy continued to recover in a challenging economic environment with increased political uncertainty. Favourable exchange rate conditions, low commodity prices, accommodative monetary policy, and supporting endogenous factors, such as improving labour markets, underpinned this recovery. The ECB announced additional expansionary measures in March 2016, further easing the funding conditions for non-financial corporations (NFCs).

In terms of funding, the funding mix not only differs between NFCs, households and the government sector, but also shows significant intra-sector variation across countries. NFCs are mainly financed through equity (representing 50% of firms' liabilities), while households (including non-incorporated businesses) rely mainly on bank loans (representing 76% of their liabilities). Net access to new funding has recovered since 2015, especially in the case of bank loans. Governments are still significantly exposed to bond markets given that bonds, on average, make up 70% of their liabilities.

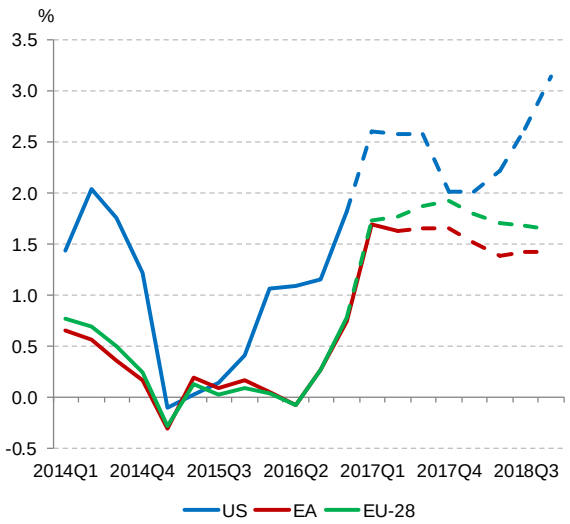
Reflecting gradually rising current account surpluses, net capital inflows continued moderating in 2016, and eventually switched to net outflows. The ECB bond-buying programme may have resulted in lowering the holdings by foreign residents of EU debt securities. Foreign direct investments (FDI), followed by bank-related flows, are the most stable sources of foreign capital for EU Member States.

1.1 Macro-economic and financial developments

1.1.1 Macro-economic developments

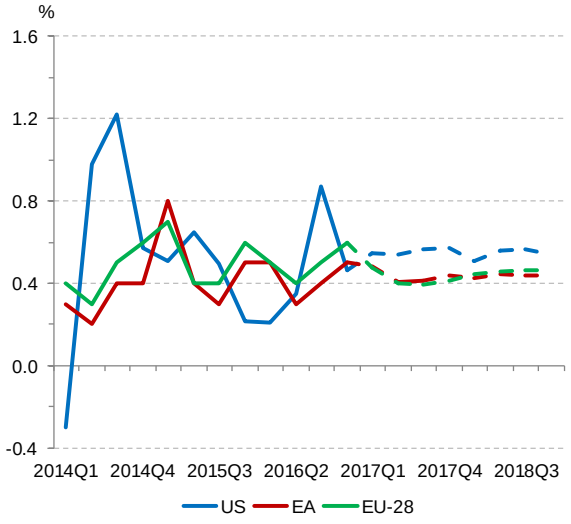
Against a challenging political and financial background, the European economy continued to recover in 2016. Recovery was supported by relatively low commodity prices, a favourable euro exchange rate, a continued accommodative monetary policy, and improving labour market conditions.

Chart 1.1: Real GDP growth, quarter-on quarter



Source: European Commission
Note: Actual data (2014-2016) and forecast (2017-2018)

Chart 1.2: HICP inflation, year-on-year



Source: European Commission
Note: Actual data (2014-2016) and forecast (2017-2018)

Economic activity in the EU had a relatively strong start in 2016, with first quarter GDP growing by 0.5% quarter-on-quarter (q-o-q) in both the euro area and in the EU[2]. This was driven by expanding private consumption and investment. The pace of activity slowed somewhat in the second quarter (0.3% q-o-q in the euro area; 0.4% q-o-q in the EU), amid slowing investment. There was a steady increase in the pace of economic growth in the second half of the year, despite increased political uncertainty.

The recovery in the EU economy is expected to continue at a largely steady pace in 2017, with annual GDP growth projected at 1.7% in the euro area and 1.9% in the EU).[3] In 2016, private consumption, the main driver of growth in recent years, expanded at its fastest pace in 10 years. However, consumption growth is set to moderate this year as inflation partly erodes gains in the purchasing power of households. Investment is expected to increase fairly steadily, but remains hampered by the modest growth outlook, and the need for further deleveraging in some sectors. A number of factors support a gradual pick-up in investments, such as rising capacity utilisation rates, corporate profitability, attractive financing conditions, but also through the Investment Plan for Europe.

The labour market in the EU and euro area has continued to recover during 2016 and early 2017, with net employment increasing and unemployment declining.[4] These developments were supported by the ongoing economic expansion, modest wage growth and structural reforms in several Member States. However, despite this recovery, which started in mid-2013, unemployment at the aggregate level has not yet returned to pre-crisis levels. Although cross-country differences are declining, unemployment remains unacceptably high in several Member States.

Inflation in the EU and euro area was very subdued in the first two quarters of 2016, but picked up during the second half of the year. The trend in inflation was a consequence of developments in energy prices, which first continued to be low but then picked up in the second half of 2016. Core inflation has remained subdued, without a clear upward trend yet; this is consistent with the remaining slack in labour markets and the effects of structural reforms implemented in some Member States.[5]

Outside of the EU, GDP growth slowed in the first half of 2016 before recovering in the second half of the year. After the initial weakness, global activity gained momentum in the third quarter of 2016, registering 0.9% q-o-q growth, the fastest in two years. In the final quarter of the year, global GDP grew by 0.7% q-o-q. The annual growth rate for the global economy (ex-EU-28) was just 3.0% in 2016, which was the weakest since 2009. The pick-up in global economic activity in the second half of 2016 should be seen against the background of the G20 commitment to use all economic policy tools available, i.e. monetary, fiscal and structural, to strengthen growth, investment and financial stability. Global growth is projected

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2 In this case EU growth excludes Ireland. In 2015-16, there was a statistical re-classification of some activities in Ireland. Despite the relatively small weight of Irish GDP in the euro-area and EU aggregates, the size of the changes makes developments in Ireland a key determinant of aggregate figures.

3 See European Commission Spring Forecast 2017.

4 By February 2017, the unemployment rate had fallen to 9.5% of the labour force in the euro area and 8.0% in the EU, the lowest levels since May 2009 and January 2009, respectively. This compares to pre-crisis levels of 7.5% in the euro area and 7% in the EU in 2008.

5 In 2016, the harmonised index of consumer prices (HICP) in the euro area increased by 1.1% and in the EU by 1.2%.

to pick up further in 2017, but the outlook is surrounded by considerable geopolitical uncertainty in both advanced and emerging market economies. Globally, inflation seems to be picking up, supported by the rebound of energy prices and the strengthening pace in global growth.

Economic activity in the US disappointed in the first half of 2016, as a drawn-out inventory correction coincided with a prolonged weakness in investment in the energy and manufacturing sectors. However, in the third quarter, GDP growth recovered due to a rebound in inventory investment and was followed by a 0.5% GDP growth rate in the fourth quarter. Meanwhile, growth in emerging markets seems to have bottomed out at the end of 2015, early 2016. It recovered gradually in 2016, supported in particular by a turnaround in commodity prices.[6] However, growth rates differed across countries and regions. At the end of 2016, downside risks to growth in the emerging markets increased due to uncertainties about US economic policy and the possible impact through trade and financial channels.

1.1.2 Monetary policy developments in the EU

Accommodative monetary policies from all the major central banks have continued to support economic activity and ensured price stability at the global level. In the euro area, the ECB announced additional expansionary measures in March 2016 to further ease funding conditions for the non-financial private sector. The ECB lowered its major policy rates, increased the amount of monthly purchases under the ongoing asset purchase programme and broadened the range of purchasable securities to include euro-denominated investment-grade non-bank corporate bonds.[7] Furthermore, four new quarterly targeted longer-term refinancing operations with a maturity of 4 years were announced. During the remainder of the year, the ECB did not change its monetary policy stance. However, at its December 2016 meeting, the Governing Council announced a reduction of its asset purchase programme to EUR 60 billion per month from April 2017 onwards. The ECB did, though, specify that the size and duration of the programme could be expanded again, should the outlook become less favourable, or if financial conditions became inconsistent with further progress towards a sustained adjustment to inflation.

Monetary policies remained accommodative in most non-euro EU Member States, with central banks in Hungary and Sweden undertaking additional expansionary measures. Despite inflation and inflation expectations moving up somewhat, monetary policy has remained supportive in the early months of 2017. Following the outcome of the UK referendum on EU membership, the Bank of England immediately eased its macro-prudential policy stance by reducing the countercyclical capital buffer that banks have to hold. Further, in August, it announced a package of easing monetary measures, lowering the policy rate by 25 basis points (bps) to 0.25% for the first time since 2009. The Bank of England also expanded its quantitative easing by purchasing an additional GBP 10 billion of corporate bonds and GBP 60 billion of government bonds and introducing a new Term Funding Scheme aimed at

[6] Oil prices bottomed out early 2016, rebounded strongly in spring and have trended slightly upwards since as the oil market tried to find an equilibrium price. Continued supply overhang and slower growth in oil demand weighed on prices, but the OPEC agreement on limiting oil production and increasing market confidence that the agreement would be respected put a floor under the oil price.

[7] The ECB lowered the interest rate on its deposit facility (by 10 bps to -0.40% after lowering it to 0.30% in December 2015), main refinancing operations (by 5 bps to 0%), and its marginal lending facility (to 0.25%).

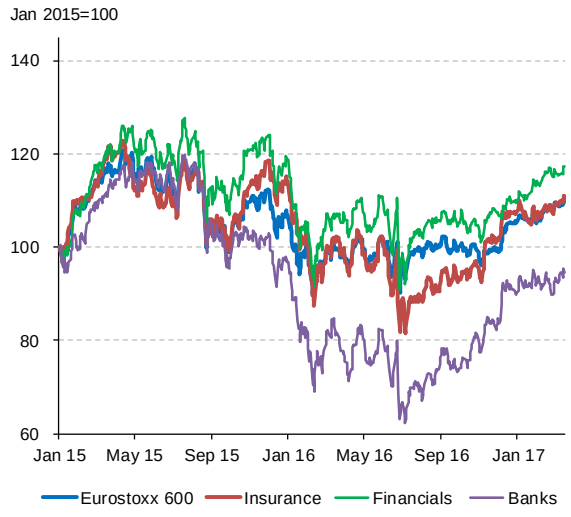
providing cheap financing to banks. At the end of the year, the Bank of England's Monetary Policy Committee maintained its policy rate at 0.25%, and decided to continue its previously announced asset purchases for monetary policy purposes, while both headline and core inflation reached 1.6%.

Monetary policy divergence between the euro area and the US has increased further. After its first rate hike in 9 years at the end of 2015, the US Federal Reserve (Fed) kept its monetary stance on hold throughout most of 2016. However, in December, the Fed raised its target range for the policy rate by another 25 bps to 0.50%-0.75%, a hike largely priced in by financial markets. In March 2017, the US Federal Reserve subsequently increased the target range for its policy rate by an additional 25 bps.

1.1.3 Financial-market developments

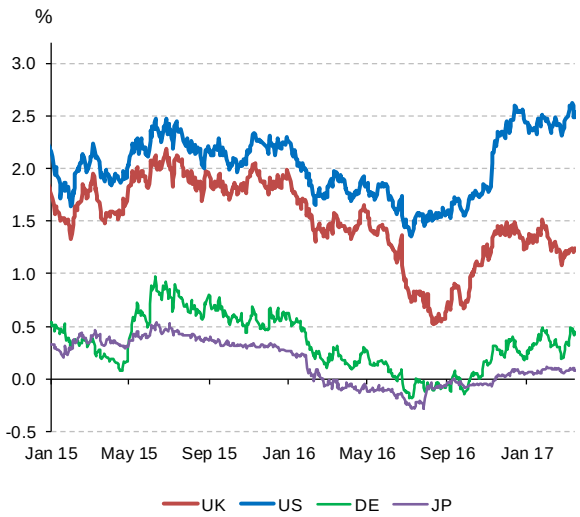
In recent years, global and EU financial markets have witnessed a number of sharp asset price corrections, which in hindsight have turned out to be short-lived. In early 2016, global financial markets experienced strong headwinds as investors became increasingly risk-averse amid rising concerns of a global economic slowdown led by the US and China. In addition, there were concerns about the potential adverse impact of very low interest rates on banks' profits, particularly in the euro area and Japan. In equity markets, the financial segment significantly underperformed the broader indices (see Chart 1.3). Meanwhile, high-grade sovereign bonds served as safe-haven assets, and yields fell close to historically low levels (see Chart 1.4). However, renewed concerns about the links between banks and sovereigns created upward pressure on bond spreads in the euro-area periphery.

Chart 1.3: Share prices by financial sector, Europe



Source: Bloomberg

Chart 1.4: Benchmark 10-year government bond yields



Source: Bloomberg

Financial-market sentiment turned positive in February 2016, amid expectations that monetary policies in some regions (notably the EU) could become even more accommodative as the economic outlook for emerging markets improved. While stock markets recovered globally, euro-area indices — especially relating to bank shares — continued to underperform. The announcement by the ECB to include investment-grade non-bank corporate bonds in its asset purchase programme led to a narrowing of corporate bond spreads

and supported corporate bond issuance. In general, sovereign bond spreads tightened, but spreads remained higher in the euro-area periphery because of disappointing figures on the public deficit and/or economic growth. The outcomes of the UK referendum on EU membership in June and the US presidential election in November took financial markets by surprise but in each case, they recovered rapidly (see Box 1).

Box 1: Financial-market reaction to the UK referendum and US presidential elections

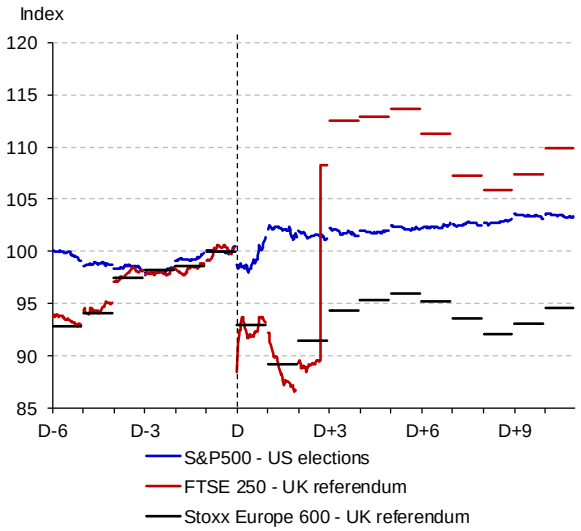
The UK voted to leave the EU in June 2016, while Donald Trump was unexpectedly elected as US president in November 2016. These outcomes were not predicted in the polls and surprised financial markets. This box summarises and compares the immediate financial market reaction to the two outcomes, focusing on three market segments: equities, sovereign bonds and currencies. Overall, it would seem that the outcome of the UK referendum shocked markets more, generating volatility to a larger extent and for a longer period.

On the day following the UK referendum, EU equity markets opened with heavy losses of around 10% and remained consistently lower for several days. However, the size of the fall should be seen in the light of accumulated gains during several days before the referendum, as markets expected a vote in favour of the UK remaining in the EU. The UK's FTSE (which is dominated by export-oriented companies) recovered sharply after two days due to the depreciation of the GBP, but continental indices remained depressed for longer. This would suggest that investors in the UK reacted to a short-term improvement in competitiveness while ignoring the more medium-term implications of Brexit.

Equity indices declined only moderately following the outcome of the US presidential election and bounced back within hours. Market sentiment continued to improve in the following days and weeks, as investors assessed earlier statements by the president-elect on tax cuts and higher infrastructure spending. Equity indices in the EU followed suit, with gains across the board and particularly in the financial sector. Expectations of de-regulation and a steepening yield curve were deemed to be positive for the financial sector in general and for EU banks in particular. This contrasts with the very negative price developments in EU bank equities after the UK referendum.

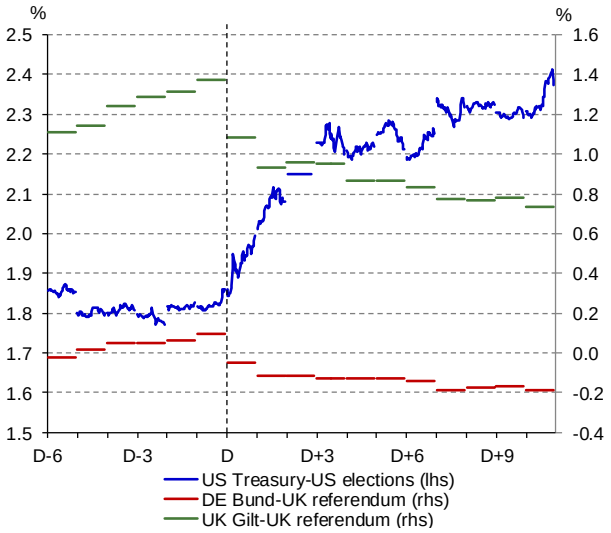
Sovereign bond markets have also seen different patterns in response to the outcomes of the two votes. The UK

Chart B1.1: Reaction of stock markets



Source: Bloomberg
Note: Intraday quotes, index 100 = Day of the results

Chart B1.2: Reaction of government bonds (10-year maturity)



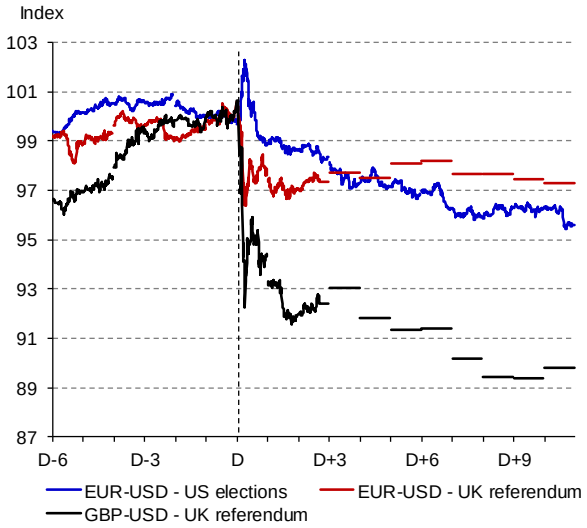
Source: Bloomberg
Note: Intraday quotes, index 100 = Day of the results

referendum triggered a massive flight to safety, with benchmark sovereign bonds benefitting from safe-haven inflows. Long-term yields fell in the US, Germany, Japan and the UK, despite warnings by credit agencies of a possible downgrade. Conversely, spreads in the vulnerable euro-area Member States widened for several days before trends were reversed on mounting expectations of more action from the ECB. In contrast, the most notable market fallout from the US election was a sharp spike in sovereign long-term yields, which began with the US Treasuries and spilled over across global markets. Such market re-pricing suggests that investors expected the massive infrastructure spending and lower taxes proposed by President Trump to enhance growth, but increase the US fiscal deficit and inflation.

Currency markets reacted swiftly and abruptly to the news of the outcome of the UK referendum. The GBP was hardest hit, but the euro also weakened against the USD and the JPY. These market developments suggest that market participants became worried about the UK's current account deficit when outside the EU, while viewing Brexit as also negative for the euro area.

The euro also fell after the US presidential election, as investors turned more positive on the US economy and expected a combination of more expansionary fiscal and tighter monetary policy. In particular, an expected further widening of monetary policy divergence between the US and the euro area contributed to the depreciation of the euro against the USD.

Chart B1.3: Reaction of currency markets



Source: Bloomberg

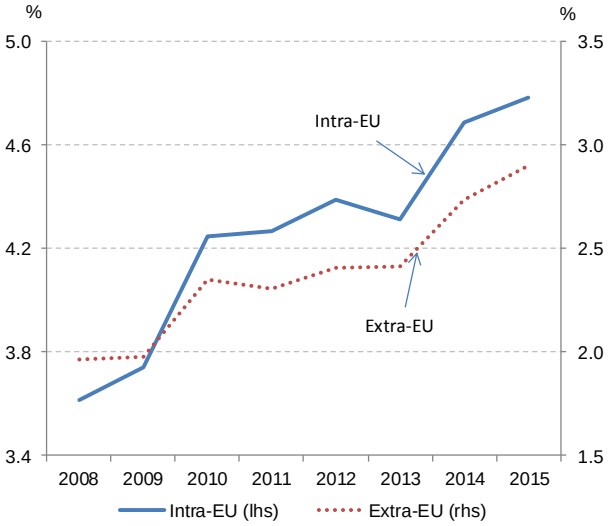
In autumn, global financial markets recovered, driven by improving macro-economic data and a pick-up in inflation. Global government bond yields rose significantly, albeit remaining low overall, while most equity markets yielded positive returns. Bank shares outperformed the broad market, thanks to the steepening of the yield curve. After the volatility surrounding the US elections, markets have started to embrace a new paradigm of stronger growth, higher inflation, and higher natural interest rates.

In the EU, market perceptions of an improving economic outlook, sustained ECB asset purchases, and the expected tailwind from the US have lifted government bond yields and pushed equity markets higher in 2017. Euro-area sovereign bond spreads widened somewhat on account of heightened perceived political risks in some euro-area countries. This led to a moderately widening of spreads to the German bund for most euro-area countries. However, despite the recent rise in bond yields, almost EUR 4 trillion of euro-area sovereign bonds trade at negative yields. Euro-area corporate bond spreads versus German bunds have picked up, as a consequence of supply pressures and softer investor demand, despite the ECB's ongoing purchases. The widening of spreads was more pronounced in the high-yield (lower grade) segment.

1.2 International capital flows and trade in financial services

The dynamics of gross and net capital flows reflects the extent of interlinkages between the economic and financial sectors across countries. After a period of rapid international financial interlinkages before the financial crisis in 2008-2009, the post-crisis period has been characterised by more subdued international capital flows and in some cases by diverging economic and financial trends. The effect of reduced integration in terms of financial stability is ambiguous, as declining capital flows simultaneously reduce contagion risk and opportunities for international risk sharing and diversification.

Chart 1.5: European and international financial integration, 2008-2015,% of GDP



Source: Eurostat BoP Quarterly Statistics and National Accounts
Note: International financial integration is measured by the sum of gross external assets and liabilities divided by GDP at current market prices, excluding reserves and financial derivatives.

Overall, global net capital flows continued to moderate in 2016 and turned negative (with outflows exceeding inflows) for most of the major world regions including the EU. Capital outflows from emerging markets seem to have levelled off in 2016, although a change in the policy mix in major advanced economies may trigger further adjustments in 2017. In the last quarter of 2016, EU capital outflows to third countries are expected to have accelerated.

The EU's current account surplus is mostly driven by trade in goods and services. Trade in financial services with third countries continued to show a surplus in 2016, although the surplus declined compared to a very strong outcome in 2015.

In terms of composition, FDI continues to be the most stable source of foreign capital for EU Member States followed by bank-related flows. The net portfolio investment position of the EU with third countries showed net outflows instead of net inflows, possibly owing to the ECB bond-buying program. This net outflows position constitutes a major shift in 2016 given that previously net outflows were only recorded in 2012-2013 during the sovereign debt crisis.

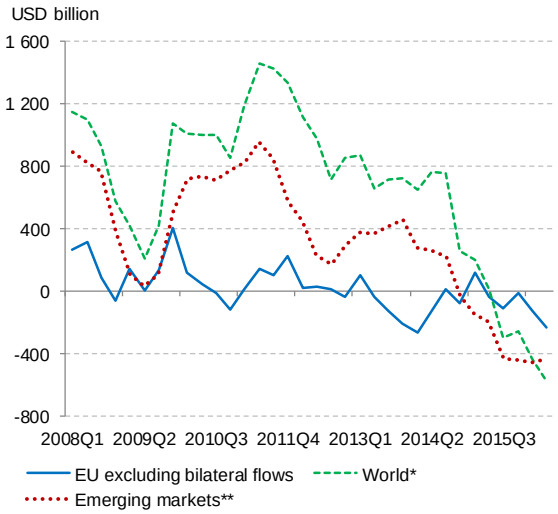
1.2.1 Financial claims and gross external positions

The financial claims of an economic area or country can be measured by the sum of the holdings that domestic residents have of financial claims on the rest of the world and the claims of non-residents on the domestic economy scaled by GDP at current market prices.[8] Using this measure, EU financial claims both between the EU Member States and between the EU and the rest of the world continued to progress in 2015. Financial claims within the EU

[8] See Lane and Milesi-Ferretti (2003).

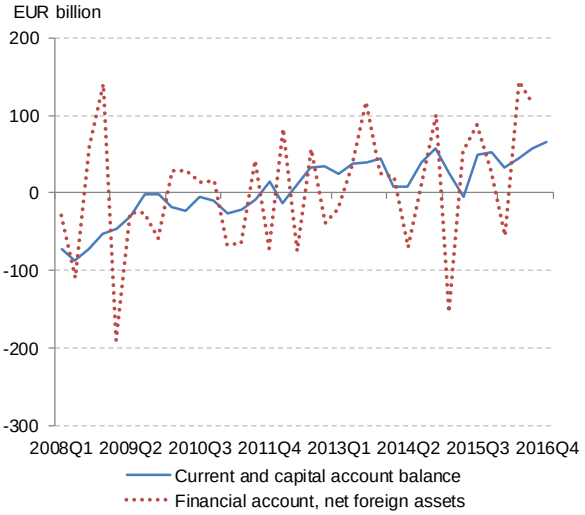
are still much higher than towards the rest of the world, although in 2015 growth in extra-EU foreign assets and liabilities was faster than growth in intra-EU foreign assets and liabilities.

Chart 1.6: Net capital flows by world regions, rolling 4-quarter sums



Source: IMF and Eurostat BoP Statistics
Note: Excluding reserves and related items, EU — excluding reserves, financial derivatives and bilateral intra-EU flows.

Chart 1.7: EU balance of payments with non-EU countries



Source: Eurostat quarterly BoP Statistics
Note: Excluding intra-EU flows; Net foreign assets, excluding reserves and financial derivatives. Current and capital account balance: (+)/(-) indicates a surplus or net lending/deficit or net borrowing; Financial account: (+) indicates capital outflows, (-) indicates capital inflows.

1.2.2. Net current and financial accounts

Global developments

Against the backdrop of a gradual normalisation of monetary policy in the US, a subdued global economic recovery, and political uncertainty, global net capital flows moderated further in 2015 and in the first three quarters of 2016 (see Chart 1.6).[9] After receiving record-high capital inflows in the post-crisis period, emerging markets have been experiencing net capital outflows since 2014.[10] These were triggered by the normalisation of monetary policy conditions in the US and declining growth differentials.

EU net current and financial accounts with non-member countries

EU net capital flows with third countries turned negative at the beginning of 2015 and continued to decline in 2016.

In 2016, the current account of the EU recorded a surplus of EUR 217 billion, compared with EUR 167 billion in 2015 (see Chart 1.7). The increase in the current account surplus of the EU is mainly explained by the surplus maintained by the euro area, which is expected to have

[9] *Global* flows are approximated by a sample of 77 countries including both advanced and emerging economies as well the EU excluding EU bilateral flows between Member States (i.e. EU flows with the rest of the world only). *Net* capital flows are defined as gross inflows minus gross outflows. *Gross capital inflows* are defined as net changes in domestic resident liabilities to non-residents. *Gross capital outflows* are defined as net changes in foreign assets owned by domestic residents, excluding reserves.

[10] Approximated by a sample of 56 emerging market economies including, 14 EU Member States. For more details and the sample see: Recent experiences in managing capital flows. IMF, 2015, Annex I.

increased to EUR 365 billion in 2016, up from EUR 319 billion in 2015. The EU current account surplus has increased in every quarter since the second quarter of 2016.

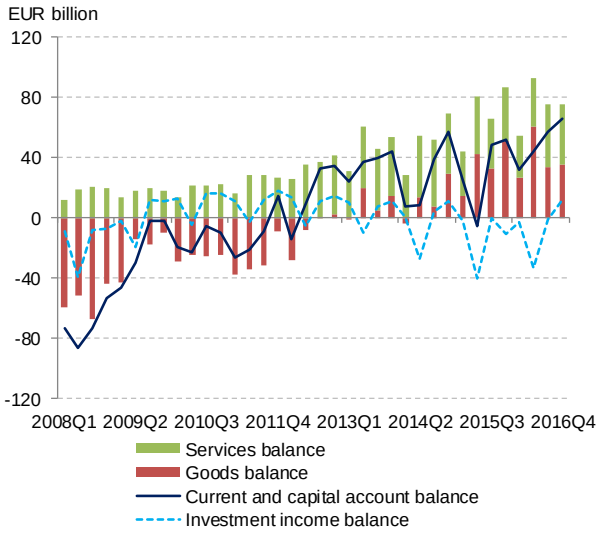
The financial account, which shows how the current and capital account are financed, has been much more volatile and recorded capital outflows in the second and third quarters of 2016.

1.2.3. Composition of the current and financial accounts

The EU's current account surplus with third countries is mainly a result of trade in goods and services, while the share of net earnings from foreign assets and liabilities is relatively small (see Chart 1.8). Since 2015, the investment income balance has mostly been negative, as the income earned from assets in third countries was lower than the return paid to non-residents for liabilities in the EU.

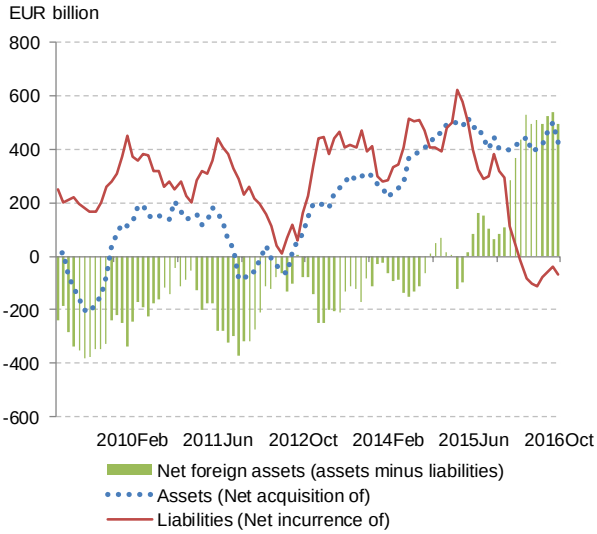
In the financial account, the net acquisition of foreign securities by EU residents (capital outflows) exceeded the net incurrence of liabilities (capital inflows) during the first half of 2016.

Chart 1.8: Composition of the EU current account surplus with non-EU countries



Source: Eurostat quarterly BoP Statistics
Note: Excluding intra-EU flows.

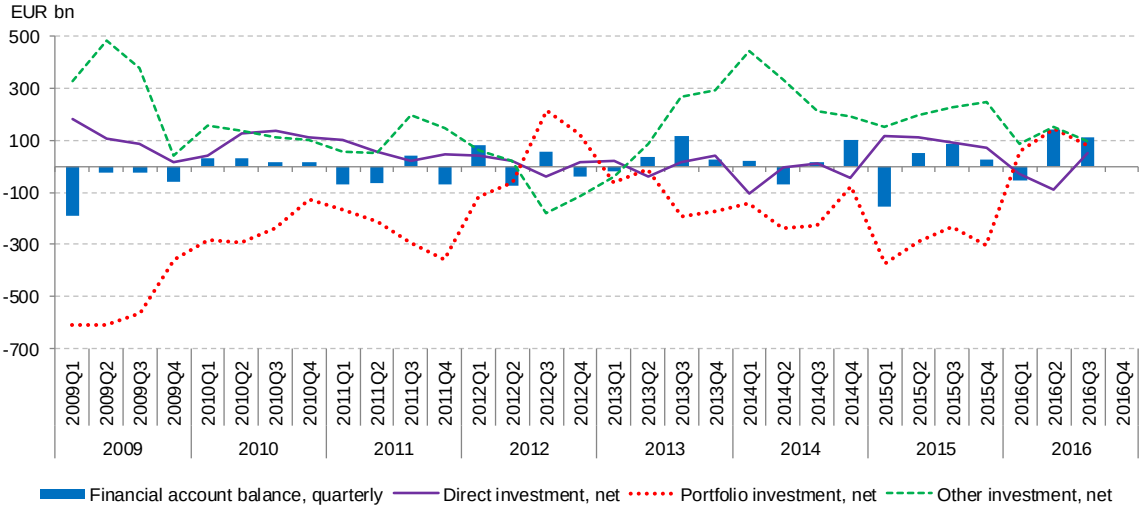
Chart 1.9: Euro-area portfolio investment flows with non-euro area, rolling 12-month sums



Source: ECB balance of payments monthly statistics

Remarkably, portfolio investment outflows exceeded inflows in the second and third quarter of 2016 because of a decline in euro-area portfolio investment inflows (liabilities) relative to broadly unchanged outflows (see Chart 1.9). Such a positive net EU portfolio investment position only occurred very rarely in the past (i.e. during the sovereign debt crisis in 2012). This outcome can partly be attributed to the disinvestment (sales) by non-residents of their holdings of EU securities in relation to the extended ECB's bond purchasing programme.

Chart 1.10: EU financial account transactions with non-EU countries, cumulated four-quarters



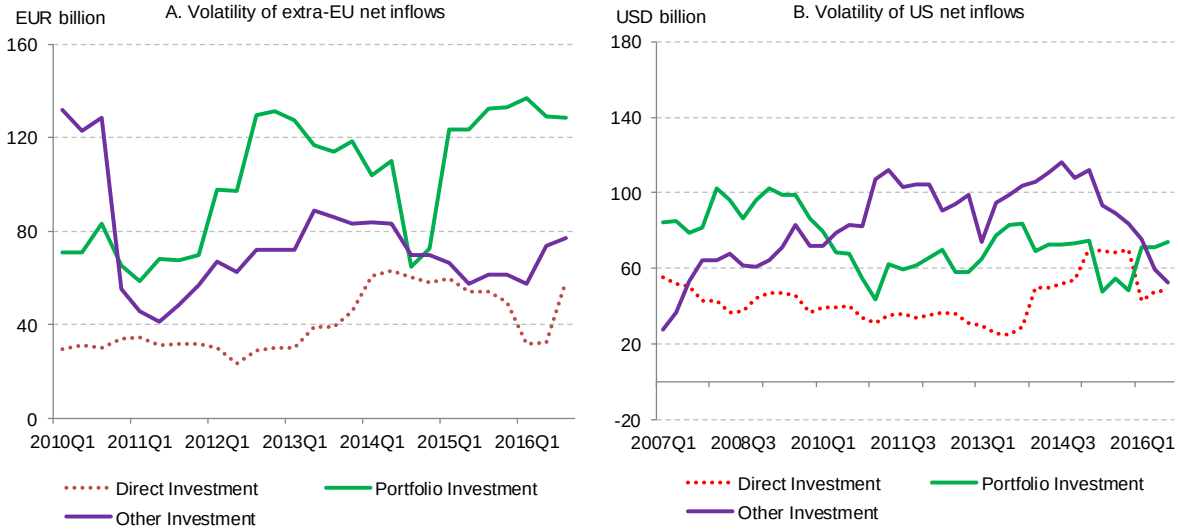
Source: Eurostat BoP Statistics
Note: excluding bilateral intra-EU flows. Positive figures indicate outflows (an increase of foreign assets), negative figures indicate inflows (an increase in the incurrence of liabilities).

Another significant development was the increase in the disinvestment by non-EU residents of their FDI in the EU. Based on preliminary data, extra-EU disinvestment accelerated in the last two quarters of 2016, and it remains to be seen whether this was a temporary development linked to merger and acquisitions (M&A) activities or a more permanent shift.

1.2.4. Volatility of capital flows

The impact of international capital flows on financial integration and financial stability depends not only on the volume of capital flows but also on their volatility. Chart 1.11 illustrates the volatility of net capital inflows in the US and in the EU by their main components.

Chart 1.11: Volatility of capital flows for the EU and the US



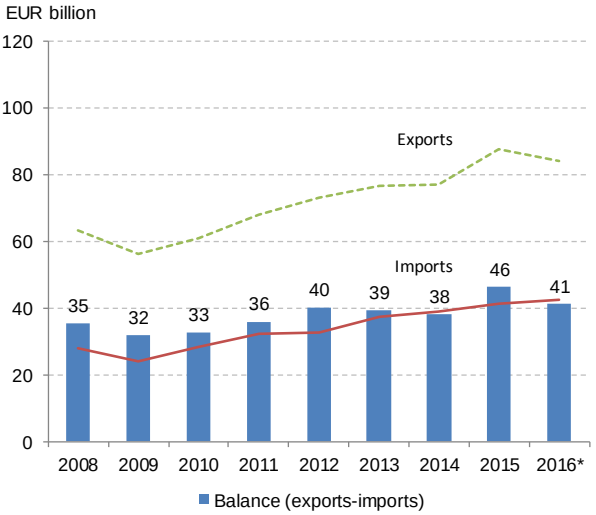
Source: Eurostat quarterly BoP statistics and IMF BoP statistics
Note: Excluding bilateral intra-EU flows; Net capital flows are defined as the net increases in the liabilities of the country or groups of countries in a given instrument, that is, all increases in the liabilities (inflows) in an instrument netted against all increases in the assets (outflows) of the same instrument. Volatility is calculated as the standard deviation of capital flows.

Foreign direct investment remained the most stable component of capital flows both in the EU and the US over the period 2010 to the third quarter of 2016. Regarding EU net inflows from third countries, portfolio investment has been the most volatile component since the beginning of 2011. Towards the end of the reporting period its volatility became almost twice as high as that of the other two components of capital flows. The volatility of other EU investment, which mainly consists of bank-related flows, declined sharply in mid-2010, most likely as a result of the extension of the first financial assistance programmes for euro-area Member States. In contrast, other investment flows were the most volatile component of US capital flows between 2011 and 2015. Overall, EU capital flows to third countries seem to have been more volatile than those of the US, mostly due to portfolio investment.

1.2.5. Trade in financial services

Since 2008, the EU has consistently generated trade surpluses in financial services. In 2015, exports of financial services exceeded imports by almost EUR 46 billion and in 2016 by EUR 41 billion (see Chart 1.13).[11] The UK share of the EU trade surplus in financial services with third countries is around 70%. In 2015, exports to countries outside the EU were up by more than 13%, while imports from countries outside the EU grew more moderately by 6%. Exports to third countries, in particular to the US (2.5%), and offshore financial centres (1.9%), grew the fastest in 2015.

Chart 1.13: Trade in financial services with non-EU countries



Source: Eurostat, quarterly BoP statistics
Note: *2016 is a sum of the last 4 quarters up to Q3 2016.

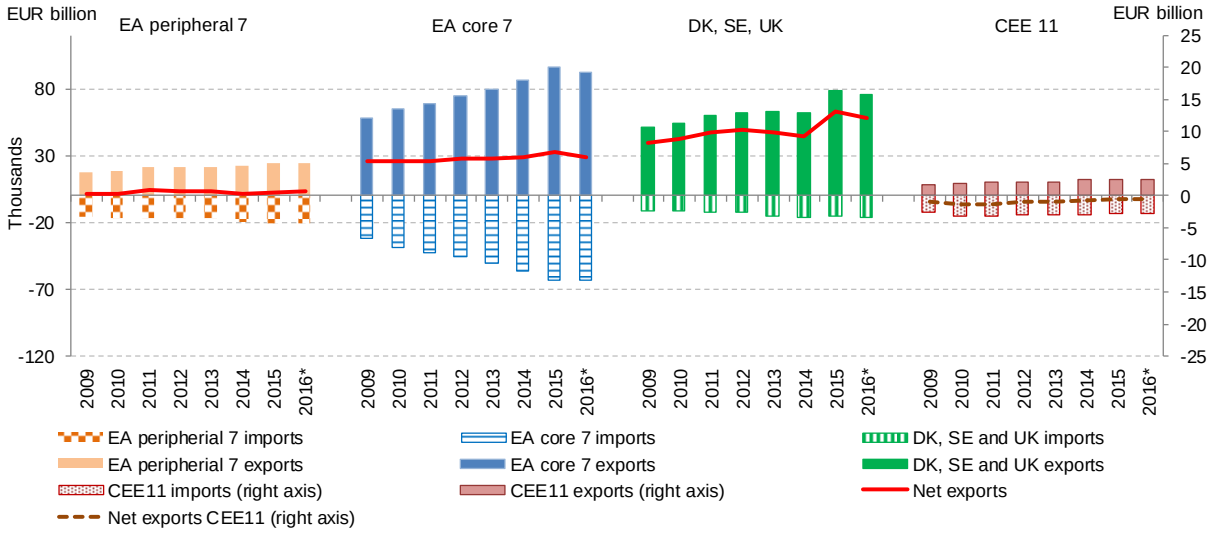
In 2016 year-to-date, the surplus in trade in financial services declined slightly (down by almost EUR 5 billion). This decline was due to falling exports to all major trading partners and especially for those trading partners whose exports grew the fastest in the previous year. The sharpest reversals were registered with the US (-1.6%), Japan (-0.74%) and Switzerland (-0.64%).

Intra-EU trade in financial services showed uneven patterns across different groups of Member States (see Chart 1.14). All groups of Member States had surpluses in trade in financial services between in 2009 and 2016, except CEE11.[12] Exports of financial services declined the most in Denmark, Sweden and the UK. Almost the entire decline in EU-28 exports in 2016 was due to these three Member States. Imports remained almost flat in 2015-2016 across all Member States. Developments in CEE11 countries sometimes diverge from those other EU countries. The deficit of CEE11 in trade in financial services has been on a

[11] Data for 2016 is up to Q3 on a rolling four-quarter basis.
[12] The CEE11 Member States are: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Slovakia.

downward path since 2010 and declined to EUR -432 million in 2016 from EUR -1 415 million in 2010.

Chart 1.14: Trade in financial services by groups of Member States

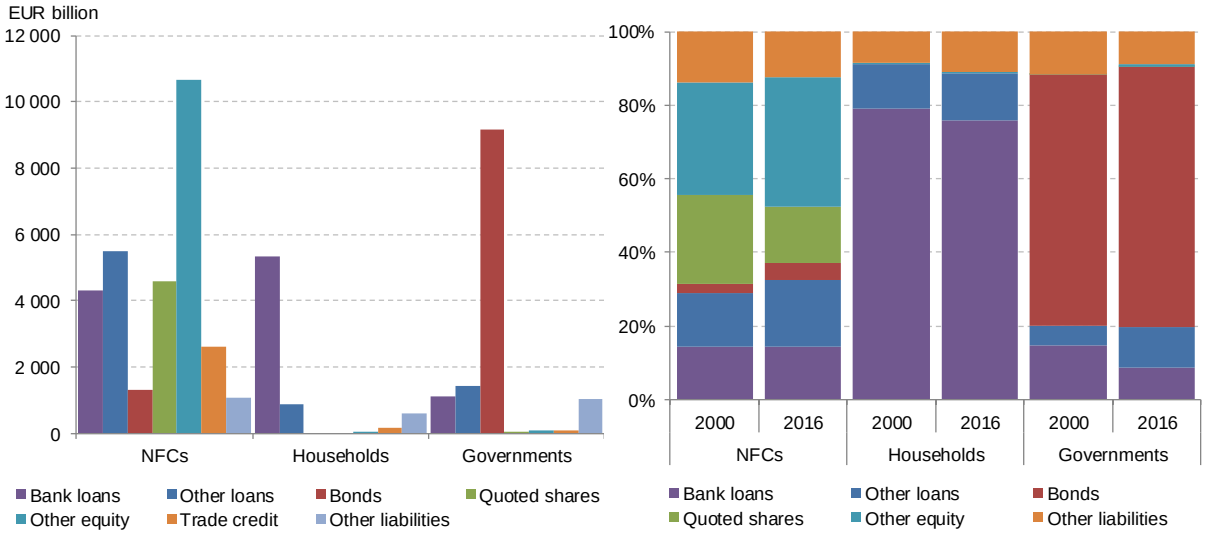


Source: Eurostat, quarterly BoP statistics
Note: *2016 is a sum of the last 4 quarters up to Q3 2016; EA peripheral: Cyprus, Greece, Ireland, Malta, Italy, Portugal and Spain; EA core 7: Austria, Belgium, Finland, France, Germany, Luxembourg and the Netherlands; CEE11: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Slovakia.

1.3 Non-financial corporations, households and public sector funding

This section provides an overview of the different sources of funding used by non-financial corporations, household and governments. It summarises the changes in certain variables over time and differences and particularities across countries.

Chart 1.15: Sources of funding (financial liabilities) by sector, outstanding amounts, euro area



Source: ECB euro area accounts
Note: For governments, trade credit is included in other liabilities.

The funding mix differs from one sector to another. Non-financial corporations (NFCs) finance their activities through a variety of sources, while households and governments tend

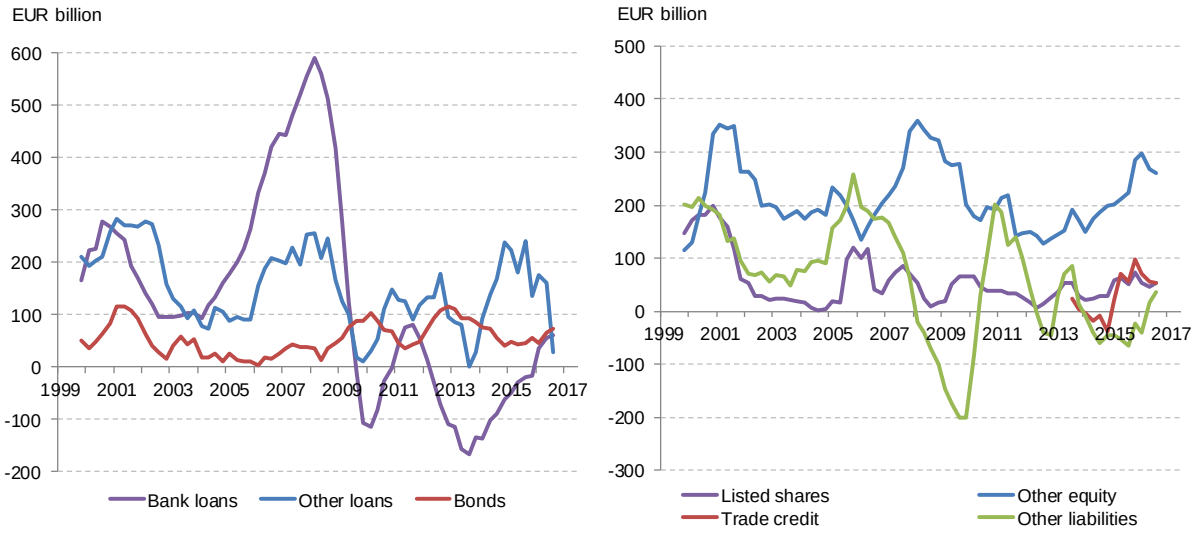
to concentrate their funding mix in a few sources (see Chart 1.15, left panel). The right panel in Chart 1.15 shows that over time a progressive shift in the funding mix has taken place.

1.3.1 Non-financial corporations

In the euro area, more than half of NFCs' activities are financed through equity, most of it in the form of equity other than quoted shares. Among debt instruments, loans are the most widely used by euro-area NFCs, with bank loans representing on average about 14% of total liabilities.[13] Other loans, which include intercompany loans, private loans, loans from public entities, or loans stemming from a supplier-customer relationship, are an even larger source of funding for euro-area NFCs, representing on average almost 20% of liabilities. The issuance of bonds is still a relatively marginal source of financing, representing on average 4.4% of liabilities and is only slightly more significant (between 6.0% and 7.5% of liabilities) in the UK, France, the Netherlands, Austria and Portugal.

Euro-area NFCs also make use of trade credit (9% of liabilities). Other liabilities, which include items such as taxes due, derivatives, factoring, or leasing, are a more marginal source of funding, representing 3.6% of liabilities. There are just a few countries where they represent more than 10% of liabilities, e.g. in the UK, Romania, Bulgaria, Poland, Portugal, Croatia, Estonia and Germany. Overall, European companies finance about 35% of their activities through the financial sector, either by borrowing from banks, or by issuing bonds or shares.

Chart 1.16: Sources of funding (financial liabilities) by sector in the euro area, flows



Source: ECB: euro-area accounts and own calculations
Note: Other liabilities also include trade credit until 2014.

The net provision of funding through bank loans has been highly volatile over the last 15 years (see Chart 1.16), expanding extraordinarily from about EUR 100 billion a year in mid-2000 to almost EUR 600 billion a year in 2008.[14] During this period, bank loans provided up to 50% of the new financing obtained by European firms, in spite of the fact that bank loans represent only 15% of the NFCs' outstanding liabilities (see Chart 1.15). With net bank flows

[13] See Box 2 for a discussion on the role of shadow banking in non-banking credit intermediation.
[14] Net transactions correspond to the difference between increases and decreases in transactions.

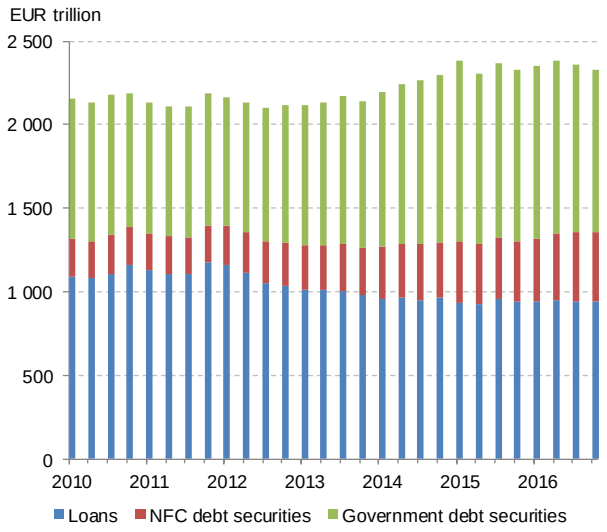
receding with the financial crisis, NFCs turned to other sources of funding. Net flows of loans became positive in late 2015, and have gained traction throughout 2016, indicating an increasing recourse to this important source of funding by EU corporations. Within the context of CMU, it remains important to promote alternative funding to facilitate diversification of funding sources.

Since the outbreak of the crisis, NFCs have issued more bonds. Annual net issuance of bonds has mostly remained above EUR 50 billion since late 2008, with some peaks above EUR 100 billion. Loans other than bank loans have also been an important source of funding for European firms since the outbreak of the crisis. However, they seem to have lost traction in 2016, probably because of improved access to bank loans. Equity, in particular non-listed shares, has been another source of funding available to firms throughout the crisis. The increasing amount of unquoted equity since early 2015 may originate from the cyclical economic upturn and the increased capacity of companies to generate profits. Net access to trade credit and other accounts payable has been very volatile. The increase in net flows of trade credit observed since early 2015 and in other liabilities observed since early 2016 may reinforce the idea that EU companies are consolidating their financial positions, and that confidence underpinning new business is returning.

Box 2 Shadow banking as an alternative source of financing

Under a widely accepted definition provided by the Financial Stability Board, shadow banking is credit intermediation which involves entities and activities fully or partially outside the regular banking system. In effect, shadow banking often breaks down the credit intermediation process between various entities and involves the use of structured financial products.

Chart B2.1: Credit provision by euro-area shadow banks



Source: Doyle et al. (2016)

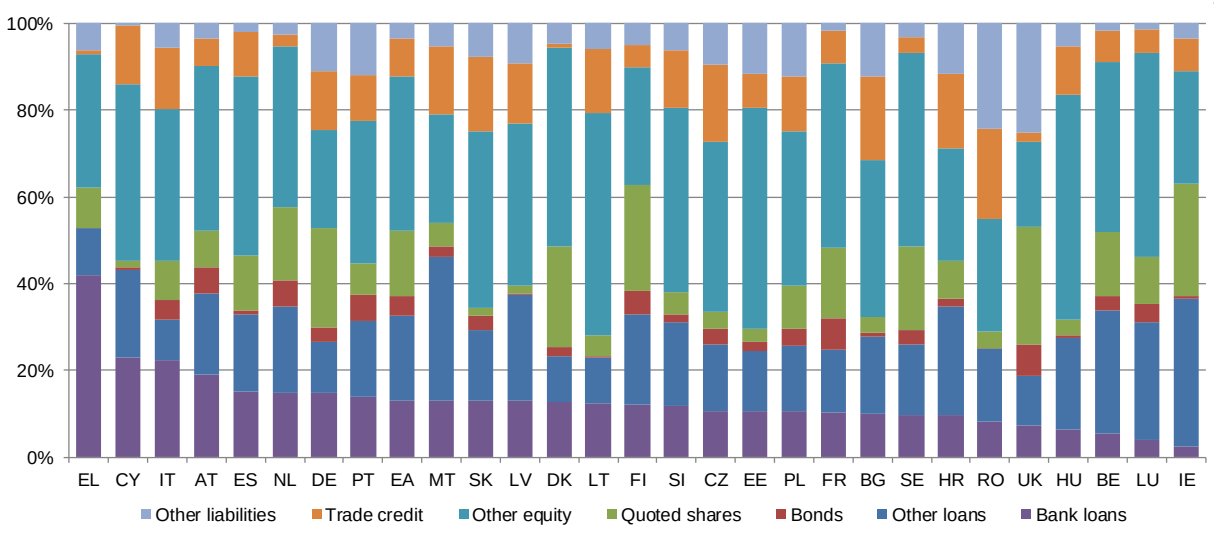
The size of the broadly defined shadow banking system in the EU was EUR 37 trillion in total assets in Q4 2015, or 36% of total EU financial sector assets.[15] This accounts for various financial actors such as financial vehicle corporations, security and derivative dealers, money market funds, and bond funds, which are not regulated as banks, but engage in credit intermediation as well as maturity transformation. They are active in derivative, repo as well as securities lending markets. The EU shadow banking system has grown significantly, tripling in size since 2004 thanks to increased transactions, as well as asset valuation and other effects. The EU shadow banking system has also become bigger compared to the traditional banking system. Between the end of 2012 and the end of 2015, for instance, the shadow banking system measured by assets grew by 22%, compared to a decrease in assets of 5% in the traditional banking system.

[15] The European Systemic Risk Board (ESRB) broad measure of shadow banking includes all entities of the financial sector except banks, insurance corporations and pension funds.

The European aggregates conceal differences across countries in the use of various funding sources. To a large extent, the mix of funding sources that NFCs use to finance their activities depends on the funding conditions and available sources in their country of residence, e.g. the level of financial development.

EU NFCs finance most of their activities with equity issuance, which in general represents about 50% of firms' liabilities. However, there are some differences across countries in the use of equity. In Member States that joined the EU before 2004, equity is often raised on organised markets (i.e. through the issuance of quoted shares). In Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Sweden and the United Kingdom, quoted shares represent between 15% and 30% of financial liabilities, or 70% or more of their respective GDP. In the majority of Member States which joined after 2004, quoted shares represent at most 5% of total liabilities, and at most 20% of GDP. However, the use of other forms of equity as a source of funding is significantly greater than quoted shares in the vast majority of Member States, with the exception of Finland, Germany, Ireland, and the UK, where quoted shares have a similar, or even larger, size than other equity instruments (see Chart 1.17).

Chart 1.17: Funding sources used by NFCs across Member States, end of second quarter 2016



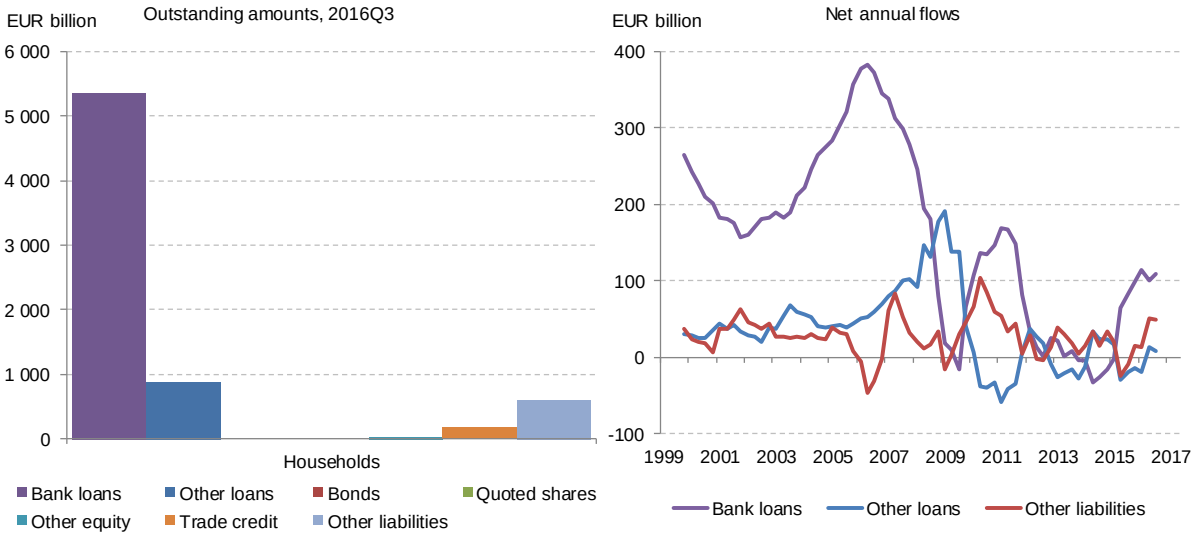
Source: ECB euro-area accounts and own calculations

Usually, NFC debt funding represents less than 50% of liabilities. However, in some Member States, such as Belgium, Ireland, Luxembourg, Malta, Portugal and Sweden, debt levels are rather high for NFCs. As regards bank loans, in Member States such as Bulgaria, Croatia, Romania or Hungary, with a still developing banking system, the limited amount of household deposits constrain the availability of banks loans for corporates, which represent less than 10% of liabilities. In these Member States, NFCs often compensate their restricted access to bank loans with other sources of funding, such as trade credit and 'other loans'. On the other hand, in countries like Sweden, the UK and Ireland, with well-developed capital markets, firms tend to more often issue quoted shares (up to 25% of liabilities). NFCs in these countries therefore make less use of bank loans.

1.3.3 Households and non-incorporated businesses

Bank loans are the main source of financing for households and non-incorporated businesses.[16] Currently, 76% of their financial liabilities stem from bank loans, but they also use 'other loans' to a certain extent (13% of liabilities). In terms of dynamics, net access to new funding was contained, particularly between 2012 and 2014, but has recovered since early 2015, particularly in the case of bank loans (see Chart 1.18).

Chart 1.18: Funding sources used by households and non-incorporated businesses, euro area

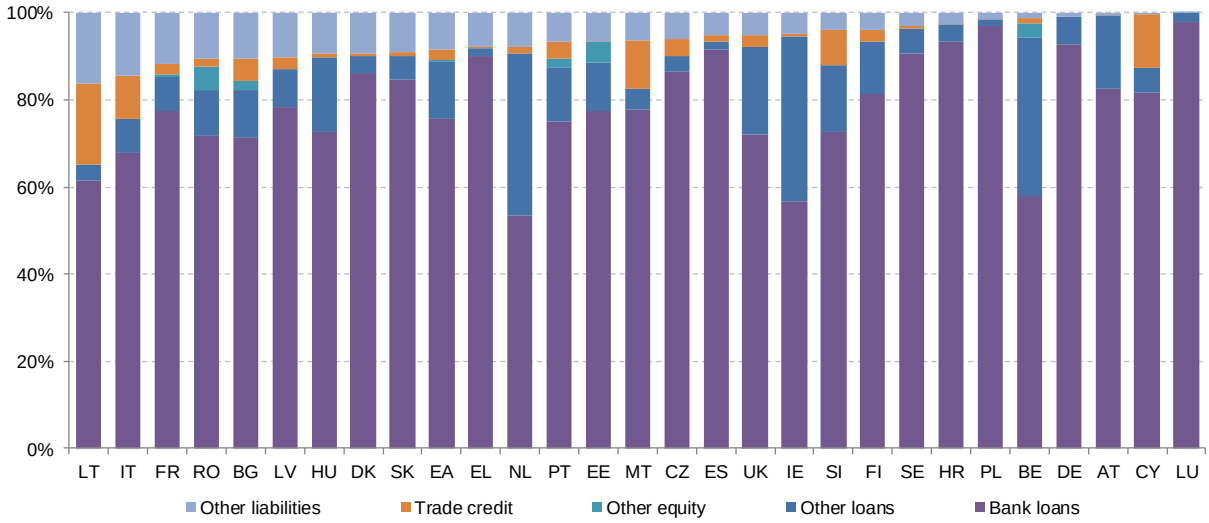


Source: ECB euro-area accounts and own calculations
Note: households include figures for non-incorporated businesses.

Bank loans are the main source of funding used by households and non-incorporated businesses across the EU, representing more than 80% of their financial liabilities in about half of the Member States. The use of trade credit is generally marginal, with the exception of Lithuania, Cyprus, Malta, Italy and Slovenia, where households finance up to almost 20% of their activities with trade credit. Finally, the use of other liabilities is, to a certain extent, commonly used by households in countries like Lithuania, Italy, France, Romania, Bulgaria and Latvia (see Chart 19).[16]

[16] Statistics are only available for the aggregate of households and non-incorporated businesses. This explains the existence of some company-like sources of funding such as trade credit and other liabilities.

Chart 1.19: Funding sources used by households and non-incorporated businesses across Member States, end of second quarter 2016

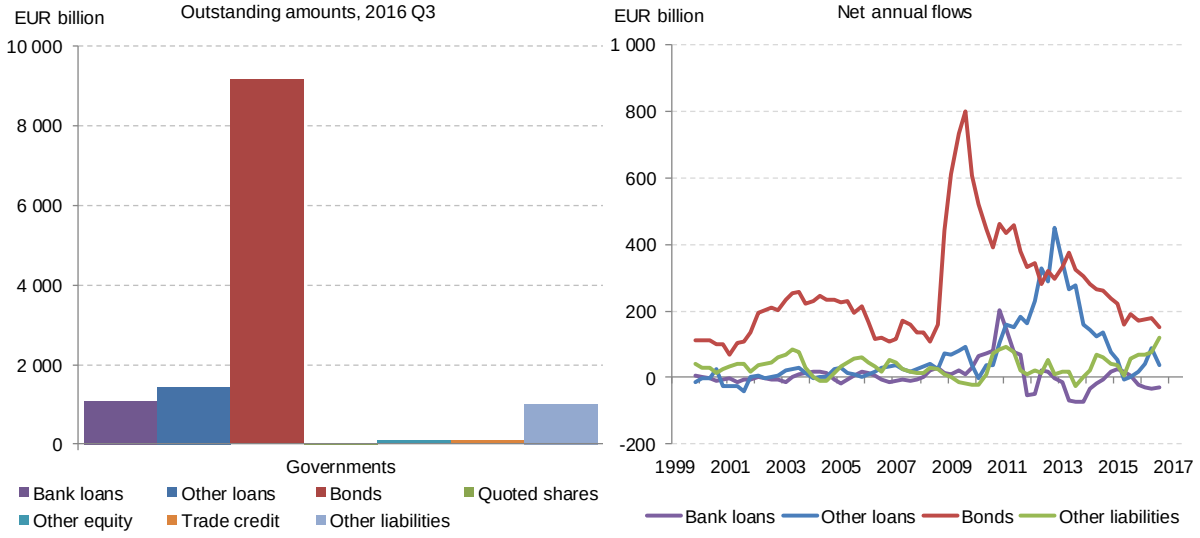


Source: ECB euro-area accounts and own calculations
Note: households include figures for non-incorporated businesses.

1.3.4 Governments

The bulk of governments' financial liabilities are bonds (about 70% of their financial liabilities). Bank loans, other loans and other liabilities (trade credit, pending bills, pending transfers, advanced taxes, etc.) represent about 10% each.

Chart 1.20: Funding sources used by governments, euro area



Source: ECB euro-area accounts and own calculations
Note: Other liabilities include also trade credit until 2014.

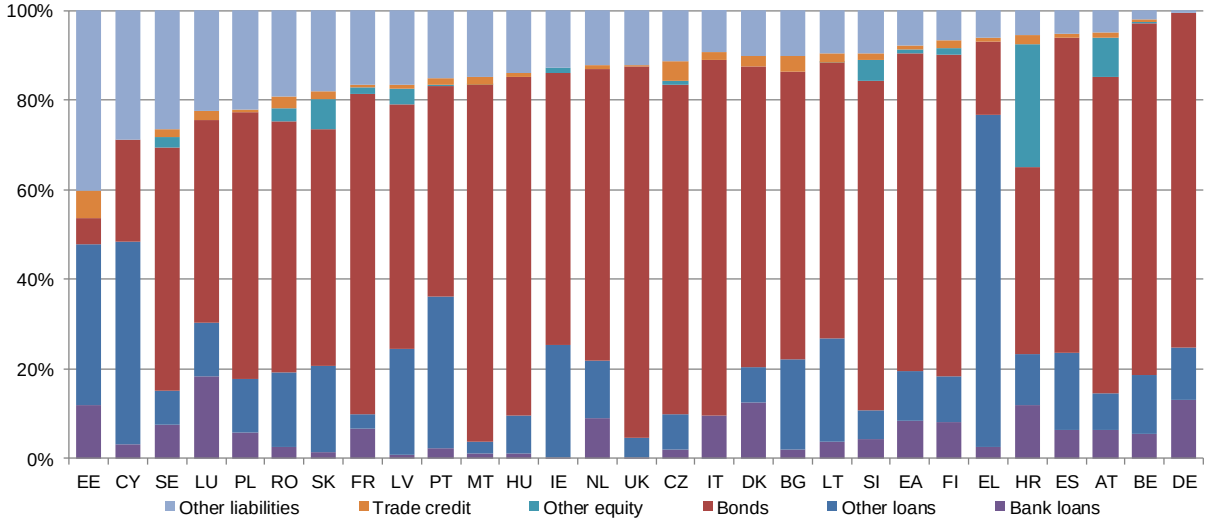
Public accounts were particularly affected by the crisis because of the macro-economic automatic stabilisers (e.g. rising unemployment benefits and reduced tax receipts), but also because of one-off measures such as the financial support to credit institutions under financial stress. The new funding required to confront these needs was mainly obtained by issuing new bonds on the markets, particularly during the period 2008-2012. However, some countries lost market access, and had to ask their European partners for support. The recourse to the new

stability mechanisms created during the crisis (e.g. the European Stability Mechanism) is reflected in the series of loans from official sources (i.e. 'other loans').

Since early 2015, the net annual issuance of sovereign bonds by euro-area governments has gone down to pre-crisis levels. However, the accumulation of debt during the crisis meant a significant increase in public sector leverage. Similarly, the recourse to official loans has significantly declined (see Chart 1.20).

In most Member States, governments finance more than 50% of their debt by issuing bonds, except for Portugal, Luxembourg, Croatia, Cyprus, Greece and Estonia. This is due to two distinct reasons. In Estonia and Luxembourg, issuances are carried out only at infrequent intervals, and the general level of debt is low. For Greece, Cyprus and Portugal, the stock of loans remains high due to past international financial assistance. On the other hand, the financial support provided by European stability instruments (European Financial Stability Facility, European Financial Stabilisation Mechanism and European Stability Mechanism) are accounted for as 'other loans', and imply a lower use of bonds in relative terms in countries like Ireland, Greece, Cyprus and Portugal.[17] Most countries also make use of bank loans, trade credit and other sources of funding, but generally to a lesser extent (see Chart 1.21).

Chart 1.21: Funding sources used by governments across Member States, end of second quarter 2016



Source: ECB euro-area accounts and own calculations

[17] Note that the financial stability programmes were successfully completed in all countries except for Greece; however, the loans remain outstanding as the repayment is spread across several years.

Chapter 2 EU BANKING SECTOR

This chapter focuses on the profitability of the EU banking sector, discussing the impact of recent developments in cyclical and structural drivers including increased competition by non-banks, on the profitability of banks.

Despite the recent years' of expanding EU bank credit, the conditions in EU banking remain challenging. Although the circumstances vary significantly across both banks and Member States, the combination of continued low interest rates and high bank operational costs are compressing bank profit margins. Low market expectations of future bank profitability, in turn are putting downward pressure on bank share prices, raising banks' cost of equity and therefore the cost of external funding. On a more positive note, the enhanced bank solvency and resilience, confirmed by the overall comforting results of the EU-wide stress test published in the summer of 2016, support confidence in the EU banking sector. The accommodative monetary policy supports bank funding conditions and banks' lending activity to the private sector.

The analysis in this chapter underlines the importance of securing a sustainable and healthy banking sector as well as diversifying the sources of funding to the European economy. Many EU banks are successful in adjusting to changing conditions, and these efforts must continue. This includes a continued focus on diversifying income sources and higher-margin lending activities. In developing and implementing these revenue-boosting and cost-reduction initiatives, including introduction of new technologies and broader use of consumer data, sufficient attention should also be devoted to ensuring financial stability and a sufficient high level of consumer protection (see Box 3). It also requires ongoing efforts to contain costs through further branch reductions, consolidation initiatives and the effective use of innovative technologies to streamline business processes. A more diversified spectrum of funding sources available to the European economy will be achieved through ongoing efforts that are part of the Capital Markets Union initiative.

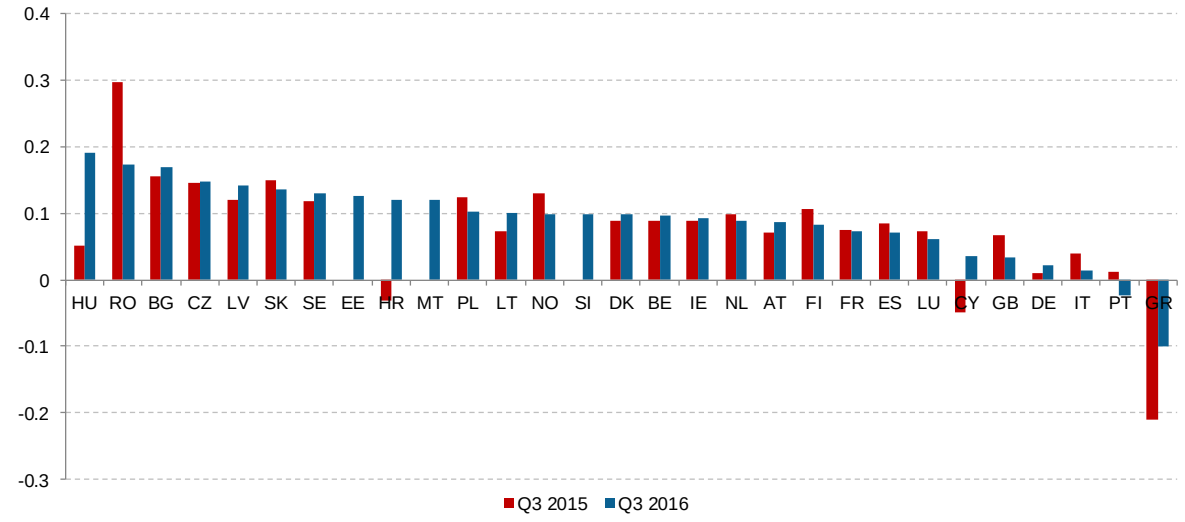
2.1 Profitability performance of the EU banking sector

European banks have faced several challenges in recent years. The global financial crisis of 2007-2008 severely disturbed the functioning of the EU banking sector, with strong negative effects on the broader economy. In response to the crisis, wide-ranging regulatory reforms have been introduced to strengthen banks' capital and liquidity positions, and to make banks safer and more resilient to shocks. However, the long-term viability of the banking sector has emerged as a concern amid very low bank profitability for EU banks over a period of many years. The low profitability can be attributed to the combined impact of many factors, including persistently weak economic conditions, a low interest rate environment, deleveraging needs, excess competition from financial technology companies and other non-bank entities, litigation costs, as well as regulatory and compliance costs.

Despite moderate improvements in 2015, bank profitability in the EU remains far lower than in the pre-crisis period. The annualised return on equity (RoE)[18] fell to 5.4% in the third quarter of 2016, one percentage point below the third quarter of the previous year. The annualised RoE also fell relative to the second quarter of 2016, when it stood at 5.7%.

Return on equity (RoE) for EU banks is very unevenly distributed across Member States (see Chart 2.1). CEE banks have recently performed better than the average for the EU, while banks in the southern periphery have underperformed relative to the average. Croatia, Hungary, Cyprus and Greece witnessed the greatest improvements over last year, although the RoE for Greek banks remains significantly negative. Portuguese banks also recorded negative RoE in 2016, and the RoE of Italian banks — although still positive — declined to 1.5%, amid concerns about asset quality.

Chart 2.1: Banks' return on equity



Source: EBA, own calculations

Meanwhile, the cost of equity (CoE)[19] for EU banks increased to around 10% on average[20], contributing to a renewed widening of the RoE-CoE gap. When costs exceed returns over an extended period of time, a bank may experience higher costs of debt funding and equity issuance. The currently low market valuations of EU banks and low expectations of future profitability demonstrate the challenges that lie ahead. For the euro area, analysts are systematically lowering their RoE forecasts for banks, with the median ROE forecasts[21] between 6% and 7% for 2017 and 2018.

[18] RoE is defined as the ratio of net income to shareholders equity. It measures a firm's profitability by showing how much profit a company generates with the money shareholders have invested.

[19] CoE is defined as the return that the market demands from firms in exchange for bearing the risk of ownership and investing their capital.

[20] EU weighted average for 2016, by EBA, estimated using the CAPM model, see more details in 'Risk Assessment of the European Banking System', European Banking Authority (EBA), December 2016, p. 48.

[21] See more in ECB Financial Stability Review, p. 75.

2.2 Cyclical and structural drivers of bank profitability

Bank income statements comprise a number of key components that shape its operating profitability: net interest income, non-interest income, operating expenses, and impairments.[22] Aggregate data for the EU banking sector indicate that the weakness in post-crisis profitability has been driven mainly by subdued macro-economic conditions, and related lower net interest income and high loan-losses and the one-off shocks to profitability stemming from impairment provisions. Analysis shows a persistently declining trend in net interest income, while the negative contribution from loan-loss provisions eased, which supported bank profitability in recent years.

Interest income is the main source of overall income in the traditional bank business model. The low interest rate environment has compressed this important source of income. Illustrating this phenomenon, the ratio of net interest income to total assets dropped to 1.2% for euro-area banks in 2015 and remained close to this low level after that. In particular, interest income derived from lending activities fell significantly and by more than interest income from banks' debt securities portfolios.

Non-interest income of euro area banks failed to compensate for the weakness in net interest income. Following an increase in 2015, banks[23] reported a 4% year-on-year decline in net fee and commission income in 2016, mainly due to a drop in fees from securities issuance, asset management, and the distribution of investment products. All these sources of income are sensitive to financial market volatility. The ECB has identified net non-interest income as the greatest contributor to RoE decline in the euro-area banking sector, both in Member States significantly affected by the financial crisis and other Member States.[24] Likewise, banks' trading income was negatively affected by repeated bouts of market volatility during the course of 2016, resulting in approximately a 20% annual decline compared to 2015.

The phenomenon of low profitability in the EU banking sector reflects a range of cyclical and structural factors, varying across banks and across Member States. The most crucial cyclical challenge to banks has been the protracted low interest rates in combination with low economic growth. Persistently low interest rates erode bank profitability by compressing net interest margins. The impact differs across institutions, depending on the composition of the loan portfolio (e.g. the share of floating rate loans) and its funding mix (e.g. the share of deposit funding). Generally, however, when interest rates are low, the difference between the rate of interest paid on bank liabilities and the rate charged to borrowers is smaller. This is because banks are constrained in their capacity to lower the rate on deposits below zero. Finally, low interest rates translate into lower profitability from government bond portfolios.

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[22] The following definitions are used: *net interest income* is defined as income stemming from loans and other financial products net of funding costs; *non-interest income* is income stemming from financial operations such as trading activities, gains/losses on repurchase of own debt & asset disposals, fees and commissions; *operating expenses* are general expenses on premises and equipment, staff remuneration, depreciation and amortisation, other costs; and *impairments* refer to provision expenses for impaired loans (NPLs, doubtful loans).

[23] Data based on euro-area significant banks, directly supervised by the ECB.

[24] Based on ECB's supervisory data, for details see ECB's Financial Stability Review, November 2016, p. 73.

On the positive side, it has been estimated by ECB staff that the overall impact on bank profitability of recent monetary policy actions is net positive compared with a scenario assuming no monetary intervention.[25] There are several reasons for this. First, the lower interest rates and other interventions have improved the macro-economic environment, which has helped loan loss provisions to fall amid a better debtors' repayment performance. In addition, whilst lower rates have compressed margins, they have increased overall demand for loans and enhanced debtors' repayment performance, therefore supporting bank interest income through rising loan growth and higher lending volumes. Moreover, low interest rates have benefited banks by lowering the refinancing costs at the ECB. Lastly, lower rates have also lead to some capital gains on the bond portfolio of banks.

Chart 2.2: Bank profitability measured by RoE

Source: Standard & Poor's Global Market Intelligence data, own calculations.

Next to cyclical challenges, the profitability of European banks also suffers from structural challenges, which amplify cyclical difficulties, such as: a large stock of unresolved legacy assets in some Member States, high cost-to-income ratios, business models dependent on interest income, increasing competition from financial technology companies ('fintechs') and other non-banks. Some of these factors, which are described in more detail in the following sections, explain why bank profitability in the EU appears structurally lower than overseas, e.g. in the US or in Asia.[26]

2.3 Profitability challenges linked to costs

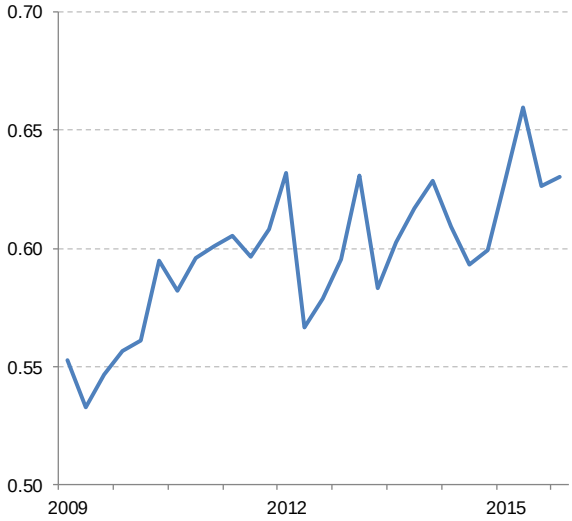
Low bank profitability in Europe is partly the result of high costs. Continued challenges to revenue generation shifted banks' focus to cost-cutting and restructuring efforts, including staff reductions, branch closures, and an increased use of digital distribution channels. Still, cost efficiency varies widely across banks and Member States, suggesting that some banks still have room to improve operational efficiency via cost-cutting, including by consolidation. Consolidation could bring some profitability at the sector level by enhancing cost and revenue synergies. However, progress in bank consolidation in the euro area, in particular across borders, remains somewhat limited to date.

[25] See Rostagno et al. (2016).

[26] Fintechs are companies that use new technology and innovation in the delivery of financial services. They sometimes compete with traditional financial institutions, but can also help make business processes more efficient.

Data shows that costs continued to rise over the course of 2016 for the average of EU banks (see Chart 2.3), which contributes to bank profitability challenges. The most typical measure of bank costs are cost-to-income ratios (C/I), which are high for EU banks compared to historical standards.[27] The EU-wide C/I average stood at 63.0% in Q3 2016. Over the course of 2016, the C/I ratio increased by 3 percentage points. When contrasted with declining bank revenues, this trend in C/I ratios indicates that costs have been reduced less than proportionally, and confirms a long-term trend of a rising C/I ratio, which recently increased quite significantly from around 55% in 2010 to 63% in 2016.

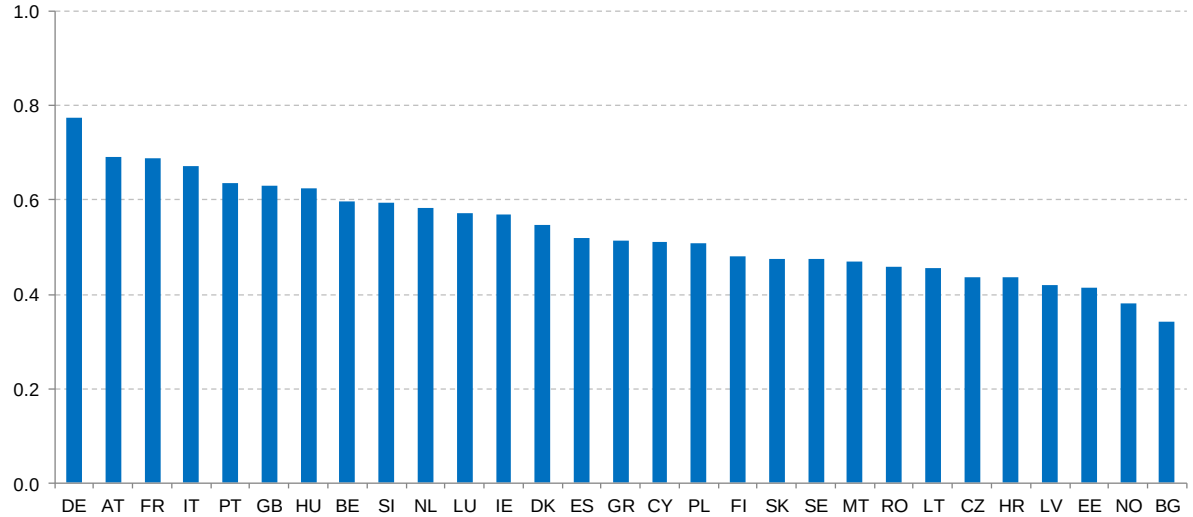
Chart 2.3: EU banks' cost-to-income ratio, weighted average



Source: EBA

There is a wide dispersion of C/I performance across Member States (see Chart 2.4). C/I ratios tend to be lower in eastern European countries and in most central European and Nordic markets. The large dispersion in C/I ratios partially reflects prevailing business models in the region. Sweden and other Nordic countries are notable examples of banking sectors achieving high profitability while not being burdened with legacy credit quality issues or excessive cost inefficiency. Some banks in the region have reduced their branch presence by more than 50% and eliminated cash service in branches. On the other hand, the highest C/I ratios can be found in Germany (77.4%), Austria (69.2%) and France (68.8%), dominated by banks with traditional business models and high branch presence.

Chart 2.4: Cost-to-income dispersion by Member State

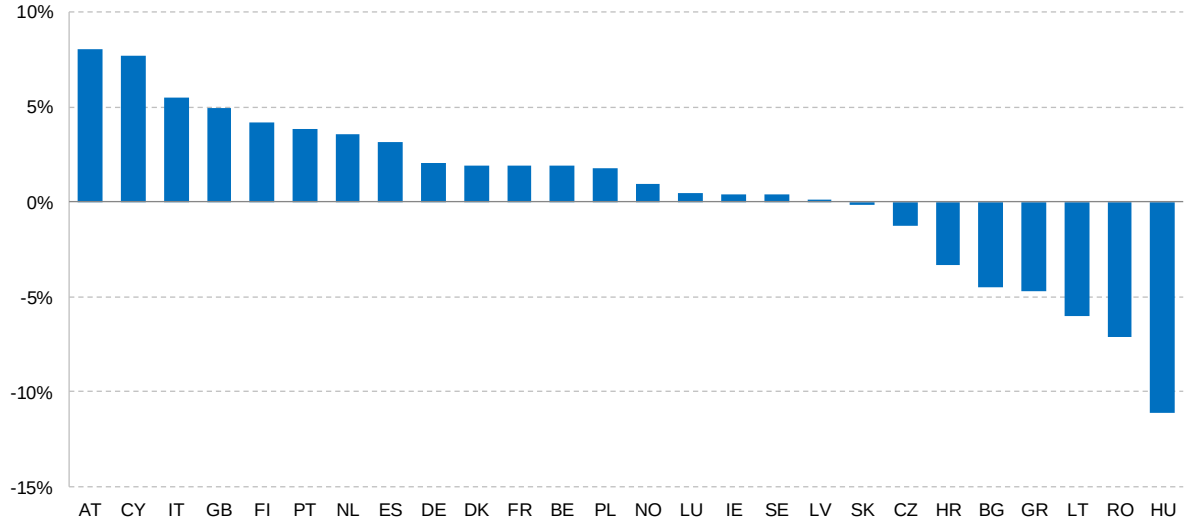


Source: EBA

[27] Cost-to-income ratios capture bank operating expenses relative to net revenues. A rise in C/I ratio can reflect rising costs in absolute terms or a situation where cost reductions are not keeping pace with dropping revenues.

As shown in Chart 2.5, C/I rose in 18 countries of the EBA sample of banks last year, while it declined in eight. The increase was the largest in Austria, Cyprus and Italy.[28] C/I dispersion among individual banks has grown since Q3 2015, particularly in the first half of 2016.

Chart 2.5: Change in cost-to-income ratio compared to Q3 2015



Source: EBA

While FinTech has put pressure on traditional business models, it also provides opportunities for banks to reduce costs. Recent developments in areas such as cloud computing, mobile applications and big data analytics have the potential to increase the efficiency of banks business models. For instance, it may lead to more efficient pricing and better risk management practices, and many business processes could become less resource intensive. An entire category of financial technology solutions helping firms comply with regulatory requirements has become known as RegTech. Subject to appropriate assessment of its compatibility with Union policies, in particular as regards data protection, Distributed Ledger Technology (DLT) systems could in the future lead to even more efficiencies and lower costs by improving processes and making resource-intensive back-office functions redundant. In March 2017, the Commission launched a public consultation on the opportunities and challenges of FinTech.[29]

Attention should also be paid to other costs, including litigation and regulatory compliance. According to the results of the EBA's risk assessment questionnaire, more than 44% of banks have paid out more than EUR 500 million in compensation, litigation and similar payments since the financial crisis. The share of banks which have paid out more than EUR 1 billion is 37%. The first half of 2016 brought a decline in legal settlements, according to Scope ratings, but the threat of further litigation costs for banks remains in the light of recent scandals.

Banks have cited rising regulatory and compliance costs over the last years, further weighing on profit margins. These concerns are related to a combination of tighter conduct standards, additional reporting requirements and stricter capital rules. While the benefits of these measures are key to enhance financial stability and consumer protection, they have been cited

[28] Estonia, Malta and Slovenia were missing in the Q3 2015 sample.

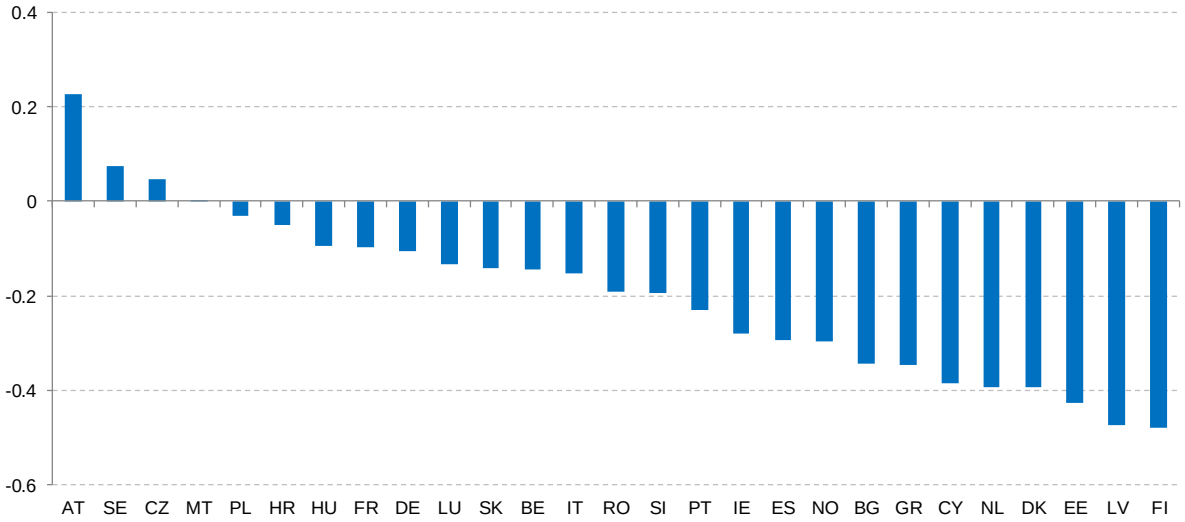
[29] See https://ec.europa.eu/info/sites/info/files/2017-fintech-consultation-document_en_0.pdf.

as a source of rising operational costs. However, the concluding result of the Commission's Call for Evidence was that overall the benefits outweighed the costs. The Commission is committed to following its better regulation principles and applying the Regulatory Fitness and Performance programme, which ensure that EU legislation delivers results for individuals and businesses effectively, efficiently and at minimum cost.

2.4 Effects of banking sector concentration and network structures

At individual bank-level, costs are highly influenced by the size and role of a bank's branch network. Despite a sharp decrease in branch density (from 33.1 branches per 100 000 people in 2010 to 27.5 in 2015), the reliance of EU banks on branches remains very high compared to other regions of the world. The International Monetary Fund hints that there remains potential for further rationalisation, as 46% of branches in the EU service only 5% of client deposits.

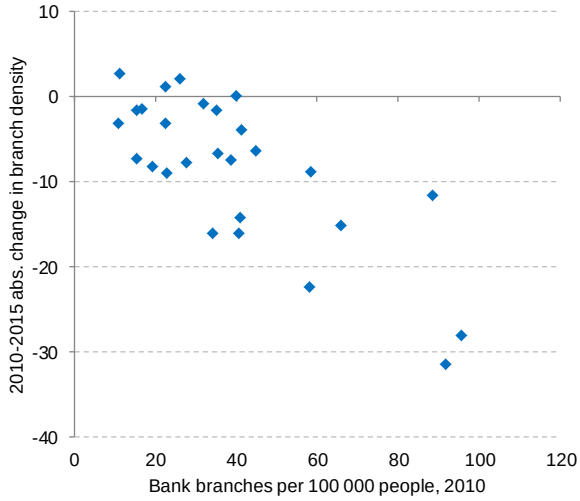
Chart 2.6: Branch density, relative change from 2010 to 2015



Source: World Bank, own calculations

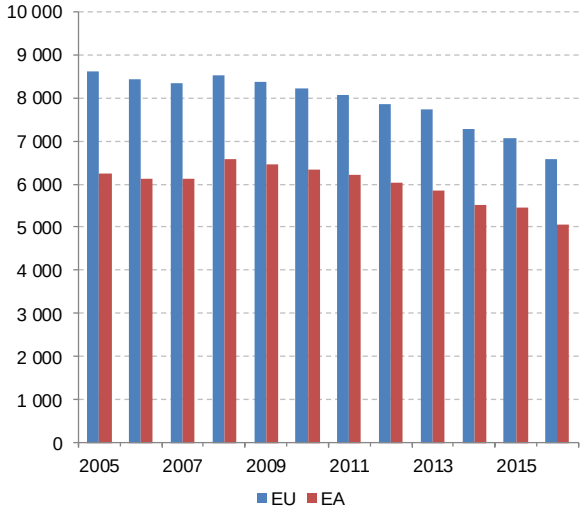
The trend of reducing branch density has been relatively widespread since 2010. Only four EU Member States have experienced growth in branch density (see Chart 2.6), while on average EU Member States have reduced their branch network by about 20%. Several Member States, notably Estonia, Latvia and Finland, have reduced their networks by 40% or more, to radically cut costs and broaden the use of digital services. Statistical analysis shows that the reduction of the branch networks is linked to initial bank branch density (see Chart 2.7). Countries with the highest branch density in 2010 have seen the highest reduction in the branch network in the following years, both in absolute and relative terms. This convergence hints at possible overcapacity in countries with large branch density, coupled with decreasing demand for branch-based services.

Chart 2.7: Changes in bank branch density



Source: World Bank, own calculations

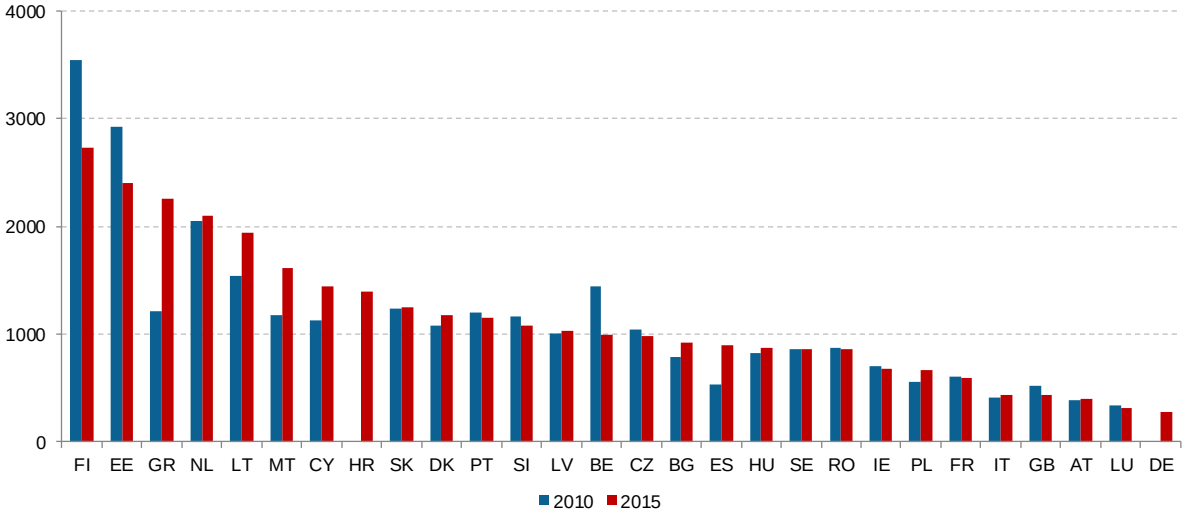
Chart 2.8: Number of credit institutions



Source: ECB

Meanwhile, the number of credit institutions has steadily decreased since the financial crisis (see Chart 2.8), driven by pressure to achieve cost containment. Market concentration not only negatively affect competition, but could also be an important factor influencing bank revenues and costs, as large parts of costs in banking are fixed[30] and because of that the sector exhibits to some degree economies of scale and scope.

Chart 2.9: Market concentration for banks, measured by the Herfindahl-Hirschman Index (HHI)



Source: ECB, own calculations

The overall Herfindahl-Hirschman index (HHI) for EU banks is estimated to be 675. This can be interpreted as a quite competitive market. Data show a moderate increase in market concentration since the crisis started.[31] The EU-wide average is largely influenced by the largest countries, which tend to have a more competitive financial environment. The HHI

[30] Kovner and Zhou (2014).

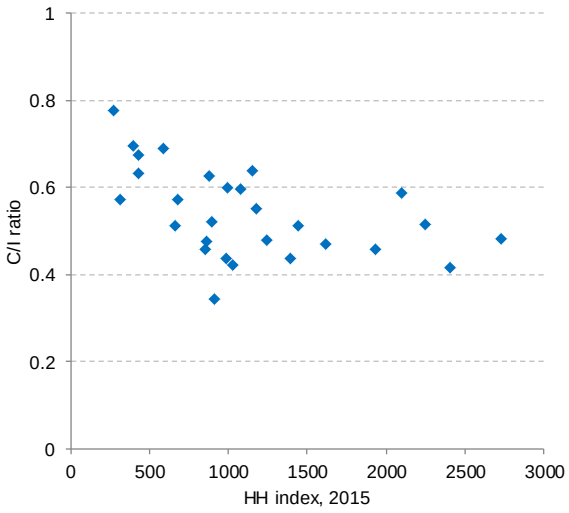
[31] Market concentration is typically measured by shares of largest companies in the sector or by the Herfindahl-Hirschman index (HHI) for credit institutions. The HHI is defined as the sum of squares of individual company's market shares, and it can range from 0 to 10 000, which would be the level corresponding to one company with a 100% share in the market. Thus a lower level of HHI indicates a more competitive market. See ECB (2016a) for the value of this index.

differs significantly among Member States and appears to be related to the RoE and C/I of the banks sampled. Between 2010 and 2015, it declined in Member States with relatively concentrated credit markets (e.g. Finland and Estonia), while it either remained flat or increased somewhat in Member States with relatively less concentrated markets (see Chart 2.9).

Chart 2.10: Market concentration and RoE

Source: Eurostat, EBA, own calculations

Chart 2.11: Market concentration and C/I



Source: Eurostat, EBA, own calculations

Bank concentration in a country seems to be related to RoE and C/I aggregated at national level (see Charts 2.10 & 2.11). Statistical analysis of a small sample of EU Member States suggests that national banking systems with HHI below 500 points tend to have relatively low RoE and high costs. This may serve as an argument in favour of further consolidation in the European banking sector, as most markets with RoE above 10% and C/I below 60% have an above-average HHI of around 1 000 points.[32]

2.5 Challenges linked to non-performing loans

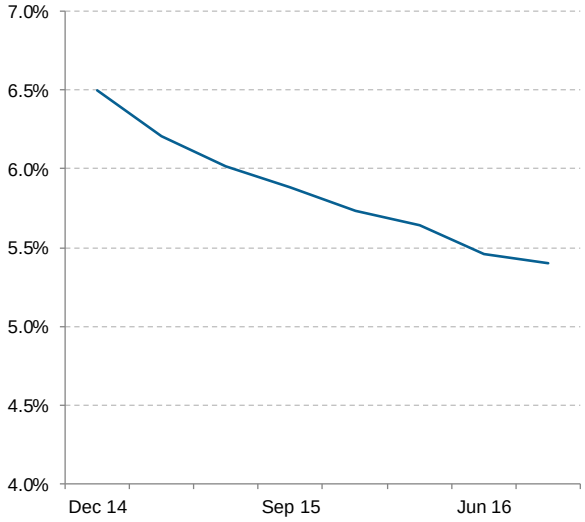
Loan-loss provisions, which are used by banks to offset potential losses on the loan portfolio, have constituted an important cost for EU banks in the years following the crisis. The elevated levels of loan-loss provisions in recent years have been closely related to higher amounts of non-performing loans (NPLs) accumulated by some of the banks during the crisis, as well as by greater banks' caution about resulting risks. According to the latest data, the EU average NPL ratio continues to trend downward, decreasing by 10 bps to 5.4% in the third quarter 2016 (see Chart 2.12).[33] Nevertheless, the level remains high by historical standards and is still higher than in the US and Japan (below 2%).

Notwithstanding the substantial reduction in NPLs observed over the past years, the progress is uneven across Europe. In some banking sectors, e.g. in Finland or Sweden, the NPL ratio stands at around 1%, and many other Member States have ratios of less than 3%. At the other end of the spectrum, NPL ratios have reached high double-digit levels in some Member

[32] Nevertheless, a sufficient level of competition should be present to ensure consumer choice.
[33] The NPL ratio is defined as gross non-performing loans in % of total loans.

States.[34] In Cyprus and Greece, nearly half of total loans are non-performing, accounting for about one third of total bank assets. According to ECB statistics, banks directly supervised by the ECB still held EUR 921 billion of such troubled loans at the end of September 2016, representing 6.4% of total loans and nearly 9% of the euro-area GDP.

Chart 2.12: NPL ratio, weighted average for EU banks



Source: EBA, own calculations

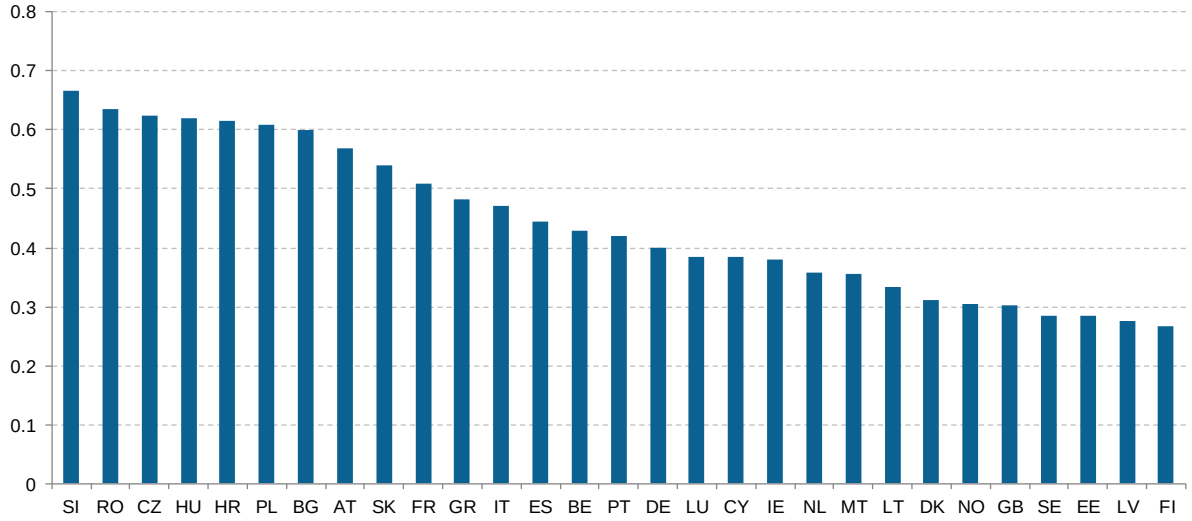
Not only the severity, but also the root of the NPL problem varies significantly across Member States. In Spain and Ireland, the high level of NPLs is linked to the earlier collapse of the property markets, whereas in Italy the increase in NPLs resulted from sluggish economic growth and a weak post-crisis recovery. In some Member States, the sharply rising numbers of bankruptcy or restructuring cases have also strained the judicial system, causing long delays in formal debt liquidation. As a consequence, NPLs were kept on balance sheets longer, aggravating their impact on bank profitability and long-term viability. The distribution of non-performing loans by sector is also mixed. More than half of currently impaired loans were extended to non-financial companies. But lending to households also constitutes a significant share, accounting for more than half of the NPLs in some Member States.

NPLs impact bank profitability in manifold ways. NPLs imply higher provisioning needs and therefore absorb bank capital and lower operating income. Net profits are further reduced by the greater need for human resources and higher administrative expenses to monitor and manage the NPL stock. Profitability can also be reduced by higher funding costs for banks as concerns about asset quality challenges are associated with higher risk premia on bank liabilities. NPLs also generate legal costs.

A sizeable part of the NPL stock is covered with provisions, reducing the risk to bank balance sheets. On average, 46% of NPLs were covered by provisions. However, as shown in Chart 2.13, coverage ratios — share of the face value of the loan covered by loan loss provisions — vary widely in the euro area, ranging from 28% to roughly 68%. Next to provisions some NPLs may also be covered with collateral. Nevertheless, while being a key tool to secure the repayment and/or recovery of a loan, acquisition of collateral is often a lengthy and costly process, eroding the net present value of the collateral concerned.

[34] Notably Italy, Ireland, Portugal and Slovenia.

Chart 2.13: Cross-country dispersion in NPL coverage ratios



Source: EBA
Note: The coverage ratio is the share of the face value of the loan covered by loan loss provisions.

The currently low levels of trading in NPLs on secondary markets can be explained to a large extent by substantial information asymmetries intrinsic to this kind of markets.[35] On the demand side, banks' informational advantage over investors on the quality of loan portfolios and prospective recoveries may deter potential market activity. Moreover, barriers to entry such as licensing requirements further inhibit the market. On the supply side, banks may be insufficiently capitalised to recognise loan losses, or they may want to wait for an economic recovery before reducing their NPLs. To avoid an increase in NPLs and defaults, some banks choose to renew high-risk loans that they would otherwise not renew. Finally, at macro level, structural inefficiencies in debt and collateral enforcement may further contribute to the lack of market turnover.

Notwithstanding the described difficulties, important action at national and at EU level is being taken to tackle the NPL problem in Europe. At EU level, the Commission is conducting a benchmarking review of loan enforcement (including insolvency) regimes to establish a reliable picture of the outcomes that banks experience when faced with defaulting loans in terms of delays, costs and value-recovery. The Commission is also assessing the case for initiatives to facilitate the development of a secondary market for distressed debt, such as information standardisation, with a view to sharing the risks across a greater pool of capital market participants. The Council, following Commission's proposal, has addressed NPLs in Country-specific Recommendations in 2016.

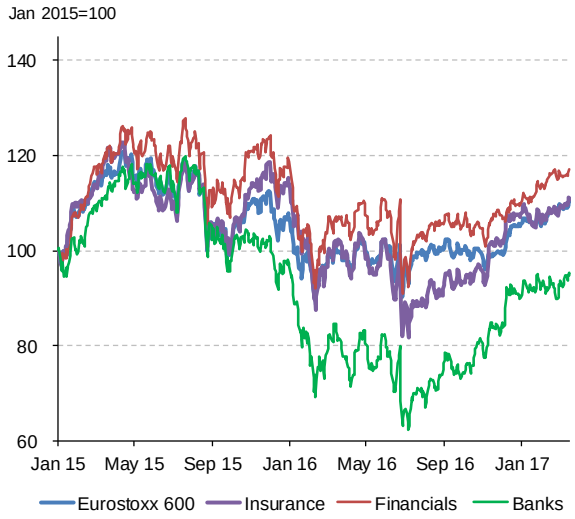
At national level, Member States faced with high NPL ratios, such as Cyprus, Greece, Ireland, Spain and Slovenia, have introduced policy measures and reforms aimed at reducing NPL stocks. The Commission supports policy responses by Member States in this area through its Structural Reform Support Service (SRSS). If the efforts to reduce the NPL ratios across the EU are successful, this should have a positive impact on the profitability of the banking sector.

[35] See Akerlof (1970) for more details.

2.6 Performance of banking stocks and bank funding markets

Underscoring the challenges to EU banks, banks' share prices showed relatively high volatility in the course of 2016 (see Chart 2.14). Over the summer, banking stock indices reached new lows. Mounting market concerns about banks' profitability drove this revaluation of bank equity. A further decline in long-term interest rates and narrowing interest rate margins led analysts to revise banks' earnings prospects down. Investors seemed to distinguish between weak and strong banks. This led, in particular, to selling pressure on banks with a large stock of legacy non-performing assets or expected high litigation costs. However, spill-over effects to the sector as a whole cannot be excluded. Since mid-2016, bank stock performance has improved amid stronger than expected earnings reports and favourable macro-economic conditions.

Chart 2.14: European banking share prices compared to other sectors



Source: Bloomberg

The two most significant marked corrections in bank equity valuations occurred after the UK referendum and, to a much lesser degree, after the disclosure of EU-wide stress-test results in late July. In the second half of 2016, bank share prices recovered amid a steepening of yield curves which could support banks' net interest margins and rising market expectations that global bank regulation (Basel III) might end up less tight than previously feared. Bank share prices finished 2016 at levels similar to those seen at the beginning of the review period.

While the weakness in bank share prices made banks' equity financing more challenging, euro-area money markets remained functional and supportive for banks' lending activity to the private sector. ECB operations, including the second series of targeted longer-term refinancing operations and the expanded asset purchase programme, boosted excess liquidity, which exceeded EUR 1 trillion towards the end of 2016.

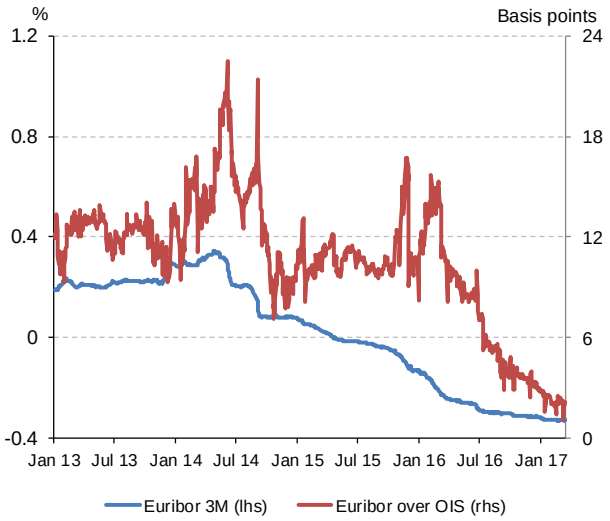
Overall, bank funding markets have also improved, and funding stress remains generally contained. Spreads on subordinated bank debt widened markedly in the aftermath of the UK referendum, and spreads on senior bank debt widened more moderately. Following that, funding conditions improved, with spreads for bank debt tightening back to levels below those observed before the early episode of market turbulence in 2016.

Illustrating benign money market conditions, interest rates on unsecured and secured instruments hovered close to the ECB deposit facility rate. In the unsecured segment, the Euribor rate and the Euribor to OIS spread[36] have reached their multi-year minima (see

[36] The Euribor spread to OIS spread is the difference between the rate at which European banks lend to each other (EURIBOR) for 3 months and the overnight risk-free swap rate (EONIA), also for 3 months, among the same two banks. The measure is considered to reflect the health of the banking system.

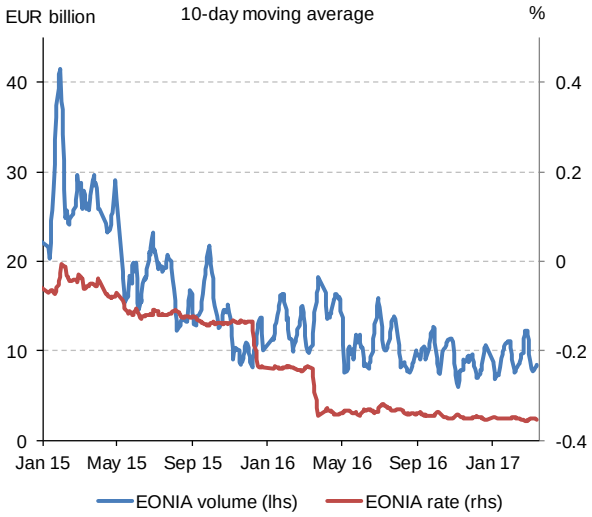
Chart 2.15), with certain interbank transactions conducted at rates below the deposit facility rate.[37] In the secured segment, repo rates continued to trend deeper into negative territory (see Chart 2.16) amid high levels of cash holdings by market participants.[38]

Chart 2.15: Euribor rates and spreads to OIS (3-months)



Source: Bloomberg

Chart 2.16: EONIA volumes and rates



Source: Bloomberg

Box 3 Ensuring consumer protection in lending

At EU level, the relevant legislative instruments to ensure a high level of consumer protection are the main credit institutions' regulation, the Consumer Credit Directive 2008/48/EC (CCD), and the Mortgage Credit Directive 2014/17/EU (MCD). In addition, general consumer protection legislation applies to consumer lending contracts. The Unfair Contract Terms Directive 93/13/EEC (UCTD) protects consumers against the use of unfair standard contract terms. Unfair terms are not binding for the consumer. Based on the UCTD, the Court of Justice of the European Union issued a number of important rulings during the last years, enhancing consumer protection against banks' unfair contract terms, in particular in mortgage loan contracts. Moreover, the Unfair Commercial Practices Directive 2005/29/EC (UCPD) protect consumers against misleading and aggressive commercial practices by financial services providers. The UCPD applies to all commercial practices before, during or after the transaction. These two Directives apply to both online and offline environments, and to all products, including financial services.[39]

Key consumer protection requirements in lending ensure that consumers: (i) understand the product they are purchasing before entering into the contract; (ii) are not confronted with standard contract terms in lending that are unfair; (iii) can afford to pay the loan back; and (iv) do not become subject to poor market practices. These requirements also aim to safeguard financial stability.

Transparency and access to information for consumers have been improved by obliging credit institutions to provide advertisements containing standardised information and standardised pre-contractual information. In the case of mortgage loans, the pre-contractual information should

[37] Some euro-area banks have offered institutions with no access to the ECB facilities the possibility to deposit their cash with them for subsequent placing at the ECB deposit facility rate.

[38] Repo rates are interest rates at which a central bank repurchases government securities from commercial banks.

[39] The UCPD provides for full harmonisation of the respective rules across the EU with the exception of financial services and immovable property.

follow the form of a European Standardised Information Sheet (ESIS). In the case of consumer loans, they should follow the form of a Standard European Consumer Credit Information (SECCI). The ESIS and SECCI, together with the Annual Percentage Rate of Charge (APRC), enshrined in MCD and CCD as compulsory information, allow consumers to compare loan offers. For consumer credits, those standards were introduced in 2008 and have been binding since June 2010. For mortgage credits the standards were introduced in 2014 and have been binding since March 2016. They apply to EU and EEA Member States.

Creditworthiness assessments protect lenders from non-performing loans and borrowers from over-indebtedness. A standardised and harmonised assessment of creditworthiness could facilitate cross-border lending, leading to lower prices, and more choice for consumers. The MCD, together with EBA guidelines for creditworthiness assessments, provides for rather detailed requirements for these assessments. Article 8 of the CCD provides that consumer's creditworthiness must be based on sufficient information. However, 'sufficient information' is not defined in more detail at EU level. So, the assessment of unsecured consumer credit is carried out differently across Member States. The Commission services are currently assessing the need to introduce more detailed creditworthiness assessment standards and principles in the area of consumer credit.

Also, data used for creditworthiness assessments differs across the EU, making it difficult to collect the required information from other countries. This is the case despite the MCD and CCD granting creditors non-discriminatory access to credit registers' databases in other Member States. Therefore, to facilitate cross-border lending, the Commission services are looking into developing a minimum set of data to be exchanged between credit registers across borders.

Given the transparency and other consumer protection requirements, effective supervision and enforcement are central to ensure that these requirements are met in practice. Traditional lenders, such as banks and mortgage intermediaries, are regulated and authorised firms and are subject to supervision. Member States are obliged to ensure that all consumer credit providers are supervised or regulated. In recent years, the online lending market has developed quickly, with new types of organisations, e.g. peer-to-peer lending platforms, offering unsecured loans to consumers. These new developments pose a challenge for existing EU legislation, given that currently these new business models do not fall under harmonised registration/authorisation or financial supervisory requirements. This creates uncertainty for consumers as to which requirements apply and which supervisors are monitoring the activities of these firms.

The Commission services are now seeking to better understand the changes in this market and to explore ways of giving borrowers easier access to loans across borders, notably by making online lending easier, while fostering a high level of consumer protection.[40]

The euro repo rates remain lower than the ECB's deposit facility rate as some counterparties borrow euros on the foreign exchange swap market at levels significantly below the ECB deposit facility rate. These are then lent in repo markets at higher rates, closer to the deposit facility rate. Elevated volatility in repo rates persisted around dates for balance sheet reporting, reflecting supply-demand imbalances in the market for high-quality collateral.

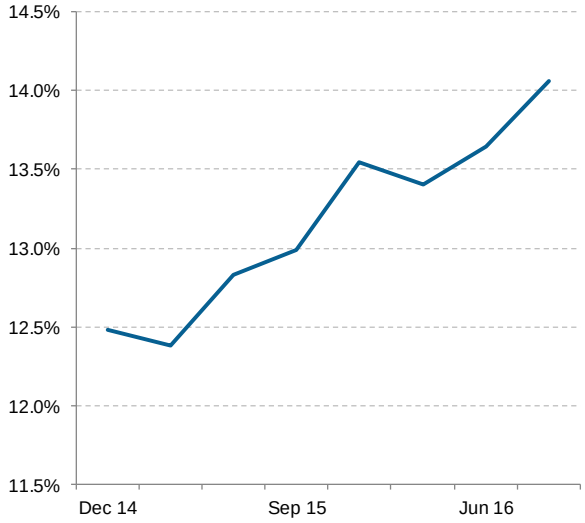
Despite a favourable impact on borrowing costs, the low and negative level of short-term interest rates has weighed on lending and borrowing activity in interbank markets. Unsecured EONIA daily trading volumes have fallen from close to EUR 30 billion in 2014 to just above

[40] COM(2017) 139 final.

EUR 10 billion in 2017 (see Chart 2.16). A similar trend can be observed in terms of secured lending volumes in the repo markets.

Any systemic implications of the recent weakness in bank share prices were also limited. Over the past few years, banks have significantly strengthened their balance sheets and built up resilience to adverse shocks. Illustrating these positive changes, the CET1 ratio has increased by 50 bps to 14.1% in Q3 2016 thanks to both an increase in capital and a decrease in risk-weighted assets. Euro-area banks' leverage ratios also continued to improve, rising to 5.7% in June 2016 from 5.5% six months earlier.[41]

Chart 2.17: EU banks' CET1 ratio, weighted average



Source: EBA

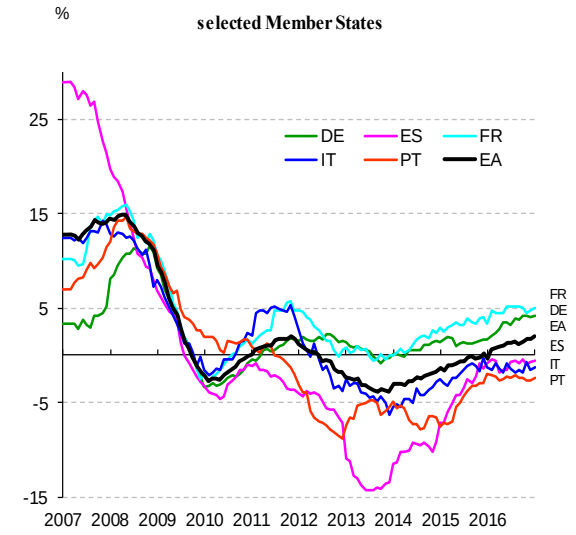
The enhanced bank solvency and resilience have also been confirmed by the overall comforting results of the EU-wide stress test published in the summer of 2016. The EBA's 2016 EU-wide stress test and transparency exercise revealed that the average fully loaded common equity Tier 1 capital stood at 13.4% in significant institutions in the euro area. The capacity of banks to further shore up their capital buffer is nevertheless hampered by low profitability, limiting organic capital generation, and by their low market valuation, making equity capital very expensive.

2.7 Recent trends in bank credit

Along with constantly improving bank resilience, and despite the profitability challenges faced by some banks, net lending flows to households and non-financial corporations (NFCs) continued to be positive over the last year, leading to a further rise in the annual growth rate of loans to the private sector. For the whole euro area, the annual growth rate of MFI loans to the private sector (adjusted for loan sales and securitisation) increased to 2.3% in 2016 from 0.4% in 2015. In particular, the annual growth rate of adjusted loans to households stood at 2.0% in 2016, up from 1.4% in 2015. Meanwhile the annual growth rate of adjusted loans to non-financial corporations (NFCs) increased to 2.3% in 2016 from 0.3% in 2015.

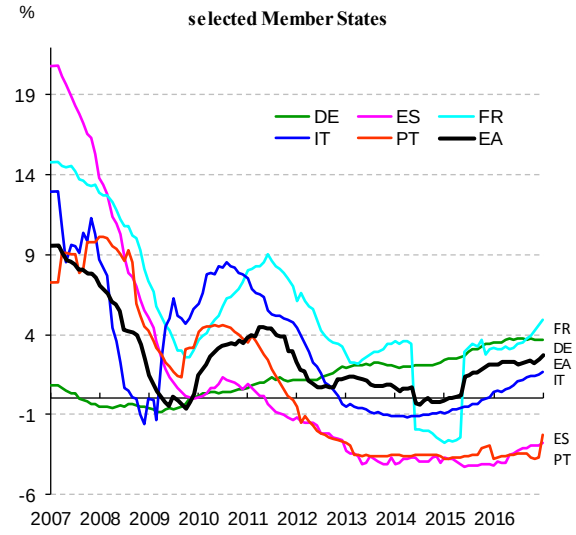
[41] The median of euro-area significant banks.

Chart 2.18: Growth of credit to NFCs



Source: ECB

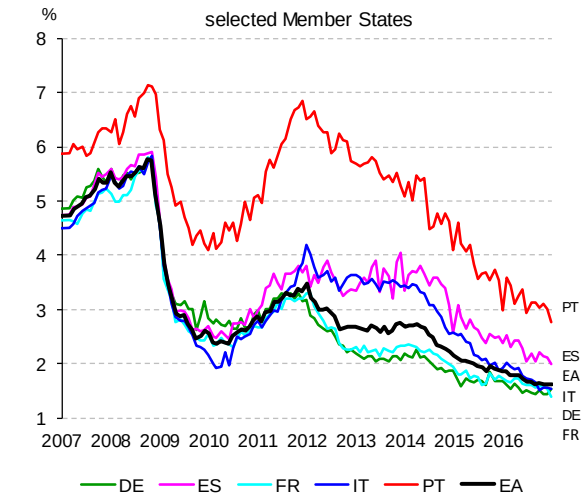
Chart 2.19: Growth of mortgage credit



Source: ECB

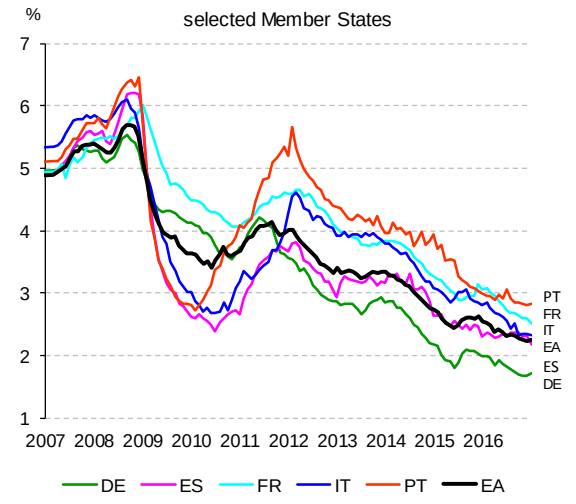
The positive trends in bank lending were supported by persistent low interest rates for NFCs and households across euro-area Member States, suggesting an efficient transmission of the accommodative monetary policy of the ECB through the euro-area banking system. Euro-area banks have been further lowering interest rates to NFCs and households over the past year, which contributed to the gradual recovery in lending volumes in the euro area. However, differences remain across euro-area Member States with higher interest rates for some countries. Such differences could partly explain the still uneven recovery in lending volumes.

Chart 2.20: Interest rates on loans to NFCs



Source: ECB

Chart 2.21: Interest rates on mortgage credit



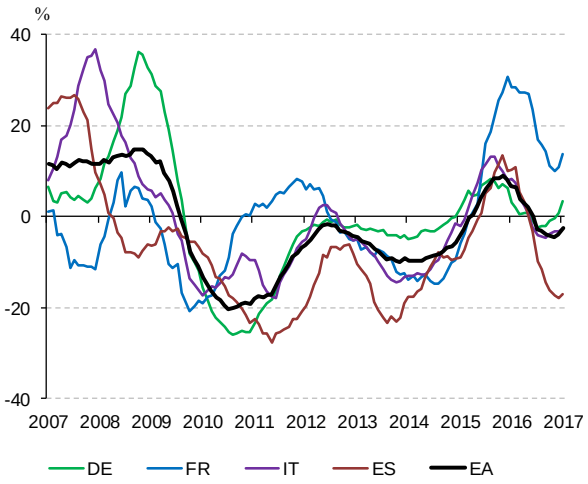
Source: ECB

In Spain and Portugal, credit to NFCs is still shrinking year-on-year, while interest rates are at higher levels than in other euro-area Member States. Italian credit to NFCs has continued to shrink despite low levels of interest rates. This could be explained by other factors on the supply side such as high NPLs or lower demand compared with the euro area's average.

Declining interest rates have also contributed to increased bank lending activity, either via the provision of new loans or through renegotiation of existing credits. Rising business volumes

are a sign that businesses and households took advantage of the improved price conditions by either taking new loans or getting a reset of interest rates at lower levels. This activity was particularly buoyant one year ago (end 2015-early 2016) and took place in most euro-area countries. Mechanically, the activity decreased somewhat compared with a year ago, as NFCs and households perceived fewer opportunities with a slower pace of interest rates declines.

Chart 2.22: Loans to NFCs–volumes, y-o-y growth



Source: ECB

The latest results from the relevant surveys confirm the positive trends in bank lending. The ECB's latest bank lending survey released in January 2017 indicates that credit standards in the euro area tightened marginally for non-financial corporations (NFCs) while remaining broadly unchanged for housing loans and continuing to ease for consumer credit. Easing credit standards for consumer might entail a risk if credit is extended to less credit worthy households. Noteworthy though, the slight tightening for corporate credit is due to one country in particular, the Netherlands. Meanwhile, loan demand continued to improve for all loan categories, further supporting the credit growth for corporations and households. For the first quarter of 2017, banks covered by the latest bank lending survey expect a net easing of credit standards across all loan categories and a further increase in net demand. The latest Survey on the Access to Finance of Enterprises (SAFE) takes a corporate perspective and confirms the views of banks expressed in the latest bank lending survey.[42] It signalled a further improvement in the availability of external sources of finance and in particular an increased willingness of banks to provide credit at lower interest rates. As in previous survey rounds, small and medium-sized enterprises (SMEs) in the euro area considered that finding customers remains the dominant concern while access to finance was the least important problem that they faced.

Looking forward, the situation in the banking sector will continue to be of importance for credit supply, particularly in some Member States where banks face balance sheet constraints and funding pressures. Overall, however, euro-area banks have further improved their capacity to support lending, as they continued to adjust to regulatory and supervisory actions by further strengthening their capital positions and reducing the risk on their balance sheets. In addition, the ECB's policies continue to help banks by offering attractive price conditions for their funding. Meanwhile, demand for credit is picking up across all euro-area countries. This should enable credit volumes to rise further, tracing the economic cycle.

In summary, there are challenges and uncertain prospects for some parts of the European banking sector, and that might bear important repercussions for the European economy. The combination of continued low interest rates and high bank operational costs creates the risk of

[42] The latest SAFE survey was released in November 2016 and covers April to September 2016 (see ECB, 2016b).

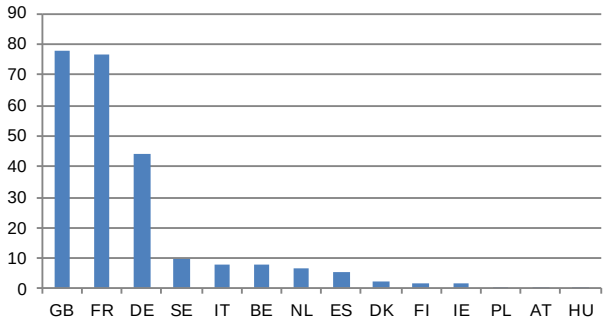
further compressed bank profit margins. Low market expectations of future bank profitability may put further downward pressure on bank stock prices, raising banks' cost of equity and increasing the cost of external funding. Taken together, these trends may make it more expensive for banks to fund new lending.

Despite the profitability challenges, EU banks have proven resilient and well capitalised, and no significant slowdown in lending activities has been observed. In fact, recent bank lending surveys show positive developments in credit conditions across the EU.[43] This suggests that many banks have been able to adjust relatively well to the changing business conditions. Substantial cost rationalisation, through branch reductions, consolidation initiatives and effective use of innovative technologies to streamline business processes, as well as income diversification, have been observed across the EU.[44] These trends must continue to secure a sustainable and healthy EU banking sector, while giving sufficient attention to ensuring financial stability as well as an adequately high level of consumer protection (see Box 3). Alongside these developments, it is crucial to reduce the dependency on banks by diversifying the sources of funding available to the European economy through completing the actions that are part of the Capital Markets Union (CMU).

Box 4: Level III assets — What are they and what do they do?

Level III assets are assets that do not have directly or indirectly (similar assets) observable market quotations. Those are mainly assets that at the measurement date no longer are traded on the secondary market. For instance, this category includes some securitised products, like those sold just before the financial crisis, which no longer have a market price or similar assets traded on secondary markets. According to IFRS 13, the entity, in this case a credit institution, would use all the necessary information (including own data) and reasonable assumptions to give those assets a fair value. Therefore, in good times, level III assets tend to shrink, due to favourable market circumstances that can make optimistic assumptions more 'reasonable'. In bad times, though, their fair value can quickly drop, as these reasonable assumptions are less tenable in worsening market conditions. The illiquid nature of those assets (lack of publicly available inputs) does not grant them any role as liquid assets for the Liquidity Coverage Ratio (LCR) treatment. In addition, on top of the standard capital requirements, determined according to the book they are in (trading or banking) and the type of counterpart, level III assets are generally subject to a required stable funding factor of either 50% or 85% for the Net Stable Funding Ratio (respectively, if maturity is below or above 1 year).

Chart B4.1: Level III assets, top 50 EU banks, EUR billion, 2015



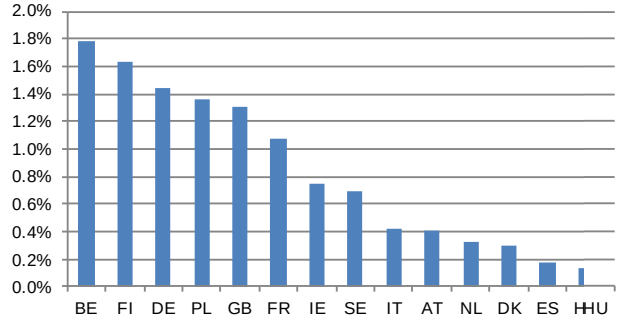
Source: SNL Financial and own calculations
Note: Selection of the top 50 banks that participated in the EBA Stress Test 2016. Data for Raiffeisen Bankengruppe, NV Bk Nederlandse Gemeenten, NRW.BANK and Volkswagen Financial Svcs AG were not available.

[43] For more details see : Results of the April 2017 euro area bank lending survey, Press Release, ECB, 25 April 2017

[44] Approximately 35% of the banks participating in the EBA risk assessment questionnaire mentioned reducing operating expenses as a primary target area for cost reduction, followed closely by impairments. More than 80% of banks whose main priority is to cut costs plan to focus on reducing staff costs and increasing automation.

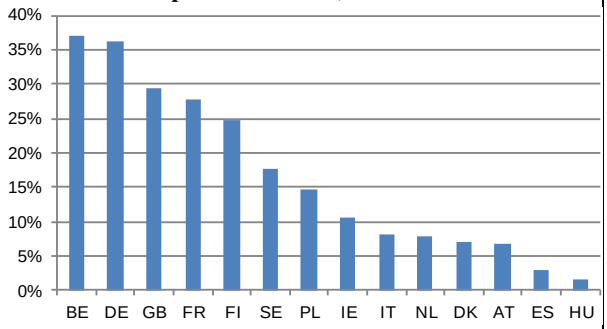
The 50 largest banks in the EU held EUR 245 billion in level III assets in 2015.[45] Level III assets are mainly concentrated in the UK and France, followed by Germany (see Chart B4.1), as these countries host the largest investment banks that have mainly dealt with illiquid assets during and after the crisis.

Chart B4.2: Level III assets, in % of total assets, top 50 EU banks, 2015



Source: SNL Financial and own calculations
Note: Selection of the top 50 banks that participated in the EBA Stress Test 2016. Data for Raiffeisen Bankengruppe, NV Bk Nederlandse Gemeenten, NRW.BANK and Volkswagen Financial Svcs AG were not available.

Chart B4.3: Level III assets, in % of CET1, top 50 EU banks, 2015



Source: SNL Financial and own calculations
Note: Selection of the top 50 banks that participated in the EBA Stress Test 2016. Data for Raiffeisen Bankengruppe, NV Bk Nederlandse Gemeenten, NRW.BANK and Volkswagen Financial Svcs AG were not available.

In relative terms, level III assets represent a smaller proportion of the overall balance sheet of EU banks, but there are differences across national banking sectors. On average, level III assets represent less than 1% of total assets and less than 10% of CET1, but they are more concentrated in a handful of countries, including Belgium, Finland, Germany, Poland and the UK (see Chart 4.2). Relative to capital, the proportion of level III assets can be significant. Indeed, it represents roughly 25% of CET1 in Belgium, Germany, the UK, France and Finland (see Chart 4.3).

At the level of individual banks, there are a few that hold significant amounts of level III assets. In particular, at the end of 2015, level III assets were between 40% and 90% of CET1 for Barclays, Deutsche Bank, DekaBank and Belfius.[46] In effect, the presence of level III assets is linked to the business model of the bank. Banks with strong wholesale or investment operations tend to have a larger proportion of level III assets than predominantly retail banks. This may call for targeted monitoring actions based on the actual business model of the financial institution to reduce the pro-cyclicality issue embedded in this type of exposure.

[45] The sample of banks corresponds to the ones covered by the EBA Stress Test 2016. However, Data on level III assets were unavailable for Raiffeisen Bankengruppe, NV Bk Nederlandse Gemeenten, NRW.BANK and Volkswagen Financial Svcs AG.

[46] See EBA Stress Test (2016).

Chapter 3 CAPITAL MARKETS AND INSURANCE

This chapter reviews recent developments in equity and fixed income markets, discusses the importance of investment funds, as well as the role of alternative finance and the insurance sector.

European equity markets performed well despite challenging market conditions. Share prices increased, supported by low interest rates, while dividend yields fell, even if they remained substantially higher than the return on most fixed-income securities. Equity issuance and the merger and acquisitions (M&A) market showed diverging trends in 2016. Equity issuance — less supported by bank issuing equity to rebalance their balance sheet — shrank, while there was a significant increase in intra-European M&As, largely owing to two major acquisitions in the Food and Beverage and Oil and Gas sectors.

European debt markets evolved positively despite volatility outbursts caused by economic and political uncertainty and monetary policy developments. Corporate issuance continued to expand, with investors shifting their portfolio to bonds with longer maturities and higher credit risk in search of higher yields.

Assets under management by the European asset management industry, dominated by the UCITS[47] sector, increased by 4% in 2016. About 27% of total assets are invested in equity funds, compared to 24% and 21% in debt and mixed funds respectively. Pension funds increased their assets under management by 90% over the period 2008-2015, supported by the recovery of the equity market and the increase in bond valuations.

Alternative funding like private equity, business angels, and crowdfunding showed good performance in 2015, with, for instance, crowdfunding gradually developing in a more mature market. Overall, the size of the EU alternative finance industry remains limited with alternative funding activities often strongly concentrated in a few countries. Positively, the overall access of small and medium-sized businesses to finance has continued to improve since the financial crisis.

The European insurance industry — the largest in the world — faced concerns about the effect of the low interest rate environment. This should not come as a surprise, knowing that fixed-income securities make up 60% of insurers' investment portfolio. With EUR 10 trillion of assets under management in 2015, insurance companies continue to be major institutional investors.

[47] UCITS refers to undertakings for the collective investment in transferable securities.

3.1 Equity markets

3.1.1 Relevance of EU equity markets in the world

The capitalisation in European equity markets has increased steadily in the past few years, just not as quickly as in some other markets. As a consequence, the relevance of European equity markets has diminished in the last decade.[48] The capitalisation of European equity markets represented almost 30% of global market capitalisation in 2005, whereas by 2016 it had declined to less than 20% (see Chart 3.1).[49] Since 2013, this relative decline has become more pronounced. Within Europe, the EU-28 has accounted for some 82% of the equity market capitalisation in the last decade, falling to 55%, if we consider the EU27 without the UK. Finally, the euro area accounts for 46% of European equity markets and less than 12% of world equity markets in the last decade (see Chart 3.2).

Chart 3.1: Market shares in terms of stock market capitalisation, selected areas

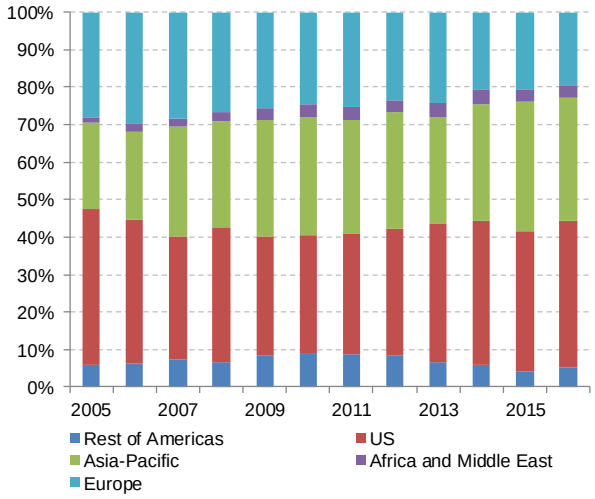
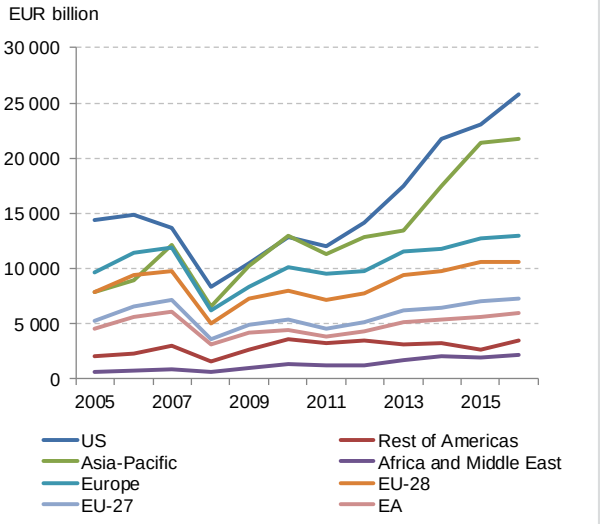


Chart 3.2: Market capitalisation, selected areas



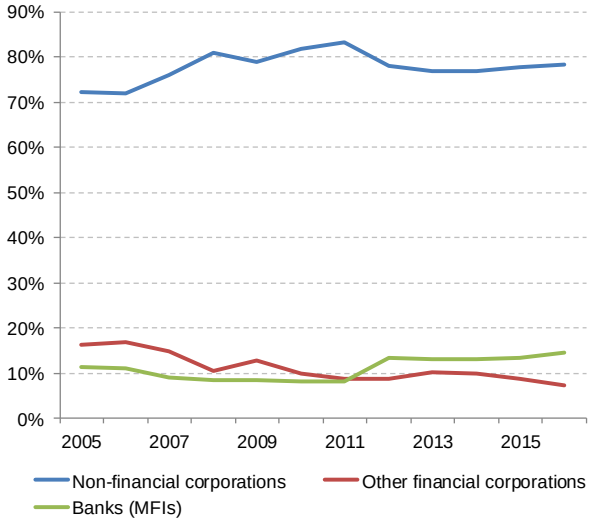
Source: ECB, Datastream, FESE, NASDAQ, LSE, WFE, and AFME

Non-financial corporations (NFCs) are the predominant issuers of equity, mainly in their domestic markets. In the last decade, the share of NFCs accounted for an average of 78% of total outstanding equity issuance, and this share is growing. Banks and other financial corporations account for the remaining share, with banks becoming more important relative to other financial corporations (see Charts 3.3 & 3.4). Globally, 94% of the listed companies were domestic, which implies that only 6% of all companies engage in cross-border equity listings. The EU and the US equity markets are the ones attracting most foreign companies. In the last decade, 42% of all cross-border company listings were recorded in the EU-28, while 27% were recorded in the US.

[48] In many Member States, non-listed equity is an important source of financing (see Chapter 1.3).

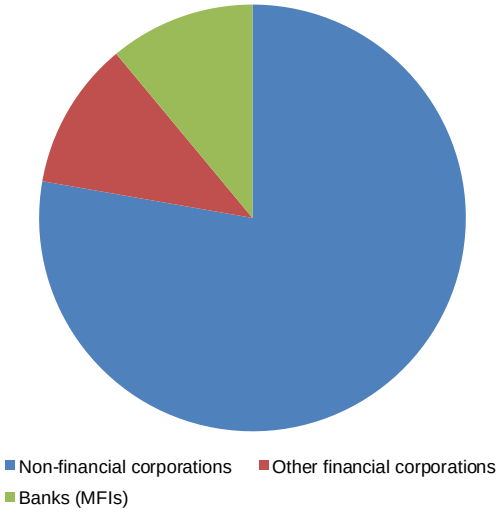
[49] European equity markets include those of the EU-28 countries as well as Belarus, Norway, Russia, Switzerland, Turkey, and Ukraine for which the World Federation of Exchanges provides information.

Chart 3.3: Share of new issuance by issuer type, euro area



Source: ECB, EFAMA, Dealogic

Chart 3.4: Outstanding stocks (%) by issuer type, EA average 2005-2016

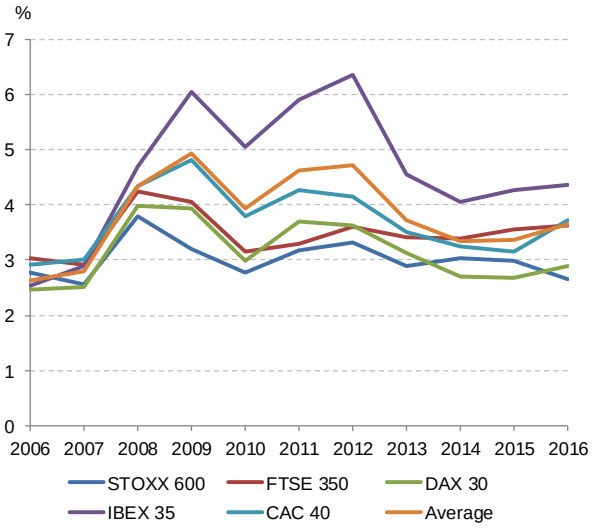


Source: ECB, EFAMA, Dealogic

3.1.2 EU equity markets performance

Dividend yields in EU equity markets declined in 2016, but remained substantially higher than yields on most fixed-income securities. The dividend yield in the STOXX600 index, which represents large, mid and small capitalisation companies across 17 EU Member States, has been on a declining trend since 2008. In particular, rising share prices, driven by low interest rates, have lowered dividend yields. The Spanish stock market consistently outperformed other main EU markets in terms of dividend yield. In 2016, the Spanish index IBEX35 reported a dividend yield of 4.4% (see Chart 3.5).

Chart 3.5: Dividend yield, selected European indices



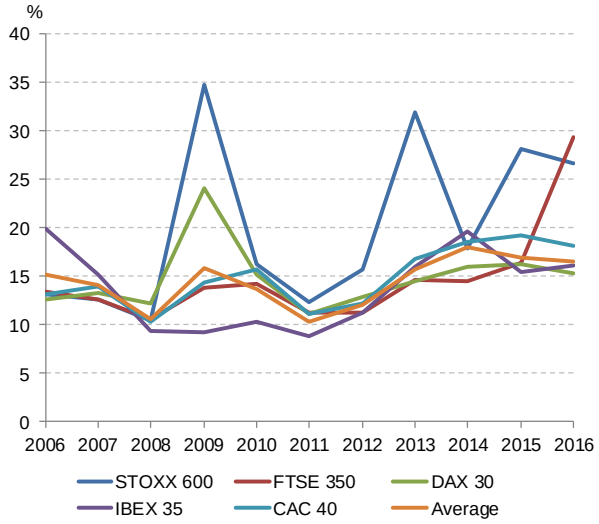
Source: ECB, EFAMA, Dealogic

The price-earnings ratio and the price-to-book value of the STOXX600 came down somewhat in 2016, but valuations are still high (see Charts 3.6 & 3.7). The STOXX600 index shows that equity valuations are high on European markets. Overall, conventional valuation measures show few signs of excessive risk-taking for European equity markets.[50] Stock markets have remained on the defensive, without moving in any clear direction. Political

[50] In comparison, US assets show signs of overvaluation, recently driven by optimistic assumptions about the prospects and impact of the new administration's announced pro-growth policy. Various measures (i.e. market capitalisation + debt - cash) / corporate gross value added and several price/earnings ratios) approach levels commensurable with those observed during previous bubbles.

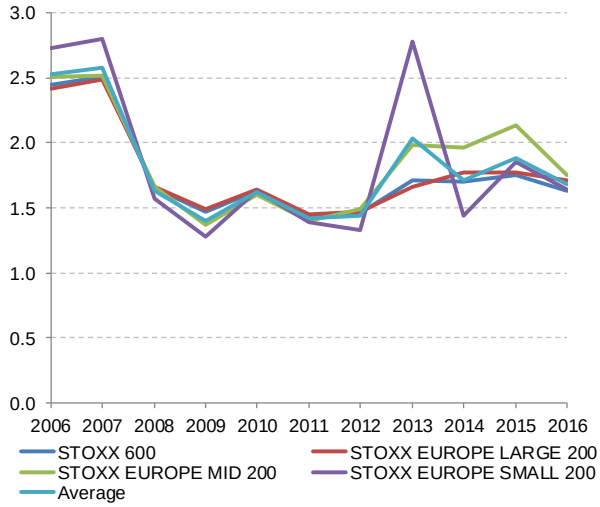
uncertainty and subdued corporate profits counterbalance the positive impact of the ongoing economic recovery and the search for yield by investors.

Chart 3.6: Price-to-earnings ratio



Source: ECB, EFAMA, Dealogic

Chart 3.7: Price-to-book ratio



Source: ECB, EFAMA, Dealogic

In terms of risks, emerging market shocks could affect equity markets globally, including the EU. This could happen if confidence eroded based on re-emerging uncertainty about emerging markets' growth prospects. Indeed, the sharp decline in Chinese equity markets in mid-2015 and early 2016 led to significant volatility across global markets, suggesting emerging markets have an increasing potential to trigger confidence and financial shocks that affect the global market. In particular, confidence shocks may prompt large portfolio reallocations and large price swings.

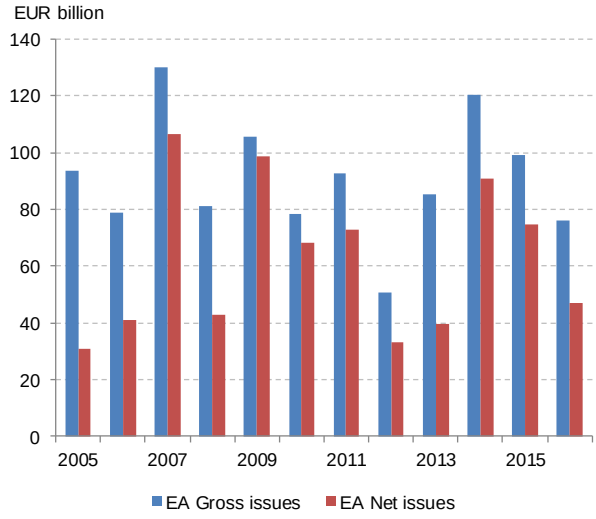
3.1.3 New equity issuance of financing companies

One of the main functions of equity markets is to make it easier to finance corporate investment projects.

Both gross and net issuances of shares have declined in the last year, partly because banks already had progressed in strengthening their balance sheets.[51] Gross issuance of equity in the euro area was more than EUR 76 billion in 2016 (see Chart 3.8), while in net terms, issuance was EUR 47 billion. New equity issuance in 2016 was below the ten-year average, both in gross and net terms. Non-financial corporations accounted for 70% of net equity issuance. The share of other financial corporations was 18%, and banks accounted for the remaining 12%. Bank issuance, which was the highest among all firms between 2010 and 2015, has declined significantly in the past couple of years. Banks' re-adjustment to lower issuance levels reflecting that they are close to completing the adjustment of their balance sheets in view of the new capital requirements introduced after the financial crisis (see Chart 3.9).

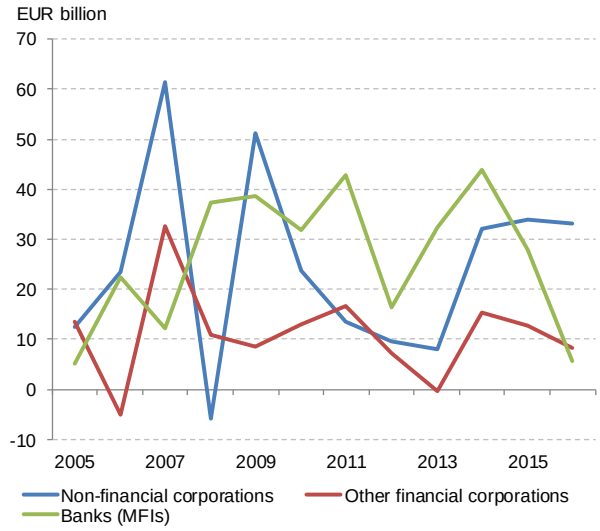
[51] Companies may not only issue new shares, but also redeem shares or delist. To properly account for this, one distinguishes between gross and net issuances.

Chart 3.8: Equity issuance, euro area



Source: ECB

Chart 3.9: Net equity issuance by issuer, euro area

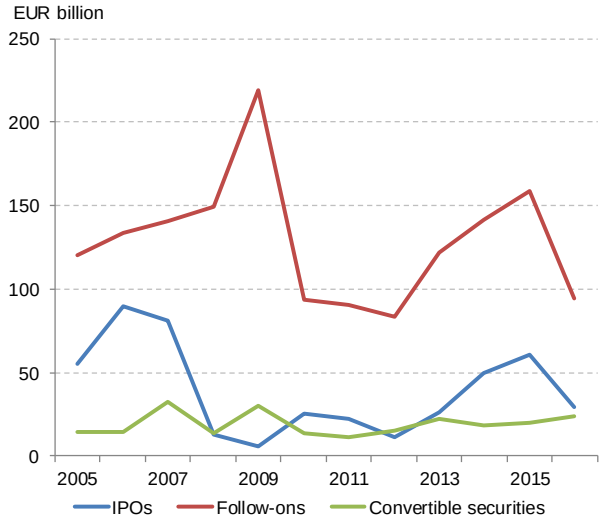


Source: ECB

3.1.4 Equity underwriting by type of asset

Equity underwriting totalled EUR 147 billion in 2016. Almost two thirds of underwritings were follow-on issues, another 20% were initial public offerings (IPOs), and the rest convertible securities (see Chart 3.10). Follow-on underwriting constitutes the bulk of the business every year.

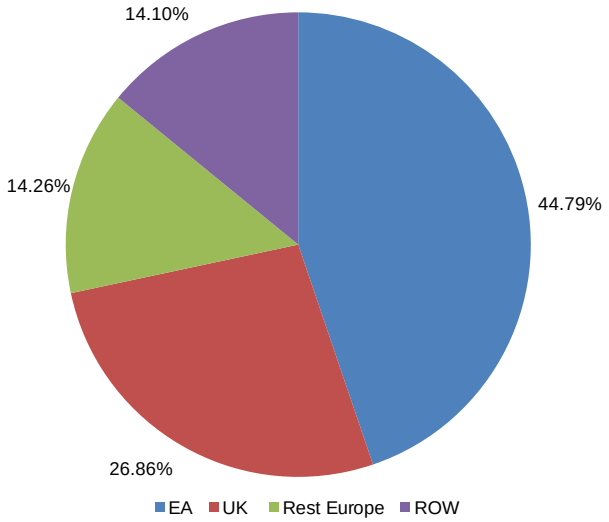
Chart 3.10: Equity underwriting



Source: Dealogic

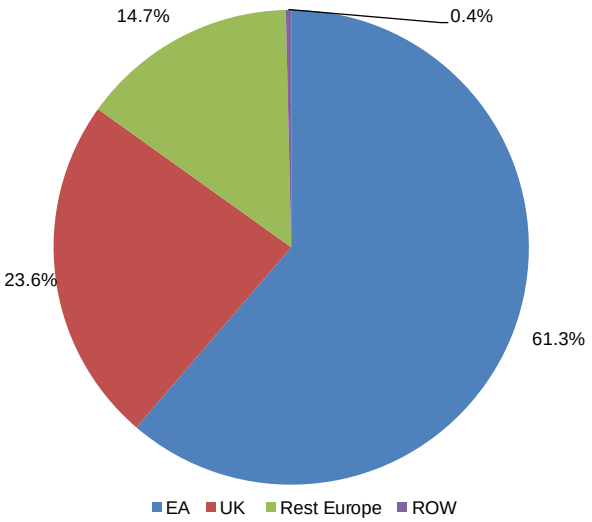
On average, companies located in the euro area have issued 47% of the total amount of IPOs in euros. UK companies represent 27%, and companies located in other parts of the EU and the rest of the world make up the remaining quarter (see Chart 3.11). However, while IPO underwriting for UK firms is relatively stable, underwriting for companies in the euro area and other parts of the world has been more volatile. This volatility is illustrated by the share of corporate IPOs in the euro area increasing to over 60% in 2016, while the share of IPOs by firms located outside Europe became insignificant at around EUR 100 million (see Chart 3.12).

Chart 3.11: IPOs by nationality of issuer; average value 2000-2016



Source: Dealogic

Chart 3.12: IPO value by nationality of issuer, 2016, relative share

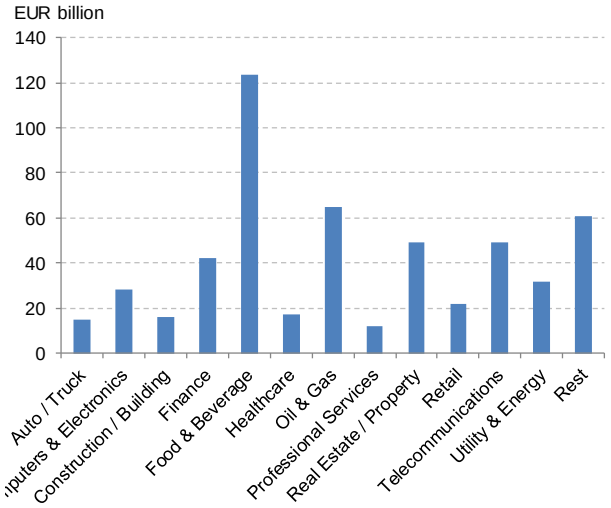


Source: Dealogic

3.1.5 European mergers and acquisitions

M&A activity has continued to recover globally after the crisis. M&A volume has been increasing since the low of 2012, when volumes were only EUR 267 billion. The volume of total deals increased by 19% in 2016, which was partly the result of two major acquisitions (Royal Dutch Shell bought the BG group, and Anheuser Busch acquired SAB Miller). As a consequence, the food and beverage and oil and gas industries accounted for the highest volumes of M&A in 2016 (see Chart 3.13). Intra-European deals account for EUR 531 billion out of EUR 1 013 billion of completed European M&A deals. In about 45% of non-intra-European deals, a European company bought a non-European company, and in the other 55% a non-European company acquired a European company.

Chart 3.13: M&A deals by industry in 2016



Source: Dealogic

The volume of intra-European M&As increased by 25% from 2015 to 2016. UK companies have been particularly active in this market, either as target companies or as buyers. By nationality of the target companies, almost half of all M&As involved UK companies (EUR 264 billion). Euro-area target companies constituted 45% of the deals, and the remaining 5% were companies located in the rest of Europe. Most of the acquiring firms were residing in the euro area and responsible for 77% of the value of all intra-European deals. The share of deals in which UK companies were the acquiring firm was 16%, and the companies in the rest of Europe accounted for the remaining 7%. 2016 was a year with an unusually high flow of intra-European M&As, where UK firms were bought by euro-area companies.

3.2 Fixed-income markets

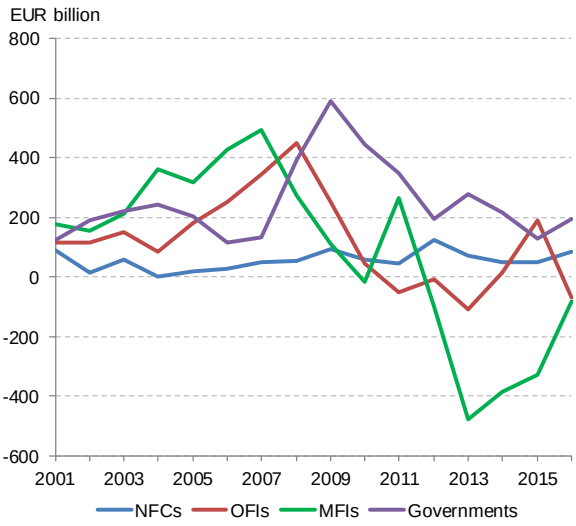
Even though 2016 proved to be a difficult year, European fixed-income markets continued to perform well. In particular, (euro-denominated) corporate issuance continued to expand. In a search of yield, investors increased the risk level of their portfolio by shifting their investments to bonds with longer maturities and higher credit risk. Boundaries on the yield curve were indeed pushed ever further, with negative yields up to 12 years in German Bunds. Maturities were extended to new levels, as illustrated by the introduction of a new 70-year benchmark issue by Austria.

At the same time, the year was marked by several episodes of high volatility, driven by macro-economic shocks, political and monetary uncertainty. The combination of (ultra) low interest rates, elevated levels of volatility and high volumes was already steering markets in 2015. The strong volatility at the start of the year, usually an attractive window used by (frequent) issuers to frontload their funding programmes, caused the European corporate and high-yield markets to remain subdued until March. Sovereign issuers, even though less affected by such volatility spikes, also spread out their funding programme (somewhat) more evenly throughout the year.

3.2.2 Public sector

The market for public debt instruments (sovereigns, supra-nationals, agencies and local authorities) experienced considerable volatility in 2016. Net issuance rebounded from EUR 193 billion in 2015, which was the lowest since 2007 (see Chart 3.14). Net issuance in 2016 was EUR 193 billion (7% of euro-area GDP).

Chart 3.14: Net issuance in historical perspective



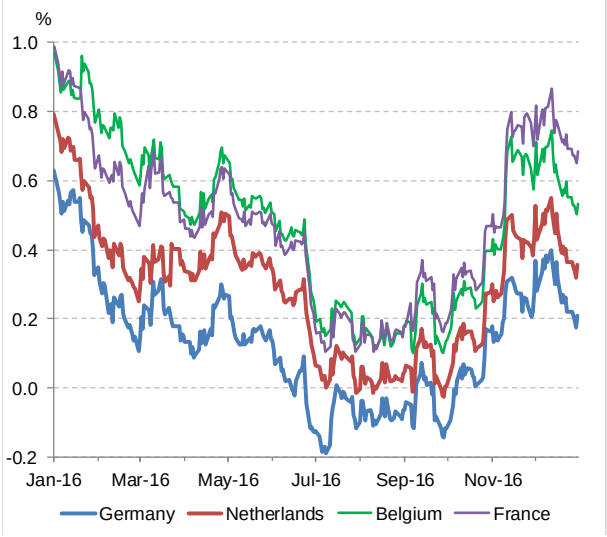
Source: ECB SDW and own calculations

Central banks, primarily the ECB, the US Federal Reserve and the Bank of England continued to influence debt markets. Market participants generally welcomed the ECB's decision (March 2016) to undertake new stimulus measures (including extension and expansion of the public sector purchase programme and the corporate sector purchase programme, leading to a significant tightening of spreads and a flattening of yield curves.

Towards the end of the second quarter, investors became more risk averse, induced by the Federal Reserve's stated intention to raise interest rates and by the approaching date of the UK referendum on EU membership. The lower appetite for risk continued for most of the year. In this context, lower-risk instruments were performing well, as investors sought safe-haven assets to safeguard their investments. As a result, for example, the yields on 10-year German Bunds reached all-time lows, crossing the zero bound to attain a new record low of -0.19% in July (see Charts 3.15 & 3.16). At a certain point, the German yield curve exhibited negative yields up to a maturity of 12 years. Globally, the total amount of

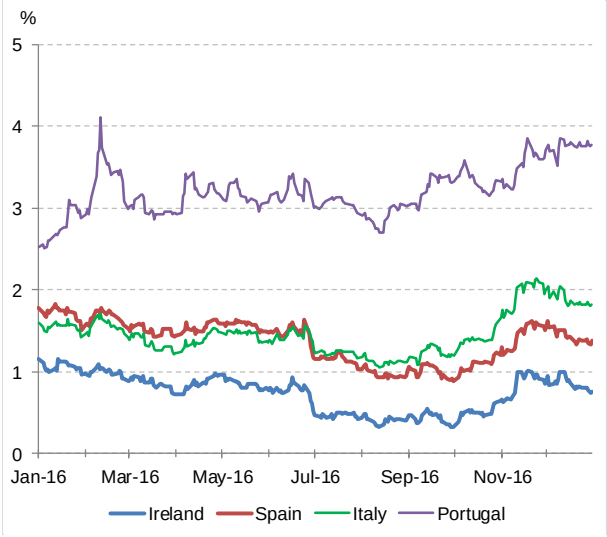
outstanding sovereign debt with negative yields reached no less than EUR 11 trillion by the end of the first half of 2016. The amount fell towards the end of the year, falling below EUR 9 trillion.

Chart 3.15: 10-year benchmark yield



Source: Thomson Reuters DFO and Eikon

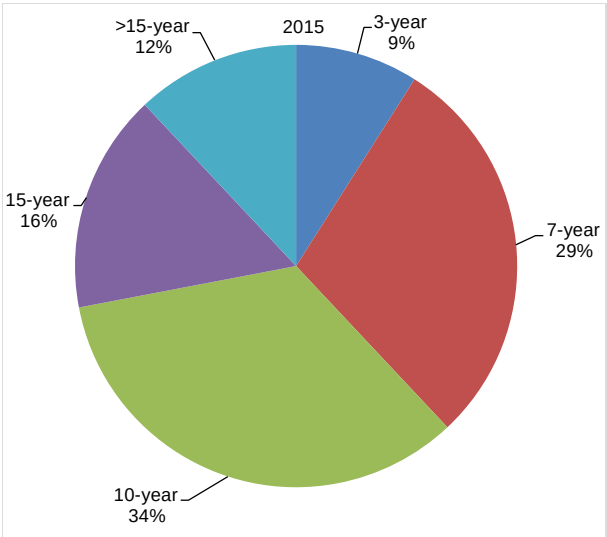
Chart 3.16: 10-year benchmark yield



Source: Thomson Reuters DFO and Eikon

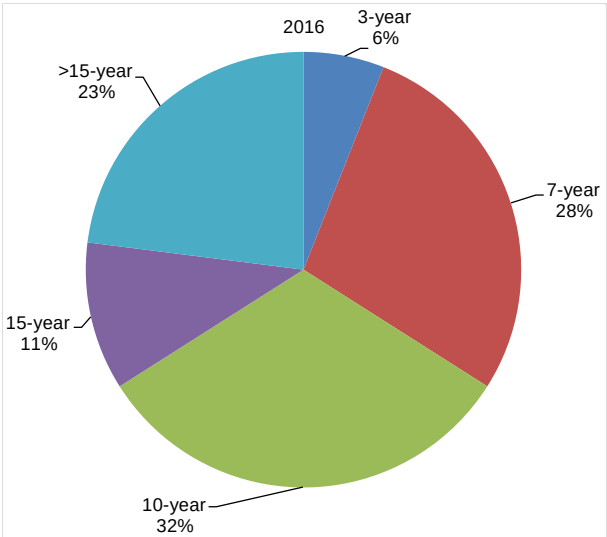
In general, sovereigns frontloaded their issuance less in 2016 than in 2015, reflecting lower funding needs due to budgetary consolidation. In view of low rates and cheap funding costs and with the public sector purchase programme on track until March 2017 (at the least) — strongly supporting the primary market — issuance has been progressively spread throughout the year.

Chart 3.17: EA public debt maturity in 2015



Source: Dealogic and own calculations

Chart 3.18: EA public debt maturity in 2016



Source: Dealogic and own calculations

The supply of bonds by sovereigns remained heavily skewed towards (ultra) long maturities, as issuers continued to exploit the historically low interest rate environment to lengthen their maturity profile (see Charts 3.17 & 3.18). Issuers capitalised on investors' search for yield to secure long-dated financing at attractive funding costs. Building on solid demand at the ultra-long end of the curve, some countries — Belgium, France and Spain — successfully issued a

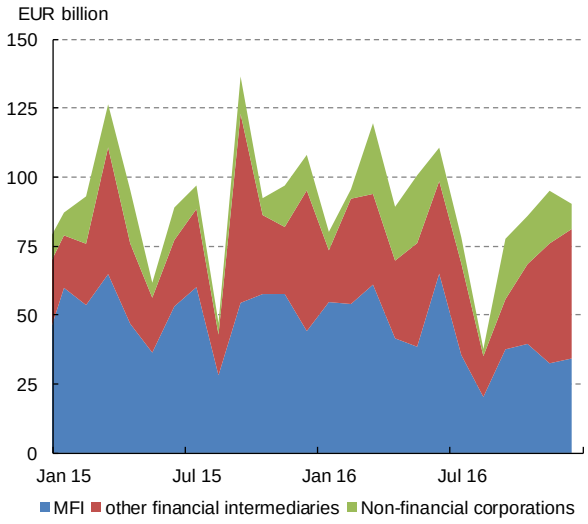
new 50-year benchmark. This was possible with the support of a large range of high-quality institutional investors, large redemption flows (particularly in the second quarter), and attractive pricing. Belgium and Ireland even issued 100-year papers in smaller private placements of EUR 100 million each. Italy also joined the league of ultra-long issuers, by issuing EUR 5 billion of its first 50-year syndication (while demand surpassed EUR 18.5 billion). Austria joined in pushing the boundaries of fixed maturity duration sovereign bonds ever further by issuing a new 70-year benchmark (issue size of EUR 2 billion). As a result, ultra-long dated bonds have become an important asset class.

3.2.3 Non-financial corporations

2016 was also a remarkable year for corporate issuers, with tight spreads and low premiums. Even though the corporate bond market experienced several bouts of elevated volatility, credit spreads were the tightest ever, premiums for new issues were very low, and investors' appetite remained strong.

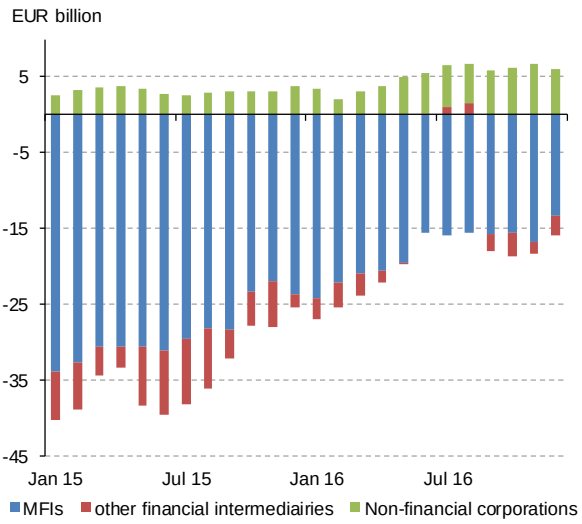
Total gross corporate issuance in 2016 was EUR 534 billion, down slightly from 2015 (see Chart 3.19). Net issuance increased substantially from the previous year and amounted to EUR 84 billion in 2016 compared to EUR 50 billion in 2015. Net issuance of private euro-denominated long-term debt securities has been persistently positive, contrasting with other types of issuance (see Chart 3.20).

Chart 3.19: Gross issuance of private euro-denominated long-term debt securities



Source: ECB / Thomson Reuters DFO and Eikon

Chart 3.20: Net issuance of private euro-denominated long-term debt securities (12-months moving average)



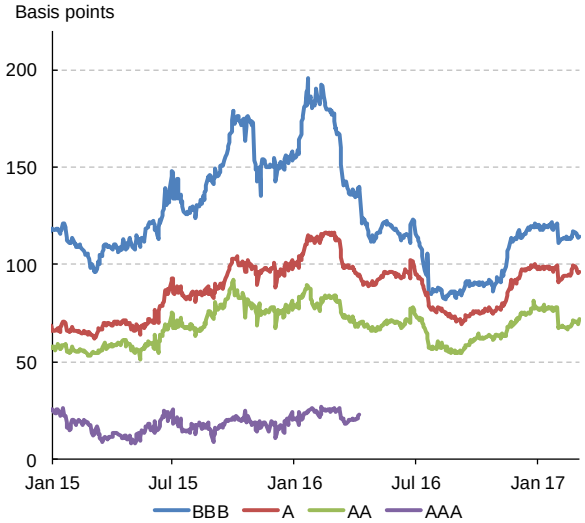
Source: ECB / Thomson Reuters DFO and Eikon

Amid several geopolitical and macro-economic shocks in 2016, NFC issuance volumes were supported by an environment of ultra-low interest rates, enduring continued bank disintermediation, as well as robust refinancing activity for M&As. The ECB's announcement of additional monetary policy measures in March included an expansion of the asset purchase programme (including corporate bonds), which changed the conditions for euro-denominated debt markets. ECB purchases of eligible corporate bonds in both secondary and primary markets also had an impact. Aggregate corporate spreads narrowed significantly — notably for lower-rated issuance — in the months following the ECB announcement (see Chart 3.21). Primary market activity picked up substantially following the ECB announcement, driven also

by NFCs reinforcing their liability management by capitalising on low interest rates. The most prominent primary-market issuances occurred in the context of M&As.

Issuance volumes were strong across all credit buckets. Total (euro-denominated) issuance volume of investment-grade bonds was EUR 285 billion in 2016 and exceeded the issuance of EUR 239 billion in 2015. The high-yield market steadily recovered from a poor start of the year, with a healthy increase in volumes reaching EUR 57 billion in 2016 compared to EUR 55 billion in 2015. Spreads in the high-yield segment fell below their long-term averages, in spite of weak fundamental data and slow earnings growth. The improving market sentiment encouraged many issuers to exploit the low interest rates, which in turn stimulated investor appetite for higher yielding assets. Most corporate issuance was at the long end of the curve, with over one third having a maturity of at least 10 years, again reflecting a search for yield. NFCs are thus significantly altering the maturity structure of their corporate debt. The resulting extension in their debt maturity profile could hold implications for growth opportunities, particularly considering the risks posed by debt overhang in terms of underinvestment in the future.

Chart 3.21: Euro-area corporate bond spreads



Source: Thomson Reuters DFO
Note: The AAA index is currently not updated due to the lack of qualifying corporate bonds required for the index.

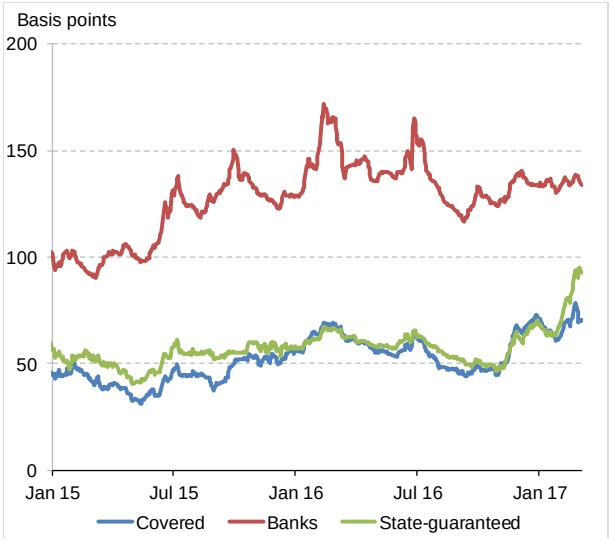
3.2.4 Monetary and financial institutions

Funding activity (volumes as well as patterns) of monetary and financial institutions (MFIs) has been impacted specifically by the volatility in interest rates, currency exchange rates, and credit spreads. Moreover, market-based funding needs have diminished particularly in the EU, mainly due to the cost-efficient funding offered by central banks. Bank funding via deposits has also been strong despite very low retail deposit interest rates.

MFI issuance of bonds has been adjusted to minimise liquidity reserves as much as possible. Issuance plans have also been geared towards strengthening capital buffers to fulfil regulatory requirements, although the issuance of subordinated debt seems to have stalled, pending finalisation of the relevant legislative proposals on bank resolution.

Gross issuance of bonds by MFIs in 2016 was EUR 2 298 billion, down from EUR 2 645 billion in 2015. Net issuance remained negative, but rebounded substantially from EUR -330 billion in 2015 to EUR -84 billion in 2016. Net issuance has been persistently negative in recent years and is gradually recovering from the low in 2013, following the sovereign debt crisis. Alongside this recovery in issuance, there has also been a visible improvement in the spreads for MFI bonds and credit default swaps (see Chart 3.22).

Chart 3.22: Spreads of bonds issued by banks



Source: Thomson Reuters Eikon / Markit Iboxx

In an environment of elevated volatility, suitable issuance windows have been few and short. The distribution of issuance volumes has been linked to risk perceptions, determining the relative suitability of different debt instruments. MFIs have adjusted their strategies accordingly, by frontloading covered bond issuance in the first half of the year when market conditions were less favourable. Less defensive issuances were postponed until markets stabilised. As such, when the environment was more favourable to riskier instruments, issuers focused on senior unsecured debt.

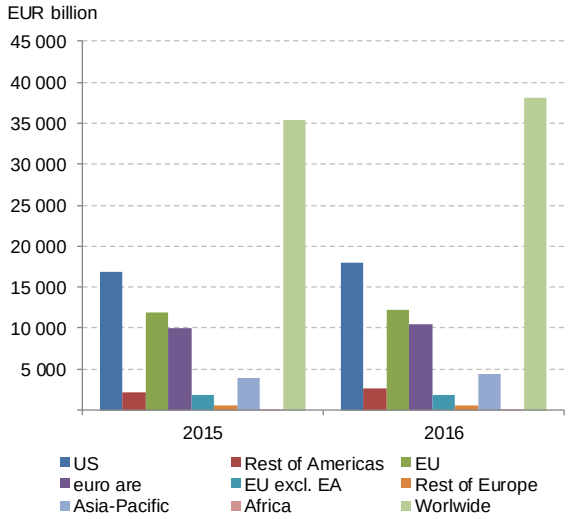
As in the past few years, regulation and higher capital requirements for financial institutions have continued to influence the market for senior unsecured debt in 2016. For banks, the Minimum Requirement for Own Funds and Eligible Liabilities (MREL) and the Total Loss-Absorbing Capacity (TLAC) requirements play a crucial role in their capital planning. Last year banks were still waiting for the final implementation framework and required levels. Nevertheless, they are searching for the most cost effective ways to build up the envisaged capital buffers.

3.3 Investment funds, exchange-traded funds and pension funds

3.3.1 Global importance of EU investment funds industry

Globally, the investment fund industry held assets of almost EUR 40 000 billion in 2016 (see Chart 3.23), an increase of 7.5% over the previous year. However, this growth is not evenly spread across economic regions. The economic areas with the largest stock of investment fund assets — the US and the EU — had growth of 6.4% and 4.0% in 2016. The areas where the volume of assets is low were growing at a higher rate of 22% in the rest of Americas, and 15% in Asia and the Pacific.

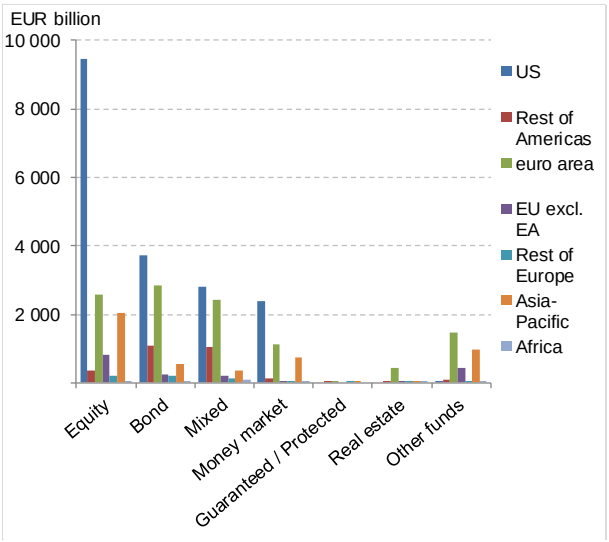
Chart 3.23: Investment fund assets by area



Source: ECB, ICI, EFAMA

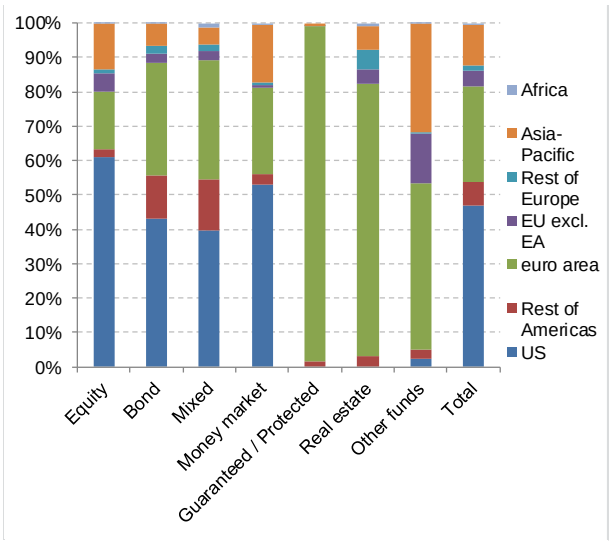
The investment fund industry is dominated by US asset managers, who managed almost half (47%) of the globally outstanding assets at the end of the third quarter of 2016. EU asset managers are in second place with almost EUR 13 000 billion in assets, which represent 32% of outstanding assets worldwide. The Asian and Pacific countries account for 12% of assets worldwide.

Chart 3.24: Assets by type of investment fund, 2016



Source: ECB, ICI, EFAMA

Chart 3.25: Geographic distribution of assets by type of fund



Source: ECB, ICI, EFAMA

Investors behave differently in the US and the EU. EU investors prefer a more balanced mix between equity and fixed income assets, while US investors have a preference for equity (see Chart 3.24). The share of equity fund assets located in the US is 61% of the total worldwide, contrasts with 22% in the EU (see Chart 3.25). In the EU, the amounts invested in equity, debt or mixed funds are quite similar, even though equity funds (EUR 3 387 billion) hold more assets than bond funds (EUR 3 085 billion) or mixed funds (EUR 2 624 billion). These

amounts represent 27%, 24% and 21% respectively of investment fund assets in the EU. In contrast, US equity funds hold more than 51% of US investment funds' assets, or EUR 9 472 billion (see Chart 3.24).

3.3.2 UCITS and other investment funds

Undertakings for collective investment in transferable securities (UCITS) funds are the most widely used investment funds within the EU. The advantage of these funds is that they can be sold to any investor within the EU under a harmonised regulatory regime. Money market, equity, and bond investment funds are the funds that have relied the most on the UCITS status. Some 96% of all money-market funds in the EU are UCITS funds, while almost 90% of all equity and 75% of all bond funds are UCITS. At the end of 2016, almost 66% of all mutual funds in the EU take advantage of the benefits that UCITS provide (see Table 3.1).

Table 3.1: 2016 UCITS and non-UCITS assets by type of funds, EUR billion

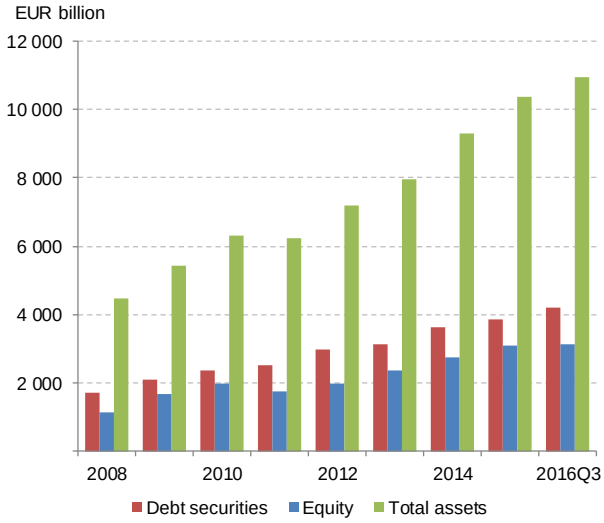
	UCITS	UCITS (%)	Non-UCITS	Total
Equity	3 178	89.34	379	3 557
Bond	2 326	75.71	746	3 072
Mixed	1 423	53.14	1 255	2 678
Money market	1 179	95.62	54	1 233
Guaranteed/ protected	13	21.07	49	62
Real estate	0	0.00	473	473
Other	503	24.98	1 510	2 013
Total	8 622	67.89	4 079	13 089

Source: ECB, EFAMA and ICI

3.3.3 Investment funds in the euro area

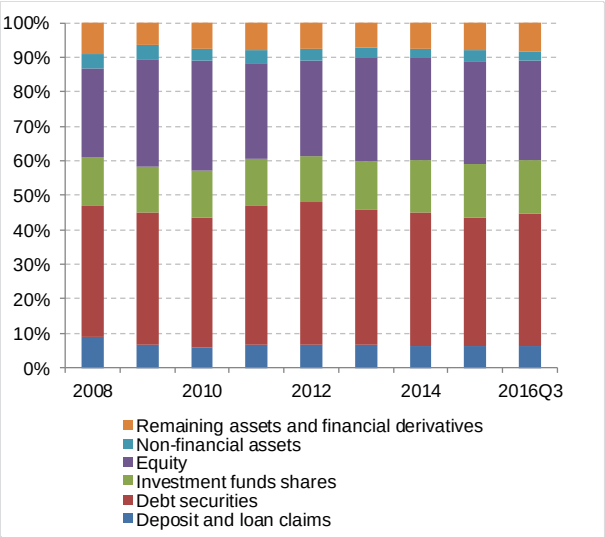
The investment fund industry in the euro area has been growing steadily since 2008. At the end of the third quarter of 2016, investment funds managed assets worth almost EUR 11 trillion, an increase of 5.4% on the previous year. Since 2008, the stock of assets managed by investment funds has gone up almost 2.5 times (see Chart 3.26). Except for 2011 and 2016, assets managed by investment funds grew each year by double digits.

Chart 3.26: Outstanding assets



Source: ECB

Chart 3.27: Proportion of each type of assets



Source: ECB

Investment funds hold most of their assets in bonds and equity, 39% and 28% respectively (see Chart 3.27). The remainder includes shares in other investment funds (16%), financial derivatives (8%), deposits and loan claims (6%), and non-financial assets (3%). Furthermore, the shares of total assets invested in bonds and equity have been stable over the years, ranging between 38-41% for bonds and 25-32% for equity. Bond funds, equity funds and mixed funds account for almost 90% of total assets held by investment funds. Bond funds account for 30% of the investment funds; the proportion was higher during 2011, 2012 and 2013. Equity funds represented about 28% in 2016, with a maximum of 30% in 2010 and a minimum of 24% in 2008. Finally, mixed funds held 27% of the total euro-area investment fund assets. The vast majority of investment funds are open-end funds (98%).

In 2008, more than 70% of the debt securities and 50% of shares held by investment funds in the euro area were issued by issuers located within the euro area. However, by 2016 these proportions had fallen to 48% and 36% respectively as investment funds diversified into US and EU securities originating from Member States other than those in the euro area. The exposure to both US debt and equity has increased by 10 percentage points. There is also an increase in the exposure to other parts of the world.

At Member State level, there are large differences in the size of the investment fund industry, partly determined by differences in tax systems. Luxembourg, Ireland and Malta are the Member States with the largest investment fund industries in relation to GDP. Luxembourg hosts the largest investment fund industry in the euro area, with a market value of EUR 3 785 billion in 2016, accounting for more than one third of all outstanding investment fund assets in the euro area and almost 63 times Luxembourg's GDP. Germany accounts for 19% and Ireland for 17% of total managed assets in the euro area. Investment funds in Germany, Ireland and France manage assets with values of EUR 2 000 billion, EUR 1 867 billion and EUR 1 332 billion respectively. However, growth rates among these four countries are rather different, with the French fund industry growing most slowly among the four. Ireland increased its volume of assets by more than 400% in the period 2008 to 2016, whereas Germany and Luxembourg increased their volume of assets by about 100% in the same period.

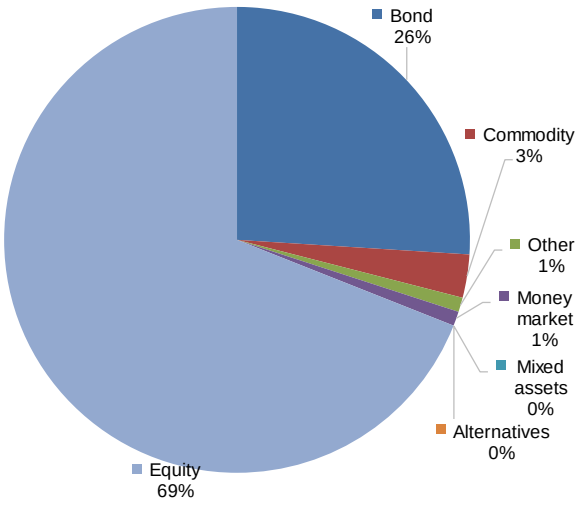
In 2016, in Cyprus, Slovenia and Estonia more than 50% of the investment fund assets were equity securities, whereas investments in debt securities represented less than 20%. The proportions are almost reversed in Austria, Germany, Latvia and Spain, where investments in debt securities were above 40% of total assets and equity less than 20% on average. It is interesting to note that in Portugal, Slovakia and Greece, more than 50% of investment fund assets are neither debt nor equity securities, but rather deposit and loan claims, non-financial assets, derivatives and shares on other investments funds.

Cross-border activity by investment funds remains underdeveloped. According to Harvey et al. (2014), the main barriers to cross-border investments are legal and regulatory barriers rather than organisational issues or a discouraging investment climate. Establishing a proper Capital Markets Union should ease constraints on cross-border activity, and spread investments more evenly across the EU by reducing the uncertainties related to insufficient protection of investors' rights, taxation, differences in state authority, and policy autonomy.[52]

3.3.4 Exchange-traded funds

An exchange-traded fund (ETF) shares many of the principal features of a mutual fund, but ETFs are traded on a stock exchange and generally have lower expense ratios. Cost efficiency is therefore one of the main drivers of ETF market growth. ETF markets have grown rapidly in recent years. In the EU the amount of assets managed by ETFs has been growing by approximately 40% per year since 2000. The industry is expected to sustain high growth rates in the future.[53] This growth has also triggered concerns about low liquidity of thinly-traded ETFs and the fact that (leveraged) ETFs[54] may shift the focus to short-term investments and speculation.

Chart 3.28: Market share of European ETFs by asset type



Source: Thomson Reuters Lipper

Globally, ETFs had about EUR 2 851 billion of assets under management in 2016. With a market share of about 16%, the EU is the second largest market in the world, preceded by the US with its 75%. By asset type, virtually all assets in European ETFs are held by equity ETFs and bond ETFs, which have market shares of 69% and 26% respectively (see Chart 3.28).

3.3.5 Pension funds

Occupational or personal pensions are funded pension funds that convert members' contributions into assets invested on capital markets. They are an important source of funding

[52] See West et al. (2011) for protection of investors rights'; Fleischer (2009) and Cui (2009) for double taxation and Helleiner (1994) and Vogel (1996) on policy autonomy.

[53] For instance, PwC estimates that until 2021 the European ETF market will grow by 27% annually.

[54] Leveraged ETFs use borrowed money to establish a leverage effect and amplify investment returns.

because they increase the amount of market-based financing available to the economy and improve the efficiency of financial intermediation.[55] Countries with a substantial funded pension funds sector tend to have larger capital markets.[56] Increasing pension assets in the euro area and the EU to 90% of GDP — the level observed in the US — would generate additional stock market capitalisations of 31% and 26% in the euro area and EU respectively.[57] This in turn would improve the depth and liquidity of capital markets and increase the shock absorbance (and thus the resilience) of the economy as a result of increased risk sharing.[58]

Table 3.2: EU occupational pension funds by Member State

	Total assets (EUR billion)	**Penetration rate** (Total assets/GDP)	**Number of members** (in thousands)	**Of which active members** (in thousands)	**Number of IORPS**
Netherlands	1 175.7	173.8%	18 120	5 478	249
United Kingdom	1 788.7	69.3%	21 455	9 843	:
Ireland	60.4	23.6%	942	411	:
Portugal	16.7	9.3%	277	153	183
Germany	211.8	7.0%	9 548	5 546	171
Italy	112.5	6.8%	4 344	4 232	283
Belgium	24.7	6.0%	1 513	938	197
Slovenia	2.3	5.9%	461	418	12
Austria	19.8	5.8%	877	737	13
Sweden	18.2	4.1%	1 015	1 015	11
Romania	5.7	3.6%	6 939	6 939	:
Luxembourg	1.8	3.5%	25	21	18
Spain	35.3	3.3%	2 176	733	336
Denmark	6.3	2.3%	13	3	18
Slovakia	1.6	2.0%	942	522	4
Finland	3.9	1.9%	72	13	47
Latvia	0.3	1.4%	255	142	6
Greece	1.2	0.7%	123	82	:
Croatia	0.1	0.2%	32	29	18
Poland	0.4	0.1%	46	45	4
Total	3 487	28.8%	69 175	37 298	1 570

Source: EIOPA statistical annex and own calculations
Note: Data as of December 2015 (with the exception of number of members and active members for Sweden for which 2014 data are shown). Sample of 20 Member States, where five Member States are missing from the database and for three the total assets are below EUR 5 million.

The EU occupational pension funds under the IORP[59] Directive had total assets of EUR 3.5 trillion as of December 2015, equivalent to almost 30% of GDP and covering close

[55] As the terms 'second pillar' and 'third pillar' have different meanings in Member States depending on the design of their national pension systems (e.g. in some Member States, 'second pillar' denotes statutory funded pensions, while occupational pension schemes are considered part of the 'third pillar'), the terms 'occupational' and 'personal' pensions will be used instead of 'pillars'.

[56] See e.g. Rocholl and Niggemann (2010), Meng and Pfau (2010).

[57] This would require increases by 73% and 60% of GDP for the euro area and the EU respectively. See EFSIR (2016).

[58] These funds also provide an alternative savings vehicle for households and add to competition on the loan and securities markets. In so doing, they spread the gains of investments in capital markets to the broader population, facilitate asset diversification, and make access to capital markets cheaper.

[59] Institutions for Occupational Retirement Provision

to 70 million pension scheme members. There is a high degree of heterogeneity among Member States. Differences are mainly driven by the relative shares of private and public provision of pensions, based on countries' legislations and state support (see Table 3.2).[60] For example, the United Kingdom and the Netherlands are characterised by highly developed occupational pension systems with penetration rates much higher than the EU average and with total assets combined of more than 80% of total assets of the occupational pension funds in the EU.

Around 90% of total balance sheet assets are made up of invested assets[61]: as of December 2015, European occupational pension funds managed assets worth almost EUR 3.2 trillion, an increase of EUR 1.6 trillion (i.e. 90% growth) over the period 2008-2015. Several factors can explain this positive development, including the recovery of the equity market and the increase in bond valuations. The latter is driven by the prevailing low interest rate environment and demographical effects (e.g. a higher relative weight of active members over retired people's contribution to net incoming flows).

Table 3.3: Portfolio asset allocation of EU occupational pension funds

	2015		2008		Evolution
Equity and other variable-yield securities	**1 030**	**33%**	**686**	**41%**	**50%**
of which listed equity	904	29%	620	37%	46%
of which other variable-yield securities	126	4%	65	4%	93%
Debt and other fixed income securities	**1 730**	**55%**	**707**	**43%**	**145%**
of which sovereign	1 074	34%	420	25%	155%
of which financial	386	12%	125	8%	208%
of which other	270	9%	161	10%	67%
Other investments	**392**	**12%**	**263**	**16%**	**49%**
Real estate investments	234	7%	128	8%	82%
Other investments	158	5%	134	8%	18%
Assets under management (EUR billion)	**3 152**		**1 655**		**90%**

Source: EIOPA statistical annex and own calculations.
Note: The amount invested in UCITS (EUR 148 billion in 2015 and EUR 76 billion in 2008) has been included in the direct investments by asset class (e.g. for 2015 EUR 49 billion in debt, EUR 36 billion in equity, EUR 8 billion in real estate and EUR 49 billion in other investments).

Table 3.3 shows that pension funds have a long-term investment view, which is reflected in the long-term strategic asset allocation. Despite a noticeable decrease between 2008 and 2015, equity and other variable-yield securities still represent 33% of the total invested portfolio[62] with an amount over EUR 1 trillion. Pension funds' long-term investment horizon and their ability to follow contrarian investment strategies (i.e. strategy in which they invest against the prevailing market trend) support the proposition that pension funds can act as shock absorbers in the economy by providing liquidity and by not being forced to sell assets when asset prices are squeezed.

[60] All EU Member States have set up schemes whereby workers are assured of a certain level of income when they retire. It is up to the Member States to determine the preferred mix within their pension systems. The pension system has three pillars. Although there is no universal taxonomy of pension systems, the following elements are often distinguished: (i) a first pillar consisting of 'state-based pensions', which are part of a public statutory social security system (referred to as pay-as-you-go or 'PAYG' systems); (ii) a second pillar consisting of 'occupational pensions' private supplementary plans with contributions from employers and/or employees, linked to an employment relationship; (iii) a third pillar consisting of 'personal pensions' i.e. non-compulsory private pension savings by individuals.

[61] The remainder being reinsured technical provisions and other assets.

[62] Higher than in the insurance sector, see Section 3.5.

Box 5: Pan-European personal pensions (PEPP)

The European market for personal pension products shows a lot of potential for further development. Currently less than 3% of households' financial assets are invested in personal pension products, driven by a low level of diversification of households' financial portfolios (with on average 30% held in deposits) and an increasing pension gap.[63]

Table B5.1: EU households' financial assets, currency and deposits and personal pensions, 2015 (except for personal pension market which is 2014)

	Total financial assets (TFA) (% of GDP)	Total financial assets (EUR billion)	Currency & deposits (EUR billion)	Currency & deposits (% of TFA)	Personal pension market (EUR billion)	Personal pension market (% of TFA)
Netherlands	325	2 195	409	19	9.7	0.4
United Kingdom	324	8 262	2 006	24	:	:
Belgium	309	1 266	373	29	43.4	3.4
Denmark	294	799	133	17	78.8	9.9
Sweden	281	1 280	179	14	11.0	0.9
Cyprus	259	46	29	63	Low PP	:
Malta	257	24	11	46	2.1	9.0
Italy	251	4 120	1 273	31	37.2	0.9
France	222	4 841	1 379	28	49.9	1.0
Portugal	212	380	168	44	2.3	0.6
Spain	187	2 009	848	42	83.5	4.2
Austria	182	620	252	41	8.1	1.3
Germany	182	5 503	2 153	39	215.1	3.9
Greece	148	259	172	66	Low PP	:
Finland	144	301	90	30	12.0	4.0
Luxembourg	140	72	36	50	:	:
Ireland	139	356	132	37	4.7	1.3
Bulgaria	135	61	23	38	0.2	0.3
Hungary	124	133	38	28	3.5	2.6
Croatia	121	53	29	55	0.3	0.7
Estonia	113	23	7	29	0.3	1.5
Czech Republic	110	186	97	52	11.4	6.2
Latvia	108	26	9	34	0.3	1.1
Slovenia	102	39	20	50	1.9	4.8
Poland	97	408	195	48	0.9	0.2
Lithuania	92	34	12	36	0.05	0.1
Slovakia	77	61	38	62	1.5	2.4
Romania	72	114	40	35	0.2	0.2
Total EU-28	228	33 470	10 149	30	578*	2.3*
Total EU-24	:	24 831	:	:	578	2.3

Source: Eurostat, European Personal Pension Framework (EPPF) study (E&Y — May 2017) and own calculations.
Note: for Cyprus and Greece the current personal pension market is very low. As per the EIOPA 'Consultation paper on creation of pan-European personal pension', the assets under management in Luxembourg and the UK amounted to EUR 0.5 billion (as of December 2011) and EUR 237 billion (as of December 2010) respectively. However the definition of the personal pension product employed by EIOPA is less stringent than the one used in the EPPF study as it includes mandatory retirement products. Therefore the figures are not fully comparable. Furthermore, households' financial assets include non-profit institutions serving

[63] The pension gap is defined as the difference (or gap) between the pension individuals on an aggregated basis can currently expect to receive (from a possible combination of state, workplace and personal pensions) and the amount individuals on an aggregated basis are likely to need for an adequate standard of living in retirement. The gap is, among other factors, influenced by ageing and fiscal pressures limiting the capacity of states to sustain adequate retirement incomes in the long run.

households. The totals for the last two columns are for 24 Member States.

In addition, the EU market for personal pensions is fragmented, with a low degree of cross-border provision and portability.[64] This fragmentation prevents personal pension providers from maximising economies of scale and achieving risk diversification. This reduces choice and increases costs for pension savers, and also hinders digital innovation.

The Commission therefore announced as part of the Communication on 'Capital Markets Union — Accelerating Reform' that it will analyse ways to increase choices for retirement savings and build an EU market for personal pensions.[65] The preparatory works are currently being finalised and the Commission is expected to come forward with a proposal in the summer of 2017.

Finally, as pointed out by EIOPA[66] traditional defined benefit plans, which make up approximately 75% of the sector in terms of assets, are affected by the current low interest rates environment.[67] Defined benefit schemes in many EEA countries are long-term investors, whose liabilities have a longer duration than their assets, potentially leading to long-term asset-liability mismatches that sometimes can be greater than those experienced in the insurance sector. In the course of 2015, lower interest rates negatively affected cover ratios[68] for most of the EEA countries in the sample, resulting in a decrease in the average weighted cover ratio in 2015 from 104% to 95%.[69]

3.4 Other types of funding

Developing funding options beyond banking is particularly relevant for SMEs, as they rely heavily on bank financing and have limited access to capital markets.[70] Firms in the early stage of their life cycle tend to have less access to traditional market-based funding sources because they often combine a higher risk profile with a lack of earnings or collateral.[71] In addition, they typically face more significant barriers to funding than larger firms, largely owing to existing information asymmetries.[72]

Overall, SMEs' access to finance has improved significantly since the 2008 financial crisis. The latest survey on the access to finance of enterprises (SAFE), dating from June 2016, even reports a negative financing gap for euro-area SMEs — except Greece (23%) and France

64 EIOPA's advice on the development of an EU single market for personal pensions products (PPP), July 2016, available at: https://eiopa.europa.eu/Publications/Consultations/EIOPA%27s%20advice%20on%20the%20development%20of%20an%20EU%20single%20market%20for%20personal%20pension%20products.pdf

65 COM(2016) 601 final.

66 The European pension fund sector ––June 2016.

67 This type of plan provides employees with a defined level of pension, although market developments may affect funding levels, which may have affect sponsors and/or members depending on how risks are shared across the parties.

68 Defined as net assets covering technical provisions divided by technical provisions.

69 Financial stability report ––EIOPA –– December 2016. For further details on the EIOPA stress test, see https://eiopa.europa.eu/Pages/News/Results-of-the-first-EU-stress-test-for-occupational-pensions.aspx

70 Improving SMEs financing options also affects the economy as a whole. SMEs represent 99% of all businesses in Europe. They are considered the backbone of the European economy given their crucial contribution to economic growth, innovation and job creation.

71 See European Commission (2015).

72 In the fourth quarter of 2016, 57.6% of SME funds consisted of bank loans and bank overdrafts. Equity and debt financing in general represented only 2.3%. See ECB (2016a).

(3%) — indicating that the availability of funds exceeds the need for external funds. This is also reflected in the fact that only 9.2% of SMEs indicate access to finance to be a problem, compared to 17.4% in June 2009. Alternative sources of funding also remain underdeveloped in the EU compared to other regions around the world. It therefore remains important to further unlock these alternative sources of funding to broaden the spectrum of available funding to SMEs and other firms. By doing so, the possibilities for investors to diversify their portfolio will also improve.

The remainder of this section focuses on alternative financing instruments such as private equity, crowdfunding and business angel investment. Official statistics on these sources of funding are scarce or unavailable, so the analysis mainly relies on unofficial data.

3.4.1 Private equity and venture capital in the EU

Private equity is the provision of equity capital to non-quoted companies with significant growth potential. Private equity funds invested in about 5 000 European firms in 2015, 86% of them being SMEs.[73] Private equity firms launch private equity investment funds that collect capital from investors which are typically institutional investors (like pension funds, insurance companies, banks, etc.), governments, investment funds, or high-net-worth individuals.[74] In 2015, pension funds accounted for 15% of investment in private equity funds, followed by government agencies (10%), sovereign wealth funds (9%), funds of funds (9%) and insurance companies (6%).

European private equity investments have been proven to positively affect innovation, subsequent business creation and a firm's productivity and survival rate.[75] Private equity typically focuses on firms with high growth potential or on underperforming firms that can be transformed into profitable businesses. Private equity investments can be associated with different stages of a firm's life cycle, targeting either mature firms (development capital or buyouts) or new and early-stage companies (venture capital).

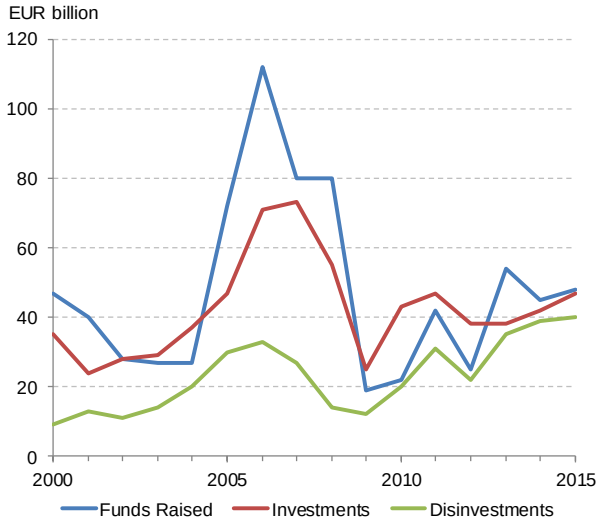
Of the two main types of investments, buyout funds (which buy an existing unlisted firm from the current stakeholders) are far more important in terms of assets under management. Buyout funds have EUR 34 billion or 71% of assets under management, this compared to just 11% managed by venture funds focusing on the early development or expansion phase of a business.

[73] 2015 statistics of Invest Europe are based on information from over 1 200 European private equity firms, representing 91% of capital under management in Europe. See Invest Europe (2016).

[74] Private equity firms are also referred to as private equity management companies or 'general partners' (GPs), while private equity investors are often referred to as 'limited partners' (LPs).

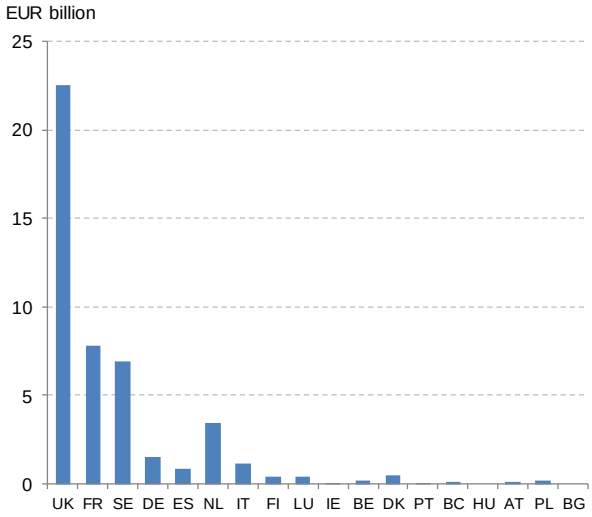
[75] See Frontiers Economics (2013).

Chart 3.29: Private equity activity in Europe, gross annual flows



Source: Invest Europe (2016)
Note: Data include venture capital. 'Funds raised' refers to gross increases of liabilities, 'investments' to the use of liquidity to purchase equity, and 'divestments' to the liquidation of previous investments.

Chart 3.30: Private equity funds by country of management, 2015



Source: Invest Europe (2016)
Note: Data include venture capital. 'Funds raised' refers to gross increases of liabilities, 'investments' to the use of liquidity to purchase equity, and 'divestments' to the liquidation of previous investments.

Compared to investment funds, the relative size of this market remains small. European private equity funds managed a total of EUR 564 billion in 2015, an increase of EUR 16 billion on 2014. Funds raised by private equity funds in 2015 increased by 8% to EUR 46 billion. Over the last 3 years of the reference period (2013-2015), funds raised were 70% higher than in the period 2010-2012. Looking at the long-term evolution of the sector, private equity activities are returning to their long-term average levels in terms of funds raised and investments, while disinvestments remain high but stable on a year-to-year basis (see Chart 3.29).

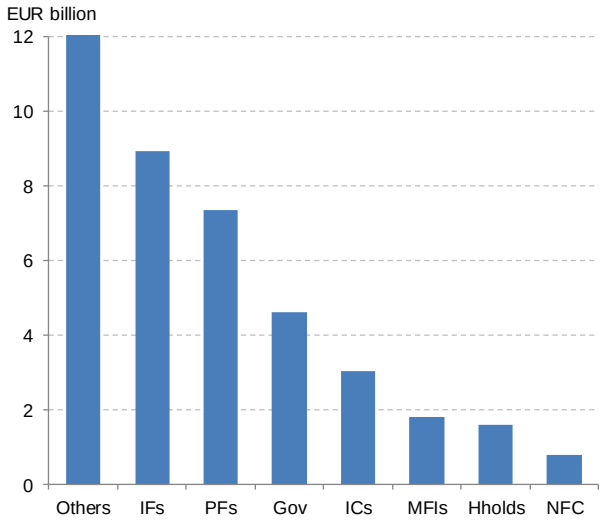
The positive aggregate trend in funds raised masks significant divergences across Member States. Among the top five Member States measured by market share (see Chart 3.30), funds raised more than doubled in Sweden and the Netherlands between 2015 and 2014. In the UK, funds raised increased by 49%, while in France they remained broadly stable, and Germany witnessed a significant decrease of 45%. Overall, about half of the investments are raised in the UK (49%), followed by France (17%) and Sweden (15%). Although this type of financing is important for high-risk and innovative products, such activities remain limited, even in the top three Member States, with ratios of funds raised to GDP ranging from 1.4% to 3.4%. There is also a strong geographic concentration in private equity investments. France & Benelux account for 29% of all investments, followed by United Kingdom and Ireland with 27%.

Private equity investment is attractive to institutional investors who want to further diversify their portfolios.[76] Although institutional investors have systematically built up their exposure to alternative investments, pension funds and insurance funds have recently significantly decreased their investment activities. Funds raised by pension funds for instance amounted to EUR 7 billion in 2015 compared to EUR 12 billion in 2014 (see Chart 3.31).

[76] Given the increased correlation within and across bond, equity and money markets over the last few years, it is increasingly difficult for investors to diversify risk.

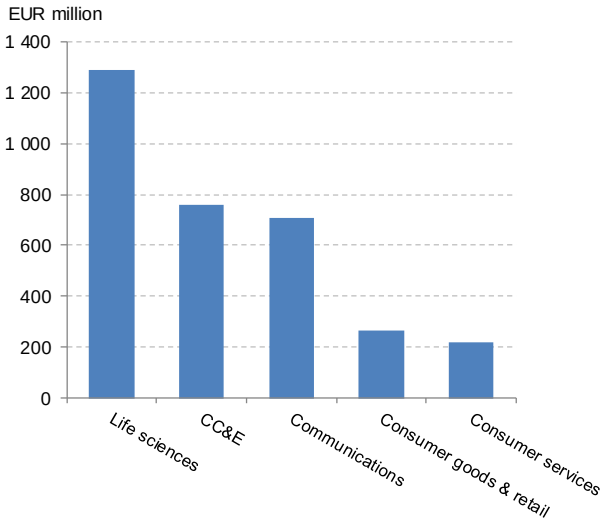
In line with trends for private equity funds, venture capital funds activities also grew in 2015. Investments increased by 7% to EUR 3.2 billion. The amount of investments related to start-up financing (financing of product development in companies that have not yet sold their product commercially) is the largest segment at 52% of total investment. This is closely followed by funds for later-stage financing (financing for the expansion of an operating firm), which account for 45% of total investments. In line with the global downwards trend, the EU venture capital industry however shrank in 2016, as the number of deals fell by 28% to 3 142 deals, representing a total venture capital investment of EUR 15.7 billion.[77] Investors have showed concerns about high valuations and increased macro-economic uncertainties. In Europe, these concerns have been moderated, among others, by its diversity of technology ecosystems. Total venture capital investments can therefore be considered to be rather robust and remains at high levels, despite the drop from the 2015 record level.

Chart 3.31: Private equity by investor, 2015



Source: Invest Europe (2016)
Note: PFs (pension funds), IFs (investment funds), Gov (governments includes government agencies and sovereign wealth funds), ICs (insurance corporations), Hholds (households), MFIs (monetary financial institutions).

Chart 3.32: Venture capital by sector, 2015



Source: Zhang et al. (2016)

Venture capital is almost exclusively invested in SMEs (98%) and is characterised by a strong sector and geographical concentration. Two thirds of venture capital investments are made in the life sciences, computer and consumer electronics and communications sectors. Venture capital investments were hit hard by the financial crisis, and in the post-crisis period government agencies became the largest investor in venture capital, providing 20% of new funds raised in 2015. Corporate investors are the second largest provider of new funds, although they have significantly reduced their new commitments to EUR 503 million, a decrease of 60% compared to 2014 levels.

3.4.2 Crowdfunding

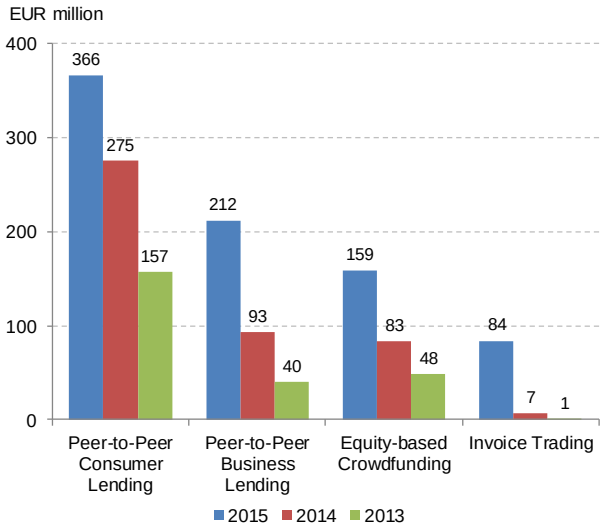
Crowdfunding aims at funding a project or venture by collecting relatively small amounts of funds from a wide range of contributors, typically via the internet. It is estimated that

[77] Global venture activity declined 24% on a year-to-year basis. See KPMG (2017).

Although Europe is the second largest market in the world, it represents only 18.8% of the global market measured by total funding volume.[78] European crowdfunding platforms represent less than half of all active platforms worldwide.[79] The number of active platforms differs significantly across Member States. These platforms offer access to finance for individuals and small companies for which traditional lending channels are not available. Overall, the European online alternative finance market grew significantly by 92% in 2015, reaching EUR 5.4 billion.[80] The UK has a dominant position with a European market share of 81% of total market volume, followed at a distance by France (5.9%), Germany (4.6%) and the Netherlands (2.0%).

The main types of crowdfunding models are lending, equity, donation and reward. Lending is the most important segment, followed by equity-based crowdfunding. For continental Europe, peer-to-peer consumer lending and peer-to-peer business lending amounted to EUR 366 million and EUR 212 million respectively, while equity-based crowdfunding attracted EUR 159 million. In terms of three-year growth (period 2013-2015), invoice trading in particular grew spectacularly with an average annual growth rate of 877%.

Chart 3.33: Crowdfunding in Europe (excluding UK)



Source: Zhang et al. (2016)

There are signs that crowdfunding is evolving into a more mature market. The average deal size of equity-based crowdfunding has risen to EUR 460 000 for continental Europe and EUR 621 000 for the UK, illustrating that crowdfunding is no longer exclusively used to provide financial means in the very early stages of a firm's life cycle. In addition, the market is becoming more and more institutionalised. Across continental Europe, participation rates of institutional investors grew dramatically, increasing by 83% over 2013-2015. In 2015, institutional investors provided about one quarter of funds in peer-to-peer lending and 8% in equity-based crowdfunding. Relatively speaking, institutional investors are the most important for invoice trading where they have a market share of 37%.[81] Nevertheless, crowdfunding in the EU remains largely a national activity, with only very low levels of cross-border flow. Almost half of the platforms (46%) indicate that all of their funding inflows were domestically sourced, while 76% of platforms report that none of the funds raised went to cross-border projects.

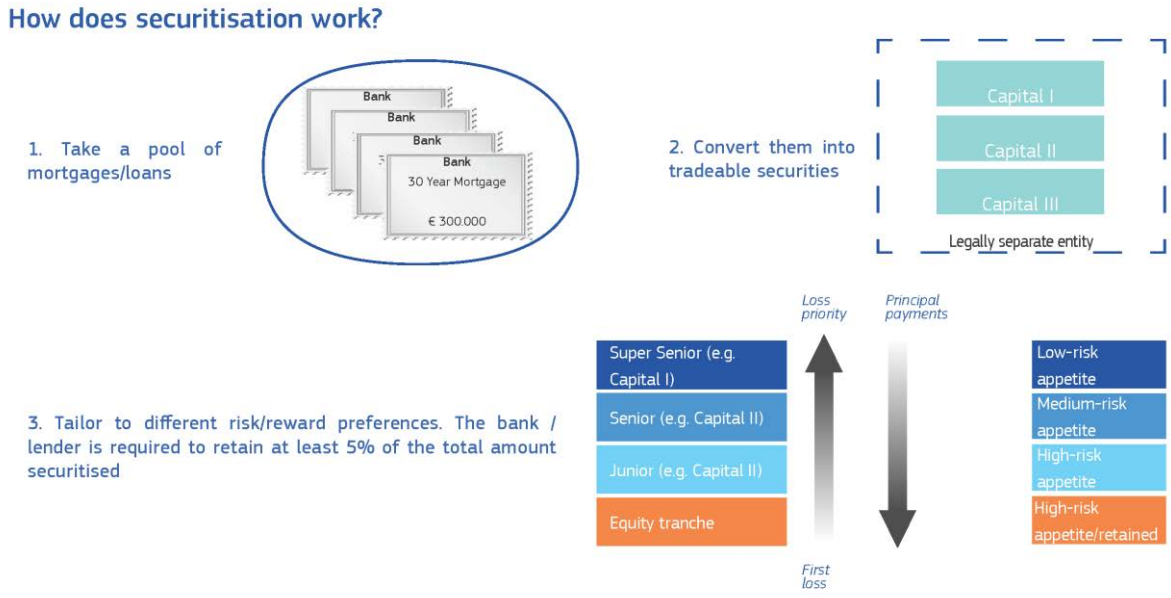
[78] See Massolution/Crowdsourcing.org (2016), CF2015: Crowdfunding Industry Report Excerpt.
[79] See Dushnitsky et al. (2016).
[80] See Zhang et al. (2016). Figures are based on data from 367 European platforms representing 90% of the visible market.
[81] In invoice trading, individuals or institutional funders purchase invoices or receivable notes from a business at a discount.

3.4.3 Business angel investment

Business angels are high-net-worth investors, who individually or via a syndicate invest in an unquoted business (with which they have no family ties). They add to the financing possibilities for firms in the start-up phase. Business angels not only provide funding but usually also play an active role in the firm, and helping it to access non-financial resources such as skills, knowledge and a network. Figures on business angels are patchy. Accurate data are only available for visible business angel investments made through an angel network or a syndicate, which is estimated to represent only 10% of the total market.[82] Although the size of the market remains relatively small, business angels are a significant provider of capital for early-stage investments, and as such support the entrepreneurial eco-system. The European Business Angel Network (EBAN) estimates that business angels provide more than 70% of early-stage investment.[83]

Box 6 Simple and transparent securitisation

Soundly structured securitisation can be a significant channel for diversifying funding sources and allocating risk more efficiently within the EU financial system. It allows for a broader distribution of financial sector risk and can help to free up banks' balance sheets to allow for further lending to the real economy. Overall, it can improve efficiencies in the financial system and provide additional investment opportunities.



If simple, transparent and standardised (STS) requirements are met, securitisation can create a bridge between banks and capital markets with a direct benefit for businesses and citizens (through, for example, less expensive loans and business finance mortgages and credit cards). It can also provide investors with exposure to asset classes decoupled from the credit risk of the originator (e.g. insurers investing in pools of SME loans).

The Commission's proposals[84] fully incorporate the post-crisis reforms on securitisation. First, post-crisis provisions on due diligence, risk retention and transparency are included. Second,

82 See EBAN (2016).
83 See EBAN (2016).
84 See Regulation COM/2015/0472 final and amendments to regulation COM/2015/0473 final (CRR).

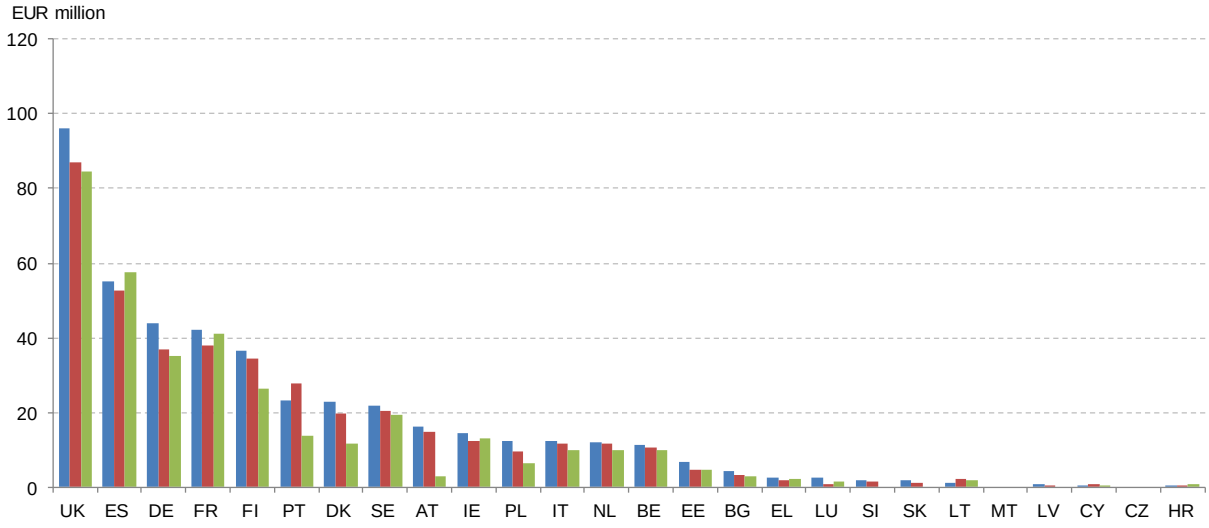
requirements for STS securitisations are proposed. These requirements are based on the analysis made by European and international institutions (EBA, BCBS/IOSCO, ECB and BoE) of soundly structured, transparent and well-performing securitisations. They exclude the instruments which featured prominently in the US subprime boom and successive crisis. Thirdly, in view of the good performance of these STS securitisations a more risk sensitive treatment is proposed, which reflects the instruments' actual performance. Finally, the proposals contain a robust supervision and sanctioning regime that puts responsibilities with the market participants with strong oversight by supervisors.

What is the expected impact of the adoption of the Commission proposals?

The proposals will: (i) take away the stigma attached to securitisation; (ii) provide a more risk sensitive treatment to securitisations; and (iii) provide a sound basis for sustainable market practices in securitisation, ensuring financial stability and investor protection.[85] If the issuing of EU securitisations were to reach the pre-crisis average, it could generate between EUR 100-150 billion in additional funding for the economy.

The UK hosts the most prominent European angel investment community with EUR 96 million followed by Spain (EUR 55 million) and Germany (EUR 44 million) (see Chart 3.34). Angel investment scaled by a country's GDP is most developed in Estonia, Finland and Poland.

Chart 3.34: Business angel investments, 2013-2015



Source: EBAN Statistics Compendium (2015)

Business angels invest their money mostly in the information and communications technology (ICT) sector, which attracts 22% of total amount invested. Average investment per business angel remains low, but stable at EUR 20 000, although co-investment with other angels and through early-stage funds is gaining in popularity. Average investment per company is therefore also steadily increasing, going up by 5.0% in 2014 and 5.9% in 2015.

[85] See the European Commission Impact Assessment on the securitisation proposal for a detailed discussion of the proposal's expected effects on EU securitisation markets, available at https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/securities-markets/securitisation_en

3.5 Insurance sector

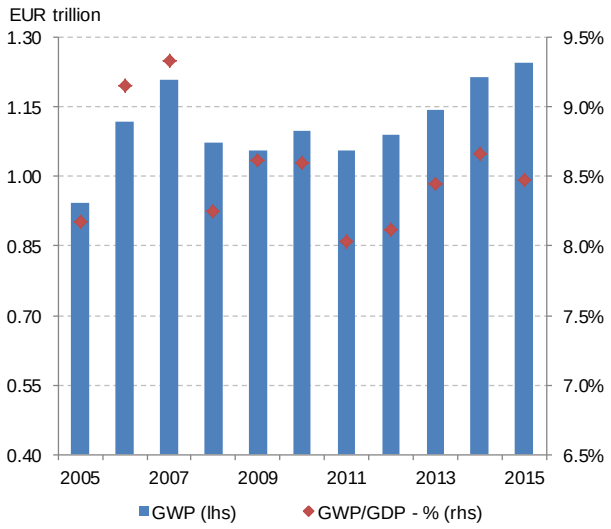
The insurance sector is typically divided into two quite distinct categories: (i) life and health insurance; and (ii) general insurance, also known as property/casualty or non-life insurance.

The former offers protection to individuals against mortality, disability and longevity risk, and it usually involves a savings element. The latter offers protection to both individuals (e.g. compulsory motor insurance) and entities (e.g. catastrophe cover), and hence makes sure that their financial situation is not heavily impacted in case of a claim. They also support economic growth by taking on risks the commercial entity would otherwise have needed to bear.

3.5.1 The role of the insurance sector in the EU economy

The EU insurance market is the largest in the world with more than EUR 1.2 trillion in gross written premiums (GWP). As of December 2015, this represents around one third of the global share, and is equivalent to more than 8% of EU GDP. Split across sectors, the GWP in the EU is distributed[86] as follows: 61% for life, 29% for non-life, and 10% for health insurance, with an average amount per capita spent on insurance of around EUR 2 000. Moreover, total benefits and claims paid in 2015 amounted to almost EUR 1 trillion, with a split between sectors broadly in line with that of GWP.

Chart 3.35:Evolution of premiums in EU



Source: EIOPA Statistical annex
Note: 27 Member States up to 2012, afterwards Croatia is also included. The database is incomplete so GWP 2015 for Luxembourg is assumed to equal 2014, GWP 2005 for Romania is assumed to equal 2006 and GWP 2005 and 2006 for Greece is assumed to equal 2007.

The value added of the insurance sector to the economy is estimated at 1-2% of total GDP. There seems to be a positive correlation between the size of the insurance sector and the development status of economies, although the direction of causality is unclear.[87]

Table 3.4 shows that the situation in EU Member States is quite uneven, with a somewhat low insurance activity (insurance penetration ratio below 4%) in most Member States that joined the EU in or after 2004.[88] On the other hand, there is relatively high insurance activity (penetration ratio above 20%) in Luxembourg, Ireland and Malta, where the international activities of national enterprises under free provision of services in other EU or EEA countries are quite significant. In 2015, the four biggest markets (the UK, France, Germany and Italy) account for 70% of the total GWP in the EU.

[86] See European Insurance in Figures — December 2016 — Insurance Europe.
[87] ESRB (2015a).
[88] 'Insurance penetration rate' is defined as the ratio of GWP over GDP.

Table 3.4: EU premiums, GDP and penetration ratios, 2015

	Gross written premium (EUR billion)	Insurance undertakings (Number of)	GDP (EUR billion)	Penetration ratio (per cent)
Luxembourg	23.1	302	51.2	45.1
Ireland	56.4	147	255.8	22.0
Malta	1.9	51	9.3	20.3
United Kingdom	296.4	354	2 580.1	11.5
Denmark	30.7	99	271.8	11.3
France	234.6	285	2 181.1	10.8
Netherlands	72.4	167	676.5	10.7
Italy	150.4	117	1 642.4	9.2
Belgium	30.1	79	410.4	7.3
Germany	199.5	349	3 032.8	6.6
Spain	59.0	237	1 075.6	5.5
Austria	18.3	40	339.9	5.4
Finland	10.8	49	209.5	5.1
Slovenia	1.9	15	38.6	4.9
Cyprus	0.8	29	17.6	4.8
Sweden	21.1	166	447.0	4.7
Portugal	7.5	45	179.5	4.2
Czech Republic	5.5	31	167.0	3.3
Poland	13.1	57	429.8	3.0
Estonia	0.6	12	20.3	3.0
Croatia	1.1	23	43.8	2.6
Slovakia	2.0	17	78.7	2.6
Hungary	2.7	30	109.7	2.5
Bulgaria	1.0	45	45.3	2.2
Greece	3.3	48	175.7	1.9
Latvia	0.4	8	24.3	1.6
Romania	2.0	35	160.0	1.2
Lithuania	0.4	10	37.3	1.1
Total EU-28	1 247	2 847	14 711	8.5

Source: EIOPA Statistical annex (data for Luxembourg refers to 2014), Eurostat and own calculations

Note: The numbers of insurance undertakings comprise those under national supervision i.e. national enterprises and branches of undertakings from non-EU countries operating in a given country. The gross written premiums also include the international activity of national enterprises. The data are sorted by penetration ratio (from highest to lowest).

The strong growth of the insurance sector in 2006 and 2007 came to a halt in 2008 due to the financial crisis. Chart 3.35 shows the evolution of GWP in the EU and the penetration rate in the period 2005 to 2015. With the financial crisis, the insurance sector declined by more than 11% in terms of GWP, mainly due to a decrease in the life sector. After a few years of overall stagnation, a positive and stable trend resumed in from 2012 and continued through 2015, bringing the average yearly GWP nominal growth to around 3%, which is broadly in line with GDP growth during this period.[89] The expectation for 2016 and 2017 is for a slight improvement in premium growth.[90]

[89] GWP growth across the EU over the 10-year period was uneven. For example, five Member States (Malta, Estonia, Luxembourg, Bulgaria and Denmark) recorded a yearly nominal growth higher than 6%, while another five Member States (Hungary, Sweden, Belgium, Greece and Portugal) saw a net decrease from 2005 to 2015.

[90] EIOPA — The European Insurance Sector — Financial Stability Report December 2015.

Table 3.5: Assets managed by insurance companies, EUR billion (unless indicated), 2015

	Total assets	Of which total investment assets	Of which non unit linked type investment	Total assets/GDP (per cent)
Luxembourg	151.0	126.1	28.2	295
Denmark	388.7	376.0	261.1	143
Ireland	287.2	243.8	53.1	112
France	2 199.3	1 980.3	1 693.5	101
United Kingdom	2 534.0	2 351.5	962.7	98
Sweden	434.6	415.7	295.8	97
Malta	7.6	6.1	4.9	82
Belgium	321.7	295.6	265.1	78
Netherlands	498.2	436.3	331.4	74
Germany	1 662.4	1 559.1	1 464.0	55
Italy	762.7	692.6	564.4	46
Finland	73.0	68.9	37.2	35
Austria	104.8	98.9	79.7	31
Portugal	53.9	51.6	51.6	30
Spain	297.5	247.4	233.1	28
Cyprus	3.6	3.0	1.8	20
Slovenia	6.6	5.6	4.5	17
Croatia	5.0	4.1	3.9	11
Czech Republic	17.9	16.0	12.9	11
Poland	42.0	37.1	24.2	10
Greece	15.3	12.9	10.8	9
Estonia	1.7	1.5	1.0	8
Slovakia	6.5	5.8	4.7	8
Hungary	8.2	7.1	3.7	7
Romania	5.5	3.0	2.2	3
Lithuania	1.2	1.0	0.6	3
Latvia	0.6	0.5	0.4	3
Bulgaria	0.4	0.0	0.0	1
Total	9 891.3	9 047.6	6 396.5	67

Source: EIOPA Statistical annex (2015 data, except for Luxembourg, for which 2014 data are taken, Eurostat and own calculations

3.5.2 Insurers as major institutional investors in the EU

Insurance companies are large institutional investors that contribute to the development of well-functioning capital markets, due to the large amount of assets they manage: indeed, with total assets equivalent to two thirds of EU GDP, the EU insurance sector plays a significant role in the financial sector, together with the banking sector.[91]

In 2015, insurance companies managed assets worth EUR 9.1 trillion, of which EUR 2.7 trillion in backed life assurance policies, where the investment risk is borne by the policyholders. The remaining EUR 6.4 trillion of assets are managed by insurance companies for two purposes: first to fulfil life and non-life policies contractual obligations where the risk is borne by the insurance companies, and second to contribute to the overall net profit of the company by complementing the technical profit (see Table 3.3).[92] In short, investments are a

[91] As per EBA risk dashboard report, total assets of the banking sector in the EU as of December 2015 amounted to EUR 30.3 trillion with the bulk made up of loans and advances (EUR 19.8 trillion). Debt securities and equity instruments investments amounted to EUR 4.4 trillion and EUR 0.6 trillion respectively.

[92] In its simplest form defined as the profit resulting from the difference between the received premiums and paid-out claims together with administrative charges.

key component of the insurance business, in which the premiums paid to insurers are invested until liabilities fall due. Moreover, as liabilities usually are of a long-term nature (especially in the life sector[93]), insurers try to match those liabilities by investing in long-term and relatively safe assets. Table 3.6 provides a breakdown of the total investments in the EU.

Table 3.6: Insurance companies' investments by categories, 2005 and 2015

	2015		2005	
	(EUR billion)	(% of portfolio)	(EUR billion)	(% of portfolio)
Lands and buildings	170	3	164	4
Investments in affiliated enterprises and participating interests	475	7	248	6
Shares and other variable-yield securities and units in unit trusts	1 246	19	928	22
Debt securities and other fixed income securities	3 830	60	2 357	55
Loans	427	7	388	9
Deposits	243	4	175	4
Others	6	0	10	0
Total investments	6 397	100	4 270	100

Source: EIOPA Statistical annex (2015 data except for Luxembourg, for which 2014 data is taken) and own calculations

In aggregate, EU insurance companies have a rather conservative investment strategy, with 60% of assets invested in debt and other fixed income securities. With a value of almost EUR 4 trillion, insurance companies are key players in the government and corporate debt markets. As Table 3.6 shows, total investments held by insurance companies have increased by 50% in the last 10 years, which is equivalent to an increase of more than 4% annually. This trend is mainly explained by the growth in GWP, favourable asset price developments, and a greater role for 'assets-intensive' products like savings-like life insurance contracts.

In addition to managing and offering protection on insurance-related risks for their clients/policyholders, insurance companies are exposed to financial risks, including market risk, credit and counterparty risk, operational risk and liquidity risk through their investment portfolio. The EU regulatory framework addresses all these risks in the Solvency II Directive (see Box 7).

In particular, the current low interest rate environment is a concern for the insurance industry, especially for life insurers[94], whose profitability and solvency positions are hurt by the low yields and tight spreads. This is mainly due to the long-term business model in the life sector, the duration mismatches between assets and liabilities, and in some cases guaranteed returns to policy-holders. On the liability side, low interest rates lead to an increase in the firms' obligations in present-value terms and consequently to a deterioration of their solvency position. On the assets side, low interest rates have an adverse impact on investment returns and increase the reinvestment risk (given that the assets mature before the liabilities fall due), hence reducing the spreads between investment returns and the weighted average guarantee

[93] The weighted average time until maturity of the life insurance obligations is estimated at around 14 years in the EEA - 2016 Stress Test — EIOPA — p. 60.

[94] (Short-term) non-life insurance business is less affected. Although lower returns reduce the financial margin available to offset adverse combined ratios, non-life insurance companies are more flexible as they have the possibility to react quicker by raising premium as many products re-price annually.

on in-force policies. The life insurance industry is responding to this particularly challenging environment by:

- changing the asset allocation (which increases investment income, but could increase asset risk and decreases asset liquidity);
- lowering credited rates on in-force policies (which reduces the risk of declining profitability, but makes traditional savings products less attractive to policyholders, and may decrease sales and increase lapses);
- offering lower guaranteed rates on new business (which reduces the average guaranteed rate over time, but with low immediate impact);
- increasing the unit-linked business (which reduces exposure to investment results and increases fee-based income, but may lead to declining margins in the longer term).

3.5.3 Insurance as the main investment for households

Consumers depend on the insurance sector for their future income, as life insurance liabilities comprise a significant part of European households' wealth.

For the aggregate EU level, Table 3.7 shows that out of a total of EUR 8.1 trillion of insurance liabilities (excluding capital and other non-insurance liabilities), the total provisions related to households' future financial claims are estimated at EUR 7.1 trillion. The provisions can be broken down into: (i) EUR 2.7 trillion in life insurance policies of a unit-linked type, where the investment risk is borne by the policyholders; and (ii) EUR 4.4 trillion in gross life assurance provision, where the risk is borne by insurance companies.[95] The table compares the total amount of provisions set aside for households and the level of financial wealth of households measured as the amount of total financial assets held (hence excluding real estate). On average at EU level, future pay-outs from life insurance policies represent 20% of households' total financial wealth (this ratio would increase to 30% if deposits and currencies were excluded from the definition of financial assets). Luxembourg and Ireland stand out in this respect, which is explained by the significant weight of non-resident investments in life insurance policies sold there, and thus it is less meaningful.

Table 3.7: Insurance companies liabilities by country, EUR billion, 2015

	Insurance companies' total liabilities	Insurance companies' household related liabilities (a)	Households' total financial assets (b)	a/b in per cent
Luxembourg	143.3	134.8	71.7	188
Ireland	261.8	194.1	355.7	55
France	1 853.7	1 619.7	4 841.2	33
Denmark	313.3	254.2	794.7	32
United Kingdom	2 212.1	2 065.3	8 598.3	24
Sweden	297.6	263.2	1 278.7	21
Germany	1 314.5	1 096.7	5 503.4	20
Belgium	242.5	207.3	1 225.7	17
Finland	63.1	45.3	300.5	15
Malta	5.4	3.3	23.8	14

[95] Although there is no actual breakdown of the figures available, it is fair to assume that the vast majority of these provisions are for savings-type insurance products under which a certain investment return is guaranteed to policyholders, with the remainder being whole life insurance policies where the insurance companies will pay out the death benefit of the policy to the policy's beneficiaries when the insured person dies.

Italy	647.5	576.7	4 118.8	14
Netherlands	378.9	304.0	2 195.1	14
Austria	91.8	74.3	619.9	12
Spain	203.4	167.6	2 009.2	8
Slovenia	4.6	3.1	39.3	8
Slovakia	4.7	3.6	60.5	6
Czech Republic	13.3	9.6	185.7	5
Poland	32.0	19.3	406.5	5
Cyprus	2.7	2.1	45.6	5
Portugal	22.8	16.5	380.2	4
Croatia	3.5	2.3	53.2	4
Hungary	7.0	5.5	131.2	4
Estonia	1.3	0.9	22.9	4
Greece	11.5	7.7	259.4	3
Lithuania	0.9	0.6	34.4	2
Romania	3.3	1.3	114.1	1
Latvia	0.4	0.1	25.8	0
Bulgaria	1.5	0.0	61.5	0
Grand Total	8 138.4	7 079.2	33 757.1	21

Source: EIOPA Statistical annex (Data for Luxembourg are for 2014), Eurostat and own calculations

Note: 'Households-related' liabilities include gross life insurance provisions and unit-linked type life insurance provisions. Household financial assets include: currency and deposits; securities other than shares; loans; shares and other equity; net equity of households in life insurance reserves; net equity of households in pension funds; pre-payments of premiums and reserves against outstanding claims; and other accounts receivable.

The latest ECB Household Finance and Consumption Survey illustrates how important the performance and safety of insurance companies are for households. The survey provides an analysis of individual household wealth and consumption, with the data collected in a harmonised way in 18 euro-area countries (except Lithuania), as well as in Hungary and Poland. On financial assets, the survey confirms that after deposits, the second most common asset class is voluntary pensions/whole life insurance, with a participation rate of 30%, with only a small fraction of households owning riskier assets (e.g. bonds 4.6%, publicly traded shares 8.8% or mutual funds 9.4%). Not surprisingly, the smallest financial asset portfolios consist almost exclusively of deposits (and to a lesser extent voluntary pensions/whole life insurance), but as the portfolios get bigger, so does the weight of risky assets.

Box 7 Solvency II — The foundation of financial stability and integration in EU insurance

The Solvency II Directive (as amended by the Omnibus II Directive) became fully applicable on 1 January 2016. The EU-level harmonised regulatory framework established under the Directives includes Solvency II Delegated Regulation and a number of implementing acts. Solvency II addresses the financial soundness of individual insurance companies (i.e. solos) as well was insurance groups. For international groups, the activities of supervision are coordinated across Member States.[96]

The main objective of the Solvency II framework is to protect policyholders and beneficiaries by ensuring the financial soundness of insurance companies.[97] The framework contains qualitative provisions and principles for governance, risk management, internal controls, actuarial function and prudential investment behaviour.

The framework prescribes detailed and uniform reporting on solvency and financial conditions of

[96] The relevant documents can be retrieved at the following links: Solvency II Directive, Omnibus II Directive, implementing and delegated acts, and Solvency II Delegated Regulation.

[97] The reference to insurance companies in this box includes reinsurance companies.

insurance companies so that investors, financial advisers or intermediaries and policyholders can take well-informed decisions based on information that is comparable throughout the European Union. Disclosure quality of insurers' financial reports is enhanced by ensuring that a 'market-consistent' approach is used for the valuation of assets and liabilities by insurance companies. Any public disclosure requirements are in addition to the reporting to relevant supervisors.

Risk-based capital requirements in Solvency II are proportionate to all risks borne by insurance companies through assets as well as liabilities in their business. The Solvency II Delegated Regulation was amended with effect from 2 April 2016 to include appropriate risk calibrations for qualifying infrastructure projects that are safer than other investments.[98]

The capital requirements in Solvency II are calibrated at a 99.5% confidence level over a one-year horizon, which ensures that insurance companies that meet the capital requirement should be able to withstand stresses arising from extreme but plausible scenarios. It also establishes the criteria on 'eligible own funds' to ensure high quality of capital in various tiers. The framework contains clear provisions for addressing situations where certain insurers fail to maintain the regulatory capital requirements. In addition, Solvency II contains specific treatment for long-term investments by insurers and measures to avoid procyclical investment behaviour. Transitional provisions have been established in the Directive to allow for a smooth transition of existing insurance companies to the new Regulation.

While no regulatory framework can fully prevent the failure of insurance companies Solvency II contains provisions for early supervisory intervention for insurers who breach their solvency capital requirement or minimum capital requirement.

Based on the indications available as at March 2017, the first full year of Solvency II application has been largely successful in contributing to the financial stability and integration objective of the European Union.[99] Currently the Commission is addressing any issues on the transposition of the Directives by Member States. It has also sought further technical advice from EIOPA to review the Delegated Regulation by 2018.

[98] The link to the amendment to the Solvency II Delegated Regulation is here.

[99] Most insurance companies are expected to publish their financial reports by May 2017. The current indications are based on half-yearly results announced by companies, the results of stress tests carried by EIOPA and other technical reports.

Chapter 4 COMPLETING BANKING UNION

4.1 Introduction

In response to the financial and sovereign debt crises in the EU, Member States agreed to a deeper integration of the EU banking system via the creation of the Banking Union. The need for deeper integration was particularly strong in the euro area, so as to ensure a more effective transmission of the single monetary policy and better risk diversification across Member States sharing a single currency. A fully functional Banking Union would reinforce financial stability within the EU by restoring confidence in the banking sector through a combination of measures designed to both share and reduce risks. Participation in the Banking Union is mandatory for Member States in the euro area, while other Member States have the option to participate. A banking Union would also complement the process of capital market integration, which will receive a boost from the CMU project.

The European financial and sovereign debt crises were also driven by an excessive exposure of banks to their national sovereign. Breaking this link between banks and sovereigns is therefore an overarching objective of the Banking Union. This chapter presents the existing and proposed elements of Banking Union, and assesses the progress made in achieving the overall objective.

4.2 Existing elements of the Banking Union architecture

The Banking Union is based on a 'Single Rulebook' approach, i.e. a foundation of common rules making sure that credit institutions are subject to equivalent rules and proper supervision across the EU. The Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM) form the two existing institutional pillars of the Banking Union architecture. These pillars facilitate a more centralised application of the Single Rulebook.

Single Rulebook

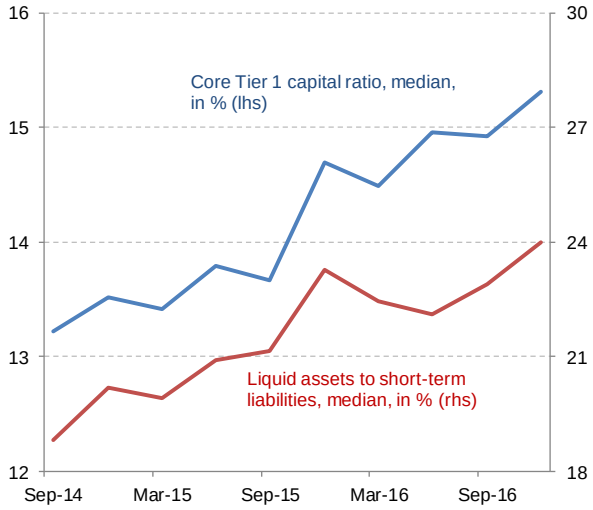
A common set of rules for banks in all 28 Member States acts as the foundation for what is known as the 'Single Rulebook'. In essence, the 'Single Rulebook' is a set of legislative texts that all banks in the EU must comply with. These rules are designed to ensure sound institutions and thereby prevent or minimise the risk and impact of banking crises.[100] Among other things, the rules require banks to hold sufficient amount of good quality capital and liquidity, require Member States to set up deposit guarantee schemes that guarantee retail deposits of up to EUR 100 000, and provide a common framework for the resolution of banks that are failing or 'likely to fail'.[101] The Single Rulebook also transposes internationally agreed regulatory standards into EU law. In November 2016, the Commission brought forward a proposal for a comprehensive package of reforms, which will further reduce risks in the European banking sector and implement international agreements on bank regulation into EU law.

[100] The report uses the word 'credit institution' and 'bank' interchangeably.

[101] See http://ec.europa.eu/finance/general-policy/policy/map-reform/index_en.htm

As shown in Chart 4.1 and described in Chapter 2, EU banks have significantly strengthened their balance sheets and built up resilience to adverse shocks in recent years. A steady improvement in quantity and quality of bank capital and liquidity positions has been driven by EU bank regulatory reforms. Signs of this improved resilience have materialised with the solid recovery of interbank and overall wholesale funding in recent months.

Chart 4.1: Banks capital and liquidity ratios



Source: ECB; Statistical Data Warehouse

Single Supervisory Mechanism

The institutional pillar of the Banking Union that was first implemented was the Single Supervisory Mechanism (SSM). It brings together the European Central Bank (ECB) and the national competent authorities of the participating Member States in a single supervisory architecture. The European Central Bank has become the banking supervisor for all banks in the Banking Union and is directly responsible for supervising (currently) 125 of the largest banking groups, while the national authorities continue to directly supervise the remaining banks under ECB guidance. The main tasks of the ECB and the national authorities are to check that banks comply with the EU banking rules and ensure the safety of the banking system through consistent supervision. This may have beneficial effects on financial integration and stability.

Single Resolution Mechanism

The Single Resolution Mechanism (SRM) is the institutional pillar that deals with the management of bank resolutions, to ensure an orderly resolution of banks that are failing or likely to fail so that there are minimal costs for taxpayers and the economy. It includes the Single Resolution Board (SRB) and the Single Resolution Fund (SRF), which operate within a framework that became operational in 2016. The operational mandate of the SRB applies to all banks under SSM supervision, and to a number of other cross-border banks. National resolution authorities are responsible for managing the remaining banks if they are failing or likely to fail. The predictable functioning of the resolution mechanism brings clarity and transparency and reinforces market confidence. The SRM is also needed to eliminate the risk of having separate and potentially inconsistent decisions by Member States for the resolution of cross-border banking groups, which may affect the overall costs of resolution.

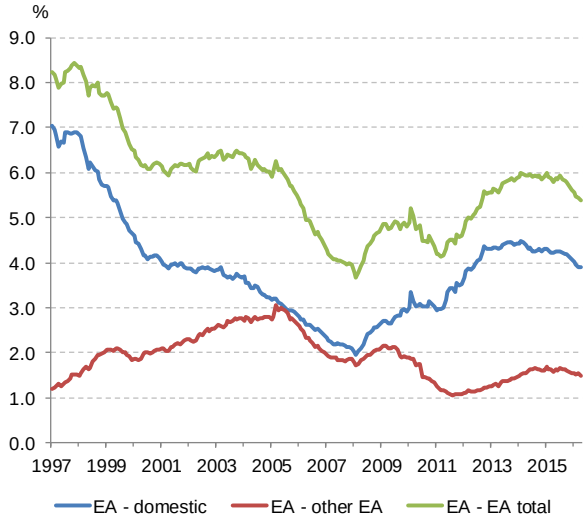
The SRB prepares the strategy for the decision whether and when to place a bank in resolution and chooses the best course of action for the use of resolution tools and the SRF. The SRF ensures the availability of funding to support the orderly resolution of a bank. The Fund is progressively being built up, and will reach a target level of 1% of covered bank deposits in the Banking Union by 2024, or an estimated volume of around EUR 55 billion. It is financed by all banks, and certain investment firms, in the Banking Union. Since it will take several years for the Fund to reach its full capacity, Member States have signed agreements to provide temporary financing as a last resort during the transition period.

4.3 Progress in breaking the link between banks and sovereigns

The sovereign debt crisis that emerged in 2010 revealed the danger of the excessive interdependence between banks and their domestic sovereigns. This section attempts to analyse any progress made in achieving the overarching objective of severing the bank-sovereign link, by examining the evolution of some basic indicators related to the different channels of interaction between sovereigns and banks. The trend suggested by these indicators does not necessarily imply direct causality with Banking Union actions, as they are influenced by several other factors (like fiscal and monetary policies), but they offer a fair illustration of the state and evolution of the sovereign-bank nexus.

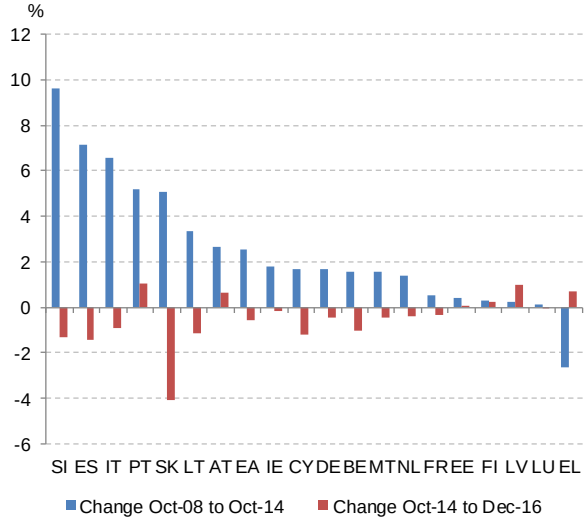
There are several different channels through which risks can be transferred between sovereigns and banks, and thereby threaten the stability of the banking system and efficient credit allocation to the economy. Two of these channels are direct. First, risk is directly transferred from the banking sector to the sovereign, e.g. via explicit and implicit state guarantees. Second, risk is transferred from the sovereign to the banking sector via holding of sovereign debt by banks. As a result, the perceived quality of banks' assets is dependent on the credit quality of the sovereign debt. Hence, the cost of bank funding (as a function of the bank's risk) is influenced by the cost of sovereign debt, which embeds the credibility of government support to its domestic banking sector. There are also indirect channels, which are a consequence of more market based developments. For example, sovereigns and banks are both very much dependent on the performance of the economy, or credit markets may be subject to information asymmetries or coordination failures, which can lead to persistent divergences of prices from fundamentals.

Chart 4.2: Government debt held by banks, in % of total assets



Source: ECB

Chart 4.3: Change in government debt held by banks



Source: ECB

Sovereign debt holdings of banks have varied significantly over the years (see Chart 4.2). From the formation of the euro area in 1999, and before the financial crisis, banks' holdings of euro-area sovereign debt declined persistently from 8% to below 4% of total assets. In this way, banks reduced their dependency on sovereigns in the run-up to the financial crisis. Furthermore, until 2005, banks diversified their government bond holdings, reducing their domestic holdings and replacing them with government debt from other euro-area Member

States. This diversification process ended with the 2008 financial crisis. The home bias in sovereign debt holdings and the implied interdependence between banks and their national sovereign increased with the sovereign debt crisis. Chart 4.2 shows how government debt holdings moved from a historical bottom (since the introduction of the euro) in 2008 to a peak in 2014. Coincidently, the peak in euro-area bank holdings of domestic government debt occurred in the same month the ECB published its comprehensive assessment of banks' assets, and declined afterwards.

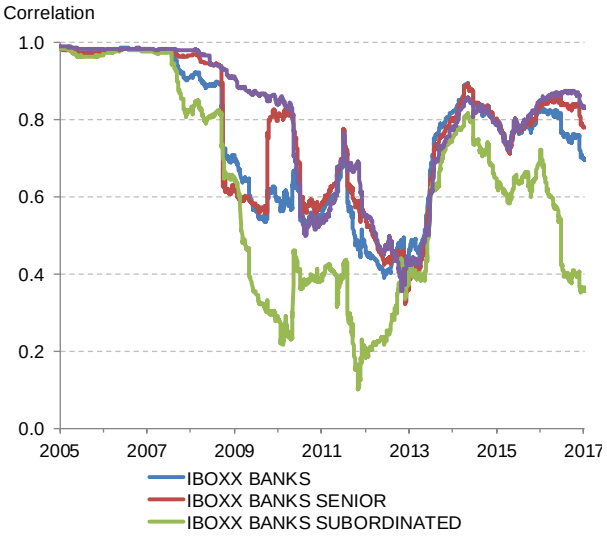
The top five Member States with the highest increases of government debt held by domestic banks between 2008 and 2014 — Italy, Latvia, Portugal, Slovenia and Spain — also experienced sovereign stress during those years. In Greece, instead, the decline too place before, thanks to the debt restructuring with private sector involvement in 2011. However, Greece had a relatively high dependency on government debt already in 2008, which increased and peaked in June 2011, with government debt equivalent to 10% of total bank assets. In contrast, Ireland — a Member State with an IMF-EU financial assistance programme running from 2011 to the end of 2013 — had a relatively low share of domestic sovereign bond holdings across the period.

The trend in banks' domestic sovereign holdings have stalled since the second half of 2012, when the Banking Union was announced and the ECB pledged far reaching support in defence of the euro area and started to decline in early 2014 (when the details of the comprehensive review under the new supervisory pillar were announced). While since then domestic and foreign government bonds have been on a declining trend, the decline in domestic bonds has been slightly faster, reducing the home bias and banks' dependency on domestic sovereigns. Overall, the amount of government debt on banks' balance sheets remains high relative to the years prior to the crisis.

The trends in correlation statistics send a mixed picture, with some weakening of the link between banks and sovereigns, but correlations are still generally high. Before the crisis, bank bonds were typically priced with a mark-up of about 40 basis points over government bonds. However, this trend was changed significantly by the financial crisis. When the crisis took hold, bank bonds were considered very risky investments and were priced accordingly. Consequently, the close correlation between the yields on bank bonds and on sovereign bonds broke down (see Chart 4.4). The adverse shock to the banking sector was eventually transmitted to governments and led to an increase in sovereign risk. In turn, the deterioration in sovereign risk raised the credit risk for banks. The interdependency between the tradable debt of sovereigns and banks was again reinforced, until the announcement of Banking Union and the beginning of the ECB's unconventional policy measures, but still remains generally strong.

An important development is the deviation in correlations for senior and subordinated bank bonds, which would suggest that the concept of bail-in is being internalised, partly via the discussions on the Bank Recovery and Resolution Directive (BRRD) and banks' total loss-absorbing capacity, and partly via the actual experience of the crisis. The close correlation between sovereign and bank yields that characterised the pre-crisis years, was largely restored by May 2014, (see Chart 4.4). However, the EU implemented a battery of measures to counter the effects of the financial crisis and reduce the risk of future crises. Among these were the different parts of the Banking Union, which involved the setting up of the SSM, conducting stress tests of the banking sector and assessing the quality of banks' assets.

Chart 4.4: Correlation between sovereign and bank yields, 260-day rolling correlation

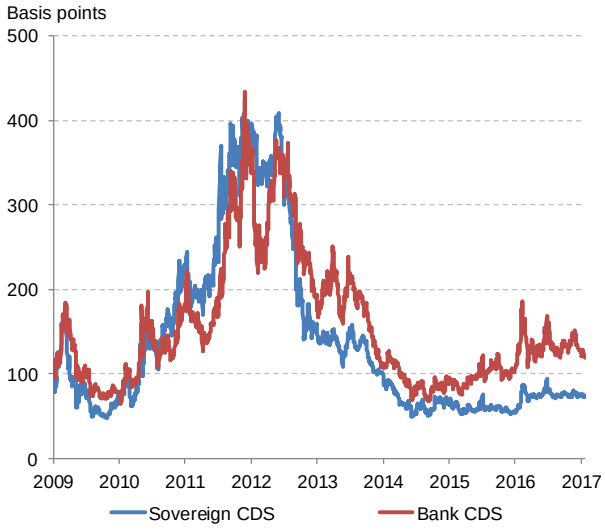


Source: Datastream

After the peak, banks' subordinated debt broke away from their senior debt. The yields of public banks and private banks' senior debt, however, are still close to parity with each other in terms of correlation with sovereign debt. As the crisis abates, the links to sovereigns and banks' senior and subordinated debt diverge, implying a different treatment of the two types of debt. Eventually, the links to sovereigns' and private banks' senior and public banks debt also start deviating, but at a slower pace, i.e. there is a partial breaking of the link between sovereigns and banks. Interestingly, there was a big shift in the correlation between sovereigns and banks' subordinated debt at the beginning of January 2016, which coincides with the BRRD (and SRF) rules on bail-in taking effect.

Similar to bond yields, the spreads on credit default swaps (CDS) can measure the interdependence between banks and sovereigns. These show that the links between sovereigns and banks were strong until SSM started to supervise the large euro-area banks. CDS contracts are relatively new instruments; they measure the credit risk of an issuer of debt. The price for hedging against the default of a bond is expressed in terms of the CDS spread, which isolates the price on credit risk from other factors priced in bond yields. CDS contracts on euro-area sovereigns were not traded much before 2009, and thus cannot provide information on the situation before the onset of the financial crisis. However, from the beginning of the sovereign debt crisis starting with the Greek announcement of faulty public deficit figures, the link between CDS spreads for sovereign debt and bank debt was strong, i.e. the credit risk of banks and sovereigns were priced similarly. Since, the SSM took over supervision of the large euro-area banks in late 2014, there has been a persistent break between the CDS spreads for sovereign debt and bank debt. The credit risk for banks increased and the correlation to sovereign CDS spreads declined, which may be interpreted as meaning that part of the link has been broken.

Chart 4.5: Sovereign and bank CDS spreads, euro area



Source: Bloomberg

Chart 4.6: Correlation between five-year sovereign bank CDS spreads, 260-day rolling corr.

Source: Bloomberg and own calculations

There are various caveats to concluding that the link between banks and sovereigns has been decisively broken, particularly at the senior debt level. First, the conclusions are based on simple observations of a narrow set of indicators. Second, regulation was not introduced in isolation from other events. For example, at the beginning of 2016, there were concerns about banks' profitability, and there was a sharp drop in prices of contingent convertible bonds (CoCos) over general uncertainty regarding institutional, legal and regulatory issues. There was also broad selling of bank shares by investors, with some stocks touching their weakest levels in a long time. Third, the approach and the indicators are not comprehensive enough to cover all aspects of the interaction between sovereigns and banks, so a more sophisticated analysis would be required to isolate the regulatory effects.

In sum, there are signs that the links between sovereigns and banks have been weakened, while these links still persist. The correlation between banks' and sovereigns' bond yields and CDS spreads have come down, especially for subordinated bank debt. However, both CDS and bond correlations for senior debt still remain rather high, in the range between 0.7 and 0.8. The reduction in the correlation coefficients coincided with strong monetary policy interventions by the ECB (e.g. the outright monetary transactions, the long-term refinancing operations, the asset purchase programme). These reduced credit and liquidity risk in the financial system more generally, and may muddle the link between banks and sovereigns. Nevertheless, the correlation between bank and sovereign credit risk seems consistent with the principles of the BRRD, in that the correlation with relatively senior bank liabilities is greater than the correlation with subordinated bank liabilities.

Even if the Banking Union is having some effect on correlations, it is clearly not enough. The continued interdependence between banks and their national sovereigns carries risks going forward. It is therefore important to move forward with both risk reduction and risk sharing as a means to definitively break the links between banks and sovereigns.

4.4 Missing elements of the Banking Union

Completion of the Banking Union is essential to ensure that the link between banks and sovereigns is broken decisively and as an important step towards a genuine European Monetary Union. The Banking Union is already functioning and has already made the banking sector more resilient and less prone to excessive risk-taking. However, it is still structurally incomplete.

As stated above, the overarching objective of the Banking Union is to break the link between banks and sovereigns at national level. This is accomplished through risk reduction and removing barriers that segment the single market for banking services. The creation of the SSM and SRM, operating on the basis of a single rulebook derived from EU legislation on bank capital requirements and bank recovery and resolution, constitutes a major step forward in risk reduction. However, a properly functioning Banking Union requires parallel steps in risk sharing at the euro-area level. In order to complete the Banking Union, the Commission has proposed a European deposit insurance scheme (EDIS), aiming to give the Banking Union the third pillar on which the functioning of the other pillars depends. The Commission also called for enhanced bridge financing arrangements and the creation of a common fiscal backstop.

The Commission proposal for a European deposit insurance scheme

There is a widespread consensus among experts and academia of the benefits of a viable and effective euro-area deposit insurance scheme.[102] The main argument behind a common European deposit insurance scheme is that it would increase the risk-absorption capacity and reduce the vulnerability of national DGS to large local shocks, as compared to the current system of national deposit guarantee schemes (DGS). A common safety net can be seen as an insurance contract, which would help prevent retail deposit runs that could overwhelm the capacity of any one country's DGS.[103] That would in turn help increase depositor confidence and limit the effects of national differences, contribute to a better functioning of the single market, and enhance financial stability in the euro area in general. Any divergences, perceived or real, between national DGSs can, on the other hand, contribute to market fragmentation by affecting banks' ability and willingness to expand their operations cross-border.

As a European deposit guarantee scheme would provide more stability and protection against large banking crises, it is an indispensable third pillar of the Banking Union. According to the Commission's effects analysis, EDIS would be considerably less likely to fall short of pay-outs than a national DGS. It would improve deposit insurance cover for banks in all participating Member States in both single and multiple pay-out scenarios, without changing the overall level of funding.[104]

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[102] See e.g. http://voxeu.org/article/case-euro-deposit-insurance; http://bruegel.org/2016/05/the-european-deposit-insurance-scheme/; Diamond and Dybvig (1983), Allen and Gale (1998), Diamond and Rajan (2001), Goyal et al. (2013), and IMF (2013).

[103] IMF (2013).

[104] http://ec.europa.eu/finance/general-policy/docs/banking-union/european-deposit-insurance-scheme/161011-edis-effect-analysis_en.pdf.

In its proposal, the Commission provided a framework for the design of EDIS to tackle most of the inherent incentive misalignments relating to a common deposit guarantee scheme.[105] Nevertheless, EDIS is a controversial issue for many Member States. The technical details of such a scheme are inherently linked to the actual design of the EDIS, and these are yet to be worked out. According to the Commission proposal, EDIS would be established in three sequential stages:

- The first stage would be a reinsurance scheme and would apply for 3 years until 2020. In this stage, EDIS would provide a specified amount of liquidity assistance and absorb a specified amount of the final loss of the national scheme in the event of a pay-out or resolution procedure. In order to limit moral hazard and avoid 'first-mover advantages', a DGS can only benefit from EDIS in this stage if it has met its requirements and filled its national fund to the required level, and only if those funds have been fully depleted.
- The second stage would be a co-insurance scheme and would apply for 4 years until 2024. In this phase, a national scheme would not have to be exhausted before accessing EDIS. EDIS would absorb a progressively larger share of any losses over the four-year period in the event of a pay-out or resolution procedure. Access to EDIS would continue to be dependent on compliance by the national DGS with the required funding levels.
- In the final stage, EDIS would fully insure deposits and would cover all liquidity needs and losses in the event of a pay-out or resolution procedure.

The reinsurance and co-insurance stages would share many common features, ensuring a smooth gradual evolution, but the costs for covering deposits would be increasingly shared among the national schemes and EDIS under the co-insurance stage. EDIS would provide full insurance of depositors in the Banking Union from 2024 onwards.

A common fiscal backstop

Member States have agreed to develop a common backstop for the SRF during the transition period. The backstop will facilitate borrowing by the SRF and hence the capacity of the SRB to resolve banks effectively. The banking sector will ultimately remain liable for repayment by means of contributions after the fiscal was used. After all Member States had transposed the BRRD, technical work on the backstop has started in November 2016.

4.5 Risk reduction and risk sharing in the euro area

Risk sharing aims to improve capital allocation in a way that allows risks to be borne by those that can bear it the most, thus improving asset allocation. When risk is shared across a financially integrated space such as the Banking Union, there is a lower likelihood of severe

[105] Like in the current DGS framework, EDIS would apply to deposits below EUR 100 000. The national deposit guarantee schemes and EDIS would intervene in the event of bank insolvency or resolution, and where there is a need to pay out deposits or finance their transfer to another bank. At the final stage of the EDIS set-up, the protection of those deposits would be fully financed by EDIS, supported by close cooperation between EDIS and national schemes. http://ec.europa.eu/finance/general-policy/docs/banking-union/european-deposit-insurance-scheme/151124-factsheets_en.pdf.

and disruptive capital movements during crises. As risk sharing implies a diversification of risks, it increases the capacity of the area as a whole to absorb losses deriving from country-specific shocks.[106] In the case of the euro area, the limited capacity for cross-border risk sharing mechanisms exposed the area to a significant capital reversal during the recent financial and sovereign debt crisis.

Box 8: General outlook on risk sharing in the euro area

Before the crisis, banks had become excessively leveraged, i.e. they were making use of other liabilities than equity to finance their operations. They represented a high systemic risk, and eventually taxpayers had to support the banks to ensure the continuity of banking services. In addition, many sovereigns were not fiscally resilient enough to withstand the pressure, which created a negative feedback loop between banks and sovereigns. This led to deteriorating market confidence in both the banking sector and sovereigns. Ideally, further risk sharing should be accompanied by measures to reduce risks in both private and public risk sharing channels. However, as the crisis illustrated, in a largely unfinished Economic and Monetary Union existing private risk sharing mechanisms were not effective enough to limit contagion to sovereigns.

The euro area could strengthen its cross-border risk sharing through both private and public mechanisms. Private risk sharing works through the access to foreign financial markets, including foreign capital markets, cross-border loans and deposits, direct investments, as well as through cross-border unemployment insurance. Public risk sharing could involve some form of fiscal redistribution between countries experiencing a negative output shock and those which do not. Fiscal risk sharing could potentially be in the form of cross-border subsidies, social protection including a common unemployment scheme, or cross-border financing of public investment.

Looking at past output shocks in the euro area, the limited smoothing that has taken place has predominantly gone through the credit channel, including savings, smoothing consumption after a shock. The evidence suggests that roughly 75% of the shocks in the euro area have gone unsmoothed, whereas in the US only 25% of the shocks have gone unsmoothed, as capital markets and fiscal transfers are able to absorb over 50% of shocks.[107]

To limit contagion in future crises, ideally both private and public risk sharing mechanisms would be needed. There is extensive evidence that financial integration can produce mechanisms of private risk sharing, where risk sharing via capital markets provides insurance before a shock has happened, with more potential to absorb losses deriving from more permanent shocks. The credit channel, on the other hand, can only address temporary shocks, and is subject to reversal.[108]

The measures proposed to complete the Banking Union are logical steps in the efforts to deepen European Monetary Union. They aim to reduce the link between banks sovereigns in Member States through risk sharing (for a more general discussion of risk sharing in the euro area see Box 8 above). A common deposit insurance scheme and a common fiscal backstop would assure the most effective functioning of the Banking Union. A common feature of these measures is that they reduce the bank-sovereign link at the national level through risk sharing among all the Member States in the Banking Union. The mere existence of these elements would reduce the likelihood of them ever being used, by strengthening confidence in the safety mechanisms in place.

[106] See e.g. Kose, Prasad, Rogoff and Wei (2006), Jappelli and Pagano (2008).
[107] See e.g. Poncela et al (2016), Furceri and Zdzienicka (2013), IMF (2013) or Asdrubali et al. (1996).
[108] See e.g. Obstfeld and Rogoff (1996), Asdrubali, Sorensen and Yosha (1996); Sorensen and Yosha (1998).

Despite the systemic benefits of risk sharing implied by the steps to reinforce the Banking Union, these steps should be accompanied by measures to further reduce risk. In June 2016, EU finance ministers agreed on a road map to both share and reduce risk in parallel. If the costs associated with bank failures and insolvencies are to be shared, it is essential that the risk of incurring such costs is contained to the maximum extent possible. While this is not a new concern, and measures to reduce such risks have already been taken, additional risk-reducing measures will be needed in parallel with work to establish further risk sharing. To this end, the Commission presented in November 2016 a comprehensive package of reforms to further strengthen the resilience of EU banks. The proposal builds on existing EU banking rules and aims to address outstanding weaknesses to bolster financial stability, while making sure that banks can continue to finance the real economy.

The measures for further risk reduction in the banking sector aim to: (i) ensure the resilience and smooth functioning of the Banking Union; (ii) increase legal certainty; (iii) contribute to overall stability in the euro area; and (iv) ensure a level playing field for all banks in the Banking Union. Further risk reduction is pursued by a range of prudential measures. These will, for example: improve the amount and quality of capital; reduce concentration of exposures; encourage deleveraging; limit pro-cyclical lending behaviour; reinforce access to liquidity; address systemic risk due to size, complexity and interconnectedness; underpin depositor confidence; and incentivise proper risk management through governance rules.

The proposal sets more risk-sensitive capital requirements for institutions involved in trading securities and derivatives, particularly in terms of market risk, counterparty credit risk and, for exposures to central counterparties. As a part of the measures to reduce excessive risk-taking, the Commission proposes to set a 3% leverage ratio requirement for all credit institutions and investment firms bound by the capital requirement regulation. With some adjustments to avoid discriminating against any particular business model, a leverage ratio is essentially the amount of capital of an institution divided by its total assets.

By setting a binding net stable funding ratio to address financial institutions' excessive reliance on short-term wholesale funding, the Commission aims to make sure banks have stable and resilient funding. During crisis, banks' reliance on short-term funding caused them to seek emergency liquidity assistance from central banks, or sell their assets in fire sales with significant discounts, causing many to become insolvent.

Some financial institutions have become so systemically critical that their potential failure would cause serious ramifications to the whole economic and financial system. As a consequence, these institutions effectively hold governments hostage, forcing them to save the banks with taxpayers' money. To address this 'too-big-to-fail' issue, a requirement known as total loss-absorbing capacity (TLAC) will be integrated into the existing minimum requirement for own funds and eligible liabilities (MREL) system. TLAC requires global systemically important institutions (G-SIIs) to be financed with sufficient levels of liabilities that can be readily be bailed-in, and other instruments that bear losses in resolution. TLAC proposes a harmonised national insolvency ranking of unsecured debt instruments to make it easier for banks to issue such loss-absorbing debt instruments. TLAC and MREL will thus strengthen the EU's ability to resolve failing G-SIIs, and allow for a more sound financial system.

Creating a Capital Markets Union would allow risk sharing in the euro area to be less dependent on the credit channel and complement the role of banking. This would also create a better balance between debt and equity financing, and make the financial system more resistant to shocks by offering access to a wider choice of financial instruments. However, capital markets are prone to increased interconnectedness and herd behaviour. The emergence of new risk transmission channels needs to be monitored and the build-up of risk curtailed.

4.6 Concluding remarks

Even after these risk-reducing proposals have been implemented, potential risk transmission between banks and sovereigns will still be present. Banks need safe and highly liquid assets to operate. They therefore rely to a large extent on bonds issued by their home sovereign and consequently hold large amounts of government debt on their balance sheets. As a result, banks remain vulnerable to changes in the perceived credit risk of their national sovereigns. Although investors are pricing in the risk of bail-in, e.g. differentiating between senior and junior debt, they still consider the possibility of a public bail-out to be supportive of bank credit quality. Taken together, it is clear that a strong bank-sovereign link remains at national level and that additional measures are needed to fully break this link. Much progress has been made in constructing a functioning Banking Union, but it remains structurally incomplete. In June 2016, EU finance ministers adopted a road pap that laid out further guidelines for completing the Banking Union. To this end, as a first important step, the Commission delivered a comprehensive bank reform package in November 2016 to tackle remaining weaknesses, by strengthening the loss absorbency of EU banks and making it easier to carry out resolution of banks at risk of failure. The new features proposed and envisaged, concern both risk-reduction and risk-sharing measures and finding a way to balance the two.

Chapter 5 FINANCIAL CYCLES, HOUSING MARKETS AND MACRO-PRUDENTIAL POLICY

5.1 Introduction

Macro-prudential policy can be defined as the use of primarily prudential tools to limit systemic risk. Systemic risk in turn is described as the risk of widespread disruption to t financial services caused by impairment of all or parts of the financial system, and which can cause serious negative consequences for the real economy.[109] Systemic risk can be generally characterised by two dimensions. A first 'structural or cross-sectoral dimension' of systemic risk refers to vulnerabilities stemming from interconnectedness at any given point in time. A second 'cyclical or time dimension' of systemic risk refers to vulnerabilities related to the build-up of risks over time.

This chapter focuses on the cyclical dimension of systemic risk in the EU, and the important role played by residential real estate[110] in the financial cycle[111]. Fundamental to systemic risk is the notion of negative externalities from a disruption or failure in a financial institution, market or instrument. Three types of negative externalities give rise to systemic risk:

- first, externalities related to the strategic interactions of financial institutions and agents during the expansionary phase of a financial cycle (causing the build-up of vulnerabilities);

- second, externalities related to fire sales and credit crunches during the contractionary phase of the financial cycle (causing a generalised sell-off of assets and decline in asset prices, a deterioration of balance sheets of intermediaries and investors, and a drying up of liquidity);

- a third category of externalities which is more structural and which refers to interconnectedness and contagion at any given point in time, causing the propagation of shocks from systemic institutions or through financial markets.

The existence of the externalities associated with the build-up of systemic risk provides the economic justification for policy interventions to safeguard financial stability. Nevertheless, the recent financial crisis made it clear that not all policies are equally effective in addressing systemic risk. For instance, macro-economic policies such as monetary and fiscal policies can be relatively blunt instruments in managing specific financial system risks, with changes in interest rates and taxation impacting very broadly on the economy as a whole. By targeting inflation and GDP, monetary and fiscal policies influence the business cycle but are arguably less effective in dampening the powerful asset price and credit movements known as

[109] See among others, ECB (2009), Financial Stability Review, Special Feature B, for a discussion of the concept of systemic risk.

[110] Commercial real estate markets are also important for financial stability due to the size of the market, the large exposures of banks and other financial institutions to it, the widespread use of commercial real estate as collateral in borrowing, and the high degree of cyclicality of the market (ESRB, 2015b). Given that commercial real estate markets are distinct from residential real estate in their characteristics and drivers, they are left out of this chapter.

[111] There is no one single definition of a financial cycle. Borio (2014) defines a financial cycle as a 'self-reinforcing interaction between perceptions of value and risk, attitudes towards risk and financing constraints'.

'financial cycles' that are observed in most developed nations. This is in part caused by the fact that these financial cycles show very different patterns from ordinary business cycles. They are generally longer and are characterised by greater amplitude, while the impact of downturns on the real economy appears more pronounced.[112] The financial cycle is a manifestation of the pro-cyclicality of the financial system and has been a source of costly banking crises.[113] Macro-prudential policy aims to complement macro-economic policies by dampening the financial cycles in both the expansionary and contractionary phase, by for instance influencing the price or availability of credit.[114]

In particular, monetary policies across the developed world have focused almost exclusively on price (and output) stability. The financial crisis has shown that stable and low inflation does not necessarily ensure financial and macro-economic stability. This strengthens the case for additional tools that can address macro-economic risks stemming from the financial sector more effectively. Macro-prudential policy, using instruments such as capital buffers, risk-weighting of assets and loan-to-value/loan-to-income ratios, can better target risks linked to particular activities (e.g. the purchase of real estate and foreign-currency borrowing) or structural features (e.g. the existence of systemically important financial institutions and the large size of the financial sector relative to GDP) in the economy. While macro-prudential policy is being used across the EU, it is seen as a particularly useful tool for Member States in the euro area, where the single monetary policy precludes the use of interest rates to address potentially systemic risks to financial stability at the national level.

The chapter is structured as follows. Section 5.2 explains out the importance of residential real estate markets for financial cycles, arguing that both mortgage credit and a range of other housing market characteristics have the potential to amplify financial cycles. Section 5.3 documents the significant heterogeneity in national housing market characteristics across the EU and succinctly reviews the different types of macro-prudential measures taken in the area of residential real estate in the EU. Section 5.4 discusses EU macro-prudential policy in a broader perspective of the overall economic policy mix. Section 5.5 provides conclusions.

5.2 The importance of residential real estate in financial cycles

Macro-prudential policies aim to dampen booms and busts linked to financial crises, which reflects the accumulation of unsustainable financial imbalances that ultimately trigger credit crunches, fire sales following a generalised sell-off of assets and sharply declining asset prices. As indicated in the previous section, the vast majority of financial crises are related to house price cycles.[115] This explains why most of the literature finds that the key indicators of

[112] See among others Drehmann et al. (2012), Schüler et al. (2015) and Claessens et al. (2012). While business cycles in the EU last between 2 and 8 years, EU financial cycles are shown to have an average length of between 10 and 20 years. Most studies find substantial heterogeneity across EU Member State financial cycles. This will be further illustrated in Section 5.4.

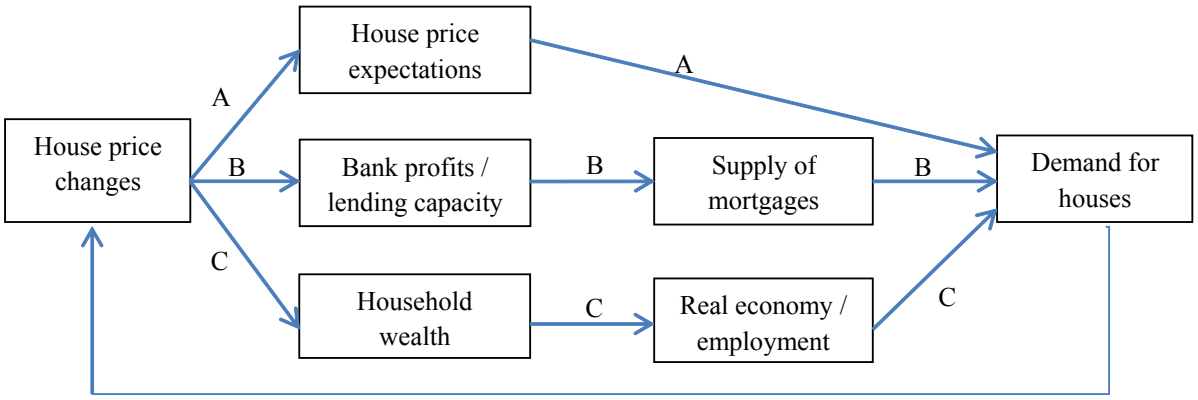
[113] See Borio (2014).

[114] Dampening the cycle is the more challenging objective of macro-prudential. The other and more pragmatic objective is to enhance the resilience of the financial system to significant shocks that would cause disruptions to its functioning and have negative knock-on effects on the real economy. Jorda et al. (2017) find that higher capital ratios are unlikely to prevent (or even reduce the likelihood of) a financial crisis, but mainly help the speed of recovery from financial crisis recessions. They argue that the main role of higher capital ratios is in mitigating the social and economic costs, rather than in reducing the likelihood of financial crises.

[115] See Schoenmaker (2016), Jorda et al. (2015), Reinhart et al. (2009) and Claessens et al. (2011).

financial cycles are the evolution in credit volumes and house prices. Chart 5.1 presents three important feedback loops that help explain the strong role of residential real estate in contributing to financial cycles and systemic risk.

Chart 5.1: Feedback loops in house prices, credit and the real economy



Source: European Commission

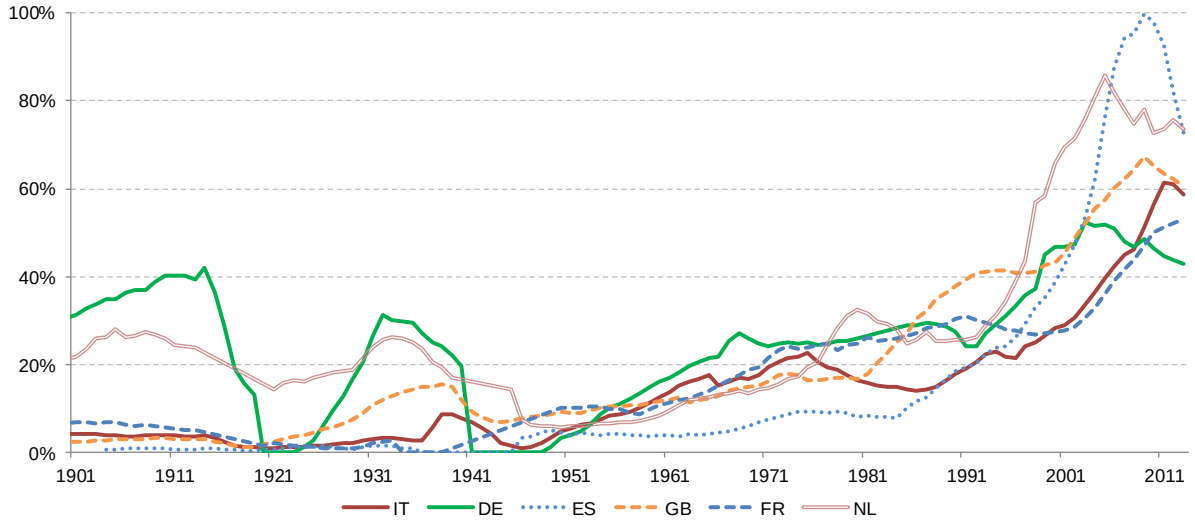
Feedback loop A represents the possibility that rising house prices raise expectations about further price rises, increasing demand and driving prices up further. In a downturn, this process could go into reverse: a combination of pessimism and risk aversion can lead to price decreases through lower demand.

Feedback loop B represents the importance of mortgage credit. The past decades have seen a strong increase in reliance on mortgages for the financing of housing purchases. Chart 5.2 shows that mortgage lending has increased rapidly over the past decades across EU Member States. This has markedly strengthened the link between the financial sector and households. By increasing the immediate purchasing power of households, availability of mortgage credit may drive up house prices. At the same time, a subsequent sharp fall in house prices may expose banks to large losses which could destabilise the financial system and result in a contraction in the supply of mortgages.

Feedback loop C represents the link to the real economy via wealth effects. Real estate purchases by households have become very common in many European countries. Across the EU, 70% of households own rather than rent the property in which they live.[116] Accordingly, changes in house prices may influence the actual or perceived wealth held by a large share of the population. House price increases could encourage households to spend more and save less, whereas a fall in house price values would likely result in increased saving and weaker household expenditure. Mortgage lending also strengthens the link between households and the real economy, as high levels of indebtedness increase the impact of house prices falls on the wealth and spending capacity of households.

[116] Source: Eurostat. There is substantial variation in home ownership across Member States. This is further described in Section 5.3.

Chart 5.2: Mortgage lending in % of GDP



Source: Jordà et al. (2017)

The finding that a credit-fuelled increase in house prices plays a key role in contributing to financial cycles suggests that it may be appropriate for macro-prudential policies to influence the availability or price of mortgage credit, and to do so in a counter-cyclical manner. At the same time, apart from mortgage credit, there are many structural characteristics of housing markets that can have profound implications for the length and amplitude of house price cycles. These include characteristics like home ownership rates, frequency of switching residence, mortgage reliance, loan-to-value rations (LTVs) and other financial assets held by households. The theoretical channels through which housing market characteristics can impact the strength of financial cycles are explained using the various feedback loops described in Chart 5.1, which are summarised in Table 5.1 below. Many of these housing market characteristics are at the centre of social, fiscal and income policies in most countries. This underlines the importance of recognising that macro-prudential policy cannot be set in isolation and that the social, fiscal and economic impact should be assessed carefully.

Table 5.1: Selected housing market characteristics and hypothesised impact on the financial cycle

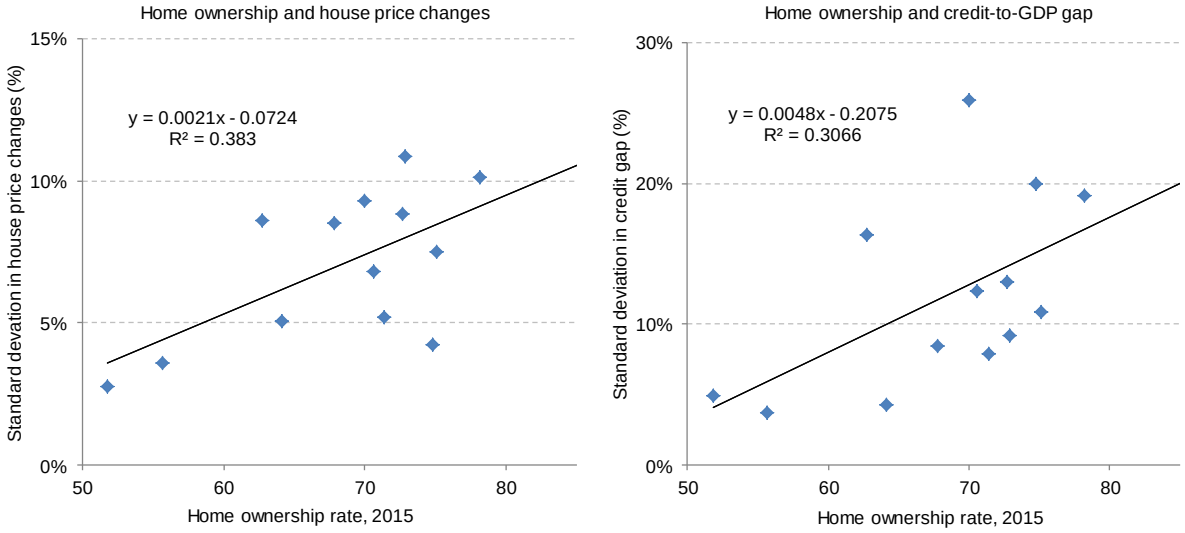
Housing market characteristics	Hypothesised impact on financial cycles
Home ownership rate	Higher levels of home ownership could amplify financial cycles. Home ownership is likely to strengthen the relationship between house prices and the real economy (feedback loop C); home ownership can boost consumption via a positive wealth effect as house prices rise, but could have the reverse effect if prices fall.
Frequency of switching residence	Higher frequency of switching could amplify financial cycles. Many transactions on the housing market may accelerate the speed with which price adjustments take place. This could work through feedback loops A, B and C.
Mortgage reliance	Higher reliance on mortgages could amplify financial cycles. Mortgage reliance creates a direct link between the housing market and bank lending. House prices could rise quickly if credit is easily provided and dampened when it is not (through feedback loop B). In addition, higher reliance on mortgages also creates higher levels of household indebtedness and therefore more vulnerability to changes in house prices (e.g. by creating negative equity) or to economic shocks in general. It will thus make feedback loop C stronger.
LTV on new mortgages	Higher LTV ratios could amplify financial cycles. They reinforce feedback loop B by facilitating the supply of mortgages to a larger share of the population. In addition, they create higher levels of indebtedness and make households more vulnerable to shocks in house prices, through feedback loop C.

Source: European Commission

There is some empirical evidence suggesting that some of these housing market characteristics are correlated with the strength of financial cycles. Huber (2016) shows that

the length and amplitude of the financial cycle, i.e. the 'violence' of housing booms and busts, is closely related to home ownership shares: the higher the share of home ownership, the longer and more amplified are the financial cycles. Runstler (2016) also finds that markets with higher home ownership rates experience more powerful financial cycles in house prices and credit volumes. This is confirmed by our own analysis: when plotting home ownership rates in various Member States against the standard deviation (as a proxy for the strength of the financial cycle) of both house prices and the credit-to-GDP gap, we find a positive correlation, as shown in Chart 5.3.[117] This provides an indication that structural characteristics of housing markets and the underlying policy choices that drive them (e.g. taxes and transaction costs) play an important role in financial cycles.

Chart 5.3: Home ownership rates versus volatility of house prices and credit-to-GDP gap



Source: Eurostat and OECD data. Own analysis

Note: For house prices, the countries included are AT, BE, DE, DK, ES, FI, FR, EL, IE, IT, NL, PT and SE. The standard deviation (STDEV) of house price growth rate is calculated for the period from 1971 to Q3-2016, with the exception of ES (start in 1972), PT (start in 1989), EL (start in 1989), and AT (start in 2001). For credit-to-GDP gap, the countries included are AT, BE, DE, DK, ES, FI, FR, EL, IE, IT, NL, PT and SE. The standard deviation of the credit-to-GDP gap is calculated for the period from 1971 to Q3-2016, with the exception of DK (start in 1976), FR (start in 1979), BE, FI, EL, ES (start in 1980) and IE (start in 1981).

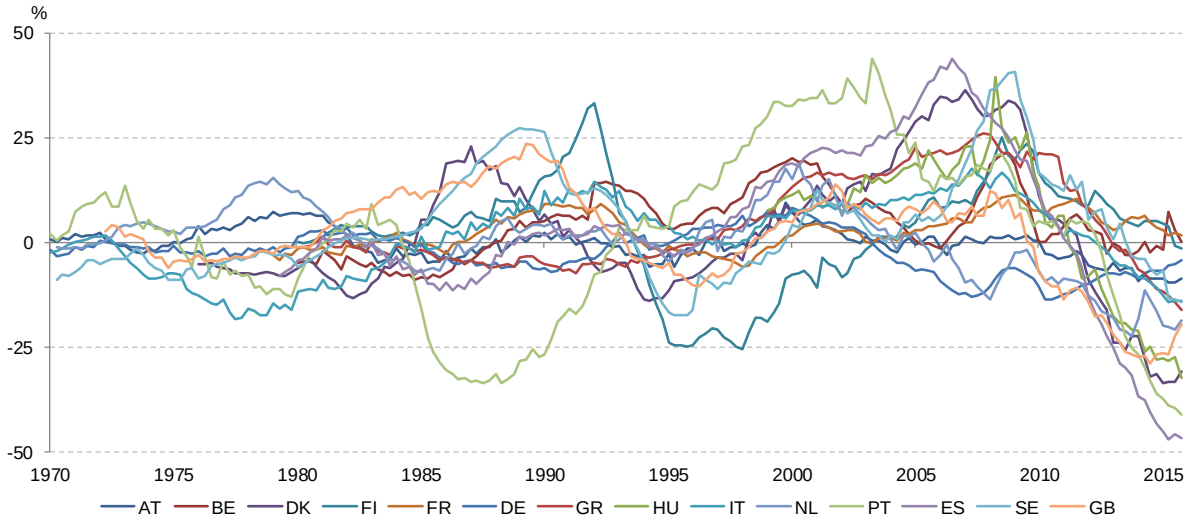
The next section points out that these underlying factors differ across Member States. This is because they are influenced by national characteristics including policies (e.g. property taxation system, mortgage tax relief, transaction taxes), banking systems (e.g. market concentration, importance of non-banks in credit provision), market characteristics (e.g. home ownership, typical mortgage maturities, prevailing type of interest rates), preferences, and other demand and supply features. Institutional features and structural elements can therefore play a key role in accentuating or mitigating developments in the real estate sector and the related vulnerabilities.

5.3 National developments and macro-prudential policies in the real estate sector

Many recent studies, using a range of empirical approaches, show that movements in credit and house prices have common trends but are not fully synchronised across EU Member

[117] The 'credit-to-GDP gap' is the estimated deviation of credit-to-GDP from its long-term trend.

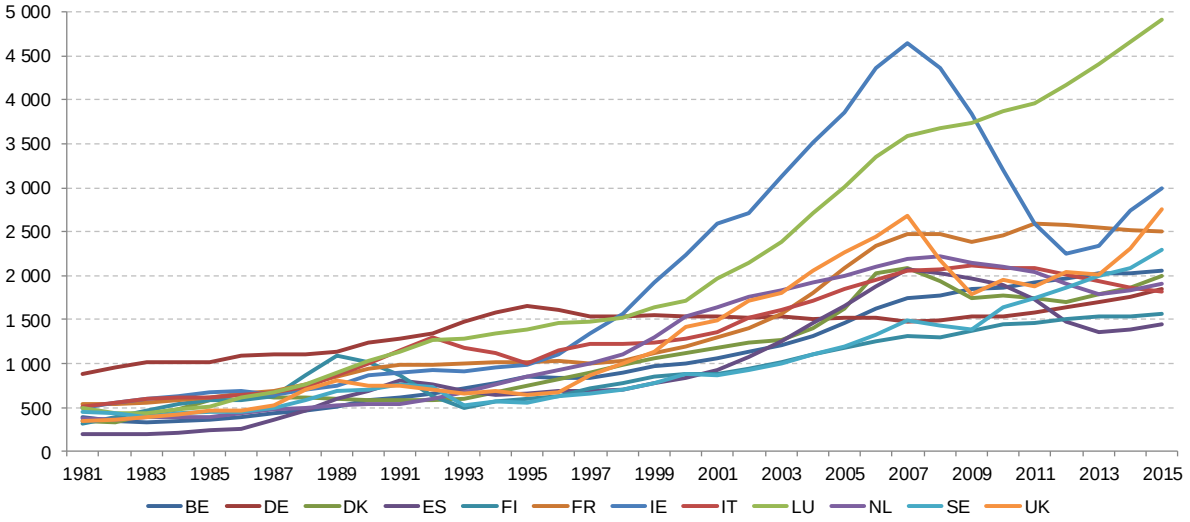
Chart 5.4: Credit-to-GDP gaps (in % of GDP)



Source: BIS
Note: The 'credit-to-GDP gap' is defined as the difference between the credit-to-GDP ratio and its long-term trend. The credit series used is for total credit to the private non-financial sector, capturing total borrowing from all domestic and foreign sources. The ratio of nominal broad credit to nominal GDP is calculated for each quarter, where GDP is annualised by taking the sum of the four most recent quarterly observations. The long-term trend is calculated with a one-sided (or recursive) Hodrick-Prescott filter, where the smoothing parameter lambda (λ) is set at 400 000. The credit-to-GDP gap is the difference between the credit-to-GDP ratio and its long-term trend, resulting in a gap in percentage points (pp).

States.[118] The existence of heterogeneity can be illustrated by Chart 5.4, which shows substantial variation across the EU in the development of private credit-to-GDP, one of the key indicators of financial cycles. Real house prices (Chart 5.5) have increased during the past few decades in all Member States, but the pace of growth and the adjustments following the financial crisis vary substantially from country to country.

Chart 5.5: Real house prices, EUR per m^2



Source: Bricongne et al. (forthcoming) and European Commission , Box I.4: Assessment of the housing markets outlook: new insights from house prices in levels
Note: Here, prices in euro/m² are in real (CPI-deflated) terms.

[118] See Schuler et al. (2016), Galati et al. (2016) and Runstler et al. (2016).

A recent study by Runstler et al. (2016) also shows a large degree of heterogeneity in financial cycles for some EU Member States, both in the length and amplitude of the financial cycle. Table 5.2 summarises their main findings. Germany stands out with very short and small cyclical components, whereas Spain and UK have particularly long and strong cycles. France and Italy fall in the middle. These findings also illustrate the pronounced differences between financial cycles and business cycles mentioned in Section 5.1.

Table 5.2: Length and size of financial cycles, selected EU Member States

	House price cycle		Credit cycle		Business cycle	
	Length	Amplitude	Length	Amplitude	Length	Amplitude
Germany	7.1	2.7	6.2	1.4	6.4	2.1
France	15.3	10.5	15.1	5.1	12.6	2.7
Italy	13.5	12.4	13.6	6.2	9.2	2.9
Spain	17.1	21.2	18.7	14.0	17.6	4.1
UK	16.5	18.6	15.8	7.7	13.5	4.1

Source: Runstler et al. (2016)
Note: The length of the cycles is measured in years. The amplitude of the cycle is proxied by the standard deviation of the time series.

The common trends in financial cycles across the EU can in part be explained by the strong financial and economic linkages between European economies, as capital tends to be mobile and liquidity conditions are generally correlated across markets. Nevertheless, there are a range of other factors at play that could help explain heterogeneity in financial cycles. Some of them are related to differences in demand for housing and credit. Specifically, country-specific economic policies including taxation and fiscal policies, as well as differences in labour markets, industries and productivity levels, result in large variation across EU Member States in key macro-economic outputs such as employment and economic growth. Some of the key variables affecting housing markets are also specific to Member States. For instance, the supply of housing and tax systems for housing markets are often determined locally. In addition, many structural housing market characteristics, including rates of home ownership, accessibility of mortgages and the frequency of going to the (real estate) market either as a buyer or seller remain differentiated across Member States, as is shown Table 5.3 and in more detail in the Annex.

Table 5.3: Heterogeneity in housing market characteristics, EU Member States

	Min	1st quartile	Median	3rd quartile	Max
Home ownership rate in % (i)	51.8	70.2	75.0	82.1	96.5
Frequency of switching residence in % (ii)	3.1	13.6	22.6	31.1	44.3
Mortgage reliance in % (iii)	0.9	13.3	26.4	55.2	89.8
Loan-to-value ratio on new mortgages in %	50.5	62.4	70.4	75.4	96.0
Share of floating rate mortgages in % (iv)	2.2	19.7	61.4	91.2	99.9
Maturity at issuance in years	15.0	20.2	22.7	28.4	41.2

Sources: Eurostat, ECB Expert Group, Hypostat
Note: 2015 data for home ownership and mortgage reliance, 2016 data for floating-rate mortgages and, 2013 data for maturity and LTV. (i) share of all households that own a home, (ii) share of all owners that switched in period 2007-2012, (iii) share of all owners with a mortgage, and (iv) share of new housing loans with floating rate of fixation period of up to one year.

Given the importance of the real estate market in affecting financial cycles, macro-prudential authorities are particularly vigilant in this area. In November 2016, for the first time in its history, the European Systemic Risk Board (ESRB) issued public 'warnings' to eight Member States about significant medium-term vulnerabilities relating to their residential real estate

sectors.[119] The ESRB initiative was part of a forward-looking EU-wide assessment using indicators related to price levels and dynamics in residential real estate markets, the implications of household borrowers' debt for their consumption and behaviour, and the potential impact on lenders of developments in residential real estate. The ESRB stressed that the nature of the vulnerabilities in the various Member States differed, but all were the result of a combination of household indebtedness (more specifically households' leverage and capacity to repay debt) and price dynamics in the real estate market. In parallel, the ESRB also adopted a recommendation on closing real estate data gaps, encouraging national macro-prudential authorities to implement frameworks for monitoring financial stability developments in the real estate sector, based on recommended indicators and definitions.[120]

To address risks stemming from imbalances, macro-prudential authorities have a variety of tools at hand, ranging from capital-based measures (which can help increase the resilience of the banking sector against potential shocks) to measures to reduce credit flows and lower household indebtedness. The analysis of vulnerabilities and use of macro-prudential instruments in the real estate sector can be grouped conveniently in 'borrower-stretch' (or 'income-stretch'), 'collateral-stretch', and 'lender-stretch' categories:

- **Borrower-stretch instruments** cover instruments that target the repayment capacity of the borrower, such as loan-to-income (LTI), debt-to-income (DTI), and debt-service-to-income (DSTI) limits. These are used in 14 Member States.[121]

- **Collateral-stretch instruments** refer to instruments that focus on the collateral of loans, such as loan-to-value (LTV) limits. These are used in 20 Member States.

- **Lender-stretch instruments** are instruments that directly increase the resilience of the lender, such as risk weights or sectoral capital buffers. These are used in 14 Member States.

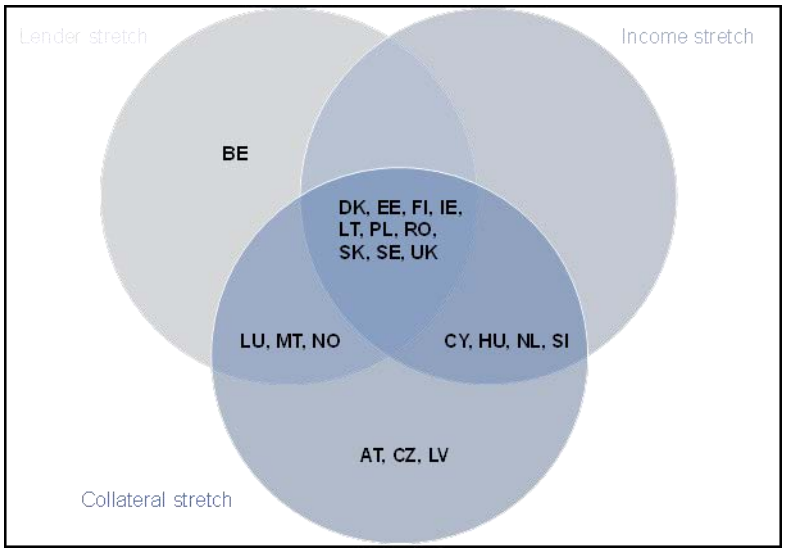
Most Member States employ a combination of instruments, as illustrated in Chart 5.6. This variation in the tools used by national authorities reflects the fact that macro-prudential policies have to be tailored to the national specificities of housing markets and cycles documented in this chapter. EU oversight and coordination of macro-prudential measures is necessary, to permit the deployment of the national policies without hampering the single market (see also Section 5.4).

[119] The eight countries identified were Austria, Belgium, Denmark, Finland, Luxembourg, the Netherlands, Sweden and the United Kingdom. In Member States that did not receive a warning, vulnerabilities in residential real estate could not be identified or the policy stance in place to address vulnerabilities was deemed appropriate and sufficient to address them. Direct near-term risks in residential real estate have not been identified, partially thanks to the resilience of the banking sector. For the complete set of documentation, see ESRB (2016).

[120] ESRB Recommendation ESRB/2016/14.

[121] Finland, Austria and Sweden are examples of Member States that are still working on ensuring a legal basis or clear mandate for the use of borrower-based measures.

Chart 5.6: Use of macro-prudential instruments in the real estate sector, by Member States and categorised by 'stretches'



Source: ESRB (2017)
Note: Instruments active in 2016, but possibly activated in earlier years. Some instruments have a hybrid nature. Amortisation requirements affect both the repayment burden and bring down the LTV ratio over time. Therefore they have been included under both the borrower/income stretch and collateral stretch.

The ESRB considers measures as 'appropriate' when they are conceptually suitable given the nature and timing of risks. The ESRB considers measures as 'sufficient' when they are expected to or can be shown to significantly mitigate or reduce the build-up of risks over an appropriate time period with limited unintended impact on the general economy. However, for a number of reasons, assessing the appropriateness and sufficiency of macro-prudential measures to address systemic risks in the real estate sector or elsewhere is not straightforward.[122]

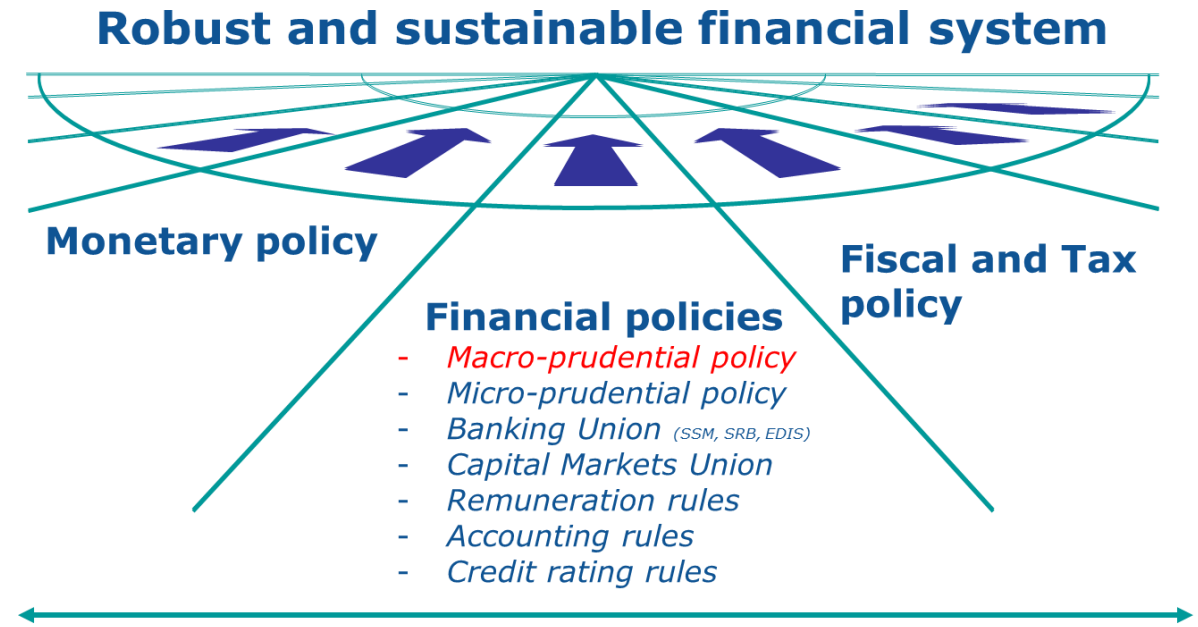
5.4 Putting EU macro-prudential policy in a broader perspective

This section enlarges the perspective around EU macro-prudential policy-making beyond its role in preventing imbalances in the real estate sector. First and foremost, macro-prudential policy is just one of the numerous interacting policies contributing to a more robust and sustainable financial system, that in turn ensures the provision of vital services to the real economy. Second, national flexibility in macro-prudential policy implementation triggers a need for a strong framework of EU oversight and coordination to ensure the proper functioning of the single market. Third, the existing macro-prudential policy framework is relatively bank-centric and the fact that some risks, currently more prevalent in banking, may

[122] When assessing macro-prudential measures, several complexities need to be dealt with. First, reliably and accurately measuring systemic risk is difficult. Second, reliably assessing the causal impact of any policy measure on systemic risk is difficult, given the lack of a counterfactual scenario where no measure has been taken. Third, many of the evaluated macro-prudential regulations became applicable only quite recently, meaning that the implementation period is very short. Fourth, the introduction of macro-prudential measures may have been well anticipated, with the result that adjustments of economic agents may have already taken place prior to implementation. Fifth, cost-benefit analyses in financial regulation are inherently difficult to perform, as costs often materialise in the short term and often affect primarily a few vocal financial institutions, whereas expected benefits only materialise over the medium or long run, and are spread out over numerous smaller stakeholders (depositors, taxpayers, etc.). Also, private costs and social costs may differ, with the same holding for the benefits. Finally, the protracted period of low growth since the onset of the crisis and the introduction of the new macro-prudential tools has not resulted to date in the common use of cyclical macro-prudential measures, such as the countercyclical capital buffer.

migrate to the non-bank sector, suggests that careful consideration is needed whether and when the existing macro-prudential framework needs to be expanded into the non-bank sector. Fourth, macro-prudential policy is just part of an ambitious and comprehensive reform agenda that put in place following the 2008 financial crisis to ensure that financial integration gives rise to improved risk sharing, efficient capital allocation and sustainable economic growth.

Chart 5.7: Interaction of policies that aim to contribute to a more robust and sustainable financial system, that in turn ensures vital services to the real economy



Source: European Commission

Numerous policies in addition to macro-prudential policy aim to contribute to a more robust and sustainable financial system, that in turn ensures vital services to the real economy. As Chart 5.7 illustrates, and as partially reflected in this section, tax policy, fiscal policy, monetary policy, competition policy, financial regulatory policies and crisis management policies all interact with each other. The interaction between these policies needs to be analysed and assessed as all of them may reduce or increase systemic risk, directly or indirectly, or intentionally or unintentionally.[123] For example, tax policies may often focus on specific political objectives and may thereby unintentionally and indirectly distort asset prices and contribute to excessive leverage and systemic risk. In turn, excessive leverage and debt overhang can give rise to artificially weak investment and economic growth. In such context, one challenge when implementing macro-prudential policy can be that addressing imbalances in property prices and rising credit may go against other social and tax policies aimed at fostering credit availability and home ownership. Taking a broad policy perspective to address systemic risk is aligned with the key objectives of President Juncker's political agenda and would improve the coherence of policy-making.

[123] Rajan (2010) argues that rising inequality in the past three decades led to political pressure for redistribution that eventually came in the form of subsidised housing finance ('let them eat credit'). A lending boom resulted, with the massive rise in housing prices enabling consumption to stay above stagnating incomes. When the boom reversed in 2007, it led to the 2008 banking crisis. Interestingly, increasing inequality also preceded the financial crash of 1929 and the resulting great depression.

Second, there are a number of reasons that support national flexibility or discretion in activating and implementing macro-prudential policy. First, as documented in the previous sections, systemic risks and financial cycles vary across Member States as a result of national policies and differences in economic and financial structures.[124] Therefore, macro-prudential policies need to be sufficiently focused on detail to deal with the more local features of property credit cycles. National authorities have in-depth knowledge about the functioning of their economy and financial system; this suggests that national macro-prudential authorities should play an important role in identifying and designing measures. Some of the macro-prudential measures taken, such as caps on loan-to-value or debt-service-to-income ratios, may also have significant social, distributional and hence political impacts. Furthermore, despite significant progress in Banking Union to date, the consequences of financial system crises will still to a certain extent be borne at the national level. The above arguments jointly suggest that macro-prudential policy calibration has an important national dimension.

Given the national dimension of macro-prudential policy-making[125], EU coordination and oversight becomes all the more important to ensure proper functioning of the single market. Set out below are some of the features that would be needed for a successful macro-prudential framework:

- Positive cross-border spill-overs need to be generated and negative ones need to be avoided.
- Transparency, cross-border consistency and a level playing field need to be promoted.
- Unintended effects and misuse of macro-prudential measures (inappropriate/disproportionate action) need to be avoided.
- Host authorities should not unduly ring-fence capital and liquidity within national boundaries.
- Cross-border foreign banks not subject to macro-prudential regulation should not undo the intended domestic effect.
- Political economy and short-term considerations should not give rise to inaction bias on behalf of national authorities, to the detriment of other Member States, the Banking Union or the single market.

[124] Also, while the Single Rulebook has harmonised the key elements of financial legislation, some elements are still specific to Member States due to the transposition of Directives into national law or the fact that insolvency law and taxation — which are key for the functioning of financial markets — are not harmonised at EU level.

[125] To avoid inaction bias at the national level, the ECB and the Commission have also been granted certain macro-prudential powers and instruments. Under Article 5 of the SSM Regulation, the ECB/SSM is entrusted with certain macro-prudential powers within the Banking union and may object to or strengthen certain macro-prudential measures proposed by national competent or designated authorities within the Banking union, under certain conditions. Under Article 459 of the Capital Requirements Regulation, the Commission may impose, for a period of one year, stricter requirements for the level of banks' own funds, large exposures, or public disclosure, under specific conditions, in particular upon the recommendation or the opinion of the ESRB or EBA. The required conditions are that these measures are necessary to address changes in the intensity of micro-prudential and macro-prudential risks which arise from market developments in the Union or outside the Union affecting all Member States, and that the instruments of the CRR/CRDIV are not sufficient to address these risks.

- Risks should be built down and not just shifted to other sectors.

- Finally, too loose credit conditions in good economic times should be avoided, as they could lead to the build-up of non-performing loans (NPLs) when the economic situation worsens. The build-up of NPLs on banks' balance sheet in turn affects banks' capacity to lend and deepens or prolongs the period of protracted growth (one of the key feedback loops described in Section 5.2).

- Excessive fragmentation and undue complexity should be avoided for cross-border banks. As the Banking Union develops, it should lead to the possible emergence of pan-European banks, which should foster an increase in cross-border mortgages and cross-border ownership of assets within a soundly regulated and supervised single market.

In sum, the EU macro-prudential policy framework rightly reflects a careful balance between national flexibility in macro-prudential policy implementation and EU oversight and coordination to achieve these objectives.

Third, the importance of the banking sector in Europe and the role it played in the recent financial crisis naturally led to a focus of the regulatory and supervisory framework on addressing risks coming from this sector. The creation of the Banking Union and the macro-prudential policy and regulatory frameworks have gone a long way in providing authorities the necessary tools to do so. However, activities which have been traditionally the sole remit of banks, such as intermediation and credit provision to the economy, are increasingly being undertaken by financial institutions which are outside of the banking system, and hence outside of their specific regulatory and supervisory perimeter.[126] Therefore, as macro-prudential measures are targeted at the banking sector, there may be a risk that 'shadow banks' take an increasing share of the mortgage provision and potentially fuel imbalances in house prices.

As the Capital Markets Union (CMU) initiative seeks to develop and integrate capital markets across Europe, careful reflection is needed as to how to appropriately reflect developments in capital markets in the existing macro-prudential toolkit and monitoring framework to ensure that newly emerging risks are monitored and addressed. For example, one of the CMU initiatives is to revitalise the securitisation market by providing a framework for the development of simple standardised and transparent (STS) securitisations, allowing banks to use this tool in a transparent way, while freeing up space on their balance sheet to contribute to the financing of the real economy and mortgage credit intermediation. Financial market integration has not always been resilient in the past, as illustrated by the developments in short-term wholesale funding market segments, which proved to be prone to sudden reversals in the face of shocks. Therefore, from a macro-prudential perspective, CMU should seek to foster further integration in those market segments which are more resilient and more

[126] The 2015 ECB Financial Stability Review (FSR) points to the growth of assets of non-bank financial entities in the euro area and to the increasing role of non-banks in credit intermediation. From 2009 to 2014, shadow banking entities increased their share in the total assets of the financial sector from 33% to 37%, while — in parallel — credit institutions saw their share in intermediation shrink from 55% to 49%. The ECB 2016 FSR also stresses the possibility of spill-overs between banks, shadow banks and insurance companies in Europe.

conducive to cross-border absorption of shocks (risk sharing), such as equity markets. Further private risk sharing through capital markets and an efficient allocation of capital is of key relevance as financial cycles are not fully aligned across countries, and idiosyncratic shocks need to be compensated through market or fiscal mechanisms, which allow smoothening consumption in times of crisis. The upcoming Commission's mid-term review on the CMU is looking at these issues and seeking to dismantle the barriers to the good functioning of capital markets.

Fourth, the macro-prudential policy framework is only one piece of the puzzle when it comes to ensuring that the financial system can effectively play its role in ensuring that financial integration gives rise to improved risk sharing, efficient capital allocation and, sustainable economic growth. An ambitious and comprehensive reform agenda has been put in place following the 2008 financial crisis, including a complete revision of the supervisory and regulatory frameworks with the creation of the European System of Financial Supervision and the Banking Union. The Five Presidents' Report took this approach a step further by providing a long-term vision for the strengthening of the Economic and Monetary Union. This long term vision will be further specified in the upcoming Commission reflection paper on EMU deepening.

5.5 Concluding remarks

Macro-prudential policy is a challenging policy area which is still relatively young and under development. Macro-prudential policy cannot be looked at in isolation, as a broad policy stance is needed to effectively address the root causes of vulnerabilities and imbalances in the financial system. The interaction between policies needs to be assessed to ensure that they collectively generate a robust and sustainable financial system providing vital services to the real economy. The macro-prudential framework is just one of the elements to ensure that the financial system can effectively play its role in ensuring that financial integration gives rise to improved risk sharing, efficient capital allocation and sustainable economic growth.

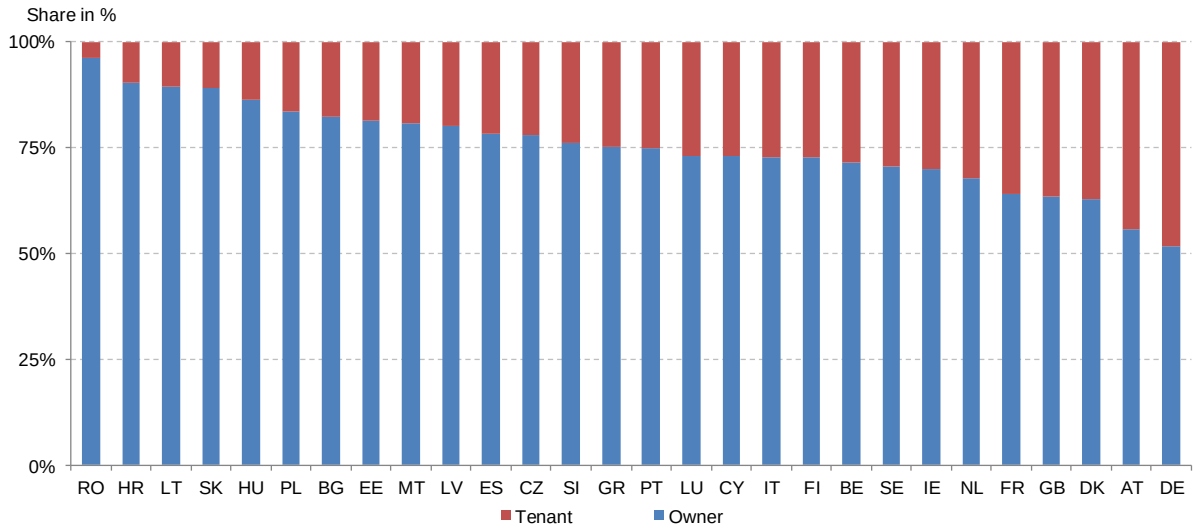
This chapter highlights that real estate developments play a key role in financial cycles and are therefore a central concern of macro-prudential policymakers. Continuous vigilance and further analytical work will be required following the November 2016 ESRB warnings on significant medium-term vulnerabilities relating to the residential real estate sectors of selected Member States. Understanding the underlying drivers of vulnerabilities and imbalances in the real estate sector will be crucial for the design of the appropriate measures and to better anticipate the impact of these measures on the behaviour of market participants.

Developments in the real estate market are driven by macro-economic factors such as interest rates and economic growth, as well as by national structural features such as market characteristics, taxes, and supply and demand features. In this context, macro-prudential policy needs to integrate a cross-border focus with a deep understanding of national developments. The current EU framework for macro-prudential policy allows for flexibility at the national level to take into account national specificities including differences in households' home ownership and related factors. It will be important for the proper functioning of the single market that the governance of the European coordination and oversight framework remains efficient, effective and coherent. Consideration and analysis is also needed to determine the macro-prudential policy framework needs to continue to be

developed, particularly as the financial structure evolves towards a more active role for the non-banking sector in delivering key economic activities such as intermediation and credit provision to the economy.

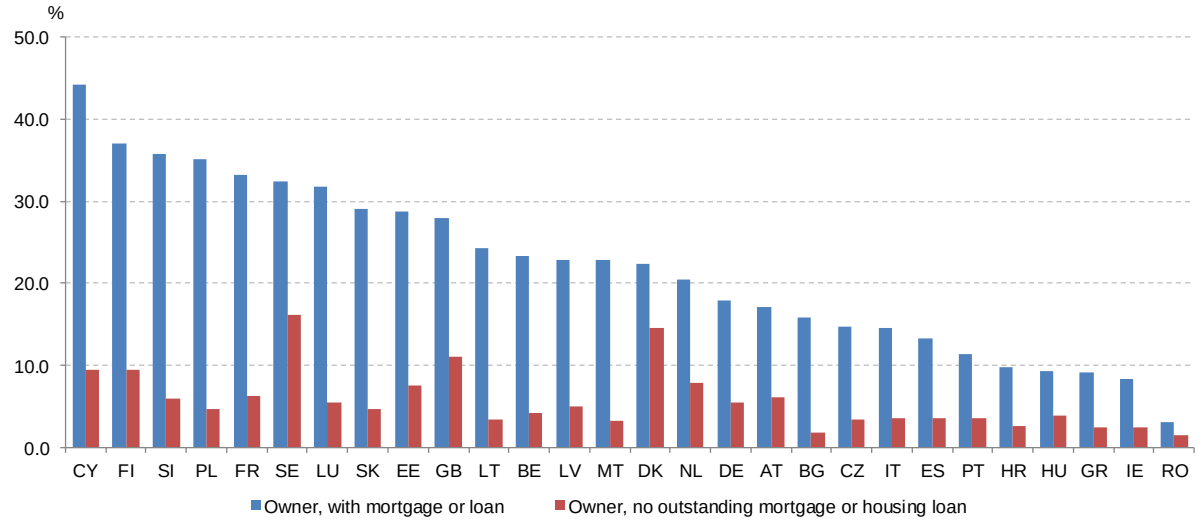
5.6 Annex — Housing market characteristics across Member States

Chart A5.1 Home ownership rates of European households



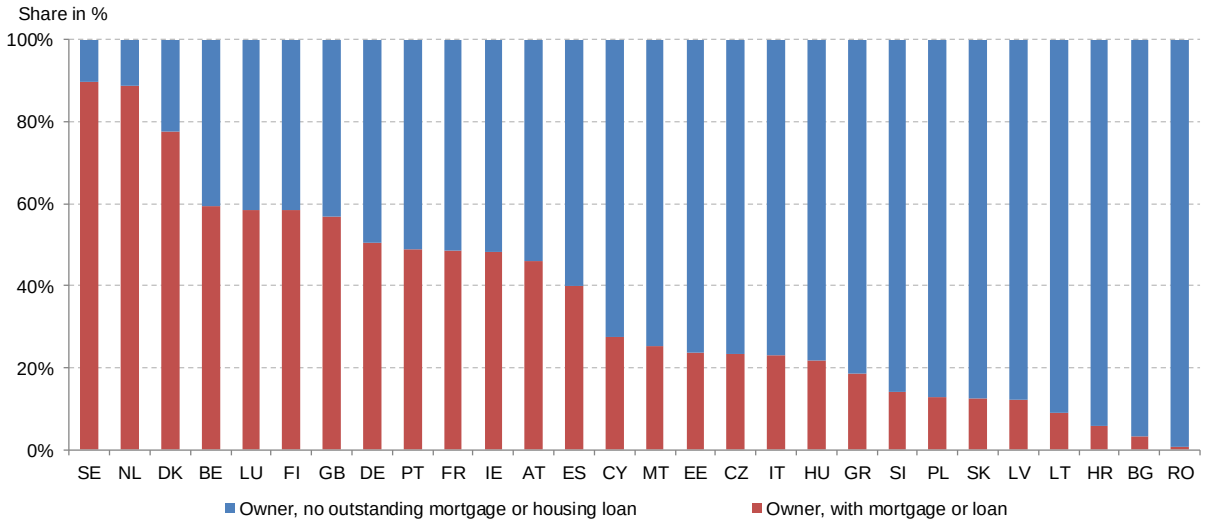
Source: Eurostat

Chart A5.2 Share of owners having switched residence between 2007 and 2012



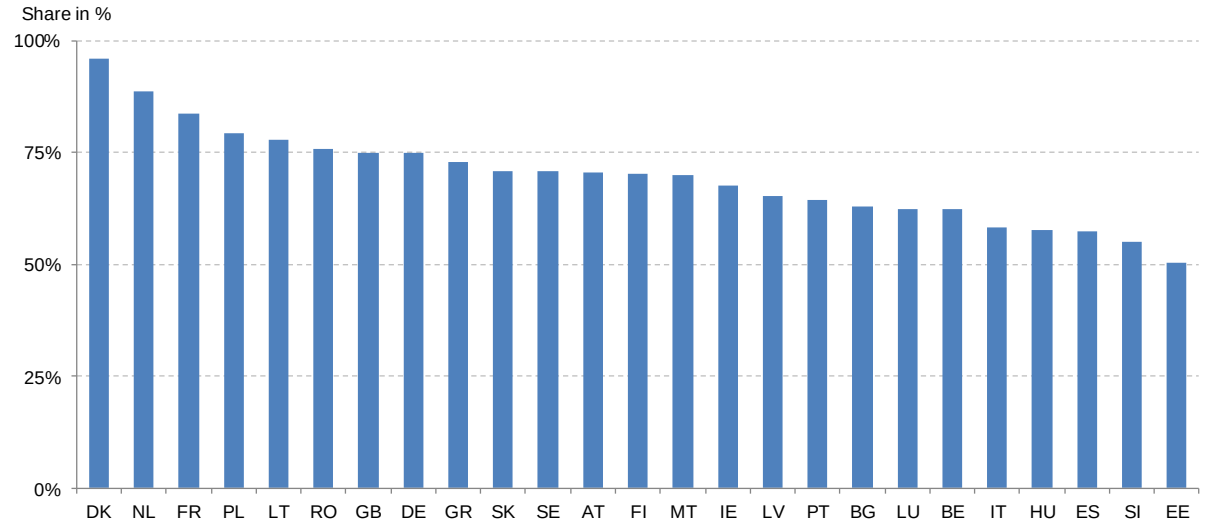
Source: Eurostat

Chart A5.3 Owners with mortgage as a share of all dwelling owners



Source: Eurostat, EC analysis

Chart A5.4 Typical mortgage LTV at issuance



Source: ECB expert group on real estate

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