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COMMISSION STAFF WORKING DOCUMENT

**European Financial Stability and Integration Review (EFSIR): A focus on Capital
Markets Union**

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

BRRD	Bank Recovery and Resolution Directive
CMU	Capital Markets Union
ECB	European Central Bank
EFSI	European Fund for Strategic Investments
EIB	European Investment Bank
EIPP	European Investment Project Portal
EIOPA	European Insurance and Occupational Pensions Authority
ELTIF	European Long Term Investment Fund
EMU	Economic and Monetary Union
ESG	Environmental, Social and Governance
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EUR	Euro
FDI	Financial Development Index
FVC	Financial Vehicle corporation
GDP	Gross Domestic Product
HNWI	High Net Worth Individual
ICPF	Insurance Corporation and Pension Fund
IMF	International Monetary Fund
IPO	Initial Public Offering
JRC	Joint Research Centre
LGD	Loss Given Default
MFI	Monetary Financial Institution
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
MMF	Money Market Fund
MRO	Mean Refinancing Operations Rate
MTF	Multilateral Trading Facility
NAV	Net Asset Value
NFC	Non-Financial Corporation
NPL	Non Performing Loan

OECD	Organisation for Economic Co-operation and Development
OFI	Other Financial Institution
OJ	Official Journal of the European Union
PP	Private Placement
PPP	Public Private Partnership
SAFE	Survey on Access to Finance of Enterprises
SFT	Securities Financing Transactions
SME	Small and Medium Enterprise
SRI	Sustainable and Responsible Investment
SSM	Single Supervisory Mechanism
STS	Simple, Transparent and Standardised securitisation
SWD	Staff Working Document
UCM	Unobserved Components Procedure
UCITS	Undertakings for the Collective Investment in Transferable Securities
USD	Dollar of the United States of America
VC	Venture Capital

EXECUTIVE SUMMARY

Following the launch of the Capital Markets Union (CMU) Action Plan on 30 September 2015,¹ this edition of the Economic and Financial Stability and Integration Review (EFSIR) serves as a complement to the first status report for the implementation of the Action Plan. The Action Plan sets out key measures to achieve a true single market for capital in the European Union, with the aim of mobilising capital to achieve economic growth and create jobs. CMU also aims to promote financial stability by facilitating a more diversified set of funding channels.

Chapter 1 provides an overview of how financial markets have developed. Funding conditions in the European Union have remained relatively benign, supported by an exceptionally expansionary monetary policy. In particular, bank lending rates declined, and in the euro area as a whole the volume of lending to corporations continued to expand while lending to non-financial corporations entered positive territory after several years of contraction. Equity funding continued to develop favourably and bond markets continued to benefit from the low rate environment. These developments affect both directly and indirectly the interpretation of the indicators selected in this overview, e.g. by changing discount rates applied by investors and relative prices of assets.

At the same time, financial markets have faced increasingly adverse headwinds through 2015, and in particular entering 2016. These challenges relate to a significant part to external factors, such as the ongoing adjustment in emerging economies towards a more moderate growth path, continued heightened geopolitical tensions, and diverging monetary policies in major advanced economies. The banking sector has underperformed the broader market amid concerns about banks' profitability, as net interest margins are under downward pressure due to the flattening yield curve. These challenges facing the banking sector are hampering the effectiveness of the bank lending channel.

Chapter 2 identifies indicators for monitoring trends in capital markets that are relevant to the six key objectives in the CMU Action Plan:

1. financing for innovation, start-ups and non-listed companies;
2. making it easier for companies to enter and raise capital on public markets;
3. promoting investment in long-term, sustainable projects and infrastructure projects;
4. fostering retail and institutional investment;
5. leveraging banking capacity to support the wider economy;
6. facilitating cross-border investing.

The indicators build on the Commission Staff Working Document (SWD) which provided an economic analysis of the functioning of capital markets in Europe in support of the CMU Action Plan.² These indicators will provide an empirical backdrop for discussing the impact of the CMU Action Plan. These indicators should not, however, be seen as an evaluation of

¹ COM(2015)468

² SWD(2015)183

the impact of individual CMU actions which will be influenced by many other factors such as culture, economic and financial cycles.

Chapter 3 is a thematic chapter that aims to develop thinking on the reasons for cross-country differences in the size and development of capital markets. It explores a few possible explanations on both sides of the financial intermediation chain, i.e. the corporate funding needs and investors' provision of funds.

The first part of this chapter documents significant cross-country differences in the size of equity markets, which appears to be linked to differences in the structure of the economies, such as firm size, sectoral composition, and the willingness to take companies public. Listed firms are essentially large and operate more often in specific sectors. The size of equity markets in a country is therefore heavily influenced by the distribution of corporations along these two dimensions. However, when controlling for the effect of size and sectoral composition, significant cross-country differences in the size of equity markets remain. This suggests that the development of equity markets also depends on corporates' financial behaviour, and on other factors, e.g. the overall development of financial infrastructures. Notably, the development of markets also depends on investor demand for marketable instruments.

The second part demonstrates the importance of institutional investors, and specifically pension funds, in explaining cross-country differences in the size of capital markets. The analysis shows that the amount of assets in private pension funds and public pension reserve funds is an important determinant for the size of equity markets. From a CMU perspective, the results suggest that developing pension savings may be a promising avenue to explore. Interestingly, other factors relevant within the context of CMU, which concern the institutional setup, financial intermediation, and the access to financial markets, matter as well.

Chapter 1 TRENDS IN EU FINANCIAL MARKETS AND FUNDING STRUCTURES

This chapter aims to provide a general view on how financial markets performed in 2015 and early-2016 to provide a backstop for analysis of efforts to enhance the functioning of capital markets in the EU. Section 1.1 sets out the macro-level environment within which capital markets currently operate. It describes recent developments as regards the functioning of interbank money markets, sovereign debt markets, as well as equity, and the corporate bond markets. EU financial market conditions have remained relatively benign, supported *inter alia* by the actions of monetary authorities. However, conditions deteriorated in the latter part of the period, as global risk aversion and market volatility surged. In particular, financial institutions, including in the EU, faced challenging headwinds.

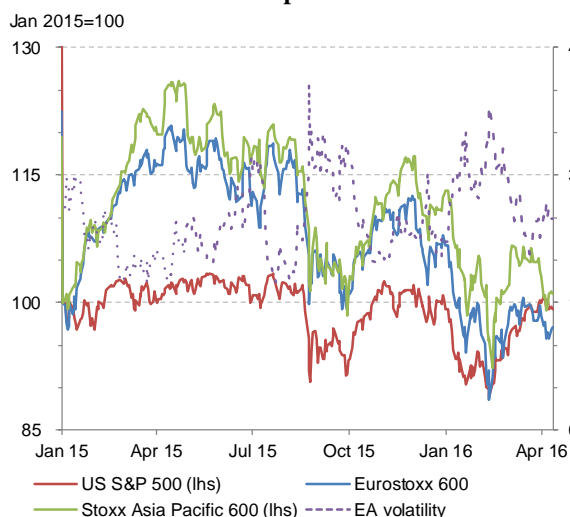
Section 1.2 focus on the recent developments in bank and market funding, and it shows that EU corporate issuance of all types of debt and equity instruments grew in 2015 in the EU. Bank lending to the private economy started to rise after years of retrenchment but cross-country heterogeneity remains an issue even if differences between borrowing costs declined further. Meanwhile, market-based debt financing continued to expand and gained in importance relative to other funding sources. Share issuance has also been expanding. Both trends are positive as they suggest that a transition to more market-based financing is already underway. However, the developments may to some extent be driven by the reduced lending capacity of the banking sector and extraordinarily low yields on bond markets, rather than a sustained demand-led shift in funding structures. Reduced bank lending capacity may explain the strong increase in non-share equity funding since 2009.

Section 1.2 contains theoretical background material to help to understand and assess correctly the described market developments. Box 1.1 provides an overview of the wide range of sources that are available for firms to finance their activities. It lists the main characteristics of equity and debt instruments and explains the situations in which financial instruments such as trade credit and advances are used. Box 1.2 outlines a number of cyclical aspects which need to be considered when analysing capital market and other financial time-series.

1.1 Developments in EU main financial market segments

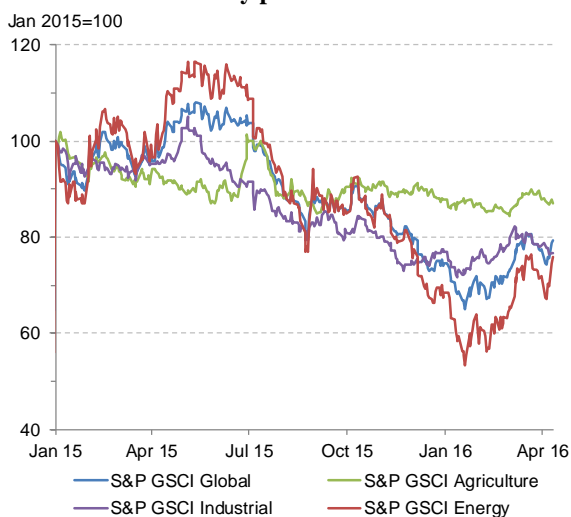
EU financial markets have faced several challenges in 2015 and early-2016 and have become increasingly volatile (see Chart 1.1). During the first half of 2015, EU markets were mainly influenced by domestic factors, including the expanded asset purchase programme of the European Central bank (ECB's EAPP) and renewed tensions around Greek developments. In the second half of 2015 and early-2016, several international factors affected EU markets, i.e. globally diverging monetary policies, in particular with the US, the market turmoil in China and other emerging markets, the downward trending of global economic growth, and the partly related sustained decline in commodity prices (see Chart 1.2). In addition, investors sudden and abrupt reassessment of risks led to sharp price declines for risky assets, over the summer and around the turn of the year. In 2016, the financial sector underperformed the broader markets, as investors grew concerned about worsening profitability prospects for banks amid sustained negative interest rates and a flattening yield curve.

Chart 1.1: Stock market performance



Source: Bloomberg

Chart 1.2: Commodity price indices



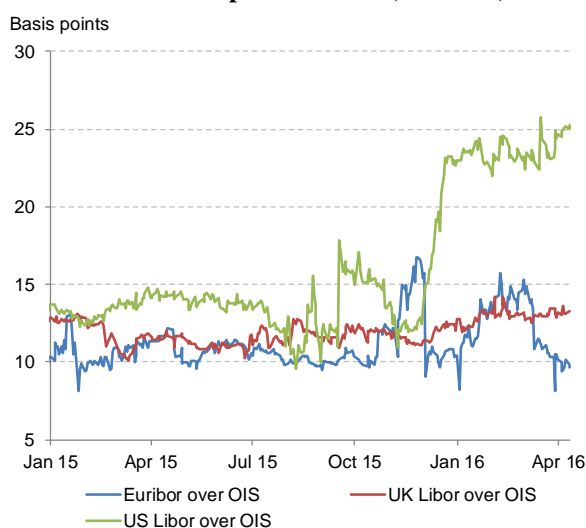
Source: Bloomberg

1.1.1 European money markets

The ECB cut its deposit rate further to -0.40% in March 2016 and reduced the Mean Refinancing Operations rate (MRO) to 0.00%. It also decided to expand its ongoing asset purchase programme and announced four new quarterly targeted longer-term refinancing operations with a maturity of four years. Most other central banks in the EU have also maintained an accommodative monetary policy stance. Some have taken additional easing measures amid renewed declines in inflation rates.

Monetary policy divergence between the EU and the US has become more pronounced as the US Federal Reserve has started normalising its monetary policy stance amid stronger economic prospects and tighter labour market conditions. US Libor rates have headed up over 2015 on speculation about a nearing rate hike, and they spiked in December after the effective announcement by the US Federal Reserve to hike its rates a quarter of a percentage point. After the rate hike, some stress in money markets was visible in the relatively strong widening of the TED spread³ (see Chart 1.3). In the United Kingdom, while the Bank of England holds its official bank rate at 0.5% (unchanged since March 2009), a rate hike is progressively being priced in, reflected by an increase, albeit very moderate, in interbank rates.

Chart 1.3: LIBOR spreads to OIS (3-months)



Source: Bloomberg

³ The TED spread is the difference between the interest rate at which the US Government is able to borrow on a three month period (T-bill) and the rate at which banks lend to each other money on a three month period (measured by the Libor). It is an indicator of interbank credit risk and the perceived health of the banking system.

In the euro area, money markets remained characterised by ample excess liquidity, amid the ECB's expanded asset purchase programme, which now includes corporate debt. However, entering 2016, stress in interbank markets increased, also as investors became concerned about banks' long-term profitability. While the capital position, the solvency and the liquidity of banks have overall been strengthened over recent years, the profitability of several banks is being hurt by rising Non-Performing Loans (NPL) and competitive pressure from non-banks. Furthermore, very low interest rates and the flattening of the yield curve in the euro area and some other EU Member States is squeezing banks' interest margins. Besides, the Bank Recovery and Resolution Directive (BRRD), which fully entered into force on 1 January 2016, may be having an impact on markets when assessing banks' credit risk. Contrary to previous episodes of financial market stress however, banks' access to money markets was not hampered in early 2016. The widening of the 3-month Libor-OIS spread, a measure of counterparty risk in the money market, was very limited (see Chart 1.3) as excess liquidity in the banking sector, i.e. the funds banks have over and above what they need for their day-to-day operations, was above 650 billion euros, levels not seen since 2012. Besides, the Eonia rate (unsecured overnight interbank lending) has been decreasing over the full period, closely following the ECB policy rate. The Eonia forward rates also declined, correctly reflecting expectations of upcoming ECB easing.

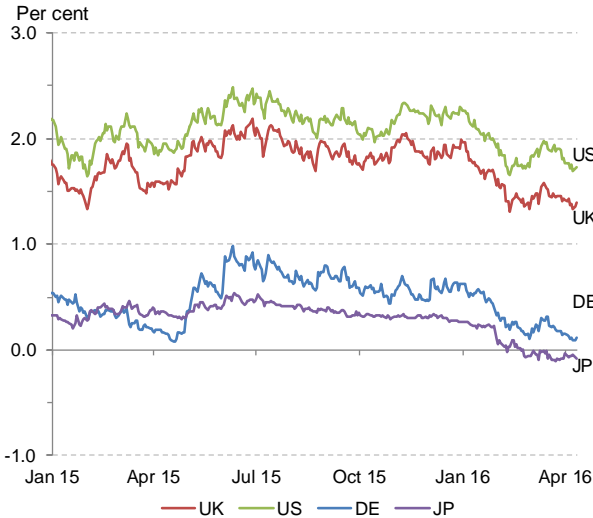
The ECB's Euro Money Market Survey of September 2015 indicated that overall money market turnover in 2015 fell by 12% from the previous year, in particular in the unsecured segment. This decline was driven by higher excess liquidity and lower volatility in the money markets, increased reliance on non-market funding sources (i.e. retail deposits), and by some regulatory effects, including capital charges and ratios, especially in the secured segment. The decline was also caused by funds switching into longer maturities. Negative policy rates have so far not triggered strong negative externalities, which some market watchers were concerned about. A first concern that banks would shift from reserves into cash, as the binding zero lower bound on retail deposit rates would squeeze bank profitability, has faded somewhat as the Swiss National Bank and the Danish Nationalbank have shown how the introduction of a tiered reserve charging regime can limit the pressure on bank profitability. This regime reduces the incentive to move into cash. The second fear that negative deposit rates could disrupt the functioning of money markets has not materialised so far either. However, the debate among economic analysts and central bankers about the potential implications of a protracted period of very low interest rates for financial stability seems to have intensified over the past few months.

1.1.2 Sovereign bond markets

The accommodative extraordinary easy monetary policy stance in the euro area has been feeding through into unprecedented conditions in bond markets, in particular sovereign bond markets. The 10-year Bund yield, i.e. the euro-area sovereign benchmark yield, fell to a historical low of 0.09% in early April 2016 (see Chart 1.4). Declining inflation expectations on the back of falling oil prices explain the fall until February 2015. Thereafter, Bund yields remained under downward pressure, amid the announcement and the actual implementation of the ECB's Extended Asset Purchase Programme. On the back of moderate but improving macroeconomic fundamentals, and a repricing of inflation expectations, the 10-year Bund yields rose from their record lows between May and early June. Over summer, safe-haven

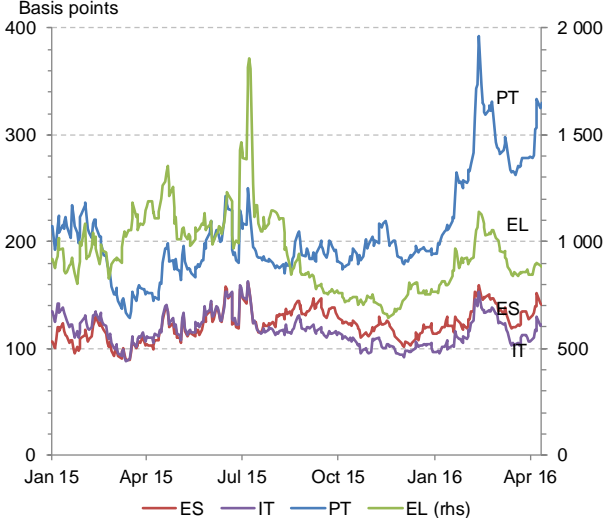
buying related to the uncertainty over Greece, and later over global growth concerns, again put some downward pressure on the benchmark yields. Early in 2016, high grade sovereign bond yields dropped again, due to safe-haven buying.

Chart 1.4: Benchmark 10-year government bonds



Source: Bloomberg and own calculations

Chart 1.5: Sovereign bond spreads to German bund 10-year maturity



Source: Bloomberg

Most euro-area sovereign bond spreads to the German Bund have remained fairly steady over the period, widening however at times when risk aversion affected markets (see Chart 1.5). Spill-over concerns from the negotiations about the new financial assistance for the Greek government had only a limited and short-lived impact on the euro-area peripheral bond spreads, as markets continued to be supported by the ECB's asset purchase programme. Last December, a slight re-pricing of sovereign bonds by investors took place as additional monetary policy measures in the euro area turned out somewhat below market expectations. However, early in 2016, there was additional upward pressure on bond spreads in the periphery amid rising general risk aversion and banking sector stress reviving concerns of the sovereign-banking sector nexus. Greek bond yields remained a particular case. Early in July 2015, Greek yields peaked at more than 1500 basis points after the outcome of the referendum, and the subsequent close-down of the banking system and introduction of capital controls. Later, Greek sovereign spreads widened again because of weak macroeconomic data and concerns about the political commitment for the new programme. In retrospect, though, Greek spreads have narrowed impressively since the signing of the third financial assistance package, the passing of the first sets of policy milestones, and the subsequent disbursements of payments.

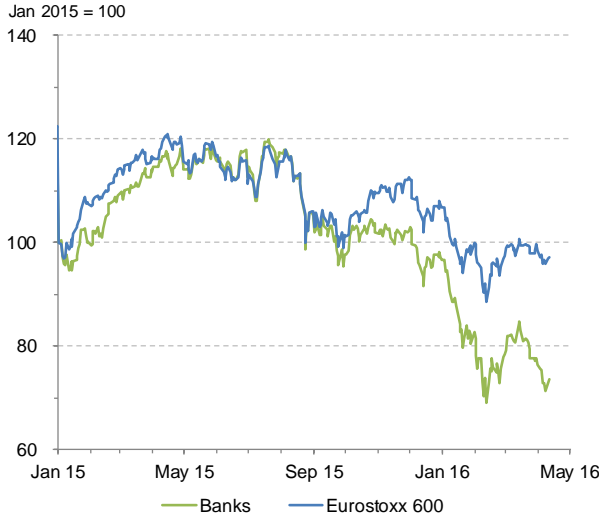
Outside the euro area, sovereign spreads of Czech Republic, Bulgaria and Hungary remained relatively stable versus the German Bund. Polish spreads, however, widened somewhat over the same period.

1.1.3 Equity markets and corporate bond markets

Equity markets started 2015 on a strong footing, supported by the twin pillars of stimulus from expansionary monetary policy, and the emerging pick-up of economic growth (see Chart 1.6). The announcement by the ECB of full-scale quantitative easing beginning in March

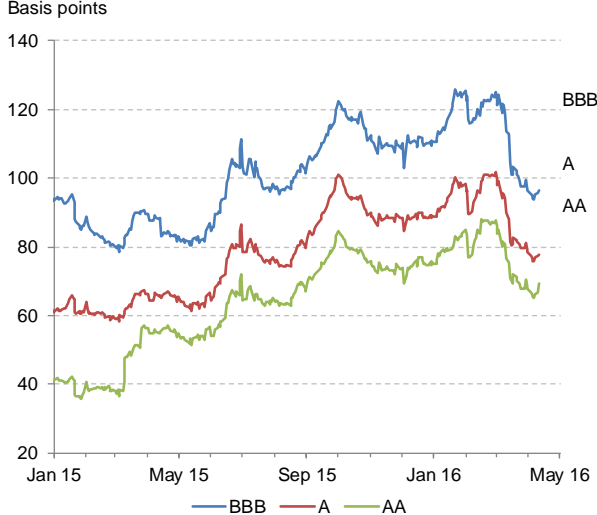
2015, including the purchase of euro-denominated investment-grade securities issued by euro area governments and agencies and European institutions in the secondary market, led some investors to invest into riskier assets in their search for yield, a move similar to the one observed in the US, following the implementation of the several rounds of quantitative easing. In May and early June, policy uncertainty regarding Greece caused European stock markets to track back despite strong corporate earnings and an improving EU macroeconomic outlook. In June, stock markets recovered, but soon after were drawn down in the turmoil stemming from emerging markets, and China in particular. In October, markets recovered yet again, but towards the end of the year concerns about the global economic outlook and about the tightening of monetary policy in the US drove markets down. The further easing of monetary policy by the ECB fell short of market expectations and therefore gave little support to markets. In the first couple of months of 2016, the market downturn deepened across the globe, as confidence in central banks' ability to support the world economy started to wane and the negative externalities of monetary policy became more visible.

Chart 1.6: EU stock market and banking sub-index



Source: Bloomberg

**Chart 1.7: Corporate bond spreads - euro area
5-year maturity**



Source: Bloomberg

Corporate bond spreads reached a bottom in March 2015, but reversed earlier than equity markets, and have widened over the remainder of the period (see Chart 1.7). These developments were driven by rising risk aversion, a deteriorating global economic outlook, and some idiosyncratic events. The widening in spreads was strongest in the higher risk segments, but the widening was less pronounced than in the US corporate bond spreads, because comparatively there is a lower share of energy firms in the European index. Evidence from balance sheet data further suggests that companies in the euro area have so far not been willing or able to re-leverage, unlike their US counterparts.

Banking shares and bonds moved in line with the broad market until July 2015, but underperformed strongly later on, and sold off in the first two months of 2016 (see Chart 1.6). The full entry into force of the Bank Recovery and Resolution Directive (BRRD) may have had an impact on investors, as reflected in the spike in the bank Credit Default Swap (CDS) spreads. However, the core of the market rout seems to have been the low profitability of banks rather than any immediate solvency concerns. Indeed, major steps have been taken

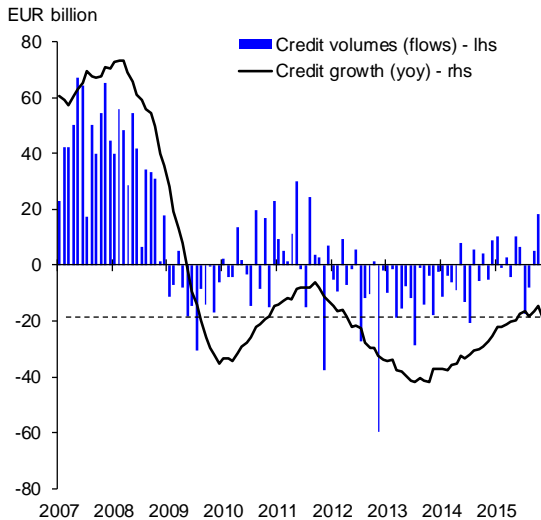
since the financial crisis to alleviate solvency risk, with the implementation of the Banking Union in general, and the Single Supervisory Mechanism (SSM) in particular. The Comprehensive Assessment performed by the SSM at its inception has given assurance that Europe’s largest and most important banks are adequately capitalised and that there is now greater transparency and accuracy regarding their loan and asset quality and valuation. However, profitability remains an issue in several banking institutions, amid legacy costs and non-performing loans concerns. Moreover, the flattening yield curve, on account of quantitative easing and of pessimism concerning future growth is eating into the banks' net interest margin and profitability.

1.2 Developments in financial intermediation and in direct market finance

Financing conditions for the EU economy remained, overall, favourable. All types of debt and equity funding sources experienced growth and bank lending to the private sector, the primary source of funding for European firms and households, has also continued to recover. The recovery in bank credit, even if remaining modest, suggests an improved transmission of the accommodative monetary policy of the ECB through the euro-area banking system. In February 2016, bank lending in the euro area to the private economy grew by 1.2% yoy (data adjusted for sales and securitisation). This growth represented a 1.6% increase in loans to households and a 0.9% increase in loans to non-financial corporations (NFCs), which turned positive in summer 2015 (see Charts 1.8 and 1.9).

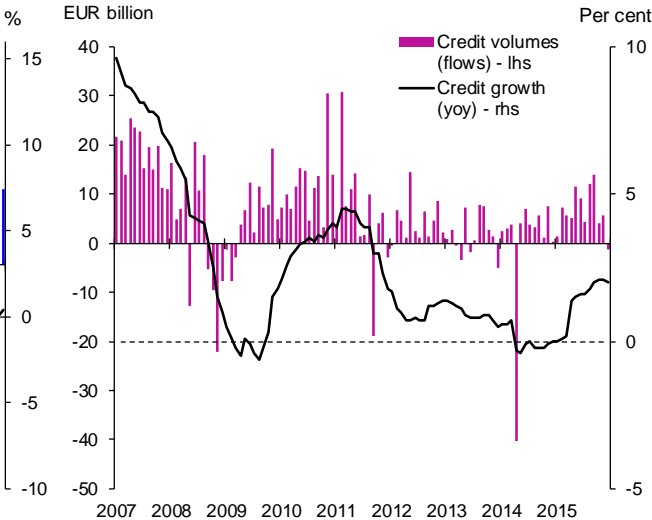
However, the recovery has not been equal across the EU. Although in some countries lending to NFCs has strengthened already since 2014, only in a few of them net flows were effectively positive (e.g. Belgium, Finland, France, Germany, Luxembourg) and in many countries net credit flows to non-financial corporations are still negative or close to zero (e.g. Spain, Italy, Netherlands, Ireland, Portugal and Sweden). In some EU MS lending activity to NFCs continued to soften (e.g. Austria, Greece and Malta).

Chart 1.8: Credit to NFCs - euro area



Source: ECB

Chart 1.9: Mortgage credit - euro area



Source: ECB

This mixed picture also applies to Member States outside the euro area. In Poland and in Sweden bank lending grew at a solid pace in 2015, while in the Czech Republic and in the

United Kingdom lending bottomed out and started to grow solidly in the latter parts of the year. Developments continue to be more subdued in other Member States outside the euro area, such as Hungary and Croatia.

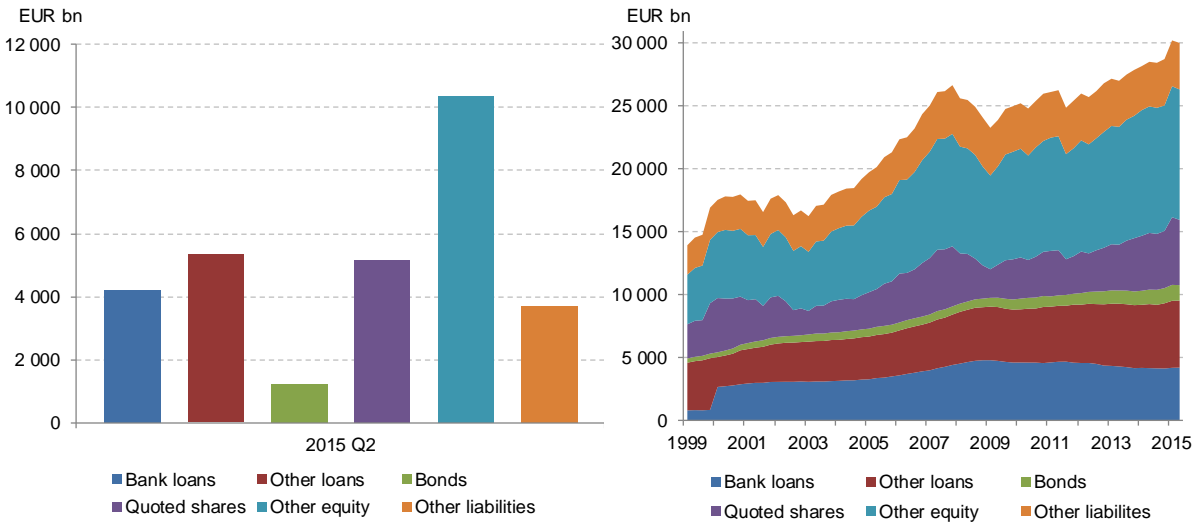
Box 1: The financing mix of the economy⁴

Among the wide range of available funding sources for firms, a firm’s capital can be divided into two main categories, equity instruments and debt instruments. As equity instruments confer ownership rights in the company, their remuneration depends on the profitability of the company. Equity instruments constitute the first layer for loss absorption, but in compensation for this risk shareholders benefit from the company's profits. In principle, equity instruments are perpetual, so the holders need to find a buyer in case they want to untie their positions. In this context, quoted shares can be more easily liquidated than other equity instruments because the exchange of shares is negotiated in organised markets.

Debt instruments do not transfer ownership in the company, but usually require a fixed (interest) payment and the reimbursement of the principal within a specific time frame. Bonds are standardised debt instruments that are traded in organised markets. Loans are bilateral contracts, which cannot be traded unless they are 'converted' into bonds through securitisation. Besides borrowing from banks, firms can obtain loans from other economic agents (i.e. intercompany loans, loans from other companies, household or state institutions).

Economic transactions between a company and its suppliers, clients, employees and other stakeholders imply intrinsic financing resources beyond those provided by capital markets nor by the financial sector. These sources of funding are usually generated by the difference between a 'continuous' accrual of economic value and a 'point-in-time' nature of payments and settlements. They can be grouped into trade credits (financing positions within the supplier-customer chain) and advances (relations with other stakeholders). For example, in business-to-business relations it is common to make the payment up to ninety days after the delivery of goods. Utility companies (e.g. electricity, water or internet suppliers) provide their services on a continuous basis but are only paid at period end (e.g. once a month or once a quarter).

Chart B1.1: Funding sources (financial liabilities) used by NFCs in the euro area



Source: ECB

In the euro area, more than half of NFCs' balance sheets are financed by equity (see Chart B1.1),

⁴ Based on European Financial Stability and Integration Report (EFSIR), April 2015, see more details at http://ec.europa.eu/finance/financial-analysis/docs/efsir/150427-efsir-2014_en.pdf

most of it equity other than quoted shares. Among debt instruments, bank loans and other loans represent, each, around a sixth of total financing sources. NFCs also use widely trade credit and similar advances for financing their activities while the issuance of bonds in capital markets is much less used (below 5%). Overall, NFCs finance 35% of their activities through the financial sector (either by borrowing from banks or by issuing bonds or shares). The number is likely to be higher for new funding because in order to finance new investment companies rarely approach the original shareholders or dilute its ownership but instead request bank loans.

The use of the various funding sources differs across the EU. In Member States which joined the European Union before 2004, equity is generally raised on organised markets through the issuance of quoted shares. In other Member States, quoted shares represent at most about 5% of total liabilities and at most 20% of GDP. NFC debt funding usually does not represent more than 50% of liabilities. However, in some countries such as Belgium, Ireland, Luxembourg, Malta, Portugal and Sweden, NFC debt in relation to GDP is high. To the degree that the availability of bank loans may be constrained by the volume of deposits in the economy, in countries where household deposits are limited, such as the Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia, firms have a more restricted access to bank loans. In these countries NFCs often compensate their low use of bank loans with other sources of funding, such as trade credit and 'other loans'. The issuance of corporate bonds is a rather marginal source of financing in the EU on average. Yet, it is slightly more significant in the United Kingdom and Austria (about 10% of financial liabilities) followed by Portugal, France and Finland in falling order (about 6%).⁵

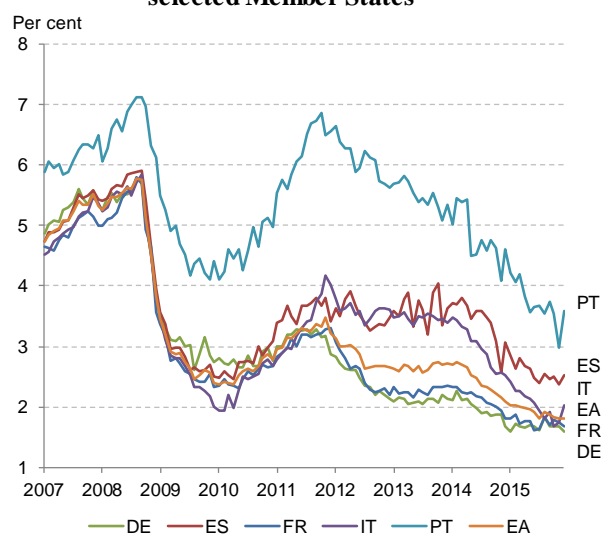
Survey data confirm the recovery in bank lending. The latest ECB Bank Lending Survey (for the fourth quarter of 2015) shows that in the euro area, credit conditions on loans to enterprises continued to improve at a stable pace, while conditions on loans for house purchases improved after a slight tightening in the previous quarter. Loan demand continued to increase for both enterprises and households, backed by the low level of interest rates. The euro area SAFE survey (i.e. Survey on Access to Finance of Enterprises) provides further evidence of looser funding constraints to SMEs at the euro-area level⁶, even if result differ across countries. The latest Credit Conditions Survey by the Bank of England paints a similar picture, even if it shows that the growth in the availability of corporate lending has slowed over 2015.

Among the main factors supporting the gradual recovery in bank credit in the euro area in 2015 were: a reduction in bank lending rates, a stronger demand for bank loans, and falling refinancing costs for banks. The latter, as explained in Section 1.1, have currently steadied at levels close to historical lows.

⁵ For further details about the sources of funding of NFCs, see Chapter 2, Priority 2. Note that the evolution of outstanding volumes may be affected by price effects, this is particularly the case for quoted shares and similar equity instruments.

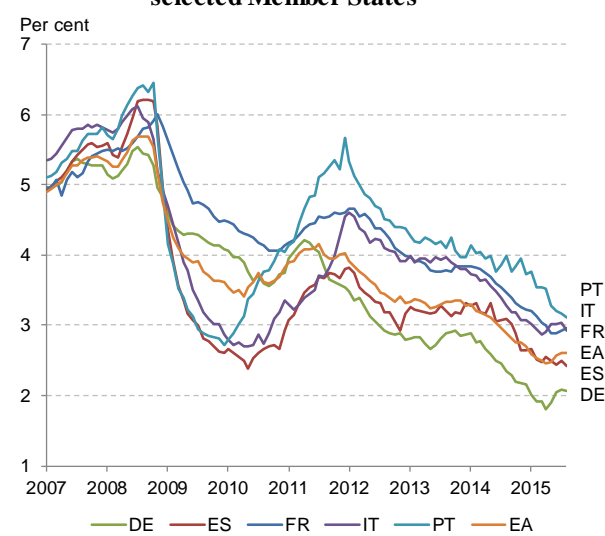
⁶ The latest SAFE (April to September 2015) showed that euro area SMEs continued to consider access to finance to be the least important problem they faced as regards their business operations. However, in many countries a significant number of companies applying for financing do not obtain the entirety of the sum requested in 2015.

Chart 1.10: Interest rates on loans to NFCs - selected Member States



Source: ECB

Chart 1.11: Interest rates on mortgage credit - selected Member States

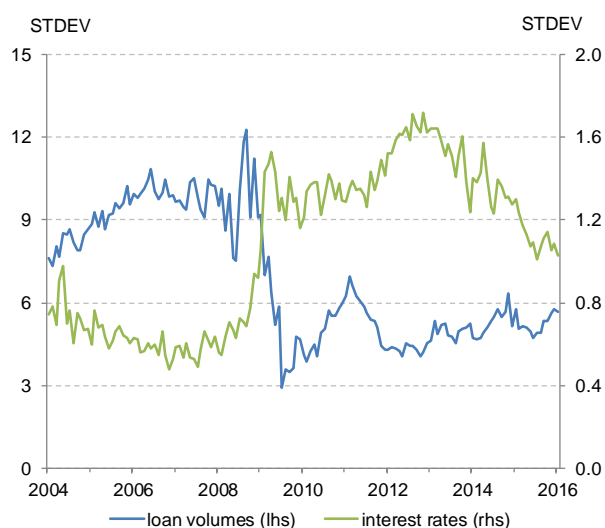


Source: ECB

The decline in bank funding costs continued to translate into decreasing lending rates. The borrowing costs of NFCs and households declined by 28 and 13 basis points, respectively, in 2015 (see Charts 1.10 and 1.11) and recently stabilised at the level of 1.8% and 2.5%, respectively.

Cross-country differences in borrowing costs declined further in 2015, but they remained above the pre-crisis level (see Chart 1.12). Vulnerable euro-area countries saw particularly strong reductions in bank lending rates relative to core countries, helped by the ECB's credit easing package. However, credit standards and the credit dynamics continued to vary across both countries and sectors, translating into a remaining significant dispersion in terms of bank lending growth. The main reasons for the unequal recovery in bank credit volumes are: differences in the level of credit demand, the persistently high or even rising levels of NPLs in some countries, and cross-country differences in the level of interest rates and in the macroeconomic environment.

Chart 1.12: Cross-country dispersion in bank lending to NFCs in the euro area

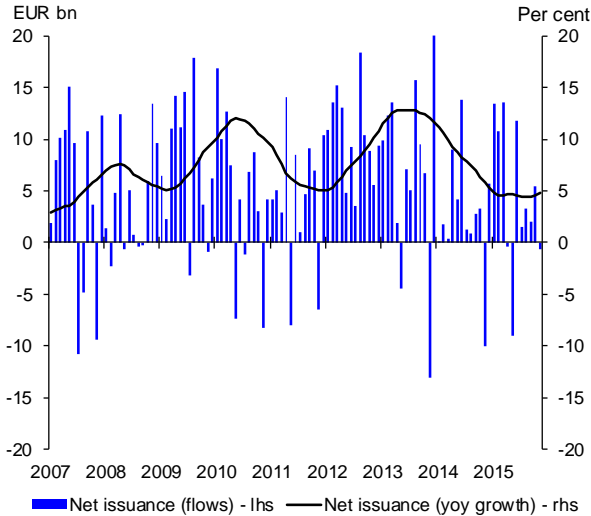


Source: ECB and own calculations

Important challenges continue to weigh on the banking sector, possibly hampering the bank lending channel. These range from the uncertainty about litigation and restructuring costs in a number of banks to working through a stock of legacy assets, particularly in the countries most affected by the financial crisis. The level of non-performing exposures remains high and progress towards tackling the problem differs across countries and banks. Moreover, as indicated in Section 1.1, the compression of the net interest income amid low interest rates

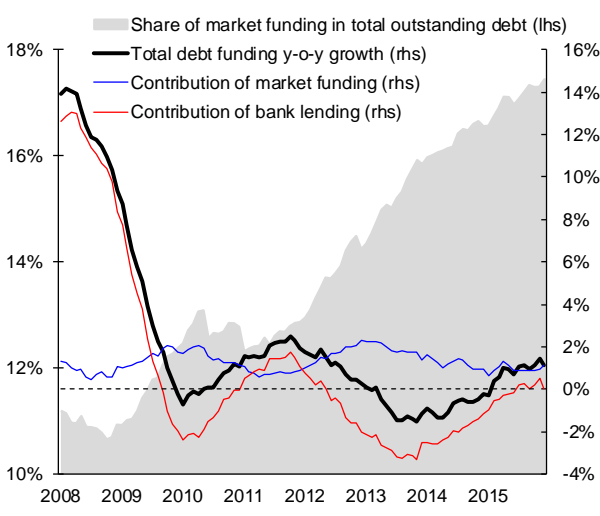
and the flattening yield curve is weighing on bank earnings by reducing the return to maturity transformation. This in turn affects banks' capital positions, banks' funding costs, and ultimately the pricing and availability of bank credit. Banks, which are funded through deposits and issue variable rate loans, are seeing their margins compressed as the level of interest rates continues to decrease. Consequently, the sheer profit of maturity transformation (short-term borrowing and long-term lending) or of the cheap borrowing from the Eurosystem and investing in domestic government bonds has been reduced. The pressure on bank balance sheets coming from high levels of private debt, Europe's large number of banks, and increasing competitive pressures from non-banks further weigh on bank profitability. Eventually, a strengthening economy and investment should compensate for some sources of reduced profitability but this benefit is still to materialize.

Chart 1.13: Debt securities to NFCs - euro area



Source: ECB

Chart 1.14: NFC debt funding structure - euro area



Source: ECB

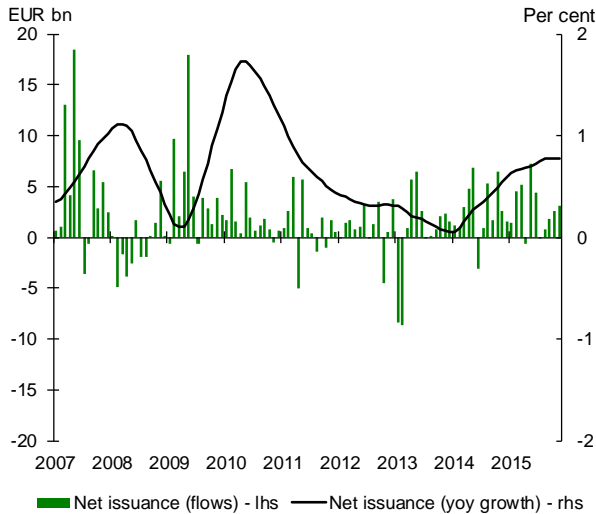
Besides, market-based debt funding also continued to expand (see Chart 1.13) with the annual growth in corporate debt issuance in the euro area stabilising at a level just below 5%. The continuous growth in corporate debt issuance translates into a systematic increase in the ratio of market to total corporate debt funding (currently at a level of approximately 17.5% - see Chart 1.14). The recent slowdown in corporate debt issuance, as compared to 2014, is likely related to higher retained earnings by NFCs, which reduced their needs for external funding, as well as to slightly higher costs of market-based debt financing. Meanwhile, a recovery in stock prices exerted downward pressure on equity funding by NFCs.

Despite the robust performance in corporate debt primary market, there are signals of reduced market activity in secondary markets. The presumed shortage in liquidity of corporate bonds is thought to come as a result of a reduction in market depth, a lower number of market makers or an increase in the price impact of trades. Studies⁷ show that adverse changes in corporate the described trends could lead to an increase in the liquidity risk premia and, consequently, to an increase in corporate bond spreads. At this stage, however, it is difficult to quantify these claims.

⁷ Dick-Nielsen, Feldhutter, Lando (2012)

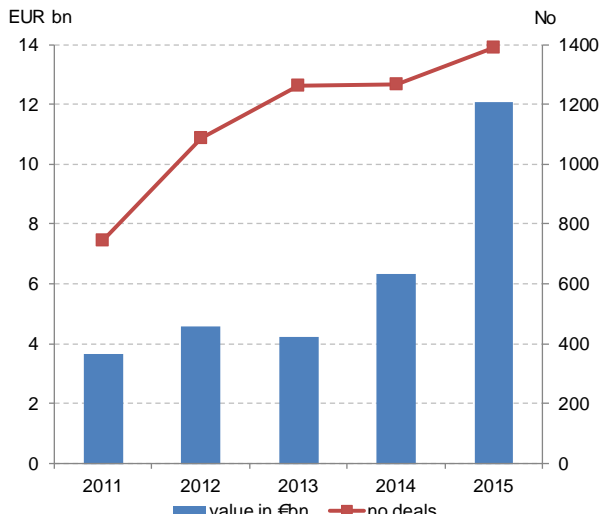
The issuance of public equity rose in 2015 (See Chart 1.15), which was beneficial not only for investments and economic growth, but also for strengthening financial stability via more robust corporate financial structures. After a record-breaking start to the year, marked by 120 initial public offerings⁸ in the first six weeks of 2015, equity issuance grew at pace of around 0.75% year-on-year. Strong Initial Public Offering (IPO) volumes during the first half of 2015 were supported by a strong performance of global stock market indices and significant inflows into equities in the search for yield. However, significant macro, geopolitical and company-specific events in the second half of the year weighed on sentiment and triggered a slight slowdown in IPO activity towards the end of the year.

Chart 1.15: Equity issuance by NFCs - euro area



Source: ECB

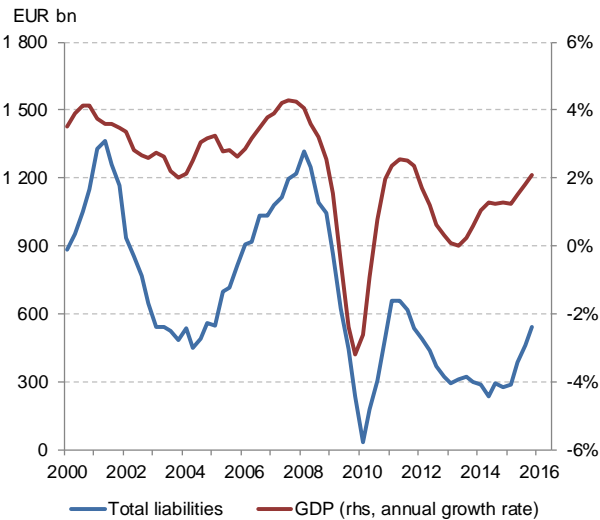
Chart 1.16: Venture capital funding in Europe



Source: KPMG, Global Analysis of Venture Funding, Venture Pulse 2015-Q4, and own calculations

Private equity also showed a positive trend in 2015. Similar to other regions, Europe experienced a strong year with respect to total venture capital (VC) activity (see Chart 1.16), topping nearly EUR 12 billion in deal value for 2015, compared to below EUR 8 billion in 2014.⁹ However, important cross-country differences remained and venture capital activity continued to be concentrated in the United Kingdom, with about 45% of total activity, followed by Germany (around of 7.5%). In other Member States venture capital investments remain marginal. Despite a slight global slowdown in VC activity towards the end of 2015, Europe’s slowdown was less pronounced

Chart 1.17: Net annual flows of NFCs’ financial liabilities and euro area GDP growth



Source: ECB, Eurostat and own calculations

⁸ Based on Dealogic data

⁹ Venture capital is a broad subcategory of private equity that refers to equity investments made, typically in less mature companies, for the launch of a seed or start-up company, early stage development, or expansion of a business, in contrast to leveraged buyouts another main subcategory of private equity but which refers to more mature companies.

than in Asia and North America as Europe's more moderate valuations provided a cushion against the decline in activity.

Developments of bank credit and trends in equity and corporate bond issuance are affected by cyclical factors because the availability of company funding is markedly driven by the economic cycle, as illustrated by the co-movement between NFC financial liabilities and nominal GDP in Chart 1.17. The analysis of economic and credit cycles points to a systematic relationship between GDP growth and credit growth, however, with bank credit cycles often lagging economic cycles by several quarters.

Interestingly, data shows that the expansion in bank credit was recently weaker than in past cycles. This suggests that the corporate sector might have become less dependent on bank credit. Instead, the corporate sector was increasingly relying on internal funds and direct market funding. This finding is supported by a consistently increasing share of market funding in total outstanding debt. However, it could also be partially due to weaknesses in credit demand, due to the slow and feeble recovery following the financial crisis.

Box 2: Cyclicity in financial indicators

This box illustrates some aspects of cyclicity detection and treatment by decomposing several relevant time series for the Euro area into their statistically significant components.

The situation and structure of corporate financing in a given economy is typically reflected by some key indicators. Assessing developments or trends in these variables requires monitoring time series of such indicators. However, it is well documented that some of these variables may contain seasonal and cyclical components, which can affect the results and the analysis.

For instance, Covas and Wouter (2011)¹⁰ find that both debt and equity issuance by listed US firms are pro-cyclical (as long as the largest firms are excluded from the analysis). Moreover, they demonstrate that pro-cyclicity of equity issuance is stronger for smaller firms. Karabarounis et al (2014)¹¹ show, using the US data as well, that debt issuance is pro-cyclical while the net sale of stock is counter-cyclical¹². They also observe widespread heterogeneity in firm financing – compared to large firms, equity issuance of small firms tends to be more pro-cyclical while debt issuance tends to be less pro-cyclical.

Potential cyclicity in the time series needs to be taken into account when monitoring progress towards a deeper CMU. This box analyses monthly data for the outstanding amounts of equity, bonds and bank loans for the Euro area non-financial corporations. It also looks at the composition of firms financing represented by the ratio of their outstanding equity and bonds to the outstanding bank loans. The sample period for bond and equity data is December 1989 to October 2015, and for the bank lending (and therefore for the financing composition ratio) September 1997 to October 2015. In order to control for inter-temporal revaluation effects for the outstanding equity, which could bias the statistical inference, it was instrumental to construct a new time series by taking the outstanding amount at the end of the first sample month as a basis, and then adding net equity issuance to it in each subsequent month.

¹⁰ Covas, Francisco, and Wouter J. Den Haan (2011), The Cyclical Behavior of Debt and Equity Finance, *American Economic Review*, 101(2): 877-99

¹¹ Karabarounis, Marios and Macnamara, Patrick and McCord, Roisin, A Business Cycle Analysis of Debt and Equity Financing (2014). FRB Richmond Economic Quarterly, vol. 100, no. 1, First Quarter 2014, pp. 51-85, <http://ssrn.com/abstract=2637450>

¹² However, their results for equity depend on the chosen definition of equity.

From the first glance at the plots of the original time series (

Chart B2.1:), it is evident that all of the series contain a pronounced trend, for which the slope and/or direction changes during the sample period, sometimes more than once. In order to isolate the seasonal and irregular components of the time series from their trend-cycle¹³ components, X12 seasonal adjustment procedure¹⁴ was applied to the original series. The graphs on the right in Chart B2.1 to Chart B2.4 plot the resulting series. Visual comparison of the original time series with the trend-cycle indicates that seasonality plays an important role in all of the variables analysed, as the resulting series are visibly smoother.

By applying the Unobserved Components procedure (UCM)¹⁵ to the trend-cycle component of the original time series, it is possible to decompose it into its statistically significant components, isolating cyclical. In the first run, the UCM does not detect statistically significant cycles in any of the series.

However, statistical tests confirm the preliminary observation that all of the series contain at least one abrupt change in the slope or direction of the trend, i.e. a structural break in the data. These tests also provide an estimate for when exactly the breaks occur. When controlling for structural breaks, the UCM results change for the equity series and for the ratio of financing composition. In particular, the procedure detects statistically significant cyclical in a subsample of the equity series (January 2000 – October 2015), as well as in a subsample of the ratio series (August 2007 – October 2015). Thus, it appears that cyclical is present in equity issuance, which in turn affects the financing composition ratio. The estimated periodicity of the cycle in both sub-series is around three years.

An appropriate method of cyclical adjustment needs to be chosen in each particular case, depending on the objectives of analysis and statistical properties of the time series. Naturally, cyclical is not an isolated phenomenon. In the second step, one would need to understand the main underlying factors that cause cyclical movements in equity issuance, most importantly their relationship with broader economic cycles. This would be crucial for the meaningful statistical inference and predictions.

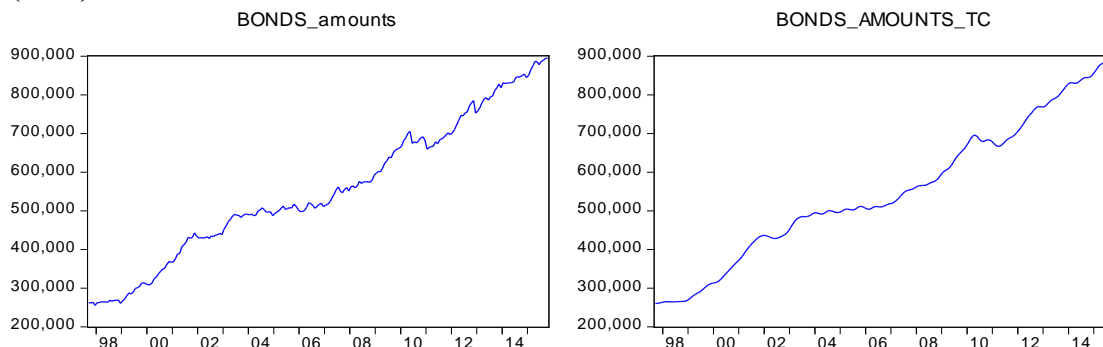
This analysis is very preliminary and exhibits several caveats. First, longer time series (ideally, not less than 50 years) would be needed to more robustly detect cyclical and estimate its periodicity. Second, one should take into account potentially different periodicities of the economic and business cycles for different countries, sectors and company sizes. For example, the observed movements in bond and equity issuance are often dominated by large firms, while small and medium companies are likely to be more strongly affected by business cycles than the large ones – as a result, aggregate data could mask the underlying cyclical (as shown e.g. by Covas and Wouter (2011)). Therefore, as a further step it would be preferable to perform more granular analysis at a country level, controlling for the relevant firm-level characteristics (importantly, firm size).

¹³ Trend-cycle is defined as a level estimate for each month, derived from the surrounding year-or-two of observations.

¹⁴ Developed at the United States Census Bureau

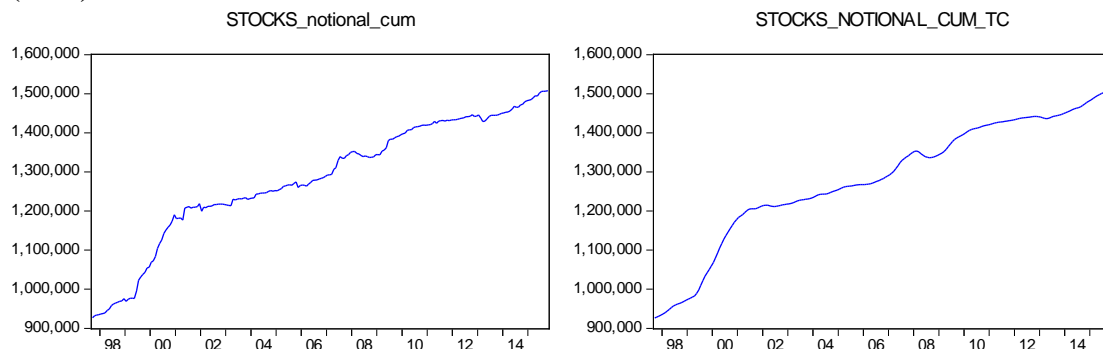
¹⁵ Harvey, A. C. 1989. Forecasting, Structural Time Series Models and the Kalman Filter. Cambridge: Cambridge University Press

Chart B2.1: Outstanding bonds amounts of the EU non-financial corporations. Original series (LHS) and the "trend-cycle" component obtained with the X12 procedure in Eviews (RHS).



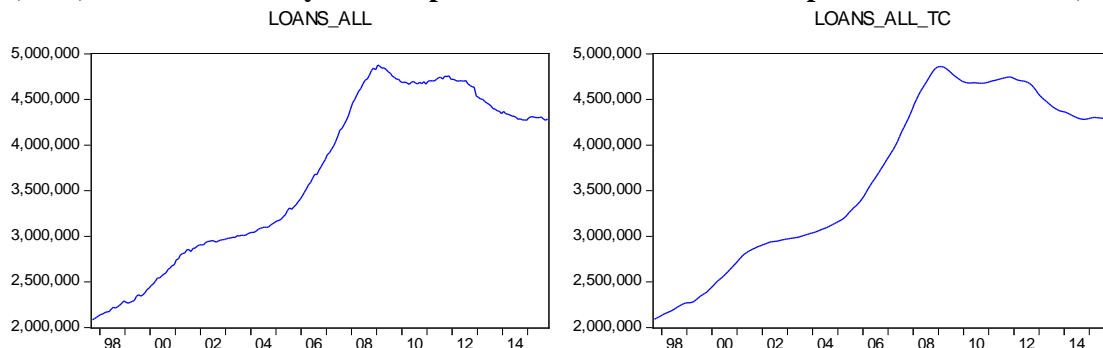
Source: ECB

Chart B2.2: Outstanding equity amounts of the EU non-financial corporations. Original series (LHS) and the "trend-cycle" component obtained with the X12 procedure in Eviews (RHS).



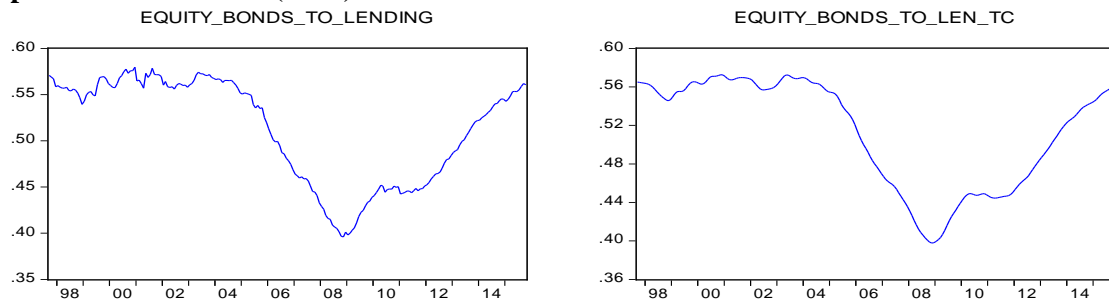
Source: ECB and own calculations.

Chart B2.3: Outstanding bank loans of the EU non-financial corporations. Original series (LHS) and the "trend-cycle" component obtained with the X12 procedure in Eviews (RHS).



Source: ECB

Chart B2.4: Ratio of outstanding equity and bonds to bank loans of the EU non-financial corporations. Original series (LHS) and the "trend-cycle" component obtained with the X12 procedure in Eviews (RHS).



Source: ECB and own calculations

Chapter 2 INDICATORS FOR MONITORING THE EVOLUTION OF EU CAPITAL MARKETS

2.1 Rationale and methodology

On 30 September 2015, the Commission adopted the Action Plan to build a Capital Markets Union (CMU).¹⁶ This plan sets out key measures to achieve a true single market for capital in Europe. It aims at mobilising capital and channelling it to the real economy, so that it can expand and support robust job creation jobs. At the same time, the CMU initiative aims to offer new opportunities for savers and investors. More specifically, the CMU Action Plan concentrates on six major objectives: (i) financing for innovation, start-ups and non-listed companies; (ii) making it easier for companies to enter and raise capital on public markets; (iii) promoting investment in long-term, sustainable projects and infrastructure projects; (iv) fostering retail and institutional investment; (v) leveraging banking capacity to support the wider economy; (vi) facilitating cross-border investing. It also aims at promoting financial stability.

The CMU Action Plan was accompanied by a Commission Staff Working Document (SWD) which provided an economic analysis of the functioning of capital markets in Europe.¹⁷ That document describes the evolution and the current state of financial markets in the EU, the financing needs of the economy, the role of investors, and the obstacles to cross border investments in Europe.

The Commission services will report regularly on the implementation of the Action Plan's measures listed in the Action Plan in a Status Report. The first Status Report¹⁸ describes the steps taken to implement the individual actions of the CMU Action plan. This needs to be accompanied by a quantitative assessment of recent trends in capital markets' development that are relevant to each of the six objectives of the Action Plan. While other factors besides CMU integration will have an often more immediate and sizable impact on the evolution of capital markets in Europe, it is important to analyse how the situation is evolving in relation to the objectives of the CMU initiative.

This section will therefore present, for each of the six objectives of the CMU initiative, a set of indicators that will be used to analyse the relevant trends in capital markets' development. Indicators will also be used to monitor the impact of the development of market-based finance on financial stability. The set of indicators outlined in this EFSIR is likely to evolve, as some indicators may be added, supplemented or replaced.

It is important to note that the vast majority of indicators will be heavily influenced by factors others than the measures put forward by, and implemented under, the CMU Action Plan. Some will be subject to cyclical factors (see Box 2 in Chapter 1), others to different market developments or policy action in other areas. Hence, their informational value will be indicative only and necessarily subject to careful interpretation.

¹⁶ COM(2015)468

¹⁷ SWD(2015)183

¹⁸ See Commission Staff Working Document "Capital markets Union: First Status report", April 2016

A positive evolution of some indicators may be due to other factors than a successful implementation of related CMU measures. Similarly, some indicators may evolve in a negative manner, despite successful implementation of related CMU measures. In both cases however, an analysis of these indicators, building on the work in the SWD accompanying the CMU Action Plan, will be the opportunity for the Commission to assess trends in the evolution of capital markets that are relevant to the objectives of the CMU Action Plan.

As there is no direct causality between a CMU action and an indicator, one indicator should not be looked at in isolation from other indicators. On the contrary, the set of indicators selected under each objective of the CMU Action Plan is meant to bring different streams of information together and thus help to form an assessment of recent developments relevant to a specific CMU objective.

An integrated European capital market means not removing barriers but also changing long-standing behaviour and attitudes. This will require sustained application of effort and resource before the impact can really be felt. Some CMU actions are clearly identified solutions to specific issues and are expected to have a direct impact, although with a time lag, which will have to be taken into consideration when assessing the evolution towards a CMU. Other CMU actions are a starting point, as the Commission is working constructively with stakeholders to develop solutions – be that through legislation, self-regulation or technical assistance. Their impact will therefore be felt over a longer time period.

The sections below presents the indicators for monitoring trends that are relevant to each of the six objectives of the CMU Action Plan. It discusses the possible limitations of indicators, provides data in the form of charts and tables, explains the recent development of each indicator, and documents the data and methodology used.

2.2 Indicators to monitor the evolution of capital markets and macroeconomic conditions in relation to the CMU Action Plan's objectives

Objective 1: Financing for innovation, start-ups and non-listed companies:

The CMU initiative aims at supporting financing for innovation, start-ups and non-listed companies by promoting alternative sources of funding. These can come via several different channels. Indicators to monitor capital market developments under this objective of the CMU focus on the take-up of alternative financing instruments, such as business angel investment, crowd-funding, venture capital, private equity and private placement. All these sources of funding remain underdeveloped in the EU. As official statistics on these sources of funding are scarce or unavailable, this section will primarily rely on unofficial data.

Crowdfunding

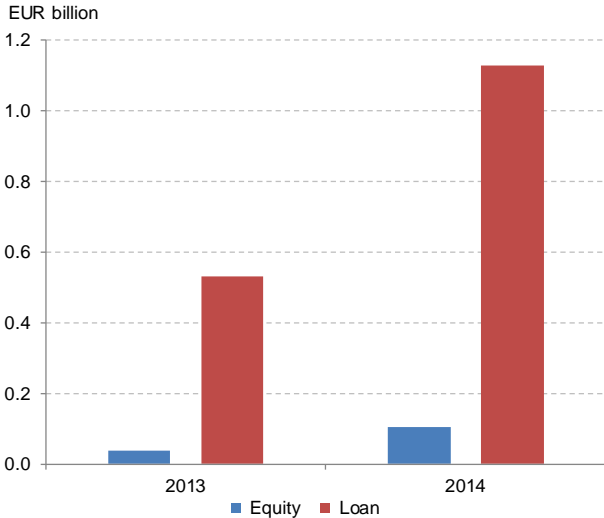
Crowdfunding gathers funds from a wide range of contributors to invest them directly in projects, which may have a commercial or non-commercial interest. Funds pooled under crowdfunding platforms can take various forms, the main ones¹⁹ being loans, equity,

¹⁹ in terms of number of platforms offering this product – Source: Crowdsurfer, EY and European Commission: *Crowdfunding: mapping EU markets and event study*

donations and rewards. The developments of equity and loan products distributed through crowdfunding platforms can be monitored in this context. Even though the average amount of funds raised per project has been increasing (from EUR 215 000 in 2013 to EUR 260 000 in 2014 for equity crowdfunding), the size of investments remains small. Also, crowdfunding investments are largely illiquid, in that participations cannot be readily sold to other investors.

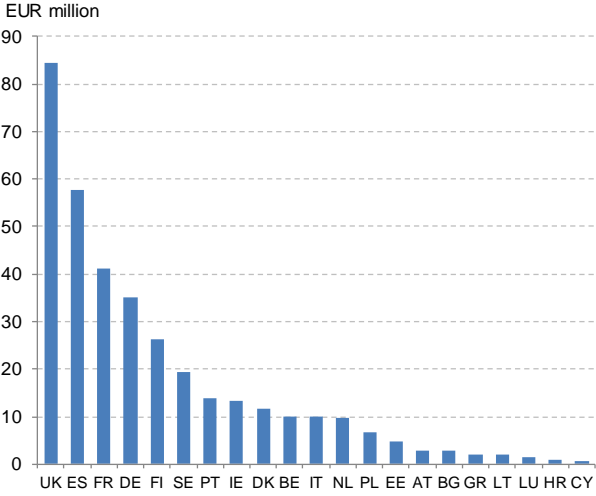
Even though growing fast (116% between 2013 and 2014), crowdfunding remains a nascent market, with total volume estimated at EUR 1.5 billion in 2014 (Chart 2.1).²⁰ Loans are by far the most widely distributed instrument through crowdfunding platforms, representing more than 10 times the volume of equity investments channelled through these platforms in 2014.

Chart 2.1: Crowdfunding volumes



Source: Crowdsurfer, EY and European Commission - Crowdfunding: mapping EU markets and event study

Chart 2.2: Business angel investments in 2013



Source: EBAN Statistics Compendium 2014

Business angel investment

Business angels are individuals who risk part of their capital by investing directly in an enterprise, without relying on financial intermediaries. With their know-how, capital and contacts, business angels provide support both at the initial stages of start-ups and to growing young enterprises. Due to the informal nature of the investment and the absence of any official definition of "angel investment", it is difficult to capture the size of the market of business angel investments.²¹

Available figures suggest that this market remains limited in Europe, representing a total of EUR 0.36 billion in 2013. Business angels are most active in the United Kingdom (24% of total), Spain (16%) and France (12%) (Chart 2.2). However, figures reported are underestimating the market, as they represent only its visible part, i.e. investments made

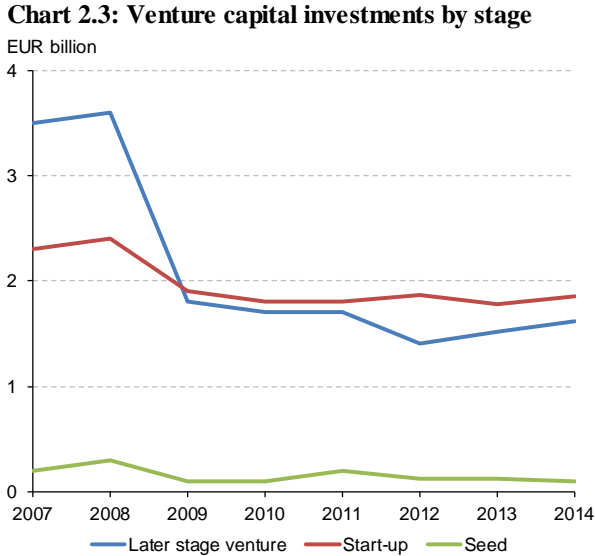
²⁰ The coverage of the study by Crowdsurfer / Ernst & Young, which is the source of the data used in this section, is estimated at 81% of the equity and loan crowdfunding market. Therefore, as the study compiled crowdfunding investments for a total of EUR 1.2 billion in 2014 (as reflected in Chart A1.1), the overall size of the market is estimated at EUR 1.5 billion.

²¹ According to BAE, a lot of angel investing happens in the so-called invisible market, outside of structures like networks, clubs or matching platforms. Many attempts have been made to generate or extrapolate figures. But all surveys share the same problem: they are either relatively small scale or unrepresentative of the market.

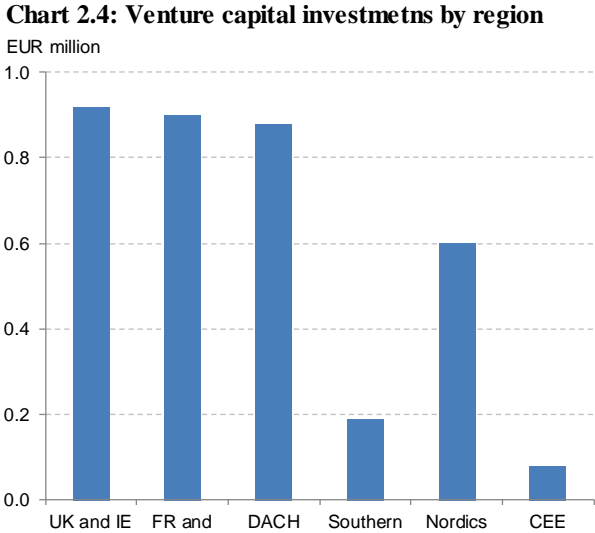
through an angel network or syndicate. Many angel investments take place outside of networks and other portals and are inherently difficult, if not impossible, to measure and study.²² As a result, according to some estimates, total angel investments might be greater than venture capital investments in some European countries, with well-developed angel markets.²³

Venture capital

Venture capital refers to equity investments made to launch, develop or expand young and unlisted companies. Venture capital is a specific subset of private equity. About half of venture capital funds finance companies exclusively in their start-up phase. The other half is allocated to companies at a later stage of their development. Little venture capital is seed capital, i.e. initial capital to start a business (Chart 2.3). Currently, around 90% of EU venture capital investments are concentrated in only 8 Member States (Chart 2.4).²⁴



Note: Balanced funds on both early stages and development
 Source: EVCA 2014 European Private Equity Activity



Notes: DACH (AT, DE and CH), Southern Europe (EL, IT, PT and ES), Nordics (DK, FI, NO and SE), CEE (Central Eastern Europe)
 Source: EVCA 2014 European Private Equity Activity

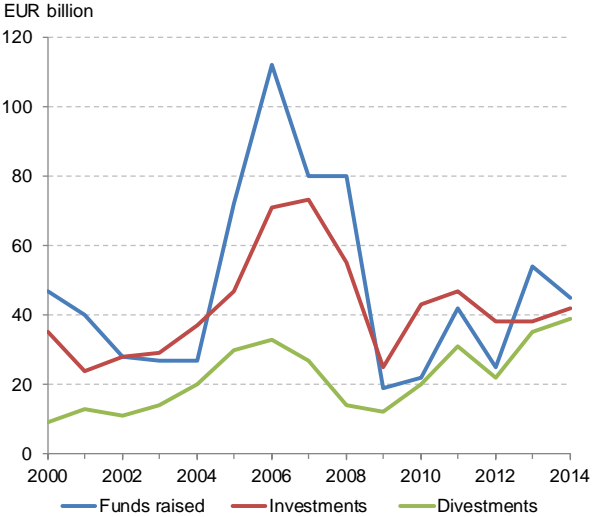
Private equity

Private equity refers to investments in the equity of a company provided on a private basis, typically by banks, NFCs, institutional investors (e.g. pension funds or asset managers), high net worth individuals (HNWI), governments or individuals. By investing in private equity, banks and NFCs typically aim at acquiring a strategic interest in entities that will generate synergies, and hence both financial and strategic benefits for their businesses. Public authorities, on the other hand, invest in private equity as a mean of achieving public policy goals, such as supporting specific sectors of the economy, activities that are ultimately expected to boost productivity, growth and employment. Institutional investors and HNWI are driven by financial returns. Private equity investments are primarily channelled through

²² See OECD (2016), Financing SMEs and Entrepreneurs 2016. An OECD Scoreboard
²³ See OECD (2011), Financing High-Growth Firms: The Role of Angel Investors.
²⁴ Source: AFME

dedicated funds.^{25,26} In 2014, European private equity funds had a total of EUR 550 billion of assets under management on European markets.^{27 28} This is equivalent to about 20% of the total assets under management of equity funds (see Objective 4). It corresponds to about half of the total outstanding amount of bonds issued by NFCs (see Objective 2). The size of the public and private equity market was similar, with gross investments by private equity firms representing over EUR 42 billion, and gross issuance of quoted shares by euro-area NFCs amounting to EUR 55 billion (see Objective 2). Whilst private equity is returning to pre-crisis levels in terms of funds raised and investments, divestments are also running above their long-term average (see Chart 2.5).

Chart 2.5: Private equity activity in Europe - gross annual flows



Notes: Data include venture capital. Funds raised (gross increases of liabilities), Investments (use of liquidity to purchase equity), Divestments (liquidation of previous investments).
Source: EVCA

More than half of European private equity investments were raised in United Kingdom alone. France and Sweden followed in importance (Chart 2.6). As regards the type of private equity investors, over one third of private equity funds raised in 2014 came from institutional investors, in particular pension funds (26%), investment funds (18%) and insurance companies (8%) (Chart 2.7). Private equity investment is considered particularly attractive by some insurance corporations and pension funds as the long-term nature of their liabilities allows them to invest in long-term and less liquid assets, with the objective of generating a higher return. Private equity investment by public authorities reached 15% of the total.

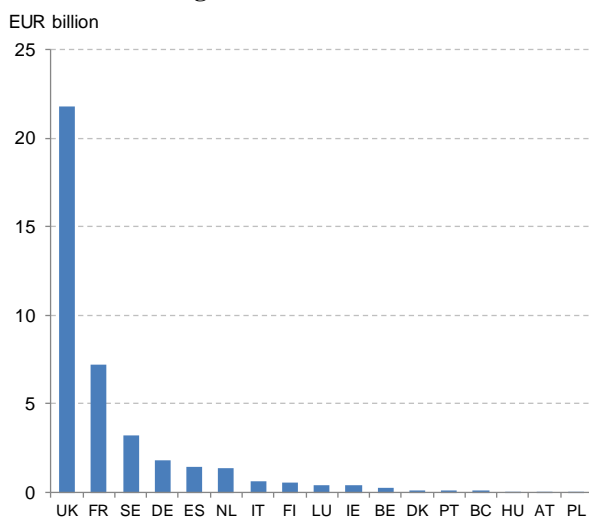
²⁵ Unless otherwise indicated, the rest of this section focuses on the private equity invested through funds.

²⁶ See Cumming, (2009).

²⁷ Equity funds excluding infrastructure funds, real estate funds, distress debt funds, primary funds-of-funds, and secondary funds-of-funds.

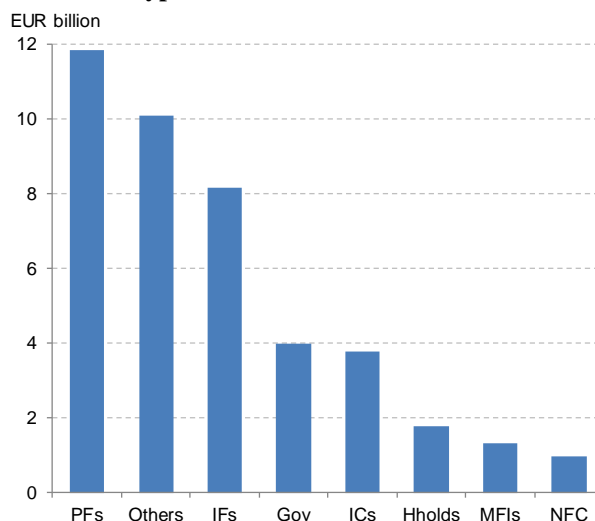
²⁸ Source: InvestEurope.

Chart 2.6: Private equity funds raised by country of management in 2014



Source: EVCA

Chart 2.7: Private equity funds raised by investor type in 2014



Notes: PFs (pension funds), IFs (investment funds), Gov (governments - includes government agencies and sovereign wealth funds), ICs (insurance corporations), Hholds (households), MFIs (monetary financial institutions), NFCs (non-financial corporations)
Source: EVCA

Private placements

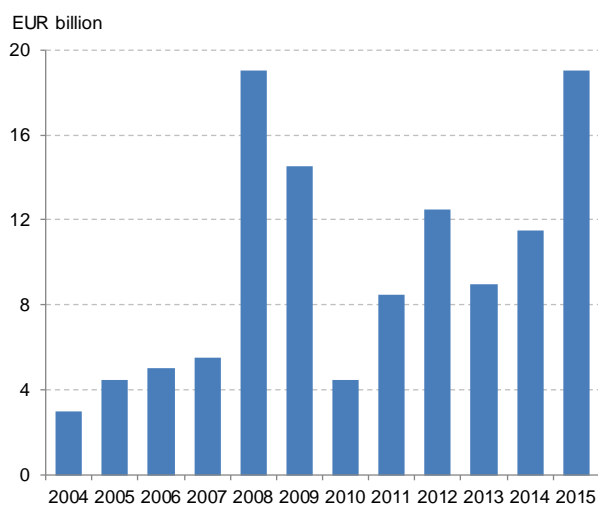
Private placements, unlike publicly listed securities available for sale on the open market, are offered to a limited number of qualified investors. Private placements are therefore rather illiquid instruments with medium- to long-term maturities. They mainly come in the form of bonds (listed and unlisted) or loan instruments that investors usually hold until maturity. In some countries, the availability of regulatory frameworks and the development of market-led initiatives have enhanced the development of private placement markets, in particular in Germany (*Schuldschein* market²⁹) and France (*Euro PP* market) and in the US (OECD, 2014a).

Gross issuance of *Schuldschein* has averaged EUR 10 billion annually over the period 2007-2014 (Chart 2.8). In 2015, this amount increased to EUR 19 billion. As regards the private placement market excluding the *Schuldschein* market, volumes have been increasing sharply over the last couple of years, reaching EUR 14 billion in 2015 through 146 deals, i.e. doubling the amount raised in 2014³⁰ (Chart 2.9). In 2015, 38% of the deal flow (in terms of volume) came from France, 14% from Belgium, 13% from Italy, 8% from Spain, 7% from Germany and 7% from the United Kingdom. While the *Schuldschein* and the European private placement markets increased significantly in 2015, volumes raised by European firms on the US private placement market decreased for the third year in a row. As a result, in 2015, the US private placement market lost its leadership as the main provider of private placement funding to European firms to both the *Schuldschein* and European private placement markets.

²⁹ *Schuldschein* loans are also known as 'assignable loan agreements', 'debt notes' or 'debenture bonds'.

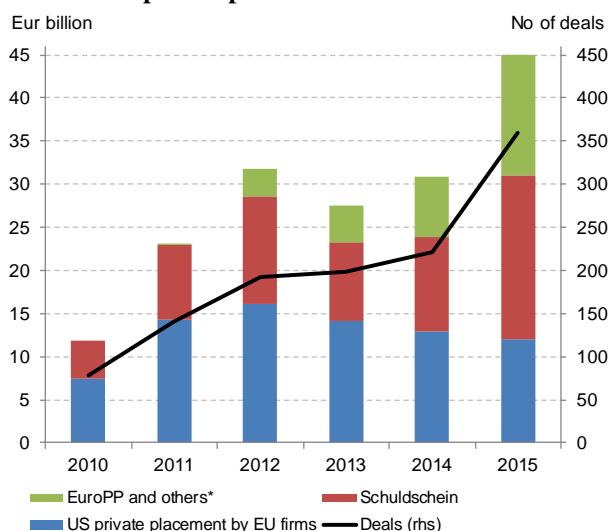
³⁰ For further details about private placements in Germany and France, see Linhart (2014) and Sapin and Montebourg (2014).

Chart 2.8: Schuldschein - gross issuance



Source: Thomson Reuters, Helaba (2015)

Chart 2.9: Issuance by European companies on private placement markets



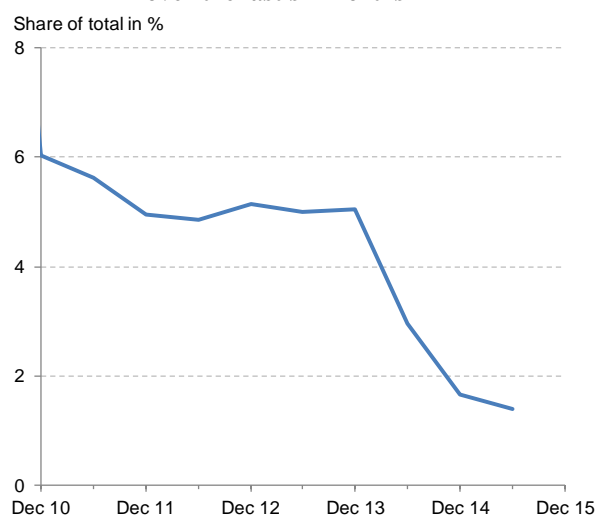
* Includes both listed and unlisted private placement deals by European firms
 Source: Private Placement League Table - Standard & Poor's (2016)

Equity issuance by SMEs³¹

The Survey on the Access to Finance of Enterprises (SAFE) by the ECB asks a sample of euro-area SMEs³² whether they have been issuing equity over the last six months.

This indicator is therefore an indication of the importance of equity as a source of external financing for SMEs. The percentage of euro-area SMEs reporting having used equity issuance over the last six months was estimated at an average of 4.8% over the period mid 2009 – mid 2015. The number has been on a downward slope over the last two years, gradually decreasing from 5.1% at end-2013 to 1.4% at mid-2015. (Chart 2.10)

Chart 2.10: Issuance of equity by euro-area SMEs over the last six months



Source: SAFE survey

Overview of main indicators ³³	Last 5-year	Latest	Value
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³¹ Euro area

³² In the SAFE survey of September 2015, the total euro area sample size was 11,226 enterprises, of which 10,238 (91%) had fewer than 250 employees

³³ Indicators and figures refer to the EU-28, unless indicated otherwise

	average	observation	
Volume of crowdfunding	NA	2014	EUR 1.2 billion
Business angel investment	NA	2013	EUR 0.4 billion
Venture capital investment	EUR 3.5 billion	2014	EUR 3.6 billion
Private equity, assets under management	NA	Dec 2015	EUR 550 billion
Issuance of equity by euro-area SMEs over the last six months, % of total SMEs surveyed	4.3%	Jun 2015	1.4%

Objective 2: Make it easier for companies to raise funds on capital markets

As an alternative to bank lending, companies can obtain short- and long-term funding by issuing securities in capital markets. Mid-sized and large companies seeking significant amounts of funding can turn to public markets to raise additional equity and/or debt financing. Growing and medium-sized companies can also benefit from access to incubator markets, such as the new SME Growth Markets provided for in MiFID II.

To monitor capital market developments related to this objective of the CMU Action Plan it is useful to consider the evolution of the funding structure of NFCs. Since the two main capital market instruments used by NFCs are bonds and shares, indicators will also monitor the size of the corporate bond and equity markets, looking at stocks, flows (gross issuances, redemptions and net issuances) and their market liquidity. The number of issuers and published prospectuses also serves as indicators, as well as the take-up of SME growth markets, and the share of public market funding in NFCs' balance sheets. A positive trend in these numbers would likely indicate an increasing take-up of funding on public capital markets by NFCs.

The development of public capital markets will also be monitored at Member State level.

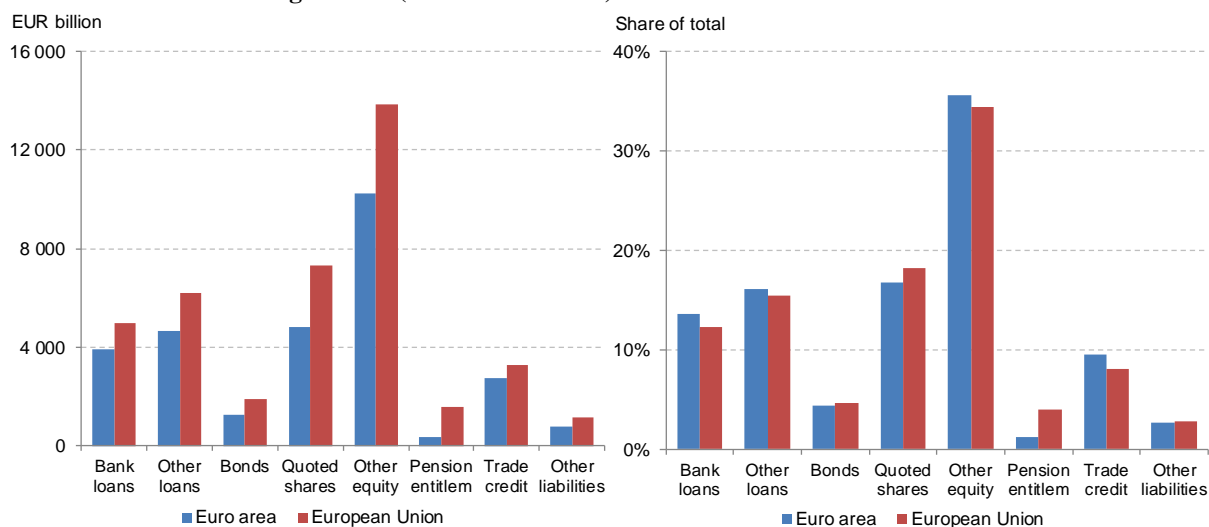
Funding structure of NFCs³⁴

Monitoring the different sources of funding used by NFCs helps to assess the weight of capital markets in the financing of the economy in terms of distribution of funding sources used by NFCs (outstanding amounts), distribution of funding sources broken down by country and net annual flows of funding obtained by NFCs. While outstanding amounts provide a good indication of the relative importance of the different sources of funding, flow data (net annual transactions) provide a better indication of their dynamics over time. Chart 2.11 provides an overview of the balance sheet liability structure of NFCs.³⁵

³⁴ NFCs' financial liabilities by instrument (in billions of euro and percentage of GDP); annual flows of NFCs' financial liabilities (in billions of euro). Data is non-consolidated.

³⁵ Indicators in this section focus on the liability side of the balance sheet, as the CMU aims at diversifying the funding sources for NFCs. For information on NFCs' assets, see EFSIR 2015, section 3.3.

Chart 2.11: NFCs' funding sources (financial liabilities)

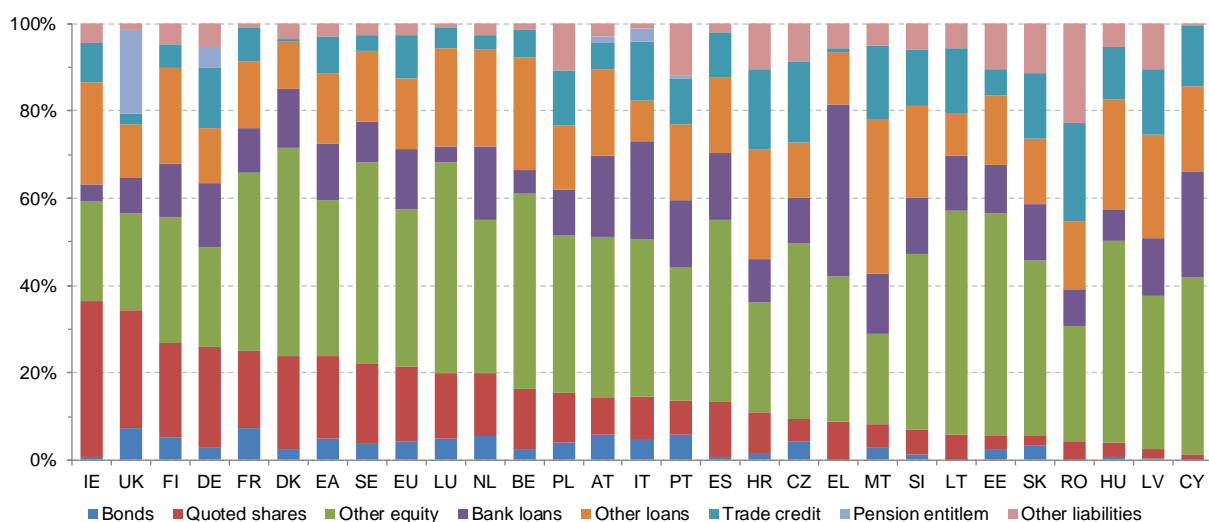


Source: ECB

Overall, debt instruments represent 31% of the total financial liabilities of EU-28 NFCs at end-2015. Among debt instruments, loans are the most widely used by European firms. While bank loans represent on average 12.3% of total liabilities in the EU-28, 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 NFCs, representing on average 15.4% of liabilities.

The issuance of bonds in capital markets is still a relatively marginal source of financing, representing on average 4.7% of liabilities. It is only slightly more significant in the United Kingdom and Austria (about 10% of financial liabilities) followed by Portugal, France and Finland in falling order (about 6%) (see Chart 2.12).

Chart 2.12: NFCs' liabilities (source of funding) by instrument - third quarter of 2015



Note: Data for Bulgaria are not available
Source: ECB, Eurostat and own calculations

To finance their activities, NFCs also make use of trade credit (9.0% of liabilities). 'Other liabilities', which includes items such as taxes due, derivatives, factoring, or leasing, are a

more marginal source of funding, representing 2.8% of liabilities, except in a few countries, e.g. in the Czech Republic, Estonia, Germany, Latvia, Poland and Romania, where they represent about 10% of liabilities.

The largest financial liability on NFCs' balance sheets across Europe is equity, which represents 52.6% of firms' liabilities (Chart 2.9). However, the main share of this equity corresponds to retained earnings, i.e. funds generated internally by the company. After taking out the share of retained earnings in NFCs' total equity, estimated at 59.5%³⁶, equity would then represent 21.3% cent of NFCs' funding sources adjusted for retained earnings (which would then broadly represent the sum of the external sources of funding for NFCs). In this case, bank loans, other loans and bonds would broadly represent 17.9%, 22.4% and 6.8% of NFCs' funding sources.

The use of equity differs across the EU. In Member States which joined the European Union before 2004, equity is often raised on organised markets (i.e. through the issuance of quoted shares). In Denmark, Finland, France, Ireland, the Netherlands, Sweden and the United Kingdom³⁷, quoted shares represent between 15% and 35% of financial liabilities, or 70% or more of their respective GDP. In Member States which joined after 2004, quoted shares represent at most about 5% of total liabilities and at most 20% of GDP.

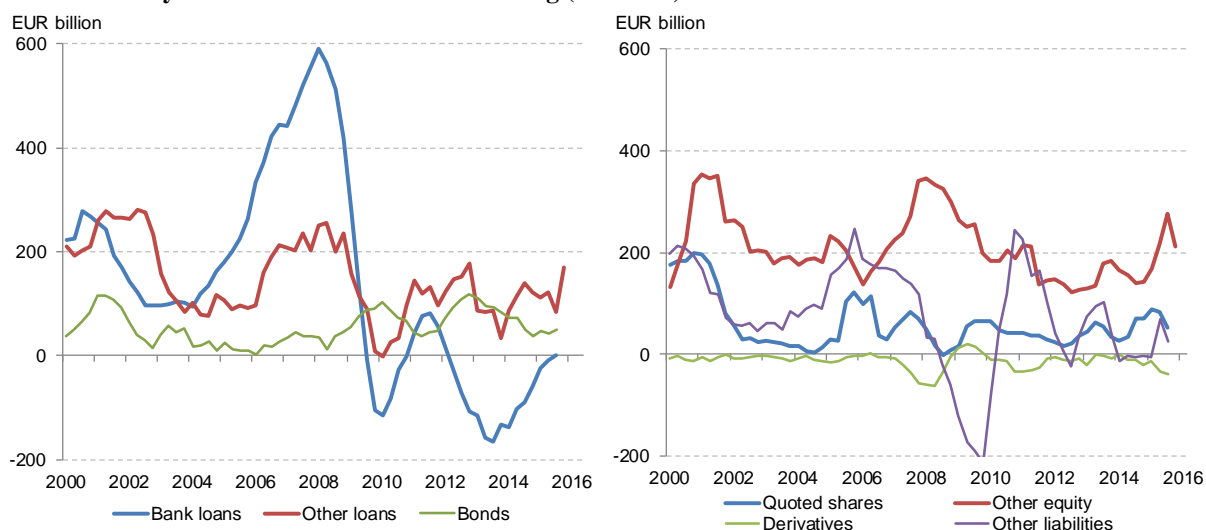
Other forms of equity, which to a large extent represents equity provided by the owners/managers of the firms but also by private equity funds, is significantly larger than quoted shares as a percentage of total financial liabilities in the vast majority of countries, with the exception of Finland, Ireland, the Netherlands and the United Kingdom, where quoted shares have a similar or even larger size than other equity instruments. Again, other equity includes accumulated retained earnings generated internally by the company.

Chart 2.13 shows the dynamics over time; as long-time series of flows data are available at EU-28 level only since 2013, this section uses euro-area data as a proxy. The net provision of funding through bank loans has in particular been highly volatile over the last fifteen years, expanding extraordinarily from about EUR 100 billion a year in the mid-2000 to almost EUR 600 billion a year in 2008. During this period, bank loans provided up to 50% of new financing obtained by NFCs, in spite of the fact that bank loans represent only 16% of the NFCs' outstanding liabilities (see Charts 2.8). With net bank flows receding with the financial crisis, NFCs turned to other sources of funding.

³⁶ 59.5% represents the unweighted average of the share of retained earnings in the equity of the 440 companies that form the Europa Stoxx 600 index over the 2011-2014 period

³⁷ Germany should probably be added to this group; however, the breakdown between quoted shares and other equity is not available for Germany on the statistics on Sector Accounts.

Chart 2.13: Dynamics in NFCs' sources of funding (liabilities) in the euro area



Source: ECB, Eurostat and own calculations

On the other hand, with a cumulative net issuance of over EUR 400 billion between 2008 and 2014, NFCs in the euro area almost doubled their use of bonds as a source of funding over that period, with NFCs' bonds' total value reaching EUR 1 050 billion. Except for a short spell in 2010, loans other than bank loans were also an important source of funding after the crisis.

As regards equity, net flows of funds from listed shares have been positive since 2009, with annual net proceeds averaging EUR 50 billion over the 2010-2015 period. However, the largest source of net proceeds to NFCs has been coming from non-listed equity, with an annual average of EUR 212 billion over the 2000-2015 period. Positive flows of equity should not come as a surprise as the objective of creating a company is to generate profits, which can be reinvested in the company itself. However, a lack of demand and investment opportunities may lead to hoarding cash and, therefore, signal a dysfunctional credit intermediation.

As regards trade credit and other accounts payable (labelled 'other liabilities' in Chart 2.3), net proceeds have been on a downward sloping trend since 2011.³⁸

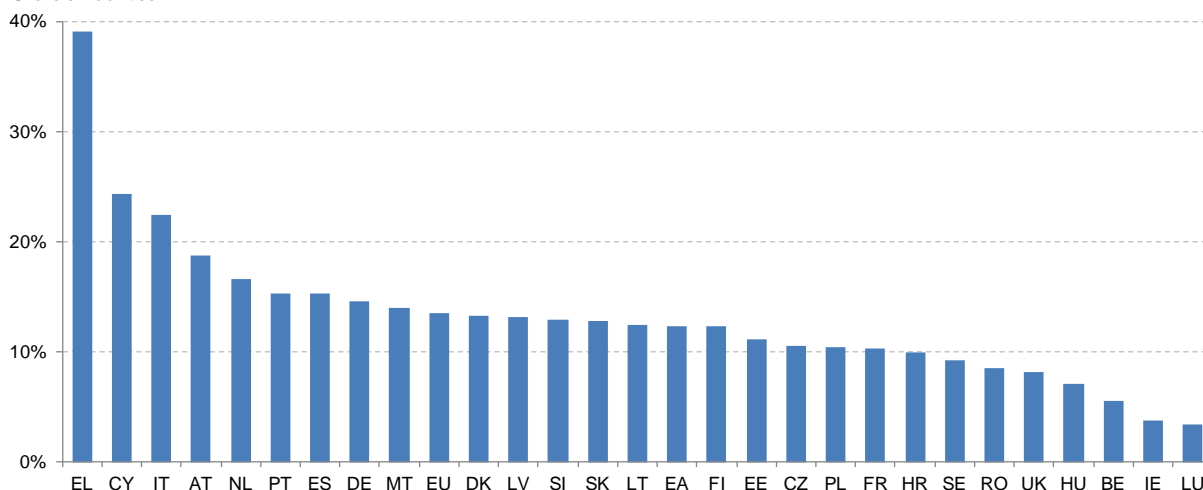
Bank loans to NFCs

One of the objectives of the CMU Action Plan is to diversify the sources of finance available to NFCs in addition to bank funding. At country level, the use of bank lending as a source of funding by NFCs varies widely across countries. In Austria, Greece, Latvia, Italy, the Netherlands and Malta the volume of bank loans represent more than 20% of all sources of funding used by NFCs (as explained earlier, would equity accumulated from retained earnings be excluded from the calculation, the weight of bank loans on NFCs' balance sheets would be significantly higher). On the other hand, in Ireland, Sweden, Luxembourg, Romania, Hungary and Belgium, NFCs use bank loans to finance less than 10% of their activities (Chart 2.14).

³⁸ One should be aware of the ambivalence of trade credit and other advances. An expansion in such sources of financing may be generated by an increase in activities, but liquidity and solvency problems are also translated into increasing (non-performing) debts to suppliers and stakeholders in general (e.g. late payment of salaries).

Chart 2.14: NFCs use of bank loans as source of funding

Share of liabilities



Source: ECB, Eurostat and own calculations

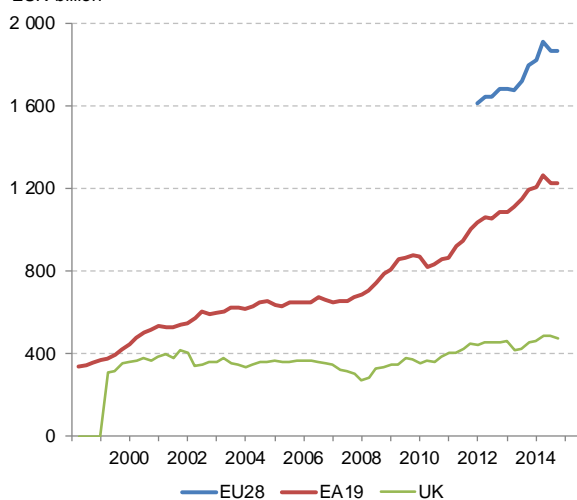
Bond markets

When using indicators on the size of bonds markets, the significance of the value of outstanding bonds versus bonds' flows and factors that may influence them must be well understood. Among other factors, the value of interest rates set by central banks changes the value of outstanding bonds, which are paying a rate (whether fix or variable) that is pre-determined in the bond's prospectus. Therefore, an increasing or decreasing value of outstanding bonds does not mechanically translate into more or less investable cash for NFCs. On the other side, changes in central banks' interest rates will have an impact on the decision of firms to issue, roll-over or call bonds – for example, a low interest rate environment is an incentive for NFCs to issue debt, whether in the form of bonds or loans.

Activity on bond markets is also influenced by other factors such as, for example, stock prices. Therefore, the analysis of stocks and flows of corporate bonds need to be complemented by an analysis of the number of issuances (Chart 2.15).

Chart 2.15: NFCs' bonds - outstanding amounts

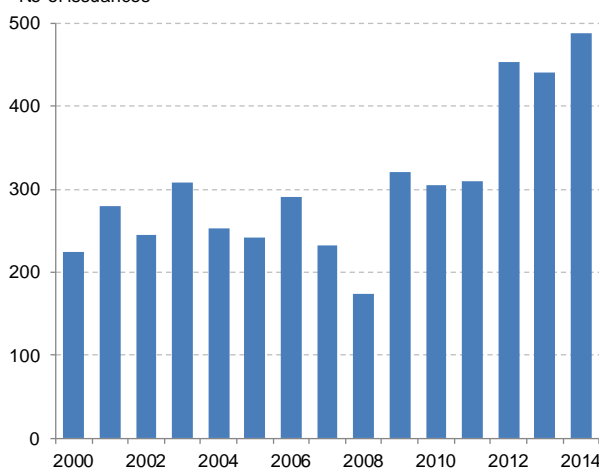
EUR billion



Source: ECB, Eurostat and own calculations

Chart 2.16: Number of bond issuances by EU NFCs

No of issuances



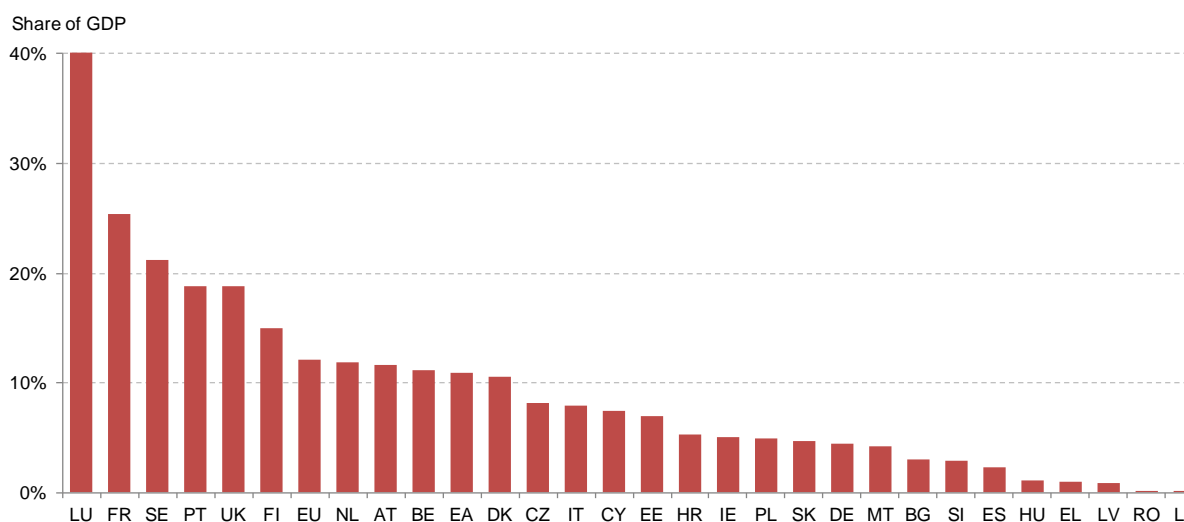
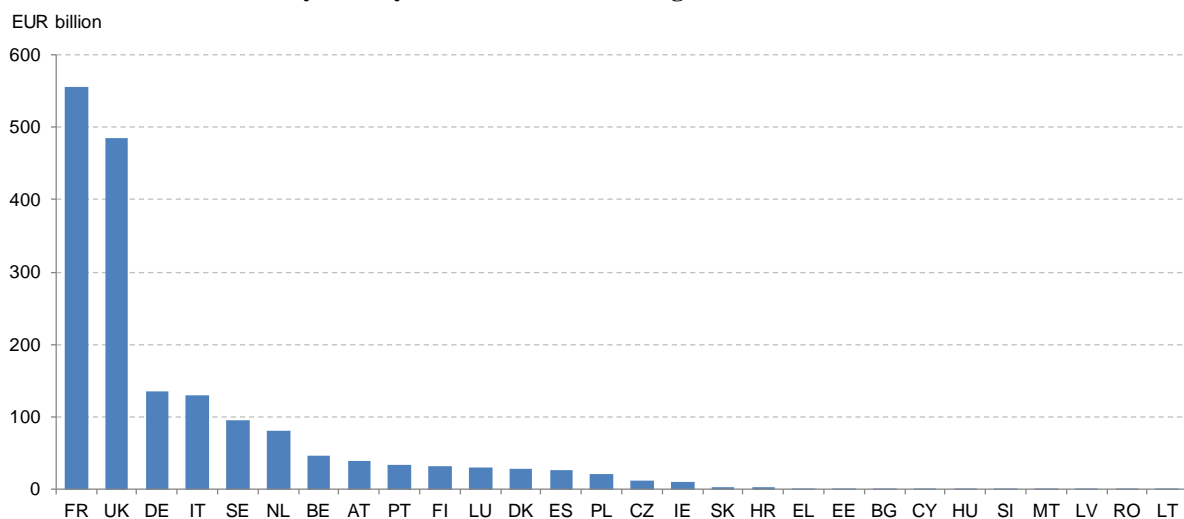
Source: OECD

The volume of outstanding bonds issued by euro area NFCs has been gradually increasing over the past 20 years, reaching over EUR 1 100 billion at year-end 2015 (Chart 2.11). At EU-28 level, this figure stood at almost EUR 1 800 billion at year-end 2015. As regards the number of corporate bond issuances, after a significant drop with the financial crisis of 2007-2008, it has been gradually recovering, nearly tripling between its low point in 2007 and 2014 (Chart 2.16).

French or British NFCs are by far the largest issuers of bonds in Europe, representing two thirds of the total outstanding amount at year-end 2015. The volume outstanding in other countries remains much smaller (Chart 2.17). In relative terms, NFCs' bonds represent more than 15% of GDP in Finland, Portugal, Sweden, the United Kingdom, France and Luxembourg. In the rest of countries, they represent about 10% of GDP or less. To monitor the extent to which European NFCs rely on public bond markets for their external funding, the value of outstanding bonds of European NFCs as a percentage of GDP will be monitored at country-level and compared to the same ratio in other European countries and other jurisdictions such as the US, where the ratio has historically been significantly higher.

The market liquidity of the European bond markets, which refers to the ease of trading an asset – whether it can be bought or sold timely in sufficient quantities at any given time without affecting its price significantly – should be monitored by Commission services, as market liquidity has an impact on market functioning and efficiency. There are several dimensions of market liquidity: (i) tightness/transaction cost – variances of bid-ask spreads; (ii) immediacy – how fast orders can be executed and settled; (iii) breadth & depth – excess of orders over price bond traded; (iv) resilience – capacity to intermediate for large deals and price swings.

Chart 2.17: NFCs' bonds by country of issuance - outstanding amounts



Note: NFCs' bonds issued in Luxembourg reach 63% of GDP

Source: ECB and own calculations

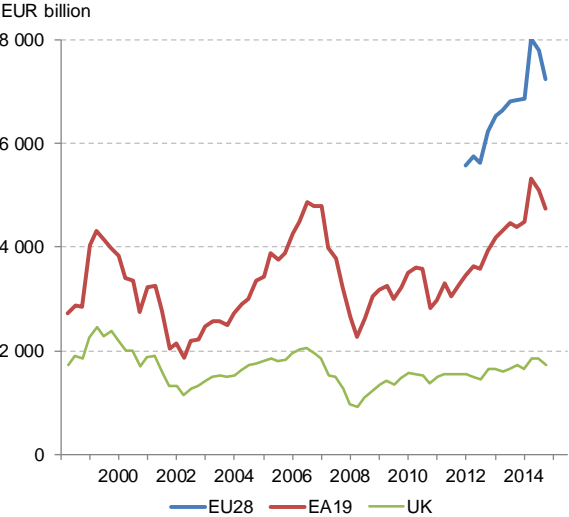
Equity markets

In a similar manner as for bonds, when using indicators on the size of stock markets, the significance of capitalisation versus issuance must be well understood. Increasing capitalisation of European stocks markets does not necessarily mean additional funding/cash for NFCs. Indeed, the market value of a NFC's equity can increase because the firm has issued new shares or because it has generated new funds internally (i.e. retained earnings not distributed through dividends). In both cases, there is an actual increase of the funds available within the firm, generated externally in the first case, and internally in the second one. However, the capitalisation of a NFC can also increase for other reasons such as global capital markets developments and/or positive perceptions about future earnings. In this case, the company is not obtaining additional funds even if its market value has increased. Conversely, a decline in the total capitalisation of a NFC does not necessarily imply a lower level of funding at the level of the company. Therefore, the use of outstanding volumes of equity (capitalisation) as an indicator needs to be complemented with an analysis of flows, which tracks the actual increases or decreases of funds available for the firm.

Another consideration to bear in mind when using these indicators is that, given the high correlations amongst equity prices across Europe and globally, the broader capital markets' movements will be a main driver of a firm's operations on equity markets. Other things being equal, a growing equity market makes the issuance of new shares more attractive to a NFC, since it will provide a higher amount of cash to the company. On the other side, a bearish equity market may incentivise NFCs to buy-back their shares at a low cost. Global market movements should therefore be taken into account when analysing the evolution of the capitalisation of and issuance on European equity markets.

Broadly speaking, and with the understanding that equity capitalisation does not represent actual cash flows but the value of equity on stock markets, a capitalisation of European NFCs totaling EUR 8 000 billion at end-2015 (Chart 2.18) indicates that, broadly speaking, EU-28 NFCs use stock markets as a source of funding to a much larger extent than bond markets (value of outstanding bonds totalled EUR 1 800 billion at end-2015, Chart 2.11).³⁹ However, these figures d

Chart 2.18: NFC stocks - outstanding ammounts



Source: ECB, Eurostat and own calculations

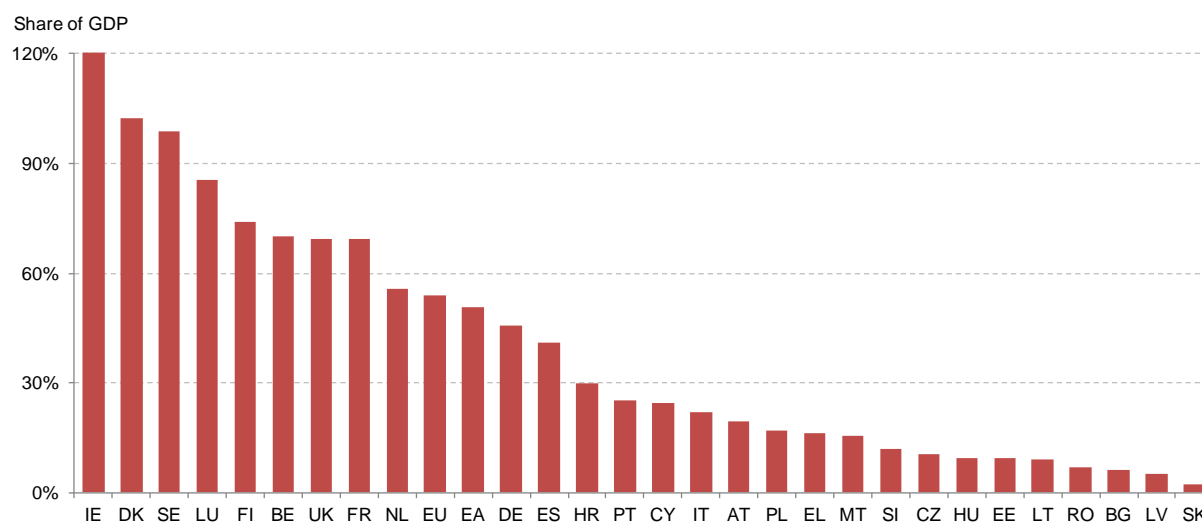
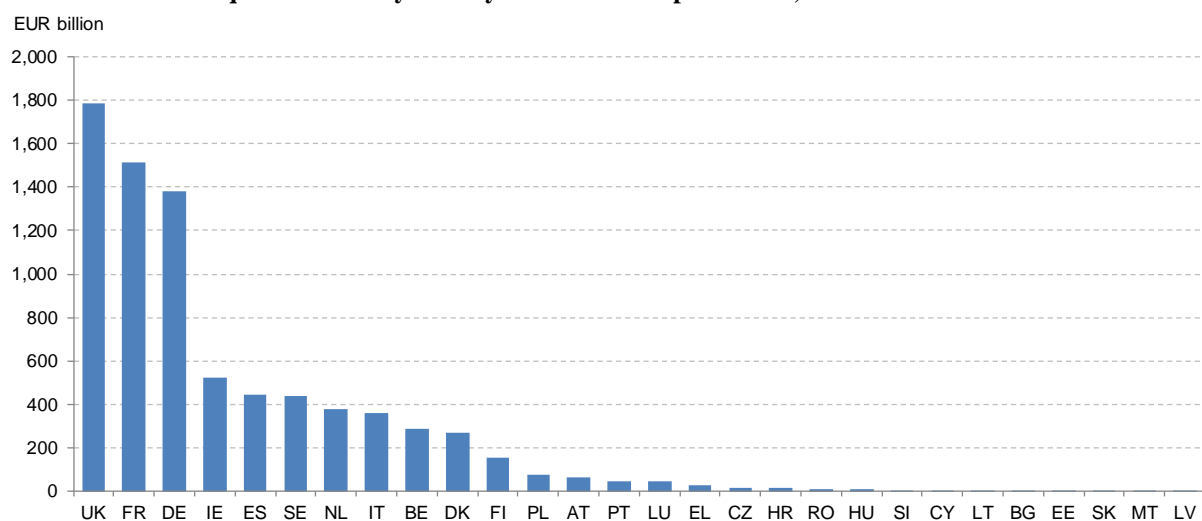
To monitor the extent to which European NFCs rely on stock markets for their external funding, the capitalisation of European NFCs as a percentage of GDP will be monitored at country level and compared to the same ratio in other European countries and jurisdictions such as the US, which has historically been significantly higher.

The largest stock markets, in absolute terms, are located in the United Kingdom, Germany and France, where almost 60% of all EU shares were issued in 2015 (Chart 2.19). However, the largest markets relative to GDP are those of Ireland, Luxembourg, Sweden and Denmark, where NFCs (both residing and not residing in these countries) have issued quoted shares worth over 80% of the respective GDP.

As liquidity is an essential feature of the attractiveness of markets for issuers and investors alike, the liquidity of European equity markets will also be monitored, across the same four dimensions set out for bonds.

³⁹ Note that data in Chart 2.18 for EU28 are only available since late 2012; therefore, the historical perspective is provided with data for the euro area and the United Kingdom, which are available since 2000.

Chart 2.19: NFCs' quoted shares by country of issuance - capitalisation, December 2015



Note: NFCs' quoted shares issued in Ireland reach 288% of GDP
 Source: ECB and own calculations

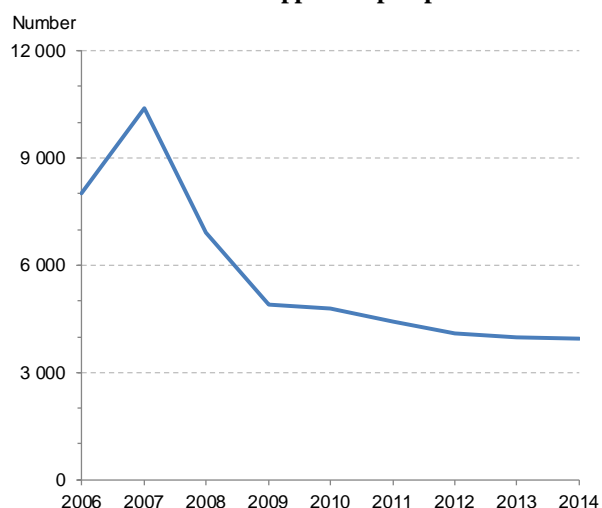
Prospectuses

In the EU, a prospectus has to be approved by the supervisor of the home Member State and published for any security that is either offered to the public or admitted to trading on a regulated market.⁴⁰ It then enables an issuer to raise capital across all EU capital markets simultaneously thanks to the "single passport" principle. There are several exemptions from the obligation to issue a prospectus— in particular when the security denomination is above EUR 100 000 and when the security is sold only to "qualified investors" as defined in the Prospectus Directive (i.e. professional investors as defined under MiFID). This is in particular the case for bonds, which represented 75% of the number of approved prospectuses in 2014. Therefore, the number of published prospectus is more an indication of the number of securities offered to the public, including retail investors, rather than an indication of the overall attractiveness of European public markets to issuers.

⁴⁰ Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC

Prospectus activity decreased strongly from the outbreak of the crisis in 2007-2008. Thereafter, approval activity has continued to decrease but at a slower pace. By 2014, the number of approved prospectuses had declined to 3 931 (Chart 2.20), of which 25% were for equity securities, and 75% for bonds.⁴¹

Chart 2.20: Number of approved prospectus in EEA



Source: ESMA

This evolution can notably be explained by the fact that, given the large availability of capital in the market and the significant appetite of professional investors for investment grade bonds, an increasing number of bond issuers, including large or very large corporations decide to distribute their bonds only to qualified investors through private placements and/or issue debt securities with a unit denomination above the EUR 100 000 threshold. This allows them to benefit from exemptions to publish a prospectus or lighter requirements.⁴² The drawback, however, is that retail investors do not have access to these high-quality assets.⁴³

Another trend, at least for first time equity issuances, is that the average size of issuances has increased, which may make it harder for smaller issuers to raise funds. For example, the average European offering value of IPOs reached EUR 196 million in 2014, a 13% increase over the EUR 173 million reached in 2013.^{44 45}

On the other hand, the proposal for a Regulation on the Prospectus published by the Commission in November 2015⁴⁶, if adopted by the co-legislators, may make prospectuses less costly for issuers, thus facilitating offerings on EU capital markets also to retail investors. It would also lift the requirement for a prospectus for companies that only raise small amounts (under EUR 500 000), and would alleviate the content of prospectuses for follow-on offerings by companies that are already listed on a regulated market or an SME growth market, taking into account their previous ongoing and periodic disclosures. Lastly, the proposal aims at developing a disclosure regime for SMEs that is proportionate to the amount raised and to the size and track record of SMEs, in order to facilitate their access to capital markets, without endangering investor confidence.

⁴¹ Source: ESMA. The split between the number of prospectuses approved for equity securities and for bonds is known only since 2014.

⁴² The incentive for debt issuers to denominate their debt securities above EUR 100 000 per unit is that they either have to disclose less information if the securities are admitted to trading on a regulated market, or are even fully exempted from the prospectus obligation if no such admission is sought

⁴³ For more information, see the SWD(2015)255 final – Commission Staff Working Document – Impact Assessment accompanying the document Proposal for a Regulation of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading

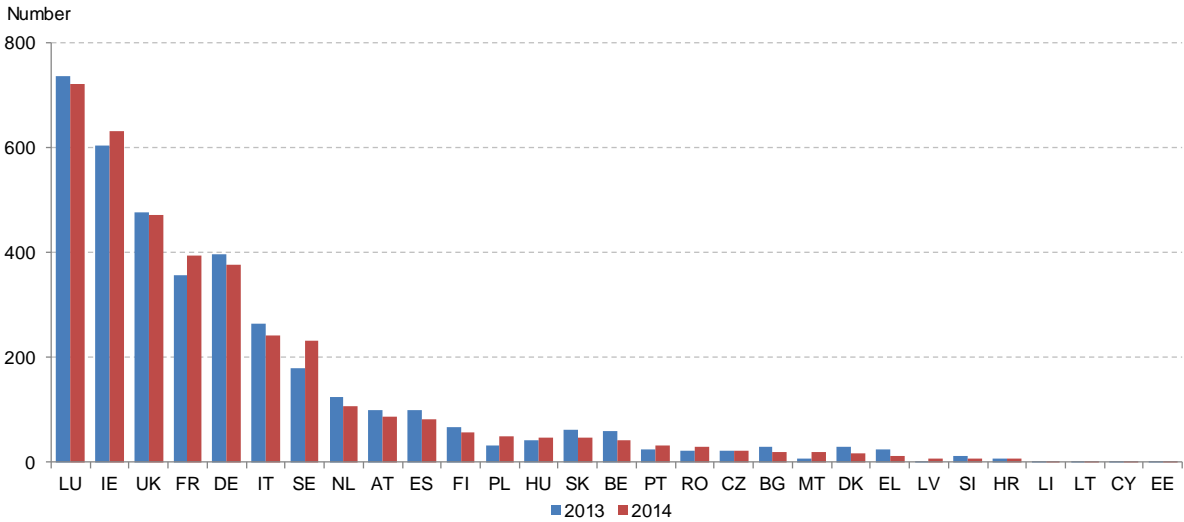
⁴⁴ Source: PWC IPO Watch Europe 2014

⁴⁵ These numbers cover IPOs on all regulated markets, including MTFs – which means that the scope is broader than the scope of issuances subject to the obligation of publishing a prospectus.

⁴⁶ Proposal for a Regulation of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading – COM/2015/0583 final

Prospectus activity concentrates in the largest countries or in the countries exerting as financial centres. Indeed, almost 20% of all EU prospectuses were approved in Luxembourg; Ireland, the United Kingdom, France and Germany account each for 10% or more of prospectuses approved in 2014 (Chart 2.21). These numbers are however to be analysed cautiously. Since, thanks to the single passport, a European company issuing a security in one Member State is able to raise capital in other Member States, a large number of issuances in a country does not necessarily mean that companies in this country are extensively using public markets for their external financing. For example countries such as Luxembourg and Ireland are hubs for corporate bonds' issuances. The numbers may reflect, among other things, a long history of financial practices by issuers, agents and underwriters, the relative discretion granted by the Prospectus Directive to choose the Home Member State where a prospectus is approved, and to a lower extent surviving differences in supervisory practices by national supervisors which the Commission Proposal aims at levelling out through the single rulebook and by increasing ESMA's supervision powers.

Chart 2.21: Number of approved prospectus by country in 2014



Source: ESMA

SME Growth Markets

The development of SME Growth Markets can be monitored via the number of multilateral trading facilities (MTF) that could qualify as SME Growth Markets under MiFID II.⁴⁷ There are currently 19 equity markets in the European Economic Area that could potentially be registered as SME Growth Markets. Starting when MiFID II will fully apply (foreseen in January 2018⁴⁸), this indicator will assess the extent to which these trading platforms use the SME Growth Market designation. However, some possible merger and acquisitions activity between exchanges and/or markets would have to be taken into account when analysing these numbers. Alternatively, in order to assess the extent to which SME Growth Markets provide an appealing and significant alternative source of public funding for SMEs, one can monitor the evolution of the number of firms that are listed on SME Growth Markets as well as the total capitalisation under these markets.

⁴⁷ Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU

⁴⁸ On 10 February 2016, the Commission proposed a one year extension to the entry into application of MiFID II

The 19 MTFs that could meet the criteria of SME Growth markets are currently home to over 3000 companies with a combined market capitalisation around EUR 200 billion. Increasing numbers of listed companies as well as their combined capitalisation would demonstrate an easier access to public markets for SMEs. When monitoring these indicators, one needs to take into account that (i) the number of listed companies and their capitalisation will also depend on other economic factors, (ii) a significant number of SMEs are listed on regulated markets, (iii) non-equity issuers would also be allowed to join SME Growth Markets and (iv) not all the companies listed on SME Growth Markets will meet the criteria of an SME⁴⁹ (i.e. company with a market capitalisation below EUR 200 million). The evolution of other alternative funding instruments also supported by the CMU Action Plan, such as venture capital and private equity, analysed under objective 1 of the CMU Action Plan, will also have to be taken into consideration when undertaking this analysis, as an Initial Public Offering (IPO) under an SME Growth Market may represent an efficient way for investors in such instruments to monetise their investment.

Overview of main indicators⁵⁰	Last 5-year average	Latest observation	Value
Bank loans as a % of total liabilities of NFCs	14.5%*	Dec 2015	12.3%
Bonds as a % of total liabilities of NFCs	4.1%*	Dec 2015	4.7%
NFCs' bonds, outstanding volumes	EUR 1 743 billion*	Dec 2015	EUR 1 867 billion
Number of bond issuances by NFCs	399	2014	487
NFCs' stocks, outstanding value	EUR 6 661 billion*	Dec 2015	EUR 7 786 billion
Approved prospectuses, EEA	4 248	2014	3 931
SME Growth Markets, number	NA	2018	-
Companies listed on SME Growth Markets, number	NA	2018	-

⁴⁹ As defined in MiFID II

⁵⁰ Indicators and figures refer to the EU-28, unless indicated otherwise

* Average calculated over 4Q2012 - 3Q2015

Objective 3: Promote investment in long-term, sustainable projects and infrastructure projects

Since the crisis, investment has dropped sharply, in particular for long-term and infrastructure projects. The European Investment Bank (EIB) estimated that the total cumulative infrastructure investment needs in the EU could reach up to EUR 2 trillion for the period up to 2020.⁵¹

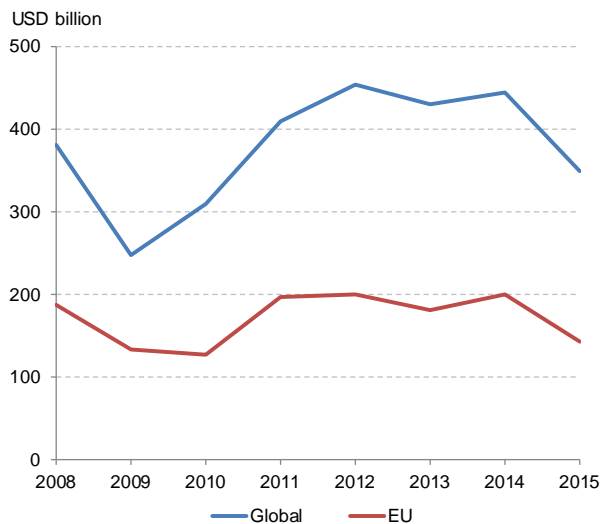
Also, the EU is committed to support the move towards a sustainable, low carbon and resource efficient economy, deliver the 2030 climate and energy policy objectives and the EU's commitments on the Sustainable Development goals. This requires improving the investment environment through the regulatory framework, supporting long term and infrastructure financing and harnessing finance to deliver environment sustainability.

In a rapidly evolving international landscape, the Commission will continue to monitor trends in the development of long-term and sustainable investment and investment in infrastructure assets.

Infrastructure deals

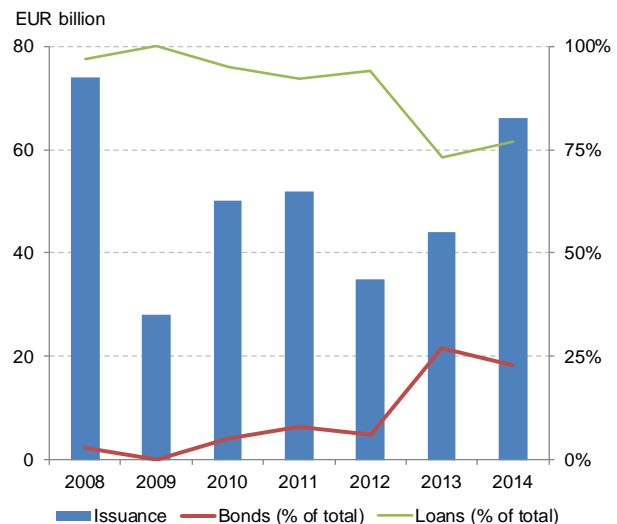
The value of completed infrastructure deals in Europe over the 2011-2015 period has averaged USD 184 billion, representing 45% of deals completed globally. Deal activity slowed down in 2015, reaching USD 143 billion (Chart 2.22).

Chart 2.22: Completed infrastructure deals



Source: Preqin Global Infrastructure Report 2015

Chart 2.23: European project bonds and loans issuance



Source: AFME-ICMA Guide to infrastructure financing 2015 - PFI Thomson Reuters

Project bonds and project loans

⁵¹ See EIB working paper, 2013/02, *Private Infrastructure Finance and Investment in Europe*, page 11

The project bond and loan market has been gradually increasing over the last three years, reaching EUR 66 billion at end-2015, a 25% growth rate from end-2014 (Chart 2.23). While bank loan finance remains the predominant form of project financing in Europe, the weight of bonds has been gradually increasing. In 2013 and 2014, bond financing represented 23% and 27% of European project debt finance, respectively, compared with an average of 6.3% of the previous three years. This shows that the use of bonds, which in the past represented only a small proportion of project financing, has been gaining over the last couple of years.

Public Private Partnerships (PPPs)

A PPP is a venture that is funded and operated through a partnership of government and one or more private sector companies and typically set up to finance and operate long term infrastructure projects in sectors such as transport, healthcare and environment (which together represented 85% of PPP transactions in Europe in 2014).⁵² Even though PPP transactions only represent a fraction of the investment in long term infrastructure assets (for example, the European project bond and loan market represented 3.5 times the PPP market in 2014), this indicator will help assess the attractiveness of PPP ventures to finance long term infrastructure projects.

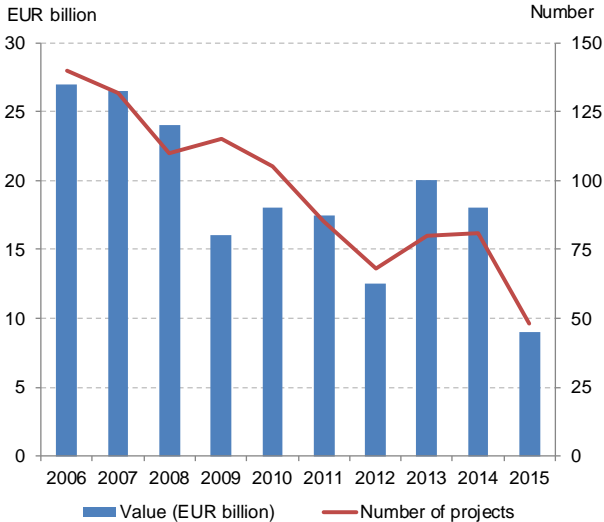
Since 2006, the aggregate value of PPP transactions that reached financial close has overall been on a declining trend since 2006 (see Chart 2.24). It amounted to EUR 4.3 billion in H1 2015, less than half the amount achieved in 2014.

European Fund for Strategic Investment (EFSI)

On the public side, the European Fund for Strategic Investment (EFSI) aims to mobilise at least EUR 315 billion⁵³ in additional investment over 2016-2018 to support strategic investments in key areas such as infrastructure, education, research and innovation, as well as risk finance for small businesses. Its success is therefore relevant

for both objectives 2 (Make it easier for companies to raise funds on capital markets) and objective 3 (Promote investment in long-term, sustainable projects and infrastructure projects) of the CMU Action Plan. The take up of infrastructure or innovation projects under the EFSI instrument represents a useful indicator to assess the extent to which this instrument is boosting long-term investment in Europe. The approval process by the European Investment Bank (EIB) Group having started in April 2015, the number of approved transactions as of 12

Chart 2.24: The European PPP Market



Note: Data represent transactions in the EU, Turkey and countries of the Western Balkans region.
Source: European PPP Expertise Centre (EPEC)

⁵² Source: EPEC

⁵³ With the support of a EUR 16 billion guarantee from the EU budget and EUR 5 billion from the EIB

April 2016 reached 222.⁵⁴ This represented approved financing from the EIB Group of EUR 11.2 billion, expected to trigger a total investment of EUR 82 billion.

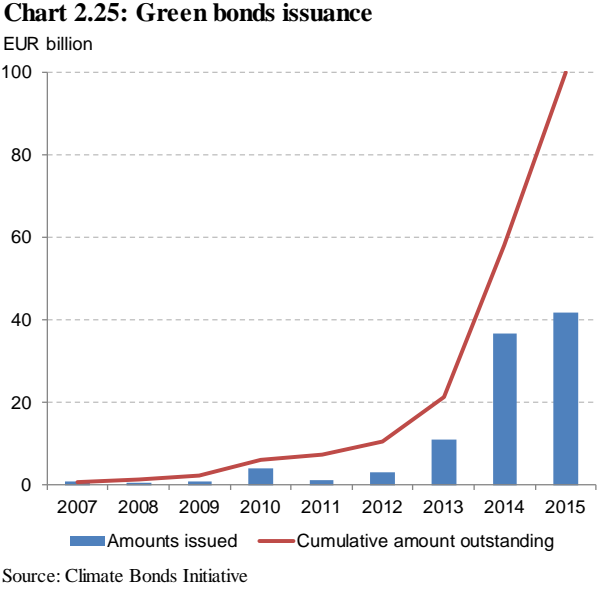
The European Investment Project Portal (EIPP), a web portal aiming at linking EU based project promoters (public or private) and investors and which is part of the Investment Plan for Europe to mobilise investment, is also potentially a useful source of information on European projects in the pipeline, even though the information provided will not be exhaustive.⁵⁵

European Long-Term Investment Funds (ELTIFs)

To qualify as ELTIF under the ELTIF Regulation⁵⁶, which entered into force in June 2015, a fund has to invest at least 70% of its capital in eligible investment assets, which are broadly defined as generally illiquid, requiring commitments for a certain period of time, and having an economic profile of a long-term nature. This indicator will assess the extent to which the regulatory environment created by the ELTIF Regulation is fit for purpose, i.e. boosting European long-term investments in the real economy. Gaps remain in terms of data on long-term and infrastructure investments, and investment by institutional investors (insurance companies, pension funds, investment funds) and banks in long term investment / infrastructure projects, which multilateral organisations such as the OECD, the IMF, the FSB the BIS and the World Bank are working on addressing.⁵⁷

Green bonds and environmental, social and governance (ESG) investment

Green bonds are financial instruments aimed at financing projects generating an environmental, social or governance (ESG) benefit.⁵⁸ The growth of the market of green bonds increases the number and volume of financial instruments aimed at financing projects generating an environmental, social or governance. This market has been expanding rapidly over recent years, with the amount of green bonds outstanding more than doubling between end-2014 and end-2015 (Chart 2.25). However, this market remains marginal at this stage, representing less than 0.1% of the global outstanding debt securities market. As the market develops, it is expected that data on the volume of green



⁵⁴ 57 transactions for infrastructure projects and 165 intermediary agreements signed with banks, leading to financing for 136 000 SMEs
⁵⁵ The EIPP covers projects in the following sectors: knowledge and digital economy; energy union; transport; social infrastructure; resources and environment; financing for SMEs and mid-caps
⁵⁶ As defined in the Regulation (EU) 2015/760 of the European Parliament and of the Council of 29 April 2015 on European long-term investment funds
⁵⁷ See for example the OECD report to G20 Finance Ministers and central banks governors, "Addressing the data gaps in long-term investment: an agenda for research", September 2015 -
⁵⁸ An analysis of the evolution of the green bond market is provided in section 3.4 of the SWD(2015)183 of the Commission: Economic Analysis supporting the CMU Action Plan

bonds issued by European issuers will become available.

According to estimates by EUROSIF of 2014⁵⁹, "systematic integration" of ESG issues, including, on the one hand, investment strategies where investors systematically consider or include ESG analysis when rating or valuing investment and, on the other hand, investment strategies involving mandatory constraints based on findings from ESG research stood at around EUR 1.9 trillion at end 2013, a 65% increase since end-2011, covering 11% of all European professionally managed assets. This trend shows growing awareness and interest among investors. In terms of asset allocation, equities represented about half of European Sustainable and Responsible Investment (SRI) assets at end-2013, up from 33% at end-2011. Bonds represented 40% of SRI assets – 21% in corporate bonds, 17% in sovereign bonds.

The take up of environment-related projects under the EFSI instrument would also help assess the extent to which EFSI promoting sustainable investment in Europe. As of March 2016, of the first 54 projects financed by EFSI, seven were listed by the EIB as being related to the environment sector, resource efficiency and circular economy. This represents total financing of EUR 260 million by the EIB, expected to trigger a total investment of EUR 82 billion. An additional 24 projects can be considered as environmentally positive.

Overview of main indicators⁶⁰	Last 5-year average	Latest observation	Value
Infrastructure deals completed, value, global	USD 184 billion	2015	USD 143 billion
European project bond issuance, value	EUR 7.2 billion	2014	EUR 15.2 billion
European project loan issuance, value	EUR 42.2 billion	2014	EUR 50.8 billion
Public Private Partnership transactions, Europe	EUR 15.4 billion	2014	EUR 18 billion
Number of projects supported by EFSI	NA	15 Jan 2016	42
EIB financing for EFSI-supported projects	NA	15 Jan 2016	EUR 5.7 billion
Expected total investment in EFSI-supported projects	NA	15 Jan 2016	EUR 25 billion
ELTIFs, number	NA	2016	-
ELTIFs, assets under management	NA	2016	-
Green bonds issuance, global, value	EUR 19 billion	2015	EUR 42 billion

⁵⁹ Eurosif, European SRI study, 2014

⁶⁰ Indicators and figures refer to the EU-28, unless indicated otherwise

Objective 4: Foster retail and institutional investment

The CMU aims at fostering retail and institutional investment in order to strengthen and broaden capital-market finance on the supply side of finance.⁶¹ Indicators relevant for this objective will notably look at the *volumes* of different classes of assets held by retail and institutional investors. The indicator framework requires a fit-for-purpose mix of volume and price based indicators. Under the present objective, clearly price indicators appear less relevant. The indicators proposed below make use of the *principle* that any sector's assets are another sector's liability and thus a source of funding.

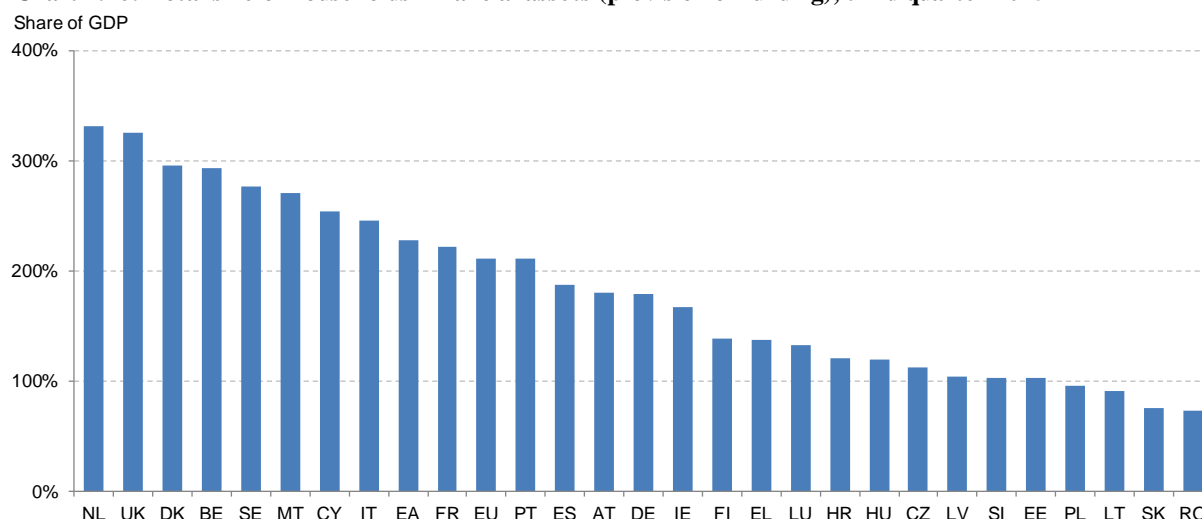
Volume indicators will reflect at any point in time a number of factors not directly linked to the CMU agenda: wider macroeconomic conditions, monetary policy, pension reforms (e.g. changes between first, second and third pillar fiscal incentives, or outright legal changes in which system households can save for the retirement), changes in taxation (e.g. fiscal incentives changing in one Member State may lead to a bilateral shift in volume without necessarily indicating an improvement in terms of achieving the present objective). After indicators have been put forward, the Status Report in spring 2017 will need to take these factors into account when assessing changes in investment volumes under this objective.

Retail investment

Via their savings decisions, households are the main providers of net funding in the economy. However, the size of households' financial assets as a source of financing for the rest of the economy varies widely from country to country. Two indicators will be used: households' financial assets as a share of GDP (Chart 2.26), and share of financial assets other than currency and deposits in total financial assets (Chart 2.27).

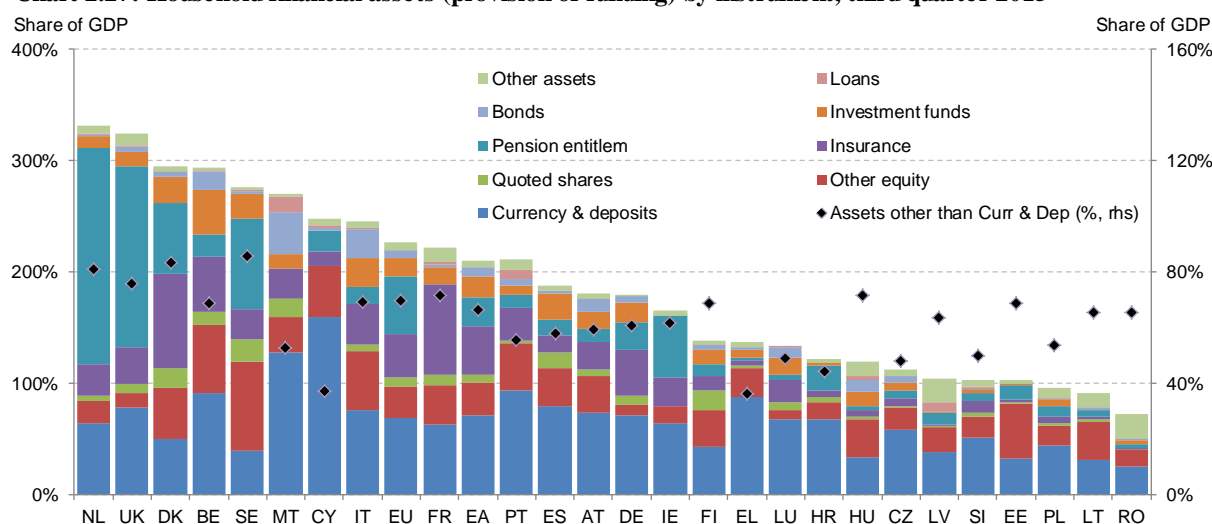
⁶¹ While the jury is still out on the question if structural differences in asset composition of the household sector can be robustly related to differences in productivity growth of the economy as a whole (see European Commission (2015) for a detailed discussion), the CMU Action Plan puts forward the aspect of increased and more ex-ante risk diversification possibilities when households' asset compositions favour alternative funding instruments (other than bank loans). At the same time, the varying degree of consumer protection across different asset classes needs to be taken into account.

Chart 2.26: Total size of households' financial assets (provision of funding), third quarter 2015



Notes: Data for Bulgaria and Cyprus are not available.
Source: ECB, Eurostat and own calculations

Chart 2.27: Household financial assets (provision of funding) by instrument, third quarter 2015



Notes: Data for Bulgaria and Slovakia are not available.
Source: ECB, Eurostat and own calculations

These indicators reflect, to a large extent, households' policy choices about long-term savings instruments. Higher values of these two indicators thus reflect a higher degree of financialisation. In combination with appropriate competition policies and a robust framework of consumer protection, the latter is expected to favour the development of non-bank funding alternatives for companies, longer-term investment, as well as additional risk diversification opportunities for households. When observing an increase in these indicators it will be important to take into account valuation risks, degree of hedging against inflation, as well as protection against outright loss (e.g. due to a failing institution not falling under deposit guarantee schemes).

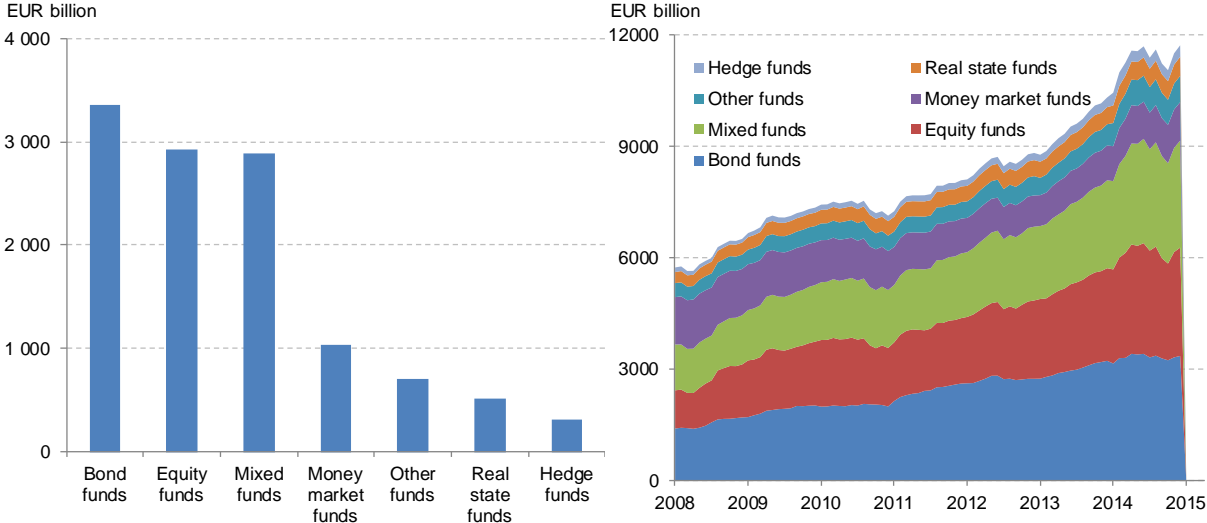
The household sectors with the largest financial size are found in the Netherlands, Denmark, the United Kingdom and Belgium (about 300% annual GDP) followed by Sweden, Malta, Cyprus and Italy (about 200% of annual GDP). This is explained by recourse to pension

schemes to place savings (e.g. Netherlands, the United Kingdom, Sweden and Denmark) or by directly investing in bonds or investments funds, which provide a greater flexibility (e.g. Malta, Italy and Belgium). In a few countries, households have decided to invest largely in insurance products (e.g. Denmark, France, Italy, Belgium and Germany). In most other countries, households maintain their savings mainly in cash (currency and deposits) or invested in non-quoted companies ("other equity"). This constrains the capacity of capital markets to develop.

*Investment funds*⁶²

In relation with the objective of fostering institutional investment, investment funds are among the most important institutional investors. They can be classified according to their investment mandate, which stipulates the type of asset in which the investment portfolio is primarily invested. The decision to create a bond fund or an equity fund may be based on a number of factors such as risk and return expectations, availability of investment opportunities and other choices of investors. Once the funds have been established, their investment choices determine the funding opportunities for issuers (e.g. bond funds are larger than equity funds and therefore more resources from investment funds are available for bonds issuers than for equity issuers).

Chart 2.28: Investment funds by investment policy, total assets, euro area



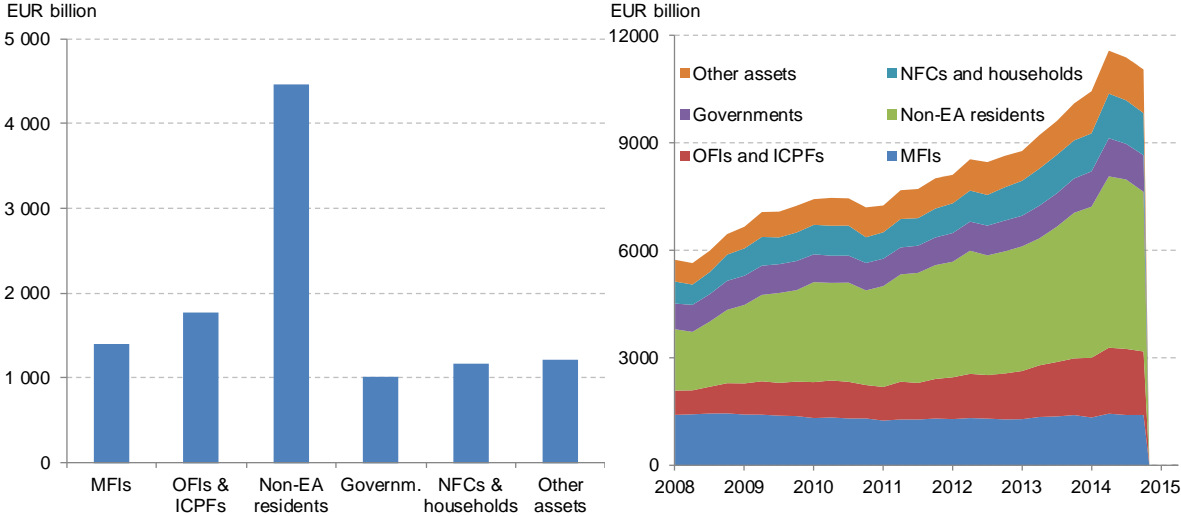
Notes: Data in the left panel is for the end of 2015.
Source: ECB and own calculations

By end-2015, total assets of euro area investment funds reached almost EUR 12 000 billion. Bond funds are the most prominent (accounting for almost 30% of assets), followed by equity funds (25%) and mixed funds (25%); investment funds with other mandates are much smaller. Funds have expanded for all mandates except for money market funds (Chart 2.28).⁶³ It is

⁶² Euro area data is used for these two indicators since United Kingdom data is not available in disaggregated format.
⁶³ However, part of the decline in the size of money market funds is explained by a change in the definition. After a transitional period that ended in January 2012, the definition of money market funds was brought into line with the guidelines issued by the CESR (the predecessor of the European Securities Market Authority – ESMA). The change in definition led to a statistical reclassification from money market funds to other investment funds, estimated at € 180 billion (see ECB, 2014b, p. 33).

also noteworthy that about 90% of the funds managed by euro area investment funds operate from Luxembourg, Germany, Ireland, France or the Netherlands.⁶⁴

Chart 2.29: Investment funds by counterpart, total assets, euro area



Notes: Data for all investment funds, including MMFs.
Source: ECB, Eurostat and own calculations

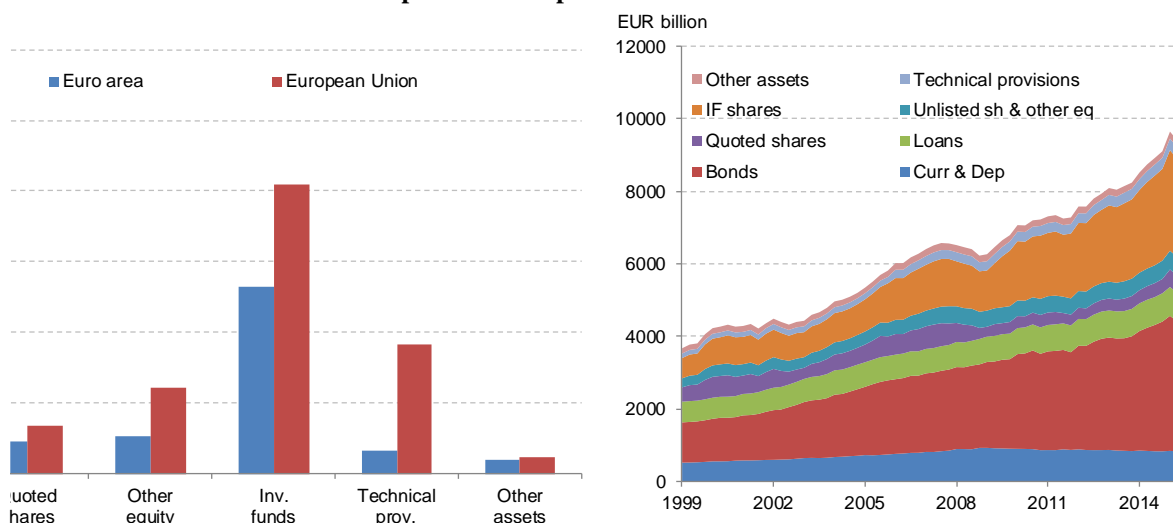
The bulk of investment funds' resources are invested either cross-border or in the financial sector: Monetary Financial Institutions (MFIs), Insurance Corporations and Pension Funds (ICPFs) and Other Financial institutions (OFIs). However, investment funds are also an important source of financing for NFCs as they provide up to EUR 1 030 billion of funds, representing almost 30% of the total volume of bonds issued by NFCs and over 15% of the volume of quoted shares issued by NFCs (Chart 2.29).

Insurance corporations and pension funds

As regards other institutional investors, the investment choices of insurance corporations and pension funds are to a large extent driven by market factors such as returns, risks and investment opportunities. On the other hand, their investment policy also determines the features of how their resources are made available to other economic agents in need of funding. Total assets of insurance corporations and pension funds reached more than EUR 9 000 billion in 2015 (Chart 2.30). The bulk of their assets were invested either in bonds (almost 40%) or in investment fund shares (almost 30%). The long-term expansion in total assets of ICPFs seems to have stopped in early 2015.

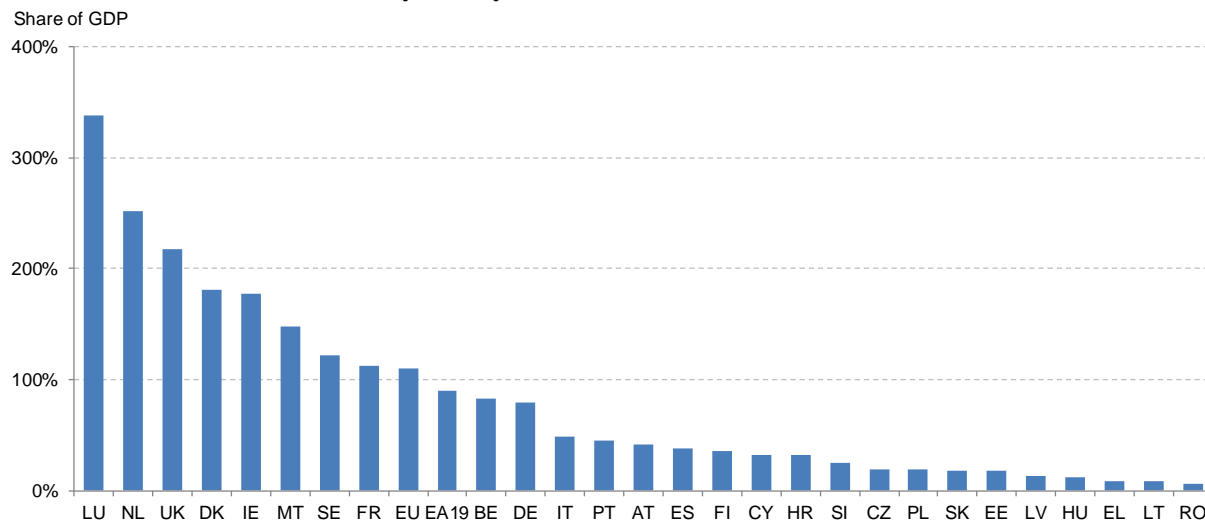
⁶⁴ France, Ireland and Luxembourg account for 96 per cent of the euro area money market funds sector (ECB, 2014b, p. 34).

Chart 2.30: Assets of insurance corporations and pension funds



Note: The right chart contains information on for the euro area
 Source: ECB, Eurostat and own calculations

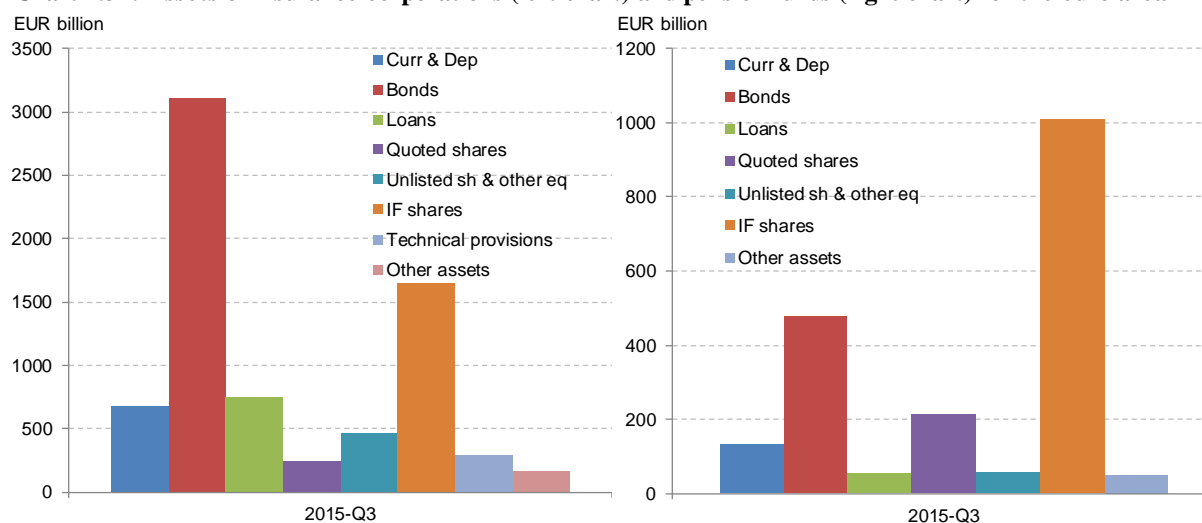
Chart 2.31: Total assets of ICPFs by country



Source: ECB, Eurostat and own calculations

Taken separately, insurance corporations are almost four times as large as pension funds (total assets amounted to EUR 7 300 billion and EUR 2 000 billion at end-September 2015, respectively). While in both cases, the majority of assets are invested in either bonds or investment funds, insurance corporations invest twice as much in bonds as in investment funds; pension funds have the opposite investment policy (Charts 2.32).

Chart 2.32: Assets of insurance corporations (left chart) and pension funds (right chart) for the euro area



Source: ECB, Eurostat and own calculations

Table 2.1: Assets of ICPFs, distribution by country and type of asset, percentage of GDP, 2015 Q3

Country	Total assets	Currency & deposits	Other equity	Quoted shares	Technical provisions	Investment funds	Bonds	Loans	Other assets
LU	337.3%	28.8%	7.7%	17.5%	57.5%	129.3%	90.0%	4.4%	2.1%
NL	251.1%	3.4%	7.0%	21.4%	5.4%	106.9%	75.4%	15.9%	7.0%
UK	217.8%	7.5%	23.9%	5.8%	60.0%	44.5%	59.1%	9.4%	1.9%
DK	180.8%	3.7%	21.7%	7.1%	0.5%	55.2%	77.8%	3.0%	3.6%
IE	177.1%	12.7%	6.2%	31.0%	17.0%	50.8%	45.3%	0.7%	9.8%
MT	148.0%	17.5%	0.7%	20.4%	0.0%	0.8%	40.7%	46.1%	20.8%
SE	122.1%	4.6%	6.6%	20.9%	0.7%	48.7%	36.2%	2.1%	1.7%
FR	112.6%	1.8%	8.5%	3.9%	5.5%	23.7%	67.2%	1.7%	0.0%
EU	110.5%	7.1%	8.4%	5.1%	12.7%	28.7%	38.1%	7.3%	1.8%
EA19	90.3%	7.8%	5.1%	4.4%	3.1%	25.7%	34.7%	7.7%	1.8%
BE	83.4%	2.4%	4.2%	2.9%	1.8%	12.0%	52.4%	6.7%	1.1%
DE	79.9%	16.6%	6.5%	0.5%	2.4%	28.4%	12.7%	10.6%	2.1%
IT	48.6%	1.6%	2.8%	2.1%	0.2%	9.1%	32.2%	0.6%	0.0%
PT	45.1%	4.6%	1.8%	2.8%	0.4%	5.2%	28.5%	0.1%	1.7%
AT	42.2%	1.7%	4.5%	0.3%	1.9%	15.3%	16.0%	2.0%	0.4%
ES	37.7%	5.5%	1.0%	2.0%	1.5%	2.9%	22.4%	0.5%	1.9%
FI	35.9%	1.7%	1.2%	1.1%	0.0%	17.5%	12.2%	0.9%	1.2%
CY	32.6%	11.5%	0.3%	0.8%	1.7%	6.5%	5.5%	4.1%	2.3%
HR	32.3%	1.5%	0.3%	4.6%	0.5%	1.9%	21.9%	0.6%	0.9%
SI	24.5%	1.8%	1.5%	0.9%	0.5%	4.4%	14.5%	0.3%	0.7%
CZ	19.4%	1.2%	0.4%	0.1%	0.9%	2.1%	13.9%	0.0%	0.7%
PL	18.7%	1.2%	0.7%	7.2%	0.5%	3.1%	4.5%	0.2%	1.3%
SK	17.7%	1.8%	0.2%	0.2%	0.5%	2.9%	11.7%	0.0%	0.4%
EE	17.5%	3.1%	0.6%	0.4%	0.1%	8.2%	4.9%	0.0%	0.2%
LV	13.9%	2.1%	0.1%	0.2%	0.0%	4.4%	6.4%	0.0%	0.7%
HU	12.1%	0.7%	0.1%	0.3%	0.3%	3.3%	7.3%	0.0%	0.2%
EL	8.5%	1.4%	0.2%	0.1%	0.3%	1.3%	4.5%	0.1%	0.7%
LT	8.3%	0.5%	0.0%	0.1%	0.0%	3.8%	3.6%	0.0%	0.3%
RO	6.0%	0.4%	0.1%	0.5%	0.5%	0.6%	3.7%	0.0%	0.3%

Source: ECB, Eurostat and own calculations.

Indicator⁶⁵	Last 5-year average	Latest observation / Starting point	Value
Households financial assets, EUR (% of GDP)	NA	2015q3	EUR 32 778 billion (227%)
Share of financial assets other than currency and deposits over total households' financial assets, EUR (% of GDP)	NA	2015q3	EUR 22 838 billion (69.7%)
Total assets of investment funds (euro area), EUR (% of GDP)	EUR 8 944 billion	2015q4	EUR 11 723 billion (81.3%)
Total assets of insurance corporations and pension funds, EUR (% of GDP)	NA	2015q3	EUR 15 927 billion (110.5%)

⁶⁵ Unless otherwise indicated indicators are for EU.

Objective 5: Leverage bank capacity to support the economy

As large lenders to the economy and important intermediaries in capital markets, banks will continue to play an important role in the European economy and the CMU. The CMU Action Plan aims at leveraging their capacity to support the wider economy, notably by supporting Simple, Transparent and Standardised (STS) securitisation. Covered bonds are also instrumental for credit institutions to channel funds at competitive conditions to specific sectors of the economy. Lastly, credit unions can be particularly supportive to smaller companies, in particular SMEs.

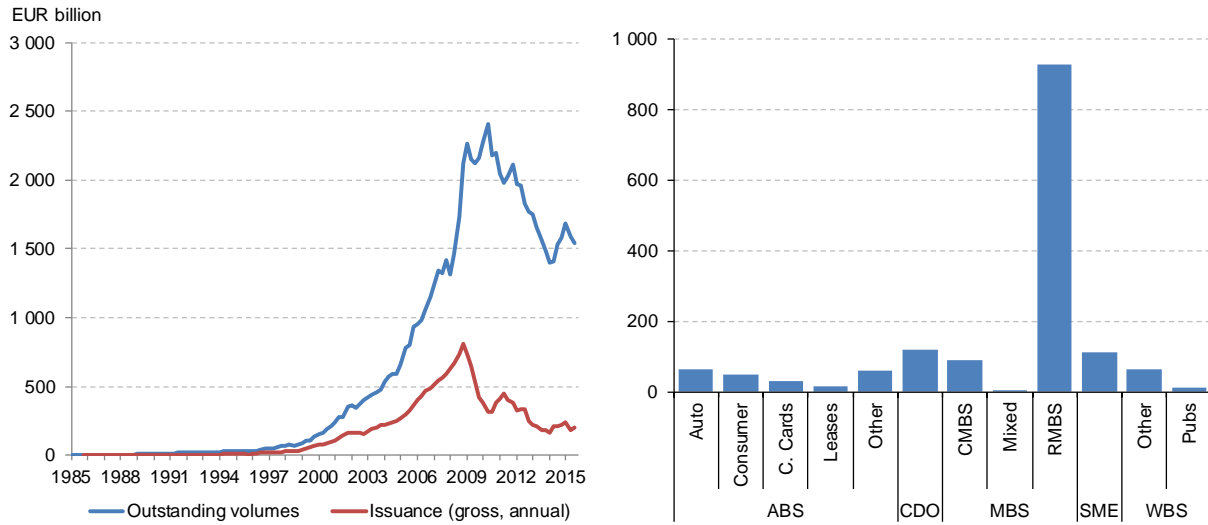
Indicators relevant for this objective will notably look at the size and main features of securitisation and covered bonds markets, and the volumes lent by credit institutions. The evolution of bank lending to SMEs will also be assessed.

Securitisation

Residential mortgages account for over 60% of the underlying assets for securitisation in Europe (Chart 2.33, right-hand panel). 80% of securitisation is originated by banks with the aim of managing capital requirements for credit risk, or to generate liquidity (e.g. by pledging a covered bond at the central bank). Charts 2.34-2.36 provide complementary information on this indicator whose economic interpretation will precisely depend on the degree of placement versus retention by originators. The aggregate indicator can be misleading in terms the geographical dimension as four countries (United Kingdom, Spain, Netherlands, Italy) account for more than 70% of all securitisation activities in the EU. Within those four EU Member States, securitisation represents between 12% (Italy and Spain) and 33% (the Netherlands) of the total loan portfolio of banks, and between 22% (Spain) and 60% (the Netherlands) of total loans to households. The average maturity of securities outstanding in the third quarter of 2015 was 5.3 years.

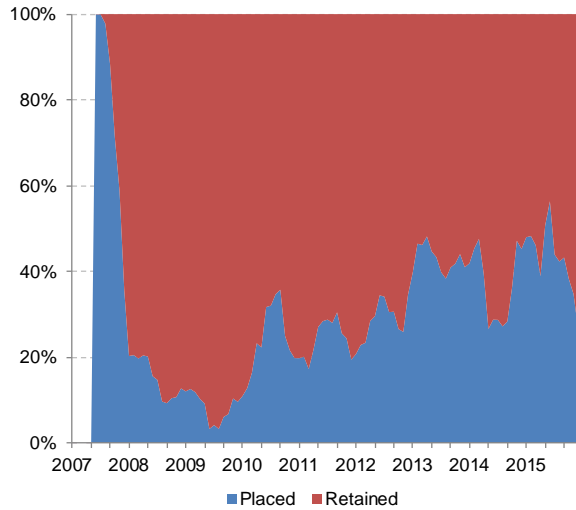
The volume of securitisation in Europe expanded from less than EUR 100 billion in early 2000 to a peak of over EUR 2 400 billion in 2010, but declined thereafter; gross issuance declined already since 2008. Since early 2014, a stabilisation is observable for both outstanding volumes and gross issuance (Chart 2.33, left hand panel).

Chart 2.33: Securitisation in Europe - total outstanding amounts and by collateral class (2015-Q3)



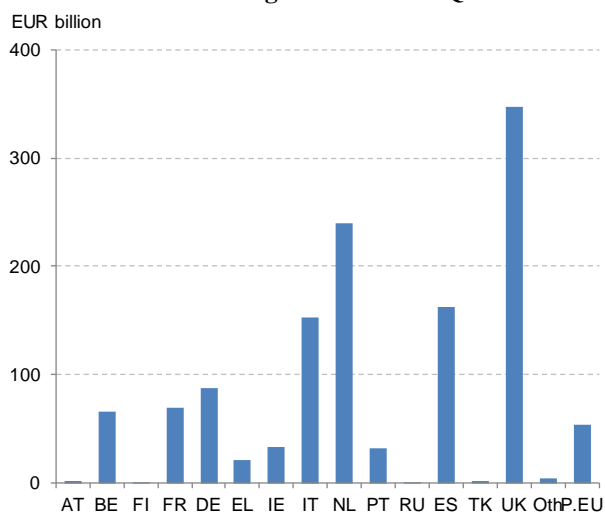
Notes: ABS: asset-backed securities; CDO: collateralised debt obligations; MBS: mortgage-backed securities; CMBS: commercial mortgage-backed securities; RMBS: residential mortgage-backed securities; SME: small and medium-sized enterprises; WBS: whole business securitisation.
Source: AFME, SIFMA, ECB and own calculations

Chart 2.34: Securitisation in Europe: Issuance by retention percentage, 6-m moving ave.



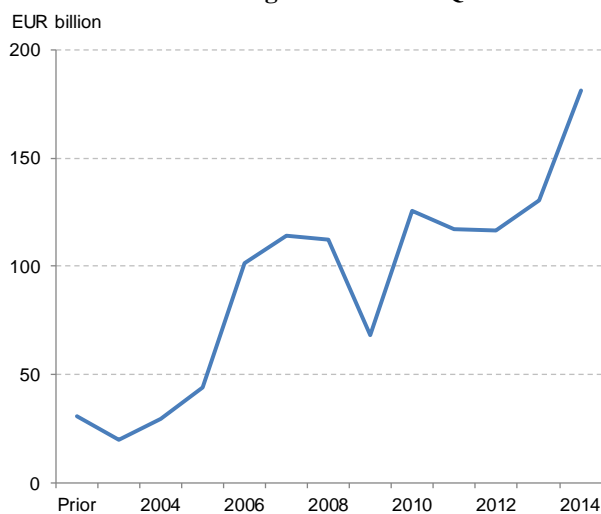
Source: AFME, SIFMA, ECB and own calculations

Chart 2.35: Securitisation by country of collateral, outstanding amounts 2015-Q3



Notes: P.EU: PanEuope (multinational).
Source: AFME

Chart 2.36: Securitisation by vintage in Europe, outstanding amounts 2015-Q3

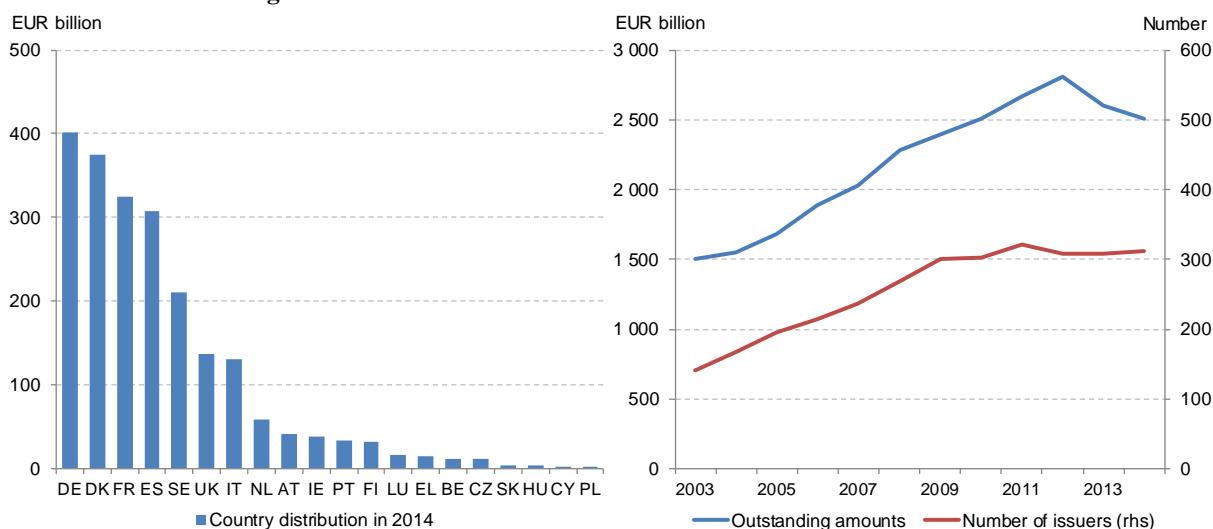


Notes: 2014 includes data up to 2014 Q3 only
Source: AFME

Covered bonds

Covered bonds are another form of creating liquidity from otherwise illiquid asset pools. Issuance is concentrated in a few EU Member States only. CMU aims to foster the recourse to covered bonds by a wider group of issuers and across a larger group of countries. In 2014, outstanding volumes of covered bonds stood at between EUR 300 billion and EUR 400 billion in Germany, Denmark, France and Spain, while it amounted to between EUR 130 million and EUR 210 million in Sweden, the United Kingdom and Italy (Chart 2.37, left-hand panel). In terms of evolution, total outstanding amounts peaked in 2012 and have declined since. Similarly, the number of issuers has plateaued at about 300 since 2009 (Chart 2.37, right-hand panel).

Chart 2.37: Outstanding volumes of covered bonds



Source: European Covered Bond Council and own calculations

Overview of indicators⁶⁶	Last 5-year average	Latest observation	Value
Volume of securitisation outstanding	EUR 1 697 billion	2015q3	EUR 1 544 billion
Volume of securitisation gross annual issuance	EUR 280 billion	2015q3	EUR 201 billion
Outstanding volume of covered bonds	EUR 2 618 billion ⁶⁷	2014	EUR 2 504 billion

⁶⁶ Indicators and figures refer to the EU-28, unless indicated otherwise

⁶⁷ Average 2010-2014.

Objective 6: Facilitate cross-border investment and promote financial stability

Cross-border investment and international risk sharing

The CMU Action Plan aims to facilitate cross-border investing by tackling remaining (national) barriers to the creation of a single market for capital. As a result, firms operating in different parts of the Single Market should be less constrained by the availability of local (domestic) savings, and be able to tap funds available throughout the CMU as well as globally. Observed foreign direct investment (FDI) and portfolio investment flows do not necessarily pick up all the beneficial impacts of the creation of a single market for capital since the latter works through both volume and price shocks. While in some cases the expected result of eliminating barriers will be an increase in cross-border capital flows, in other cases the mere threat of more abundant capital provided by non-residents will help destroy rents of national incumbents. Consequently, an effective reduction in remaining barriers to cross-border investment will also help to achieve the other objectives of the CMU Action Plan.

To monitor capital market developments relevant for this objective, three types of indicators are available. First, indicators that monitor *institutional and policy factors that impact investment decisions* of individual agents: in this category, two indicators are available: (i) a measure of the efficiency of national rescue and recovery frameworks; and (ii) the cost of burdensome withholding tax procedures. Second, an indicator that monitors *cross-border capital mobility*: the evolution of the degree by which domestic investments appear to be constrained by the evolution of domestic savings. Lastly, a third group of indicators monitors the financial integration of the EU economy: (i) price-based indicators for bond and equity market integration⁶⁸; and (ii) a broad volume-based measure for consumption risk sharing.

The second sub-section under this objective serves as a reminder that all these indicators for increased financial integration have to be monitored jointly with indicators of risks to financial stability, to make sure that increased capital market funding does not give rise to new sources of risk.

Efficiency of rescue and recovery frameworks

The CMU Action Plan foresees targeted actions on securities ownership rules and third-party effects of assignment of claims, tracks the removal of remaining *Giovannini* barriers, and provides a legislative initiative on business insolvency to address important barriers to the free flow of capital.⁶⁹ Whereas international risk sharing indicators have been developed over the last quarter of a century, the CMU Action Plan confirms a new focus on the role of insolvency regimes for market-based finance. On insolvency regimes, Carpus Carcea et al. (2015)⁷⁰ have developed a bottom-up indicator for the efficiency of rescue and recovery

⁶⁸ See JRC Report 27792 by Nardo et al. (2016).

⁶⁹ These actions, once implemented, should result also in the capital mobility coefficient to decrease; see below.

⁷⁰ This is based on joint work carried out in DG ECFIN and DG JUST; DG FISMA has been associated to this workstream at various stages as well.

frameworks. It is proposed to monitor two dimensions of this indicator: (i) an increase in the median, and (ii) a reduction in the variance (Chart 2.38).

In a fully integrated economic area with free movement of capital, remaining differences in user cost of capital must be driven by national distortions such as differences in taxation as well as differences in transaction costs.⁷¹ More or less restrictive insolvency regimes certainly belong to the latter category.⁷² Differences in *insolvency regimes* make it difficult for investors to calculate loss given default (LGD) values.

As the Commission has been pointing out in the CMU context, this impact is even more present in the context of investing across borders. This potential to discourage investment has long been recognized in economic models of banking, where the very existence of a special, trusted financial intermediary is explained by the presence of (strong) informational asymmetries, lack of commitment mechanisms on the side of borrowers, and the resulting excessive user capital costs.⁷³ However, discussions around the CMU initiative have triggered a more direct look at differences in national insolvency regimes and their capacity to hamper the provision of non-bank funding across borders.⁷⁴

Since the 1990s, EU Member States have successively introduced new, and/or rendered more flexible their national rescue and recovery schemes, often strengthening the role of pre-insolvency and out-of-court proceedings that provide additional flexibility and can also make insolvency schemes more credible ex-ante. However, much remains to be done to improve their efficiency in a cross-border context, as well as to make procedures sufficiently transparent, e.g. to allow investors to calculate loss given default estimates for the pricing of securities more swiftly and in a more transparent way.

Less costly withholding tax procedures

The economic impact of national tax distortions hurts cross-border investment. This section focuses on the withholding tax and in particular the cost of burdensome withholding tax procedures. The economic impact of the complexity of reclaim procedures is threefold: (i) the foregone tax relief, representing the fact that many investors, and in particular small investors, do not claim their tax refund; (ii) the costs related to current reclaim procedures, which involve different paper forms and filing of documents; and (iii) the opportunity cost due to delayed claims and payments of tax refunds.

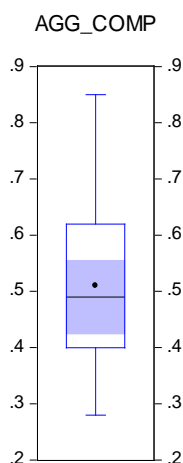
⁷¹ See Annex A3.6 for a detailed exposition of this argument.

⁷² Using the bottom-up insolvency indicator of Carpus Carcea et al. as additional control in the estimated capital structure model of Kühnhausen and Stieber (2014) we find the same negative (statistically significant and sizeable) impact on corporate leverage as Reindl et al., fully in line with the trade-off theory of corporate capital structure where firms increase leverage in order to benefit from debt tax shield until a certain (limiting) likelihood of insolvency is reached.

⁷³ See e.g. Stiglitz and Weiss (1981), Diamond (1984), Tirole (1997).

⁷⁴ Different national insolvency regimes can produce similar effects as explicit capital account restrictions (e.g. for a certain type of financial service to be provided cross border). Reindl et al. (2013) find strong evidence that efficient insolvency regimes (that permit the restructuring of company liabilities) put an upper bound on financial leverage of corporation; thus, efficient insolvency frameworks favour a broader choice of funding instruments, and at the same it complements the wider macro-prudential toolkit by making it less likely that corporations take on excessive debts.

Chart 2.38: Differences in efficiency of national rescue and recovery frameworks in EU Member States



Note: Box-Whisker plots: higher values indicate higher efficiency in recovering value for investors, the solid black line shows the median (the shaded area being its 95% confidence interval), the solid dot shows the arithmetic mean; Source: Carpus Carcea et al. (2015)

Chart 2.39: Economic impact of burdensome withholding tax procedures

Cross-border holdings in EU (USD trillion, current prices)		
	2006*	2014**
Total	16.7	22.1
o/w equities	6.4	8.8
o/w debt	10.3	13.3
Intra-EU		
o/w equities	10.5	13.4
o/w debt	3.6	4.6
	6.9	8.8
Estimated annual costs for investors (EUR billion)		
Foregone tax relief	5.47	6.03
Costs related to reclaim procedures	1.09	1.21
Opportunity cost	<u>1.84</u>	<u>1.16</u>
Total annual cost	8.4	8.4

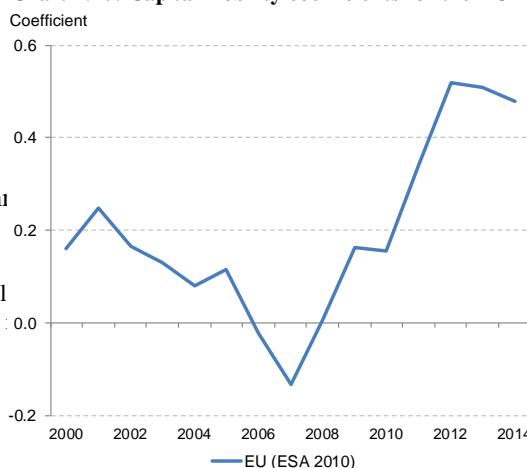
*Source: Commission SWD "The Economic Impact of the Commission; Recommendation on Withholding Tax Relief Procedures and the FISCO proposals", 24 June 2009; **Source: updated calculations by the JRC in 2016

The first estimation was done by the Commission and the JRC in 2009, in a document⁷⁵ that supported the 2009 Commission Recommendation on Withholding Tax Relief Procedures and the FISCO proposals".⁷⁶ The second estimation was calculated by the Joint Research Center (JRC) in early 2016, using the same methodology as the one used in 2009 (Chart 2.39). In 2015, the cost of burdensome withholding tax procedures totalled EUR 8.4 billion, when adding the cost of foregone tax relief due to burdensome compliance procedures (EUR 6.03 billion), the cost related to the current reclaim procedures (EUR 1.21 billion), and the opportunity cost due to delayed claims and payments of tax refunds (EUR 1.16 billion). While the two earlier costs increased compared to the estimation of 2009, opportunity costs decreased, as a result of declining interest rates.

Capital mobility coefficients

The capital mobility coefficient⁷⁷ measures the degree by which investments are constrained by available domestic savings in any EU Member State; an estimated value of 1 suggests that domestic investments are fully constrained by savings of residents; a value of 0 suggests the absence of such constraints. A

Chart 2.40: Capital mobility coefficients for the EU



Note: Lower values indicate higher mobility.
Source: European Commission services based on Darvas et al. (2015)

⁷⁵ Commission SWD "The Economic Impact of the Comi Procedures and the FISCO proposals", 24 June 2009

⁷⁶ (2009/784/EC)

⁷⁷ The capital mobility coefficient is the estimated *beta* of the fol constant + *beta* * Gross saving rate; the gross investment : 0 accounts .

lower value in a given year signals that domestic investments were less constrained by domestic savings as alternative investment projects received their funding increasingly from the entire EU. Thus, this indicator⁷⁸ is based on the notion that in an integrated economic area, savings should not be strongly correlated to investments in any specific country.

The capital mobility coefficient indicator is among the best-established for measuring the actual impact of restrictions to capital movements. In the absence of national restrictions, cross border investment flows would be expected to enforce a *law of one price* across similar investment opportunities within the Single Market. However, remaining national distortions, e.g. due to differences in taxation and differences in national insolvency, can be important barriers even under a fully liberalized capital account regime as in the EU.⁷⁹ For annual assessment purposes, the coefficient is estimated year by year, and the change of the estimated coefficient can be monitored over time (Chart 2.40).

The sovereign debt crisis has resulted in a reduction in capital mobility (e.g. due to increased ring fencing of national savings); the indicator reflects this using annual data mainly in 2011 and 2012; and even afterwards, in 2013 and 2014, the indicator has remained at a level that signals low capital mobility at least in an historical perspective.⁸⁰ However, it is not known with any degree of certainty where this indicator should be expected to be at this stage, given that some of the capital mobility before the crisis might be considered unsustainable today. Therefore, a coefficient suggesting that roughly half of idiosyncratic shocks to national savings feed through to domestic investment behaviour could just be a more realistic picture of the degree of effective capital mobility *in the absence* of unsustainable short-term, and mostly credit-based capital flows.

More recent contributions to the economic literature have provided alternative measure(s) of global market integration, which are discussed in the next two sections.⁸¹

Integration of capital markets

Indicators⁸² to monitor the price-effects of more or less integrated capital markets are based on measures of the sensitivity of domestic European stock markets to global, US or European shocks. The common rationale is to measure the extent to which domestic equity and bond markets exhibit volatility following external shocks. More integrated capital markets improve the transmission of shocks, i.e. they are expected to be more resilient. Exploiting the correlation of stock market returns gives two indicators of integration of capital markets (only equity markets in this case).

One such indicator is the observed proportion of US and European shock volatility incorporated in the domestic volatility of equity returns (Proportion of Variance, or PV). Another indicator is the sensitivity of domestic returns to US and EU shocks (spillover intensity, SI). In both cases, *higher* values signal more integrated markets.

⁷⁸ See also Horioka and Feldstein (1980).

⁷⁹ See Box 3.1 for a formal derivation of such remaining national distortions.

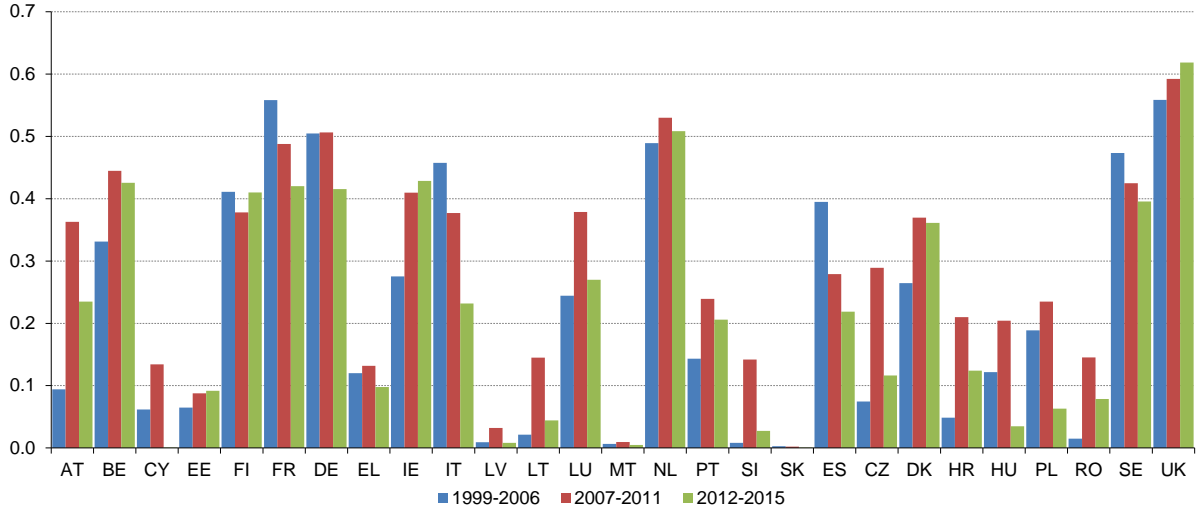
⁸⁰ See also European Commission (2015) and in the literature cited there.

⁸¹ See Pukthuanthong et al. (2009) and ECB (2014, 2015).

⁸² See JRC Report 27792 by Nardo et al. (2016).

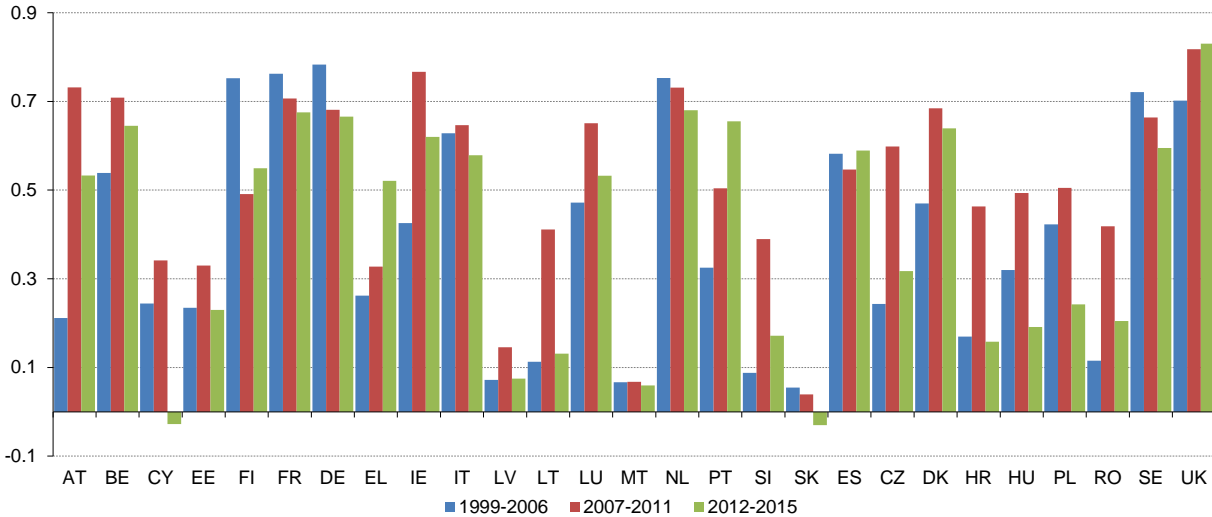
The economic intuition is that more integrated equity markets lead to better shock absorption and thus render the economies hosting these markets more resilient. These equity price-based indicators therefore also provide a consistency check for the indicator on consumption risk sharing below. Indeed, the estimated price-based indicators show a similar pattern as the indicator for capital mobility and the consumption risk sharing indicator.

Chart 2.41: Indicator of equity market integration - proportion of variance (PV) indicator



Note: The simulations use U.S. originated equity price shocks; Source: Bloomberg, JRC calculations.

Chart 2.42: Indicator of equity market integration - spillover intensity (SI) indicator



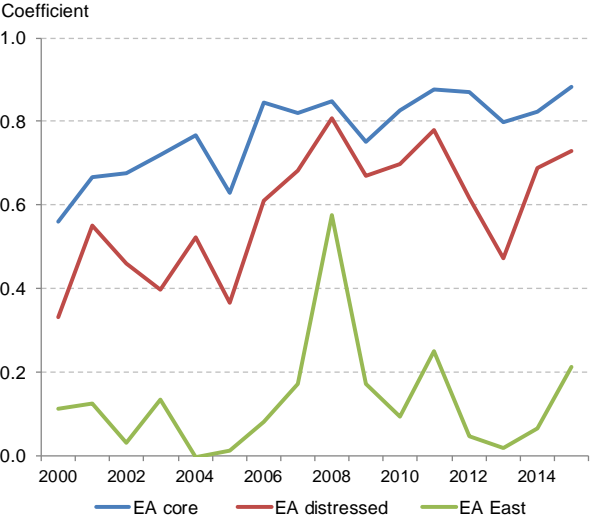
Note: The simulations use U.S. originated equity price shocks; Source: Bloomberg, JRC calculations.

Using data for the period 1999-2015, the price-based indicators confirm the integration narrative of the volume-based indicators above: integration of equity markets increased until 2011, whereas the years of the sovereign debt crisis in the euro area show a more mixed picture. Both indicators (Charts 2.41 and 2.42) show that equity returns in some European countries (no matter the currency used) were driven to a large extent by global shocks (here proxied by US shocks, e.g. a major downward correction of companies listed on the New York Stock Exchange), whereas other EU Member States show a lower degree of integration.

For Denmark, Sweden and the United Kingdom, the proportion of variance explained by US-generated shocks is similar to that of the euro area core countries (about 45%).

Another EU equity market integration indicator is based on common factor portfolios: higher values would signal more integrated equity markets. This indicator identifies a set of recurrent common patterns in EU and World stock and bond markets. Domestic returns are matched against these global factors to see the degree of co-movement.⁸³ To what extent these global factors are able to account for the variability in domestic returns is interpreted as an indicator of the degree of integration of equity markets.⁸⁴ An indicator close to zero points to national equity and bond markets dominated by idiosyncratic (domestic) shocks, while an indicator close to one indicates a high degree of integration. Again, the underlying logic is that more integrated capital markets can absorb losses more swiftly and improve the resilience of their economies.

Chart 2.43: Equity market integration based on common factor portfolios



Source: JRC calculations

JRC estimated common factor portfolios for the time period 2000-2015 for all Member States countries, adding also Switzerland, China, Japan, USA and Canada to account for international factors potentially influencing EU markets.⁸⁵ Results for equity markets (Chart 2.43) show an increasing role of global factors for some Member States. In the last two years 2014-2015, this role has increased for all Member States in the sample. Again, the indicator picks up the dis-integration effect of the euro area sovereign debt crisis. Other features also confirm the findings of the previous indicator of integration of equity markets.

Degree of consumption risk sharing

Of all the indicators discussed in this section, this indicator⁸⁶ comes closest to an indicator of the impact on jobs and growth. Also, this indicator should pick up removal of cross-border tax barriers in particular in relation to cross-border asset diversification by pension funds and life insurers. It serves to some extent as a catch-all measure, picking up several impacts relevant to all six CMU objectives. The indicator of consumption risk sharing shows a lower value in any given year if a more integrated CMU increases risk sharing opportunities; e.g., if

⁸³ The common factor portfolio approach models common patterns in financial markets as response to a set of latent variables obtained from returns on a portfolio of stock and sovereign bond markets worldwide. For EU, CH, CN, CA, US and JP two price indicators are used for the calculation (1) the price indices representing the largest proportion of trade in each stock exchange; (2) the yields of the generic benchmark sovereign bond with maturity of 10 years; see JRC Report 27792 by Nardo et al. (2016) for further details.

⁸⁴ Technically the indicator of financial integration is the adjuster R² of the regression of domestic returns on the global factors.

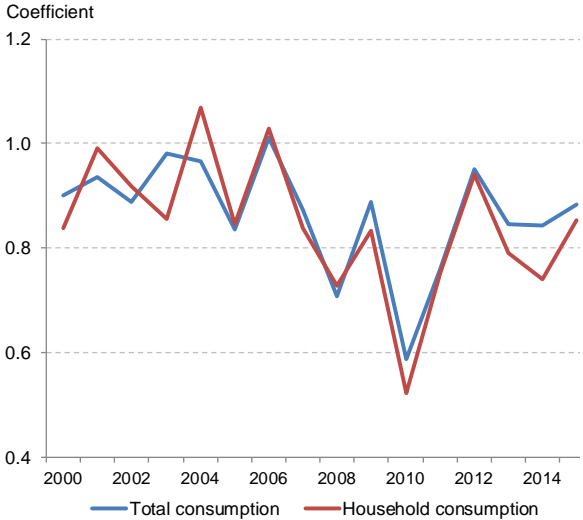
⁸⁵ The indicator shows the average (median) adjusted R² across groups of countries for equity markets; see JRC Report 27792 by Nardo et al. (2016) for details.

⁸⁶ See the contributions of Cochrane (1991) and Mace (1991); the indicator is estimated as the *beta* in the following (panel regression) equation: growth rate of country i's private consumption = constant + *beta**growth rate of GDP of country i.

households hold equity issued by non-residents, their consumption will be less affected by a shock to domestic resources as the revenue stream generated from foreign assets will not be affected. The indicator takes the value of zero in the case of full risk sharing, since in this case consumption should not depend on idiosyncratic shocks (as idiosyncratic risk is diversifiable), i.e. consumption should be perfectly correlated with aggregate shocks to economic resources of the EU. Symmetrically, the indicator would take the value of one in the total absence of consumption risk sharing. Chart 2.44 shows the estimated coefficient for an EU panel.

Several studies⁸⁷ use this kind of indicator as a starting point for an inquiry into the risk sharing potentials of different financial structures. They suggest that capital markets outperform bank debt and fiscal transfer (e.g. via social security systems). In particular, risk sharing arrangements primarily based on integrated equity markets are capable of providing effective *ex-ante* risk sharing and are able to deal with both transitory *and* permanent shocks. In contrast, risk sharing arrangements primarily based on integrated debt markets can also provide effective risk diversification, but in addition they can also accelerate the propagation of risks. Debt markets are better equipped to deal with transitory shocks, and risk sharing takes place in an *ex-post* manner rather than *ex-ante* as in the case of equity markets.⁸⁸

Chart 2.44: Indicator of consumption risk sharing



Notes: A value of zero indicates full consumption risk sharing. The Coefficient 2015 is for the entire 2000-2015 panel.
Source: European Commission, AMECO

Between 2000 and 2015, the average coefficient is estimated to lie in the range of 0.85 to 0.88 signalling the low degree of risk sharing that has been documented in previous studies; yearly regression coefficients relevant for CMU have been estimated to lie between 0.8 (i.e., 20% of the consumption risk is shared) and 1 (i.e., no risk sharing), with stronger degree of risk sharing in the period 2008-2011⁸⁹. More often than not, shocks to national gross domestic products feed through almost unfettered to reduced or increased consumption opportunities during those years.^{90, 91}

⁸⁷ See e.g. Asdrubali et al (1996), Demyanyk and Volosovych (2008), as well as Jappelli and Pistaferri (2011) for international comparisons;
⁸⁸ This theme is developed in greater detail in the SWD accompanying the CMU AP (European Commission (2015)), and in the literature cited there.
⁸⁹ This higher degree of aggregate risk sharing is driven by EU Member States that benefitted from multilateral financial assistance programmes.
⁹⁰ The Commission has pointed on many occasions to a continued lack of cross border financial intermediation in this context, e.g. in its recent Green Paper on Retail Finance.
⁹¹ Moreover, the estimated coefficient seems to roughly follow the policy approach to capital accounts in the EU: a first wave of liberalization measures in the 1960s (values between 0.2 and 0.6), and a second period with a robust trend towards more risk sharing from 1995 to 2007. However, both periods are associated with high volatility (first period), or lack of sustainability (second period). The European Commission monitors (and enforces the right of) free movement of capital as one of the four elementary freedoms within the Single Market; also, it reports on the evolution of cross border investment in an annual report to the EU's Economic and Financial Committee (EFC).

Promote financial stability

As developments during the first decade of EMU have shown, increasing financial integration requires adequate macro-prudential frameworks. This is why indicators that capture the integration-stability trade-off are also necessary.

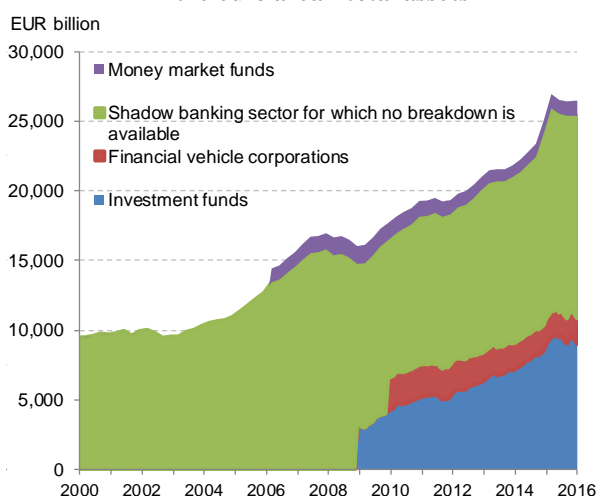
A well-functioning CMU will diversify and increase funding sources for the economy and strengthen its resilience. Truly integrated capital markets will also strengthen cross-border risk distribution, notably by deepening the integration of bond and equity markets. This will entail a broader dispersion of the impact of shocks. All this will contribute to increasing financial stability.

At the same time, increased capital market funding may give rise to new sources of risk and risk transmission channels. Possible adverse implications of greater cross-border risk sharing in terms of tightening interconnectedness and increasing the potential for cross-border spillovers of risk needs to be monitored.

The starting point of this monitoring will be an assessment of the role of the non-bank financial sector along several dimensions, recognising also that its size – as measured by the aggregate net asset value of non-bank entities – is not commensurate to riskiness. For this, the two approaches taken by the Joint Expert Group on Shadow Banking (JEGS) of the European Systemic Risk Board (ESRB) in its forthcoming EU Shadow Banking Monitor will be taken into account, also supported by data from ESMA.⁹² The ESRB assesses market-based finance developments by mapping and monitoring risks either coming from financial institutions ("entity-based approach") or from their intermediation activities ("activity-based approach").

The entity-based approach involves first aggregating balance sheet data of financial intermediaries taken from national financial accounts and monetary statistics, then narrowing it down to entities involved in credit intermediation activities that have more specific potential to pose systemic risk. Under this approach, in order to compute the so-called broad measure of EU non-bank financial entities (including investment funds, other financial institutions (OFIs) and financial vehicle corporations (FVCs)) the following indicators will notably be used: size (total financial assets) (Chart 2.45) and growth rates⁹³ of the balance sheets of investments funds and OFIs; total financial asset size of the non-bank sector, broken

Chart 2.45: Balance sheet of Non-bank institutions in the euro area - total assets



Notes: Investment funds do not include money market funds. Data collection started at different times for the various subsectors.

Source: ECB, Eurostat and own elaboration

⁹² The first EU Shadow banking Monitor is foreseen to be released in the fall of 2016. This methodology is aligned with and built upon the methodology developed by the FSB for the monitoring of shadow-banking risks at the global level.

⁹³ Annual growth rates are based on changes in outstanding amounts, i.e. including the impact of FX or other revaluations and statistical reclassifications.

down by type of entity (money-market funds (MMFs) and non-MMF investment funds, FVCs; non-securitisation special-purpose entities and OFIs); various indicators for investment funds (Net Asset Value (NAV); net issuance, etc.) and OFIs (FVCs' asset holdings, loans securitised by FVCs, etc.). Data for the total OFI sector are sourced from financial accounts statistics, while data on investment funds and FVCs are based on ECB monetary statistics.

The size of the euro-area shadow non-bank financial sector⁹⁴, as measured by its total assets, has been growing rapidly, more than doubling between 2005 and 2015. This reflects increases in the flow of funds to some non-bank entities (e.g. OFIs, investment funds), but also some valuation effects (e.g. price and FX revaluations).

Under this entity-based approach there are several **indicators of potential risks**, also developed by the JEGS:

- the *credit intermediation indicator* (ratio of loans and debt securities holdings to total assets), which assesses the extent to which non-bank financial institutions provide credit to the economy
- the *maturity transformation indicator* (ratio of long-term assets to total assets), where long-term assets are defined as loans and debt securities with original maturity of over one year
- the *liquidity transformation indicator* (ratio of investment fund shares less liquid assets over total assets), where liquid assets are defined as currency, deposits, debt securities with original maturity of under one year, shares and other equity (listed shares and investment fund shares/units)
- the *leverage indicator* (ratio of total assets over investment fund shares)
- the *interconnectedness indicator*, depicting asset- and liability-side interlinkages of the banking sector with the non-bank financial sector (exposure of the banking sector towards Other Financial Institutions (OFIs); exposure of non-bank financial entities to the banking sector).

Leverage in the investment fund sector

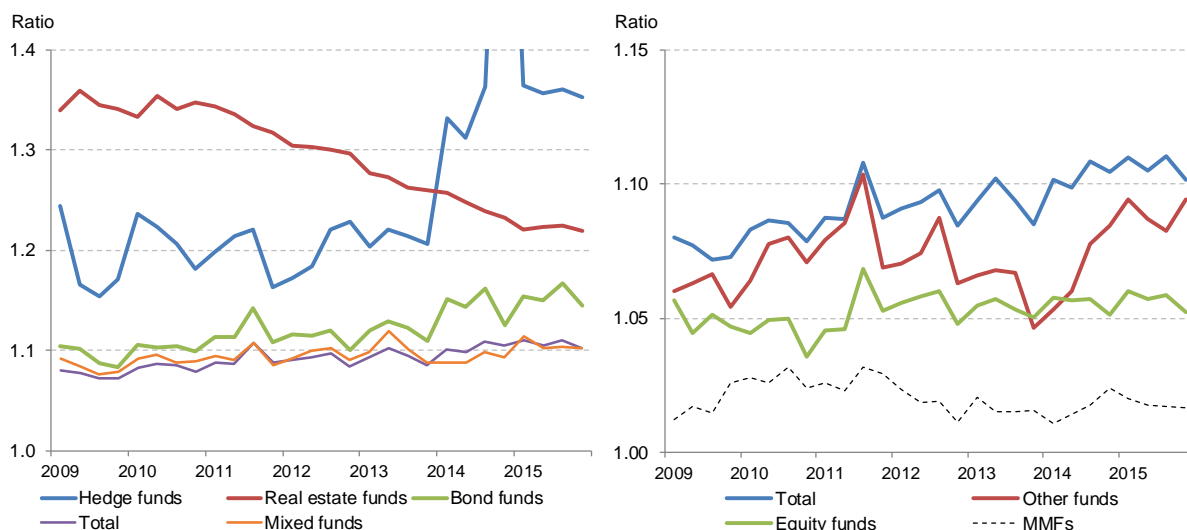
Headline leverage in euro area investment funds, i.e. balance sheet leverage generated by direct borrowings of funds⁹⁵, somewhat increased since 2013, in particular in the case of hedge funds and bond funds. On the other hand, leverage in real estate funds, which was still very high in 2009, has steadily been declining since. It is also important to note that solvency risks from these types of entities appear relatively contained overall, especially when considered against the leverage with which banks operate⁹⁶.

⁹⁴ The size of the euro area non-bank financial sector is estimated to represent approximately 75% of the EU shadow-banking sector (source: EU Shadow-banking Monitor, ESRB (2016, forthcoming)).

⁹⁵ For alternative investment funds, which are not subject to regulatory limits on leverage as is the case in UCITS funds, synthetic leverage can also play an important role and this is notably not captured by the above indicator.

⁹⁶ According to the ECB's May 2015 Financial Stability Report, the average leverage ratios of investment funds are more than ten times smaller than those of banks.

Chart 2.46: Total assets of euro-area investment funds to shares/units issued

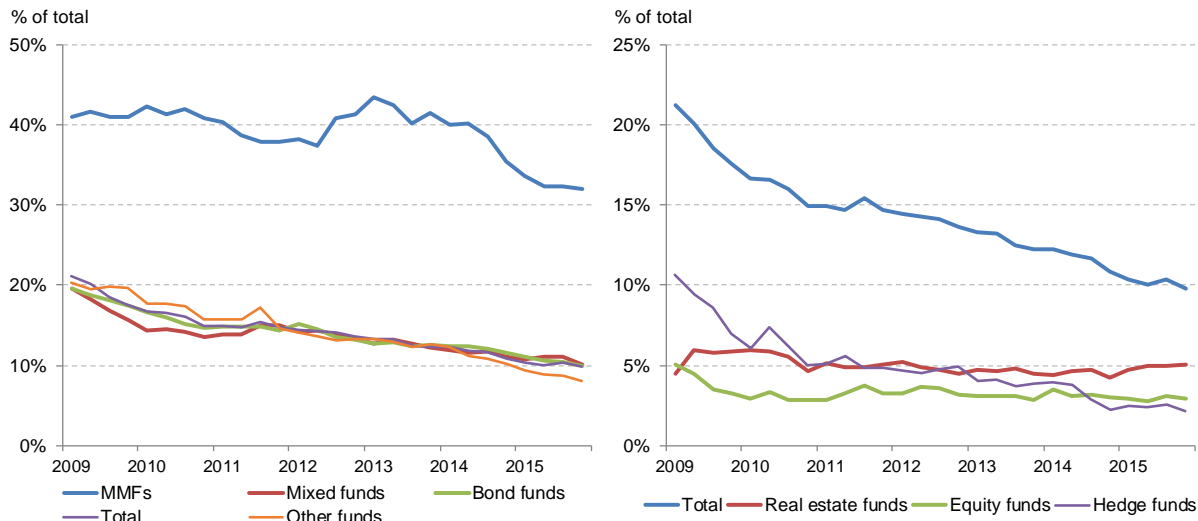


Source: ECB and ECB calculations

Financial markets interconnectedness

Growing market-based financial intermediation, accelerated by the low interest-rate environment, could increase cross-sector and cross border exposures, potentially reinforcing existing and creating new contagion channels in financial markets.

Chart 2.47: Loan and debt securities vis-à-vis MFI counterparts held by shadow-banking entities



Source: ECB and ESMA

Recent data indicates a gradual trend towards a reduction in interconnectedness of various non-bank entities (e.g. investment funds) vis-à-vis credit institutions (MFIs), with the decline especially prevalent amongst MMFs. That said, MMFs remain significantly interconnected with banks with about 67% of total assets vis-à-vis MFIs. In addition, hedge funds' interconnectedness vis-à-vis banks has also been increasing during 2015, though from low levels.

The **activity-based approach** monitors more specifically the evolution of non-banks' activities such as Securities Financing Transactions (SFTs) – repo market, securities lending. Under this approach indicators such as the size of the repo market and repo rates in selected securities, the evolution of securities lending markets in EU corporate bonds, equities or other securities will be used⁹⁷.

These two approaches are complementary, and ensure that the main elements of the shadow banking system are covered by the monitoring framework. In addition, entities which are not captured under the entity-based approach (for example, insurance companies and pension funds), but engage in some shadow banking/intermediation activities are captured with the activity-based approach (e.g. banks engaging in SFTs).

One shortcoming in the framework of indicators for monitoring risks to financial stability is the current lack of comparable data on the derivatives' exposure of OFIs across Europe. A full risk assessment on the use of derivatives in the EU, in particular their contribution to the build-up of leverage in the non-bank sector, will benefit from new supervisory data including from the AIFMD and EMIR. Progress in this domain will be followed by the Commission, so as to integrate new data – when it becomes available - in its framework for monitoring potential risks arising from more market-based finance.

Overview of main indicators⁹⁸	Last 5-year average	Latest observation	Value
Efficiency of insolvency frameworks in EU Member States, median	NA	2015	0.49
Efficiency of insolvency frameworks in EU Member States, standard deviation	NA	2015	0.18
Annual cost to investors of burdensome withholding tax procedures	NA	2014	EUR 8.4 billion
Capital mobility coefficient	0.40	2015	0.48
Variance indicators in equity markets across EU (U.S. shocks)	0.21 ⁹⁹	2015	0.34
Spill over intensity indicators in equity markets across EU (U.S. shocks)	0.39 ¹⁰⁰	2015	0.54
EU equity integration indicators based on common factor portfolios, median	0.56	2015	0.63
Indicator of consumption risk sharing	0.75 ¹⁰¹	2014	0.74

⁹⁷ A full risk assessment on the use of derivatives in the EU will benefit from new supervisory data including from AIFMD and EMIR.

⁹⁸ Indicators and figures refer to the EU, unless indicated otherwise.

⁹⁹ Averages 2012-2015.

¹⁰⁰ Averages 2012-2015.

¹⁰¹ Average 2010-2014.

Chapter 3 DRIVERS OF MARKET FUNDING

This chapter attempts to explore some of the reasons for cross-country differences in the size and development of capital markets. It explores a few possible explanations on both sides of the financial intermediation chain, i.e. corporate funding patterns and investors' provision of funds.

The first part documents significant cross-country differences in the size of equity markets. Corporate financial behaviour, including the decision to go public or remain private is influenced by many factors. These are well documented in the corporate finance literature.¹⁰² Listed firms are essentially large and operate more often in specific sectors. The size of equity markets in a country is therefore heavily influenced by the distribution of corporations along these two dimensions (size, sector). However, differences appear to be more important than can be inferred from casual consideration of differences in firm size and sectoral composition. The development of equity markets also depends on corporates' financial preferences linked to shareholder structure, definition of shareholder rights, corporate governance. It is also influenced by other factors such as taxation of personal income of shareholders, the availability and depth of internal capital markets, supply chain financing, etc.,. Notably, the development of markets also depends on investor demand for marketable instruments. Large institutional investors such as pension funds or insurance companies naturally play an important role.

The second part demonstrates the importance of institutional investors, and specifically pension funds, in explaining cross-country differences in the size of capital markets. The analysis shows that the amount of assets in private pension funds and public pension reserve funds is an important determinant of the size of equity markets. From a CMU perspective, the results suggest that policy action related to the financing of pension systems and the pension fund industry are promising avenues to explore. Interestingly, other factors relevant for the purposes of CMU, such as institutional arrangements, financial intermediation, and access to financial markets, matter as well. Thus, the results also suggest that flanking CMU actions to address these issues may be warranted.

3.1 Equity markets: size and determinants

Given the high leverage in the European economy, and the need to boost risk taking and risk capital, equity markets are key in providing the necessary boost to the European economy. Therefore, the description and measurement of any financial system's degree of capital market development typically includes measures of the size of the national equity market.

Currently the size of equity markets varies significantly across Member States, and compared in particular with the US market. One question is whether the state of equity market development in some countries with higher market capitalisation, can serve as a suitable benchmark for the other countries, and what are the drivers of cross-country differences in equity markets.

¹⁰² See also the extensive literature reviewed in Kühnhausen and Stieber (2014).

A close look at market structures reveals that the differences in market development are driven by differences in the structure of the economies, such as firm size and sectoral composition, as well as by differences in financial parameters across countries. Listed firms are essentially large and operate more often in specific sectors. In other words, the size of equity markets in a country is heavily influenced by its sectoral structure and the size distribution of companies.

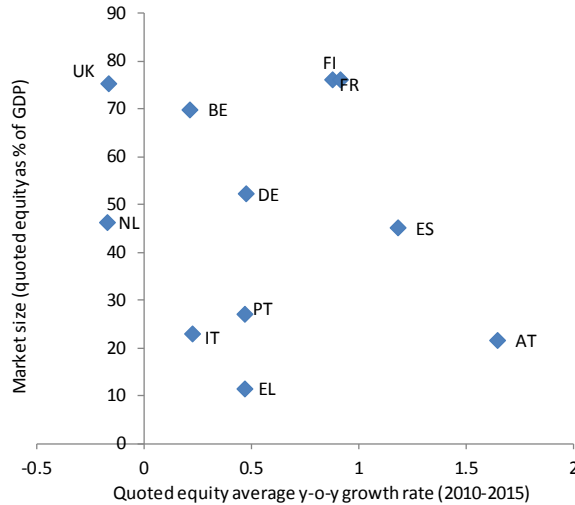
This section shows that the cross-country differences in size of equity markets go beyond the size and sectoral component. This suggests that the development of equity markets also depends on corporate financial parameters, as similar firms in two countries do not have the same likelihood to be quoted on equity markets. At the euro-area level, this effect is in fact larger than that of the firm size and sectoral composition. However, while this analyses disentangles the effects emerging from economic structures (firm size and sectoral composition) from those emerging from financial parameters, it does not explain why similar firms (same size and sector) in two different countries have different financial practices. In any case, should all those financial parameters converge among European countries and especially get closer to those prevailing in the US, there would be a potential for expanding equity funding in Europe.

Drivers behind cross-country differences in equity markets

The size of stock market differs markedly among EU Member States. Unlike for corporate bond markets, where those markets that already were large before the crisis witnessed the strongest expansion, new equity issuance over the past five years has hardly been correlated with market capitalisation (Chart 3.1). That is, equity issuance was neither strong in countries in which firms had an already large share of listed shares, such as the United Kingdom, nor in those with a large scope to catch up (Greece, Italy and Portugal). Strong issuance activity in Spain relative to Germany and the Netherlands suggests that the usual distinction between vulnerable and non-vulnerable Member States is not a good explanation either.

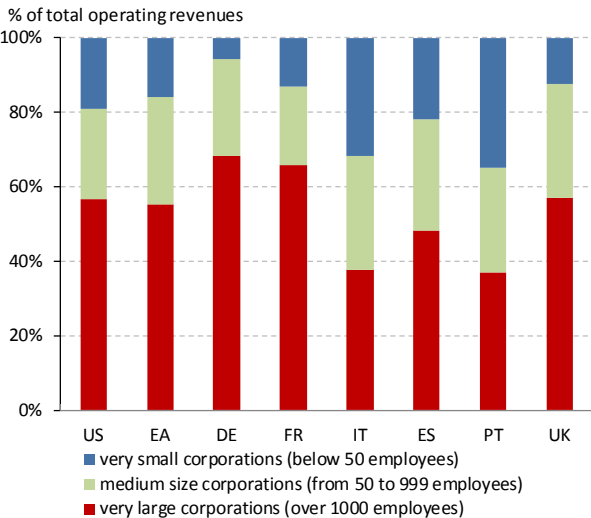
Cross-country differences in the size of equity markets for listed shares are partly due to differences in the structure of companies. Since large corporations are

Chart 3.1: Size and growth rate of stock markets in selected EU countries



Source: Eurostat

Chart 3.2: Operating revenues per firm size



Source: ORBIS

commonly listed, it is reasonable to expect to find larger stock markets in countries with many large firms. Such a relationship is indeed visible in firm-level data: countries with a relatively low share of revenues emerging from large corporations tend to have small equity markets for listed shares. In particular, this is the case for Italy and Portugal, and is consistent with their respectively small size of equity markets (see Chart 3.2).

Chart 3.2 also shows that Germany has the highest share of output by very large corporations, while the size of the country's stock market as a share of GDP is surpassed by those of France and the United Kingdom. Chart 3.3 shows that only 33% of the operating revenues by very large corporations in Germany emerge from listed companies, while this ratio stands at 61% in France. Part of the difference might be due to differences in the sectors in which these large companies operate, as the tendency to use equity, and in particular private equity, might be different across sectors¹⁰³. Chart 3.4 compiles similar data per sector, and shows large cross-country differences in Europe. Overall, quoted corporations in Europe have a lower share of operating revenues than compared with those in the US.

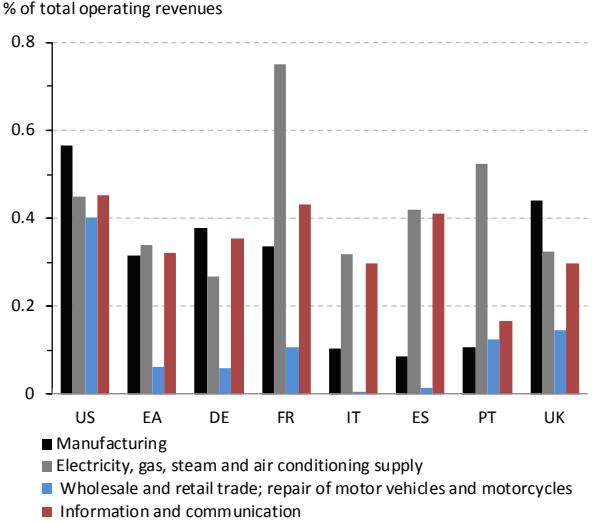
Table 3.1 gives an estimate of the respective role of the economic structure (firm size and sectoral composition) and financial practices related to equity (go public or remain private) in explaining differences in the size of equity markets across selected EU Member States. For this exercise, the fraction of companies with listed shares – measured as the share of operating revenues of listed firms to total operating revenues – in each Member State (first row in Table 3.1) is compared with a hypothetical ratio, which assumes that the fraction of listed firms in each sector and each size category is the same as that of the euro area (row two in Table 3.1).¹⁰⁴ This methodology enables to disentangle this

Chart 3.3: Share of operating revenues by listed companies - size breakdown



Source: ORBIS

Chart 3.4: Share of operating revenues by listed companies - sector breakdown



Source: ORBIS

¹⁰³ Such difference between German and French firms are due i.a. to a stronger internal funding model by German firms compared to the French ones. We do not explore here further the reasons for these differences in financial practices among countries. We simply document the existence and importance of such differences.

¹⁰⁴ The numbers in the second row in Table 3.1 control for "financial practices", i.e. they correspond to the financial practices of the euro area. Therefore, on this row, the difference between a country's number and that of the euro area, reveals the difference in economic structure between that country and the euro-area average.

difference (last row of table 3.1) between factors related to economic structure and financial practices.

Taking the example of Italy, our calculations attribute to firm size and sectoral composition 1.5 percentage points of the lower use of listed equity as compared with the euro area.¹⁰⁵ As for Germany, the calculations suggest that its economic structures contribute positively by 1 percentage point to the proportion of operating revenues generated by listed firms. The difference between the actual and simulated value in Table 3.1 is attributable to firms' financial practices, i.e. firms' decision to get listed or remain unlisted.¹⁰⁶ Such financial parameters appear to explain the relatively more developed equity markets in France and the United Kingdom. In the case of France, the higher share of firms that go public contributes to 5 percentage points higher operating revenues by listed firms compared to the euro area.

Table 3.1

	EA	DE	FR	IT	ES	PT	UK
Share of operating revenues by listed companies as % of total (1)	15.7	15.2	21.1	13.8	15.2	14.3	23.4
(1) if all countries had the euro area financial practices i.e. the same proportion of listed corporations for each size/sector	15.7	16.7	16.1	14.1	17.5	13.6	20.0
Contribution from economic structure		1.0	0.5	-1.5	1.8	-2.1	4.3
Contribution from financial practices		-1.5	5.0	-0.4	-2.2	0.7	3.4
Total difference to the euro area average		-0.5	5.5	-1.9	-0.4	-1.4	7.7

Source: ORBIS, EC calculations

A similar simulation is proposed in Table 3.2, but with the US taken as the reference economy. It shows that the gap between the US and the euro area is large, with close to 30% of operating revenues emerging from listed companies in the US and only 15.7% in the euro area. 5.7 percentage points of the difference is attributed by our calculations to economic structures, as firms in the US are overall larger and operate in sectors where corporations are more often listed. Still, the largest part (8.4 percentage points) of the difference is attributable to financial practices, as US firms tend to go public more often. US firms also benefit from a different investment culture by US retail savers, who are investing significantly more in public markets than European investors, and a larger base of institutional investors. Table 3.2 also shows large cross-country differences in the respective role of economic structures and financial practices. If one considers the US as a benchmark in terms of firms' financial practices, the biggest room for development towards larger listed equity markets lies in Germany, and to a lesser degree in Spain.

¹⁰⁵ The 1.5 percentage points for Italy is obtained by taking the difference between the simulated figure "if Italy had the financial practices of the euro area" (14.1) and the observed value for the euro area (15.7), all on the second row in Table 3.1.

¹⁰⁶ For each country, this is the comparison of the values in the first and the second row of Table 3.1. For Italy the difference is -0.4, i.e. 13.8-14.1.

Table 3.2

	US	EA	DE	FR	IT	ES	PT	UK
Share of operating revenues by listed companies as % of total (1)	29.8	15.7	15.2	21.1	13.8	15.2	14.3	23.4
(1) if all countries had the US financial practices i.e. the same proportion of listed corporations for each size/sector	29.8	24.1	26.8	23.5	19.9	24.3	19.6	29.8
Contribution from economic structure		-5.7	-2.9	-6.3	-9.9	-5.5	-10.1	0.0
Contribution from financial practices		-8.4	-11.6	-2.3	-6.1	-9.0	-5.3	-6.4
Total difference to the US average		-14.1	-14.6	-8.6	-16.0	-14.5	-15.4	-6.4

Source: ORBIS, EC calculations

3.2 Private pension funds and public pension reserves funds and their impact on capital markets

With CMU, the Commission strives to increase the benefits that capital markets provide to the economy. The Commission's Action Plan identifies pension funds as one key source to unlocking EU capital markets as they enlarge the investor base for financial securities and widen choices for investors. The idea is that pension funds could become a larger and more important source of long-term financing of the economy, fostering the development of capital markets in the EU. This section takes a global perspective, and examines whether pension funds and public pension reserves systematically can explain the differences in size of capital markets across countries, i.e. whether the size of pension funds and public pension reserves have an impact on the development of capital markets.

Pension funds and public pension reserves are an important source of funding, and affect the amount of market financing available and the efficiency of financial intermediation. Together with insurance companies, pension funds are essential institutional investors intermediating funds from households to capital markets, while banks mainly transform households' deposits into loans. They 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 the access to capital markets cheaper.

In fully or partially funded pension systems, pension funds and public pension reserve funds accumulate assets that can be invested in financial markets. In the EU, pension funds are diversified investors that invest in many asset classes, e.g. debt, equity, UCITS, loans and real estate (EIOPA, 2015).¹⁰⁷ The allocation of investments depends on many things, but two important interlinked aspects are the chosen balance between risk and return and the age profile of the beneficiaries of the fund. In general, however, the liabilities of pension funds are long-term, which gives them incentive to invest more in illiquid and long-term assets that yield higher returns. To the extent they invest in equity and corporate bond markets, pension funds provide a long-term supply of funds to capital markets, and thus may contribute to their development.

¹⁰⁷ Undertakings for the collective investment of transferable securities (UCITS) are investment funds regulated at the level of the European Union. They account for around 75% of all collective investments by small investors in Europe.

Table 3.3 Assets in private pension funds and public pension reserve funds relative to GDP

Member State	AT	BE	BG	CZ	DE	DK	EE	EL	ES
Private (%)	5.1	4.4	7.3	6.8	6.1	48.9	8.4	0.0	8.2
Public (%)		5.1							5.1
Member State	FI	FR	HR	HU	IE	IT	LT	LU	LV
Private (%)	45.4	0.3	16.2	3.9	46.6	5.4	4.3	2.1	1.3
Public (%)	27	2.5							
Member State	MT	NL	PL	PT	RO	SE	SI	SK	UK
Private (%)	8.0	144.4	17.0	8.6	1.7	10.1	3.6	9.4	96.9
Public (%)			1.1	6.9		28.0			

At the current state, pension funds play a relatively minor role in European finance, and the situation is furthermore very diverse across Member States. A few Member States (Denmark, Finland, Ireland, the Netherlands, and the United Kingdom) have a large market for private pension funds, as compared to the size of their overall financial system or economy. Most other Member States have few assets in private pension funds in relation to the size of the economy. Only five Member States have public pension reserve funds, and most are small. The exception is Sweden, which has buffer funds that amount to 28% of GDP. The figures in Table 3.3 compares to those of the US, which are 73.8% of GDP and 16.5% of GDP, respectively for private and public funds.

The amount of assets in pension funds and public pension reserves is related to the development of capital markets

Pre-funding of pensions comes in two forms relevant for the analysis at hand: private pension funds and public pension reserve funds. The latter serve as buffers in state pension systems, which are normally financed on a pay-as-you go basis (OECD, 2015). The data on assets in private pension funds come from the World Bank's Global Financial Development Database, which collects its information from the OECD Global Pension Statistics. In its database, the World Bank also presents information for a few additional developing countries. The assets to GDP ratio in public pension reserve funds comes from the OECD Global Pension Statistics.¹⁰⁸ When both numbers are available, the assets in both public and private funds are added together and represented as a share of gross domestic product (GDP).

The analysis aims at measuring the impact of assets in pension funds on the development of both equity and corporate bond markets. To this end, stock market capitalisation over GDP serves as a representation for stock market development, and outstanding domestic private debt securities to GDP for bond market development. Both series are from the Global Financial Development Database, and the data selection is in line with other studies.¹⁰⁹

¹⁰⁸ These data are also reproduced in the OECD report "Pensions at a glance 2015".

¹⁰⁹ See e.g. Niggermann and Rocholl (2010)

Table 3.4 Descriptive statistics of the data

Variable	Max	Mean	Median	Min	No of obs.
Stock market capitalisation to GDP (%)	147.6	49.1	43.5	0.3	67
Outstanding private debt securities to GDP (%)	181.2	34.0	25.3	0.6	46
Private pension funds to GDP (%)	144.4	21.4	8.4	0.0	67
Public pension reserve funds to GDP (%)	29.9	11.0	6.1	0.1	19
Total pension fund assets to GDP (%)	144.4	24.6	10.7	0.0	67
Financial Development Index ¹	5.3	3.8	3.7	2.5	49

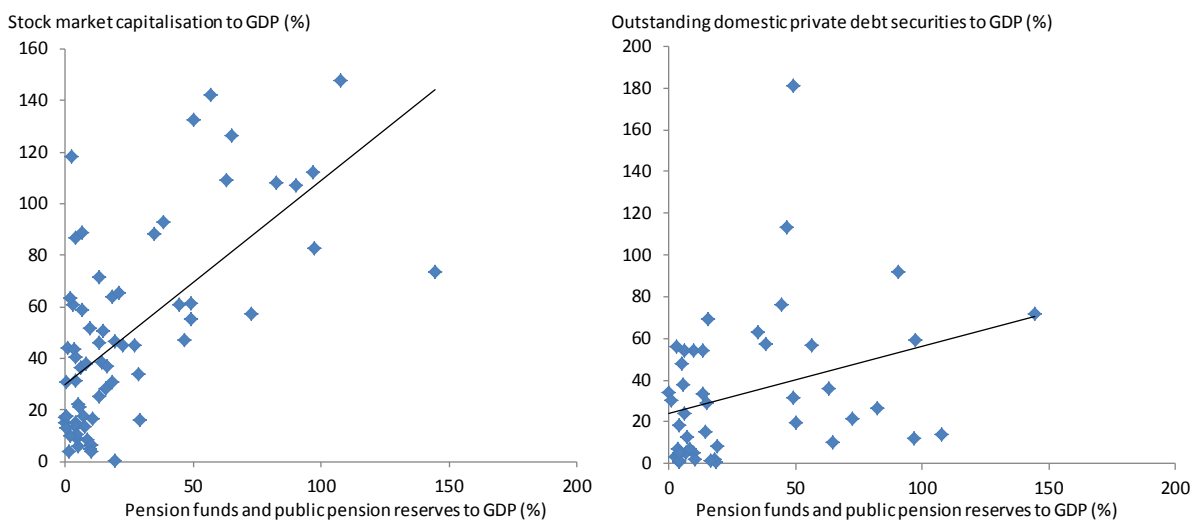
1 The index is normalise on a scale 1 to 7

Altogether, pension fund assets and stock and bond market capitalisation generate a dataset that covers 67 countries for equity markets and 46 for bond markets. Out of the 67 and 46 countries covered, 33 and 31 are members of the OECD, respectively. All data refer to 2012, except public pension reserve data and outstanding domestic private debt securities, which for data availability reasons refer to 2013 and 2011. There is considerable variability in the data. Stock market capitalisation ranges from 148% of GDP in Switzerland to almost zero in Uruguay, and outstanding debt securities range from 181% of GDP in Denmark to close to zero in Turkey. The share of assets in private pension funds is the highest in the Netherlands (144% of GDP), and the lowest in Greece and Argentina. Public pension reserve funds range from almost 30% of GDP in South Korea, to 0.1% of GDP in Mexico. Finally, the US has the highest score of 5.3, in the Financial Development Index, which is normalised on a 1-to-7 scale, and Nigeria the lowest score at 2.5.

There is a significant relationship between the size of pension funds – private funds and public pension reserve funds taken together – and the size of stock markets. Chart 3.5 plots stock market capitalisation to GDP and pension fund assets to GDP for all 67 countries in the sample. The relationship is maintained also after splitting the sample into an OECD and a non-OECD sample. However, the results break down for the non-OECD sample, if one excludes Malaysia, Singapore and South Africa.

Chart 3.5 also shows a positive relationship between the size of pension funds and private bond markets; it is weaker, but still significant. In this case there are only 46 countries represented in the chart, thus outliers may influence the relationship. However, the relation breaks down if the sample is split in an OECD and a non-OECD sample. Nevertheless, the weaker relationship for bond markets is not enough to take away the positive relationship between pension fund assets and the total size of capital markets, i.e. when adding equity and bond markets together.

Chart 3.5: Stock and bond market capitalisation to pension fund assets



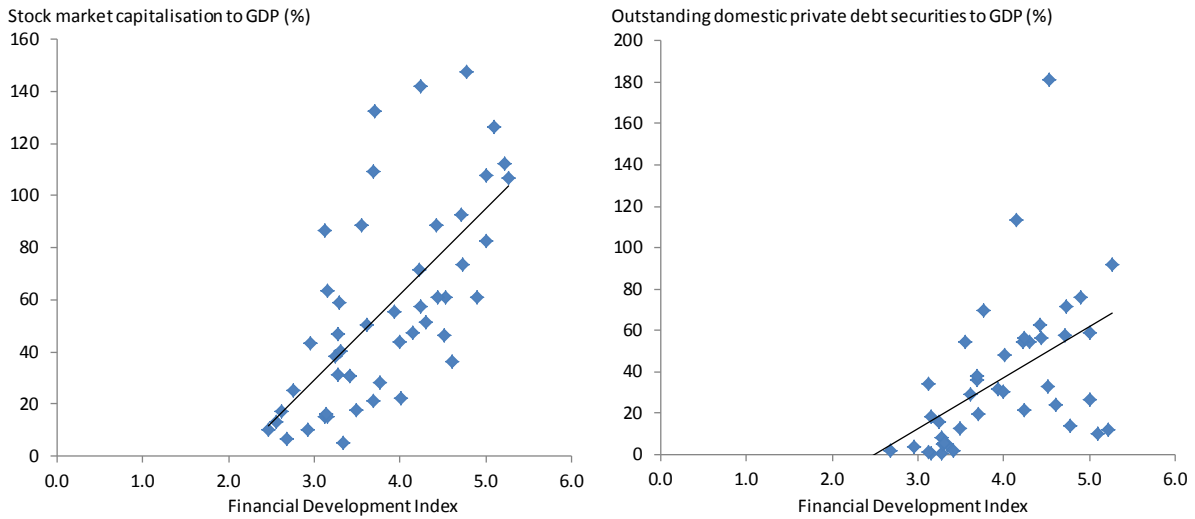
Source: OECD and the World Bank

Pension funds are of course not the only factor that may influence the size of capital markets; there are many other factors which are important to ensure effective financial markets that are both deep and broad. All should preferably be taken into account. For example, the institutional setup provides stability and legal certainty, the foundation that allows markets, services and instruments to develop. Other factors concern financial intermediation, which should be varied and efficient, and financial markets and services, which should be accessible to both individuals and businesses.

The World Economic Forum has developed a Financial Development Index (FDI) based on seven pillars that cover the three categories: (i) factors, policies, and institutions; (ii) financial intermediation; and (iii) financial access (World Economic Forum, 2012). The FDI is a proxy for many things that may influence the size and development of capital markets. It covers the institutional and business environment, which among other things take into account corporate governance, contract enforcement, taxes, and the infrastructure. Financial stability captures the risks stemming from currencies, the banking sector and sovereign debt. The index measures the size, efficiency, and the disclosure of financial information in banking financial services, and mergers and acquisitions, initial public offerings, and securitisation for other financial services outside the banking sector. In addition, the index evaluates commercial and retail access to financial markets, and the importance of foreign exchange, equity, bond, and derivative markets.

There is a strong link between market capitalisation in both the equity and the bond markets and the Financial Development Index. Chart 3.6 plots the ratios for market capitalisation to GDP for both the equity and the bond markets, and provides an illustration of how well the FDI captures financial development. GDP per capita is an alternative measure of development, but is more general than the FDI index. It provides similar results as the FDI, but with the advantage of covering more countries. However, the drawback is that GDP per capita is less precise in measuring financial development, which shows in its lower ability to explain cross-country differences the size of capital markets, especially if the sample is split between OECD and no-OECD countries.

Chart 3.6: Stock and bond market capitalisation to the Financial Development Index



Source: OECD and the World Bank

Disentangling the impact of pension funds from that of other factors

A simple regression analysis can disentangle the impact of pension fund assets on the size of capital markets from other factors that may matter.¹¹⁰ In this case the analysis involves combining the information in Chart 3.5 and Chart 3.6, i.e. trying to explain the stock market capitalisation, or the outstanding private debt, with pension fund assets and the FDI simultaneously. There could be other explanatory variables that matter. However, due to the limited number of observations, the number of explanatory variables should be limited. In that respect, the FDI is most suitable as it covers many aspects of financial development. The equation estimated is:

$$V_c = \alpha + \beta_1 P_c + \beta_2 F_c + \varepsilon_c,$$

where V_c is country c 's stock market capitalisation to GDP, or its outstanding domestic private debt to GDP. P_c is the country c 's total pension fund assets to GDP, and F_c its FDI index value. Finally, ε_c represents the error term.

Table 3.5: Regression results

Variable	EQ1: Stock market capitalisation			EQ2: Outstanding private debt		
	Coefficient	t-statistic	p-value	Coefficient	t-statistic	p-value
Constant (α)	-22.92	-0.96	0.342	-72.11	-2.05	0.047
Pension assets (β_1)	0.50	3.19	0.003	-0.11	-0.55	0.586
FDI (β_2)	16.94	2.43	0.019	28.26	2.89	0.006
R ²	0.54			0.24		

¹¹⁰ The analysis is rather similar to that of Meng and Pfau (2010). However, the analysis presented here is simpler, both in terms of methodology (ordinary least squares) and scope of the data (static in time). They use a more advanced methodology, the bias-corrected least squared dummy variable estimator, and a panel dataset. The data come from the same sources, but they also make use of the time dimension. They use GDP per capita instead of the FDI to control for overall development. Nevertheless, acknowledging all caveats, their results are similar to those presented in this chapter.

Table 3.5 displays the results of the two regressions, which shows that pension fund assets are highly significant in explaining the cross-country variation in stock market capitalisation. However, pension fund assets do not explain the cross-country variation in outstanding debt on bond markets. Nevertheless, the Financial Development Index is significant in both equations, and is an important variable in explaining the size of capital markets, i.e. financial market development.

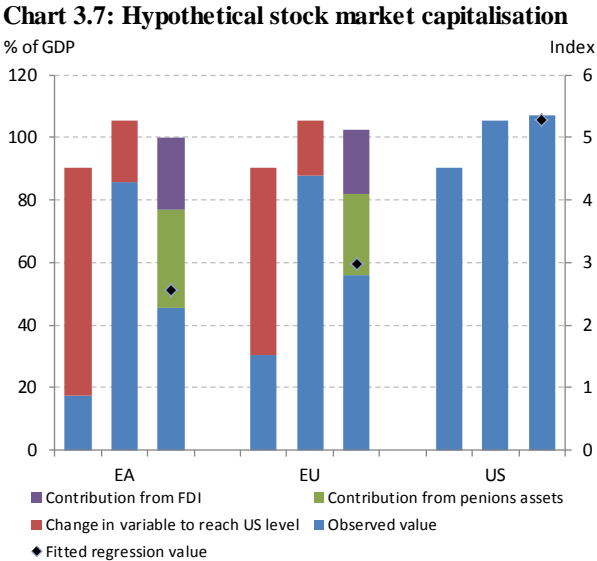
The asset allocation strategies of pension funds are likely the reason why pension fund assets do not help in explaining the development in private debt markets. Pension funds have a long-term horizon regarding investments, and debt and equity represent the largest share in the investment allocation of pension funds, 45% and 31% of total assets, respectively (EIOPA, 2015). However, the bulk of debt and fixed income securities are sovereign bonds, implying that corporate debt only constitutes 17% of total assets. In view of pension funds limited investment allocation to corporate bonds in Europe; it is not surprising that the link between pension fund assets and the corporate bond market is weak in this analysis.

The regression analysis still does not disentangle the direction of the relation between pension fund assets and stock market capitalisation, which leaves two questions unanswered. Do pension funds lead to more developed equity markets, or are countries that are more financially developed prone to adopt pre-funded pension systems, because capital markets are more developed? The choice of pension system is to a large extent a political choice, especially in OECD countries, which has reached a certain level of technical and financial sophistication. To the extent that the choice is political, the causal direction seems to go in the direction from pension fund assets to stock market capitalisation. There is also empirical support for this notion. Niggermann and Rocholl (2010) analyse the causal link by studying pension funding reforms in different countries. They find that pension funding reforms do lead to both larger equity and bond markets.

What if the EU and the euro area had similar characteristics to the US?

The regression analysis allows for making a comparison between the EU and the euro area on the one hand and the US on the other, answering the question what would the EU and the euro area look like in terms of stock market capitalisation, if they had the characteristics of the US. By changing the pension fund assets and the FDI to the level of the US, the estimated regression equation can produce new hypothetical values for stock market capitalisation in the EU and the euro area.

Chart 3.7 shows the starting point for this exercise, where the (blue) lower part of the bars displays the observed values, and the three black diamonds are the values that the regression predicts should be observed. The differences between the two imply that both the EU



Note: the columns in each panel are: pension assets, FDI, and stock market cap. Source: OECD and the World Bank

and the euro area have a stock market capitalisation below what is suggested by their respective level of pension fund assets and FDI, while the US is slightly above. The estimated equation suggests that increasing pension assets in the euro area and the EU by respectively 73% and 60% of GDP, i.e. to the level of the US, would generate an additional stock market capitalisation of 31% and 26% of GDP. The (green) middle field in the third column of the bar chart illustrates this increase. Furthermore, if other factors influencing financial development were to improve to the level of the US, i.e. the FDI increasing from around 4.3 to 5.3, stock market capitalisation would increase by an additional 23% and 21% of GDP. With a little faith, hope and charity, one could interpret the latter increase as the additional CMU potential, the part of CMU policies that are not pension related.

Caveats and policy conclusions

The results in this chapter indicate that policy actions concerning pension systems and the pension fund industry can make an important contribution to achieving the objectives of CMU. The chapter shows that the amount of assets in private pension funds and public pension reserve funds matter for the development of capital markets. This is especially true for equity markets, to which pension funds allocate a substantial part of their assets. As the analysis is mainly based on data relating to private pension funds, the results suggest that developing private pension saving may be a promising avenue to explore. Interestingly, the analysis also shows that there may be significant potential to improve in other policy areas as well. The Financial Development Index had strong explanatory power, while it is clearly lower for both the EU and the euro area than for the US. The FDI encompasses several areas of financial development, so one could consider it as a proxy for CMU potential.

The presented analysis suffers from some specific limitations related to data. In the vast majority of OECD countries, occupational pensions are generally funded through pension funds. However, in some countries pension insurance contracts play an important role. For example, in Belgium, Denmark, France, Korea, and Sweden, pensions insurance contracts constitute between 65% and 95% of total pension assets. This affects the relative size of EU pension markets when compared to the USA. However, there are only a limited set of countries that report these numbers to the OECD.

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Technical Annex to Chapter 2

Deriving a measure of national distortions of the user cost of capital from the behaviour of firms maximizing shareholder value¹¹¹

In the *absence* of national distortions, free movement of capital should lead to the (marginal) user cost of capital converging across EU Member States (*law of one price*). However, for the time being important national distortions continue to exist, and they count among those elements that have motivated the launch of the CMU action plan. Distortions include differences in taxation of corporate income, personal income taxation of capital income (feeding back into firm decisions about the level of retained earnings), differences in withholding tax, as well as differences in market entry and market exit; the latter also includes the area of national insolvency regimes that impact inter alia the pricing of corporate debt securities. This Box provides a formal derivation of a measure of national distortions of user costs of capital that should become smaller as a result of the implementation of the CMU action plan.

Consider a representative firm in country i contemplating investment I in (continuous) time $t \in [0, \infty)$. Let the firm's technology be given by a neo-classical production function $f(K_t, L_t)$. Thus, given capital K_t and labour L_t , at most $Y_t = f(K_t, L_t)$ units of output can be produced and exactly Y_t is actually produced.

Further, if I_t is the firm's gross investment and ρ is a constant rate of depreciation, then the law of motion for the net capital stock K_t may be written as

$$\dot{K}_t = I_t - \rho K_t, \quad \text{where } \dot{K}_t \equiv \frac{d}{dt} K_t$$

Let b be a constant share of gross investment that is financed through borrowing. Then the firm's accumulated debt at time t is

$$D_t = \int_0^t b p_\tau I_\tau d\tau$$

where p_t is the price per unit of physical capital. Let us for the moment assume that *all relevant fiscal provisions sum up to a flat corporation tax at a rate s and a depreciation allowance at a constant rate of δ* . The firm's distributed profit at time t is

$$\Pi_t = (1 - s)[\bar{p} f(K_t, L_t) - w_t L_t - r D_t - A_t] + A_t - (1 - b) p_t I_t$$

where \bar{p} is constant price of the firm's output, w is the constant unit wage, s is the (flat) rate of corporate taxation, the firm's total interest payments are $r D_t$, r is a constant interest rate, and $A_t = \int_0^t \delta_{t-\tau} p_\tau I_\tau d\tau$ is the depreciation allowance accumulated up to the time t . The remainder $(1 - b) p_t I_t$ is financed by retained profit.

¹¹¹ See Kaniovsky (2002).

Solving its optimal control problem the neo-classical firm chooses optimal of investment, $\{I_t^*\}$ and $\{L_t^*\}$ that maximize the present value of the sum of total distributed profits. After having solved the dynamic constrained maximisation problem, the *user cost of capital* can be written as

$$ucc_t \equiv \frac{d}{dK_t} f(K_t, L_t) = \frac{p_t}{\bar{p}} \frac{1-s(b+z)}{1-s} \left[r - \frac{\dot{p}_t}{p_t} + \rho \right] \quad (1)$$

where z captures the speed of amortization of the firm's investment.

With these elements in place, it is possible to define *national distortions* of the *user cost of capital*, i.e. the factors that cause ucc to deviate from the law of one price:

If there are different countries, i and j , in the absence of distortions from non-market factors such as taxation or labour and product market regulation, we should expect that the ucc_t computed under optimising behaviour of the firm is the same in each country (*law of one price*). If this is not the case, then there should be a distortion coming from different policies, mostly tax policies (corporate income taxation, including debt tax shields, taxation of personal capital income, withholding tax), as well as differences in national rescue and recovery frameworks.

More precisely, **national distortions between two countries i and j of the user cost of capital** can be then written as

$$ucc_t^i - ucc_t^j = f(s, b, z)$$

where the firm's effective overall tax rate (fiscal pressure), s , is set by tax policy, and b and z are co-determined by a mix of country-specific policies that include *inter alia* tax policies, accounting rules, and features of the national insolvency regimes.

Annex: Indicators of development of capital markets

All the indicators presented in the following will be heavily influenced by other factors than the measures put forward by, and implemented under, the CMU Action Plan. Most of them will be subject to cyclical factors¹¹², other economic and market developments, or policy action in other areas. Therefore, while it is important to monitor how capital markets have developed in relation to the six objectives of the CMU Action Plan, the indicators' informational value will be indicative only and necessarily subject to careful interpretation.

It will be difficult to disentangle the impact of CMU measures from the impact of other factors; e.g., a positive evolution of some indicators may be due to other factors than a successful implementation of related CMU measures. Similarly, some indicators may evolve in a negative manner, despite successful implementation of related CMU measures. This is why a monitoring of these indicators will be a prerequisite step in the Commission's assessment of progress towards the objectives of the CMU Action Plan, but it will not pre-empt the assessment and pre-judge a possible adjustment or calibration of CMU Action Plan measures over time.

Also, one indicator should not be looked in isolation of other indicators. On the contrary, the set of indicators selected under each objective of the CMU Action Plan is meant to bring different streams of information which, together, help form an assessment of recent developments in capital markets as well as the broader macroeconomic environment relevant to a specific CMU objective.

Lastly, some CMU actions are clearly identified solutions to specific issues and are expected to have a direct impact, even though with a time lag; this time lag will have to be taken into account also in relation to the use of indicators. Other CMU actions, on the other hand, are a starting point, as the Commission is working constructively with stakeholders to develop the right response – be that legislation, self-regulation or technical assistance. Their impact will therefore be felt over a longer time period. An integrated European capital market means not only building new financial circuits but also changing behaviour and attitudes. This will require sustained application of effort and resource before the impact can really be felt.

With these caveats in mind, the overview table below presents a first set of the indicators that will be used for monitoring purposes. Indicators assess capital market and macroeconomic developments relevant for each of the six objectives of the CMU Action Plan; the overview table also provides the latest observation as the starting point against which future evolution of the indicator will be monitored. A detailed description and discussion of indicators is provided in Chapter 2, which also highlights their limitations, provides additional data in the form of charts and tables, explains the recent evolution, and documents the data and methodology used.

¹¹² See also related Box in Chapter 1.

Objective 1: Financing for innovation, start-ups and non-listed companies

Indicator ¹¹³	Last 5-year average	Latest observation	Value
Volume of crowdfunding	NA	2014	EUR 1.2 billion
Business angel investment	NA	2013	EUR 0.36 billion
Venture capital investment	EUR 3.5 billion	2014	EUR 3.6 billion
Private equity, assets under management	NA	Dec 2015	EUR 550 billion
Issuance of equity by euro-area SMEs over the last six months, % of total SMEs surveyed	4.3%	Jun 2015	1.4%

Objective 2: Make it easier for companies to raise funds on capital markets

Bank loans as a % of total liabilities of NFCs	14.5% ¹¹⁴	Dec 2015	12.3%
Bonds as a % of total liabilities of NFCs	4.1% ¹¹⁵	Dec 2015	4.7%
NFCs' bonds, outstanding volumes	EUR 1 743 billion ¹¹⁶	Dec 2015	EUR 1 867 billion
Number of bond issuances by NFCs	399	2014	487
NFCs' stocks, outstanding value	EUR 6 661 billion ¹¹⁷	Dec 2015	EUR 7 786 billion
Approved prospectus, EEA	4 248	2014	3 931
SME Growth Markets, number	NA	2018	-
Companies listed on SME Growth Markets, number	NA	2018	-

Objective 3: Promote investment in long-term, sustainable projects and infrastructure projects

Infrastructure deals completed, value, global	USD 179 billion	2015	USD 143 billion
European project bond issuance, value	EUR 7.2 billion	2014	EUR 15.2 billion
European project loan issuance, value	EUR 42.2 billion	2014	EUR 50.8 billion
PPP transactions, Europe	EUR 15.4 billion	2014	EUR 18 billion
Number of projects supported by EFSI	NA	15 Jan 2016	42
EIB financing for EFSI-supported projects	NA	15 Jan 2016	EUR 5.7 billion
Expected total investment in EFSI-supported projects	NA	15 Jan 2016	EUR 25 billion
ELTIFs, number	NA	2016	-
ELTIFs, assets under management	NA	2016	-
Green bonds issuance, global, value	EUR 19 billion	2015	EUR 42 billion

¹¹³ Unless otherwise indicated indicators are for EU.

¹¹⁴ Average calculated over 2012q4-2015q3.

¹¹⁵ Average calculated over 2012q4-2015q3.

¹¹⁶ Average calculated over 2012q4-2015q3.

¹¹⁷ Average calculated over 2012q4-2015q3.

Objective 4: Fostering retail and institutional investment

Indicator ¹¹⁸	Last 5-year average	Latest observation / Starting point	Value
Households financial assets, EUR (% of GDP)	NA	2015q3	EUR 32 778 billion (227%)
Share of financial assets other than currency and deposits, EUR (% of GDP)	NA	2015q3	EUR 22 838 billion (69.7%)
Total assets of investment funds by investment policy (bonds, equity, mixed, MMFs, real estate, hedge funds), EUR (% of GDP)	EUR 8 944 billion	2015q4	EUR 11 723 billion (81.3%)
Total assets of insurance corporations and pension funds by investment policy, EUR (% of GDP)	NA	2015q3	EUR 15 927 billion (110.5%)

Objective 5: Leveraging banking capacity to support the wider economy

Volume of securitisation outstanding, EUR	EUR 1 697 billion	2015q3	EUR 1 544 billion
Volume of securitisation gross annual issuance, EUR	EUR 280 billion	2015q3	EUR 201 billion
Outstanding volume of covered bonds, EUR	EUR 2 618 billion ¹¹⁹	2014	EUR 2 504 billion

Objective 6: Facilitating cross-border investing

Efficiency of insolvency frameworks in EU Member States, median	NA	2015	0.49
Efficiency of insolvency frameworks in EU Member States, standard deviation	NA	2015	0.18
Annual cost of burdensome withholding tax procedures	NA	2014	EUR 8.4 billion
Capital mobility coefficient	0.40	2015	0.48
Variance indicators in equity markets across EU (U.S. shocks)	0.21 ¹²⁰	2015	0.34
Spill over intensity indicators in equity markets across EU (U.S. shocks)	0.39 ¹²¹	2015	0.54
EU equity integration indicators, common factor portfolios, median	0.56	2015	0.63
Indicator of consumption risk sharing	0.75 ¹²²	2014	0.74

¹¹⁸ Unless otherwise indicated indicators are for EU.

¹¹⁹ Average 2010-2014.

¹²⁰ Averages 2012-2015.

¹²¹ Averages 2012-2015.

¹²² Average 2010-2014.