

Capital Markets Union

Measuring progress and planning for success

September 2018



In conjunction with:



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Foreword

This report, *'Capital Markets Union: Measuring progress and planning for success'*, is the first publication in an annual series which will review developments in the Capital Markets Union (CMU) project. It will provide market participants, policymakers, and other stakeholders with key EU and Member State facts about its progress and identify what further work needs to be done.

In September 2015, the European Commission launched its CMU Action Plan with the aim of developing a true single market for capital across the EU. AFME and its members have been strong supporters of this key initiative since its inception, believing that deeper, better integrated and more diversified capital markets are key for supporting economic growth and job creation, as well as enhancing management of systemic risk.

Three years on from the launch of the Action Plan, and with the end of the current Commission approaching in 2019, this report provides a timely opportunity to review the progress that has been made to date on achieving the CMU's vital aims.

There is no doubt that there have been some considerable achievements since 2015, with several key initiatives, such as the introduction of the new framework for Simple, Transparent and Standardised Securitisation and an overhaul of EU prospectus regulation, having already been completed, and recent progress towards agreeing an EU rulebook for a pan-European personal pension product (PEPP). Further important initiatives are also under discussion, such as the harmonisation of insolvency regimes, measures intended to develop a secondary market for non-performing loans (NPLs), and a new Action Plan for FinTech and sustainable finance. But the project is far from complete.

The CMU's original overarching aim of developing a single European capital market remains as compelling as when the project was launched. With Brexit on the horizon, and the prospect of Europe's largest financial centre departing from the EU, increasing the interconnection and harmonisation of Europe's capital markets is more important than ever.

We hope that this report will provide a useful contribution monitoring the progress of such an important European project.

This report was authored by AFME with the support of nine other trade associations and international organisations representing various Global and European capital markets stakeholders. These include the Climate Bond Initiative (CBI), and eight European trade associations representing stock exchanges (FESE), fund and asset management (EFAMA), retail and institutional investors (European Investors), pension funds (PensionsEurope), venture capital and private equity (InvestEurope), business angels (BAE, EBAN), and crowdfunding (ECN).

I would like to thank all the participating trade associations for their active cooperation, insights and contribution of data to this important CMU project so crucial to the future of the EU economy.



Simon Lewis
Chief Executive
Association for Financial Markets in Europe

Capital Markets Union

Measuring progress and planning for success



Executive Summary and Overview of Indicators

The publication of this report coincides with the third anniversary of the European Union's Capital Markets Union (CMU) Action Plan.

The CMU Action Plan was launched by the European Commission in September 2015, with 33 ambitious policy actions, seven key political priorities, and three key building blocks: (i) development of a more diversified financial system complementing bank finance with capital markets instruments; (ii) unlocking the capacity of capital markets to support growth, giving savers and investors more investment choices; and (iii) establishment of a genuine single capital market in the EU by removing barriers to cross-border investments and capital raising.

The Action Plan was reinforced with additional measures in the Commission's mid-term review of the CMU in 2017. In March 2018, the Commission also launched new proposals on covered bonds, investment funds and assignment of claims in addition to the introduction of Action Plans on sustainable finance and FinTech.

As this report finds, the case for promoting a European Capital Markets Union continues to be as valid as it was three years ago when CMU was launched. Although some areas have shown encouraging improvements over the last years, the report shows that European Union (EU) corporate issuers (both large companies and small and medium enterprises) continue to be over reliant on bank finance, the flow of capital continues to be fragmented along national lines, and capital markets need further scale and depth to support economic growth and innovation.

This first in a series of annual reports presents an analytical framework and structured approach for tracking the success of the CMU project in delivering a deeper and more integrated capital market, as well as providing an industry perspective on some of the challenges and barriers that impede its development.

Seven Key Performance Indicators (KPI) have been constructed in the form of composite indicators and ratios to assess progress across the seven political priorities of the CMU Action Plan. These indicators are summarised below, alongside the respective CMU priority they seek to address.

- **Market Finance Indicator:** how easy it is for companies to enter & raise capital on public markets;
- **Household Market Investment Indicator:** to what extent retail investment is being fostered;
- **Loan Transfer Indicator:** to what extent banking capacity is supporting the wider economy [through securitisation, covered bonds or loan portfolio disposals];
- **Sustainable Finance Indicator:** to what extent long-term investments in infrastructure and sustainable investment are being made;
- **Pre-IPO Risk Capital indicator:** how well start-ups and non-listed companies can access finance for innovation;
- **Cross-border Finance Indicator:** to what extent cross-border investment is being facilitated;
- **Market Depth Indicator:** measuring the capacity of EU capital markets.

For each of the seven indicators we have quantified progress at the EU and Member State level and compared this with non-EU countries where data is available. **We hope that the EU and specific Member State indicators will help policymakers and stakeholders to quantitatively monitor progress, year after year, and become a valuable tool to evaluate the importance of building a European Capital Markets Union.**

The country by country rankings and a summary table of recent progress by Member States are in Appendices 1 and 2 respectively. Further details of the methodology¹ and approach are in Appendix 3.

¹ Indicator methodologies may be revised in future reports to reflect market developments and possible changes to definitions.

The key findings of this report are:

- **The availability of pools of capital for investment has shown encouraging improvements in most EU countries in recent years.** Over the last five years, the total amount of EU household savings in capital markets assets (listed equity, bonds, investment fund shares, life insurance and pension funds) has increased from 114% of GDP in the period 2012-16 to 118.2% of GDP in 2017, led by the accumulation of household retirement savings. However, although the average EU household accumulates savings at around twice the rate as the US, EU households invest 35% of those savings in low-yield conservative instruments like cash and deposits while the US households allocate only invest 15% in such instruments.
- **European companies continue to over rely on bank lending** compared to market-based instruments (bonds and equity). Only 14% of new external funding by EU non-financial corporates (NFC ²) in 2017 was through bonds or public equity, with the remainder funded through bank lending. This proportion has increased from 13% on average during 2012-16 and risen significantly from 7% in 2007³, most recently led by bond issuance in a low interest rate environment and continuing central bank quantitative easing measures.
- **Europe is a global leader in the growing field of sustainable finance.** Over 2% of the EU's bonds (government, municipal, agency, corporate, securitisations, and covered bonds) issued in 2017 were labelled sustainable ⁴, from 0% just five years ago and compared with less than 1% in the US in 2017. The EU, however, lacks diversity in terms of bond type, as around 95% of issuance since 2012 have been senior unsecured bonds, whereas the US has a much greater prevalence of sustainable securitisation.
- **The annual amount of pre-IPO risk capital invested into SMEs in the form of venture capital, private equity (at growth stage⁵), business angel investment, and equity crowdfunding has increased in the EU** from €10.6bn in 2013 (1.4% of new external SME funding) to €22.7bn (2.5% of new external SME funding) in 2017. However, risk capital investments remain low relative to GDP and a significant gap continues compared with the US (0.8% of GDP vs 0.15% of GDP in the EU).
- **European capital markets have shown an encouraging trend towards greater integration since the aftermath of the financial crisis after the repatriation of some market activities and funding to home countries.** Our indicators show growing intra EU activity between EU Member States in private equity, M&A transactions, debt issuance, and cross-border holdings of bond, equity and investment funds. However, intra EU integration continues to be below pre-crisis levels, suggesting there is further room to progress towards a fully integrated capital market. Progress at improving European capital markets integration with the rest of the world has been more limited as linkages between European capital markets and those of the rest of the world have not significantly advanced in the last five years.
- **Recent years have shown a decline in the transformation of loans into tradeable securities like covered bonds, securitisation, or loan portfolio transactions.** In 2017, 5.2% of the stock of EU bank loans were securitised, sold to investors through loan portfolio transactions or pooled in covered bond instruments, compared to 5.6% on average in the 2012-16 period. Issuance of securitised products in Europe remains subdued. This is primarily attributed to the harsh regulatory treatment of securitisation and as a legacy of the financial crisis.
- **Market depth has increased slightly in Central and Eastern European (CEE)⁶.** Capital markets in Europe's high potential economies are converging with those of the rest of Europe, but at a slow pace. The region has shown encouraging improvements in primary markets activity, but less significant progress in the availability of pools of capital. Some countries, like Poland have seen a decrease amount of private pools of capital available for investment compared to a decade ago.

Table 1 compares recent evolution at the EU level of the seven key performance indicators. It is important to note that there may be many different factors which give rise to the changes shown by the key indicators. Not all of these may be directly related to the specific CMU initiatives. Nevertheless, despite the difficulty in proving direct causality we believe that it is helpful to track progress towards CMU in a consistent fashion both at the EU and Member State level.

2 Non-financial corporations produce goods and services for the market and do not, as a primary activity, deal in financial assets and liabilities.
















3 Note that the 2007 figure refers to the EU27 as UK NFC new lending data is not available prior 2011.

4 Green finance in the US and the EU as defined by the Climate Bonds Initiative. Social and dual-purpose bonds defined according to Dealogic criteria. See Methodology section for further detail.

5 Growth funds that make private equity investments (often minority investments) in relatively mature companies that are looking for primary capital to expand and improve operations or enter new markets to accelerate the growth of the business, InvestEurope.

6 As defined by the OECD, excluding Albania: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

Table 1: Summary of evolution of Key Performance Indicators⁷

	Index	What this index measures	EU 2012-16 average	EU 2017	National Findings
	Market Finance NFC equity and bond issuance as % of total NFC annual financing	Capacity for NFCs to raise finance on public markets	13%	 14%	UK and Ireland lead the EU countries with over 25% of total NFC new funding raised from markets. Slovenia, Slovakia, Malta, Cyprus, and Bulgaria had no NFC bond or equity issuance in 2017.
	Household Market Investment Household financial assets saved in financial instruments (excluding cash, deposits and unlisted equity) as % GDP	Availability of pools of capital	114%	 118%	Denmark has improved the most among EU countries over the last 5 years in the accumulation of household savings in capital markets instruments, due to greater pension coverage and higher savings rates.
	Loan Transfer Securitisation, covered bond issuance and loan portfolio transactions as % of outstanding bank loans	Capacity to transform bank loans into capital markets instruments (securitisation, covered bonds and loan transactions)	5.6%	 5.2%	Spain, Italy, Ireland, Greece, and Portugal (countries with high levels of non-performing loans) are in the top seven EU nations in the loan transfer index in 2017, suggesting an encouraging trend to use market instruments to dispose of distressed assets.
	Sustainable Finance Bond issuance labelled as sustainable as % of total bond issuance	Labelling of sustainable bond markets	0.4%	 2.1%	Netherlands, France and Sweden are the leading EU nations, all with over 3% of bonds issued in 2017 classified as sustainable. Lithuania had the highest indicator value in 2017 of almost 10%, but this reflects a single bond.
	Pre-IPO Risk Capital Annual investment through equity crowdfunding, business angels, and private equity growth funds and venture capital funds as % of loan and risk capital investment to SMEs	Finance for non-listed companies	1.4%	 2.5%	Estonia, Denmark and the UK lead by availability of risk capital for SMEs. Estonia has a prominent participation of business angel investment, while Denmark and the UK have more diversified sources of risk capital from private equity and venture capital.
	Cross-border Finance Composite indicator of cross-border M&A transactions, equity & bond issuance, Private Equity, and portfolio holdings. Range 0-1	Capital markets integration within the EU	0.23	 0.25	Luxembourg, the UK, and Belgium rank as the most interconnected capital markets with the rest of the EU. Luxembourg's lead is due to its fund and bond issues held within the EU, and a prominent share of their total private equity activity invested in companies in other EU countries.
		Capital markets integration with the rest of the world	0.40	 0.36	UK and Luxembourg are the most globally interconnected European capital markets. The UK prominently participates at intermediating global flows of FX and derivatives trading, cross-border holdings of equity shares, and facilitating public equity raising by non-EU companies.
	Market Depth Composite indicator of primary markets issuance, institutional capacity and availability of pools of capital. Range 0-1	Development of CEE markets	0.11	 0.13	The Czech Republic is the deepest capital market in CEE. In 2017, the Czech Republic was the second-most active primary market for equity and bonds in CEE after Poland; had the highest recovery rate for business insolvency; and was among the top 3 CEE countries with the largest accumulation of savings in market instruments (as % GDP).

⁷ For purposes of estimating trends, this table compares average of the respective indicators for the period 2012-16 (as baseline of pre-CMU initiatives) against the most recent performance in 2017.

Continuing progress towards building a Capital Markets Union

As the end of the current Commission approaches in October 2019, so too does its self-imposed deadline for having delivered the first stage of the CMU Action Plan. This is a tight and demanding timescale. But the scale of CMU's ambition has always meant it would need to be a long-term project and 2019 should not be viewed as the end of the story. **We hope the next Commission will continue to maintain the momentum needed to ensure that a European Capital Markets Union is achieved.**

The current Commission had the bold vision of making CMU the next step towards consolidating the European single market. Progress in delivering some of the CMU policy initiatives over the last three years has shown that there is political consensus on the importance for companies, investors, and financial stability of making CMU a priority for Europe. However, as this report shows, while positive progress has been made in unlocking the capacity of capital markets to support growth, more needs to be done to build a European Capital Markets Union.

European capital markets continue to benefit from the removal of cross-border barriers that impede the efficient allocation of capital. As the indicators in this report show, some CMU priority areas such as the availability of pre-IPO risk capital for SMEs, the amount of household retail investment on market instruments, and the labelling of sustainable instruments, have shown positive trends but more progress is necessary as significant gaps continue when comparing these indicators with other countries, or with Europe's long-term potential. Other indicators including, for example, access to market-based funding by corporates, the use of risk transfer instruments, or the integration of capital markets with the rest of the world, have deteriorated or shown no significant progress over recent years.

The report sets out policy recommendations which further support CMU and the political priorities of the Action Plan while tying in to each of the indicators. These recommendations are summarised below and are further elaborated on Chapter 8.

Summary of policy recommendations

A liquid and resilient secondary market that facilitates capital raising: It is crucial to develop a truly integrated, harmonised, low risk and low-cost post trading system in Europe- the barriers determined by the European Post Trade Forum (EPTF)⁸ should be urgently dismantled. Additionally, the recommendations of the European corporate bond markets Expert Group should be followed up before the end of 2018.

Fostering household investment: It is essential for European policymakers to provide incentives for retail investors to save for their retirement. Initiatives such as the Pan-European Personal Pension Product (PEPP) would significantly help European integration in this area and its design should take in consideration the need to promote access to diversified asset allocation to maximise risk-adjusted returns. Member States should encourage the take-up of PEPPs through appropriate tax incentives and consistent application across Member States.

Strengthen banking capacity to support the wider economy: The improvement of insolvency frameworks continues to be an important priority which will assist in freeing up capital by facilitating NPL reduction and at the same time encouraging cross-border investment- we encourage completing negotiations on the ambitious insolvency reform Directive as a matter of priority. Policymakers should also continue efforts to further develop the functioning of secondary markets for NPLs, including adequate calibration of the new securitisation framework, and collaborate more in standard setting to avoid multiple non-aligned NPL initiatives by different EU institutions.

Investing for long term, infrastructure and sustainable investment: A workable, flexible and dynamic EU taxonomy is a pivotal initiative which should be achieved prior to reviewing existing regulations. We believe that it is critical that this Taxonomy proposal be as effective as possible in delivering its core objective set out in the European Commission Action Plan to "provide clarity on which activities can be considered 'sustainable'". Sufficient disclosure of material information must play a key role for sustainable investment. Additionally, measures to encourage the issuance of sustainable securitisations are needed to diversify the sustainable assets available to investors, and it is hoped that recent securitisation regulatory initiatives could help in this respect.

⁸ The European Post Trade Forum (EPTF) is an informal expert group on post-trading, including the areas of collateral markets and derivatives, set up by the European Commission in 2016

Financing for innovation, start-ups and non-listed companies: A more suitable regulatory framework is needed to encourage institutional investors and high net-worth individuals to invest in unlisted SMEs and venture capital funds. A passport for business angel investors continues to be crucial to encourage early stage investment; likewise, further analysis on optimal tax incentives for business angel investment is desirable.

Facilitating cross-border investing: Withholding taxes continue to be one of the most prominent impediments to cross-border integration- the Commission and Member States should be ambitious in implementing the European Post-Trade Forum (EPTF) recommendations, including for example harmonisation of the fiscal status of market claims. It is crucial to adequately finalise, calibrate and implement some of the Prudential capital and liquidity rules currently under discussion⁹ given their importance at facilitating the flow of capital and liquidity within banks across the EU and the allocation of resources across countries and activities.

Strengthening the supervision and regulatory frameworks of EU capital markets: It is important that supervisory convergence contributes to the reduction of fragmentation of the Single Market. Additionally, the Commission can continue to monitor the implementation of key financial sector reforms to make sure that the regulatory framework operates as anticipated and without any unintended effects.

Strengthening market ecosystems: national capital market eco-systems with distinct national business models provide valuable services to their national capital market participants. Regulators should take a holistic approach to examining the range of factors that contribute to develop market eco-systems, for example, by evaluating the impact of regulatory initiatives on market participants as well as the role these actors play in such eco-systems.

We hope that these recommendations contribute to the ongoing debate on the further work that needs to be done to continue building a European Capital Markets Union.

The rest of the report is organised as follows. Chapters 1-7 present the recent evolution of each of the seven Key Performance Indicators at the EU and Member State level. Chapter 8 sets out the key policy recommendations for each indicator. Appendix 1 exhibits EU28 Country rankings for each of the indicators, Appendix 2 summarises in a scorecard table recent progress for EU and Members States in each of the KPIs and respective subcomponents, and Appendix 3 describes the data sources and methodology to produce the indicators.

⁹ For example, calibration of the Fundamental Review of the Trading Book (FRTB), cross-border waiver for capital and liquidity, intragroup flows and exposures, and Systemic Important Institutions (SIIs) methodology.

1. Market Finance Indicator

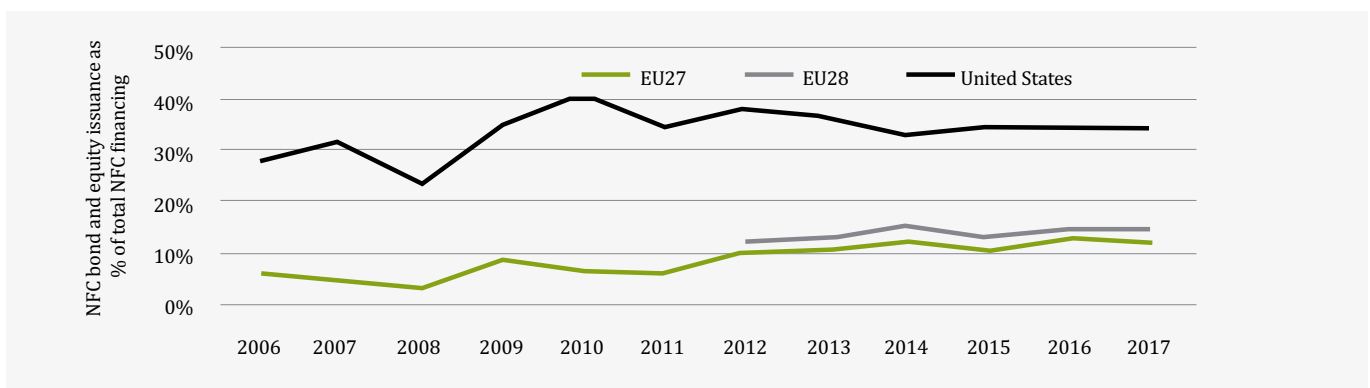
European companies have traditionally received a significant share of their funding from loans rather than capital market finance (equity and bonds). This indicator quantifies this trend, tracks changes over time and compares with the US, where companies receive a much higher proportion of funding from market finance.

The Market Finance indicator seeks to quantify the proportion of total finance for Non-Financial Corporates (NFCs)¹⁰, which is provided by capital markets instruments (equity and bonds). The indicator is calculated as annual gross NFC equity and bond issuance as a percentage of the sum of annual gross lending (new loans) to NFCs and equity and bond issuance¹¹.



Flow measures¹² (annual new issuance), rather than stock measures (outstanding amounts) are used in this indicator to allow a better comparison between equity markets and bonds and loans, and to more accurately analyse changes in activity in a given year.

1.1: Evolution of Market Finance indicator¹³



Source: Dealogic, US FED, ECB, BoE and other European central banks

EU Summary

The Market Finance indicator has shown a slight upwards trend for both the EU27 and EU28¹⁴ over the available time periods¹⁵, with the indicator for the EU28 slightly above that for the EU27 reflecting the significant market finance provided by the UK. The dashboard below illustrates the difference components of the indicator and the analysis has been split into three time periods:

¹⁰ Non-financial corporations produce goods and services for the market and do not, as a primary activity, deal in financial assets and liabilities.

¹¹ The indicator does not consider NFC finance provided by unlisted equity and trade credit.

¹² It should be noted that there is not a publicly available data source for US lending to NFCs which is directly comparable to the statistic for EU countries. For the EU, bank lending has been used as a proxy for total lending, due to the comparatively small amount of non-bank lending. This is not the case in the US, so we have estimated bank and non-bank lending to NFCs in the US using the methodology in Appendix 2.

¹³ For the US, this indicator aggregates lending provided by banks and non-banks.

¹⁴ EU28 are the 28 countries in the European Union as of September 2018, and EU27 are the same countries but excluding the UK.

¹⁵ The limited history for the EU28 is a result of the NFC bank lending data only being available from 2012 for the UK.

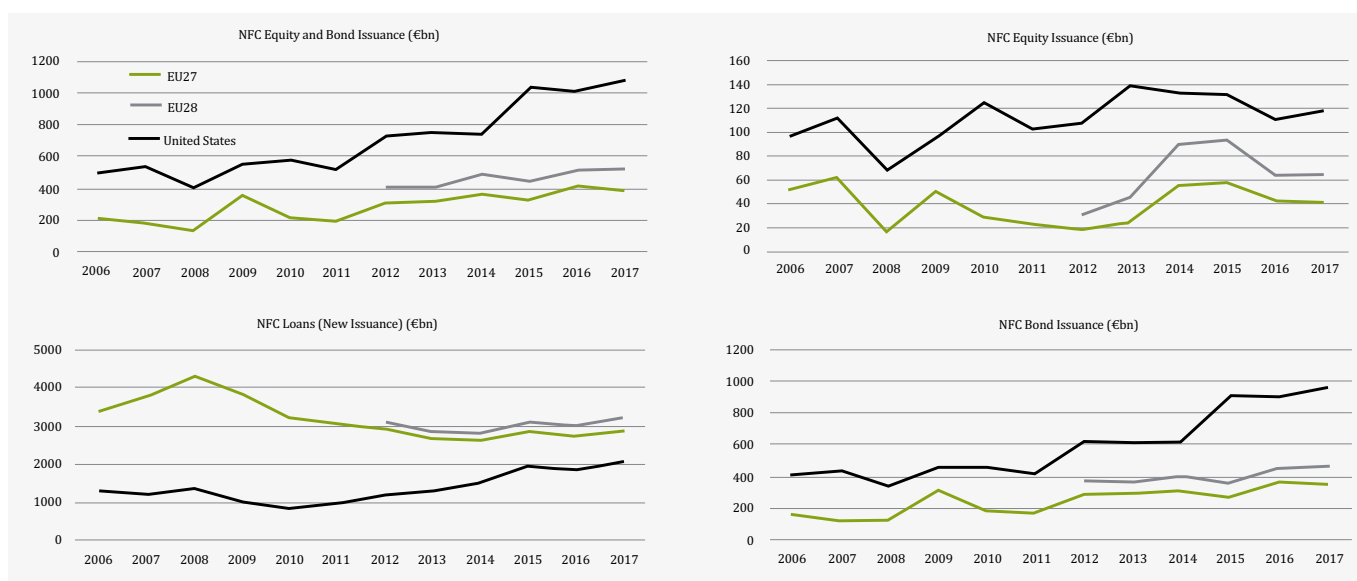
1. Market Finance Indicator

- **2006-08:** This period saw a fall in the EU27 Market Finance indicator from 6% to 3% driven primarily by a sustained increase in lending (see dashboard on chart 1.2). Bond issuance in this period stayed fairly constant, and although equity issuance increased from 2006 to 2007, it fell by more than 50% in 2008 as the financial crisis began to impact capital markets.
- **2008-12:** The Market Finance indicator increased to 10% by 2012, reflecting a continuous fall in lending volumes as banks significantly tightened credit standards for lending to NFCs in 2008 and 2009¹⁶ in the aftermath of the financial crisis. Bond issuance more than doubled in this period as NFCs turned to the capital markets to raise funds given the loss of bank lending capacity and took advantage of lower interest rates to issue longer term debt. Of the €174 billion increase in market finance for the EU27 in this period, €172 billion was due to an increase in bond issuance and €2 billion due to an increase in equity issuance (i.e. 6.3% of the 6.5% increase in the Market Finance indicator is due to bond issuance).
- **2012-17:** The indicator showed a slight upward trend throughout this period, as bank lending stabilised and both bond and equity issuance increased. Bank lending increased slightly in 2015, reflecting the first loosening in lending criteria for NFCs in 2014, after 7 years of tightening¹⁷. Equity issuance has tailed off in the last couple of years, whereas debt issuance has continued to climb to new highs in the low interest rate environment and continuing central bank quantitative easing measures.

EU vs. US Comparison

One of the most notable features of the indicator is the variations in the resilience of the different forms of funding for NFCs in the aftermath of the financial crisis. Bond financing for both the EU and US increased in 2009 compared to 2008 and remained above pre-crisis for the rest of the time series¹⁸. Lending on the other hand illustrated very different behaviour, with a sustained decrease after the financial crisis for both the EU and the US. In the EU this fall has been significant, and the recovery is only now beginning, nearly 10 years after the crisis. **This illustrates the need for greater diversification in the EU financial system and the danger of over reliance on bank lending.** Lending in the US returned to pre-crisis levels in 2013 and has recovered more strongly than the EU in the following years.

1.2: Market Finance Index Dashboard¹⁹



Source: Dealogic, US FED, ECB, BoE and other European central banks

16 ECB bank lending survey.

17 ECB bank lending survey.

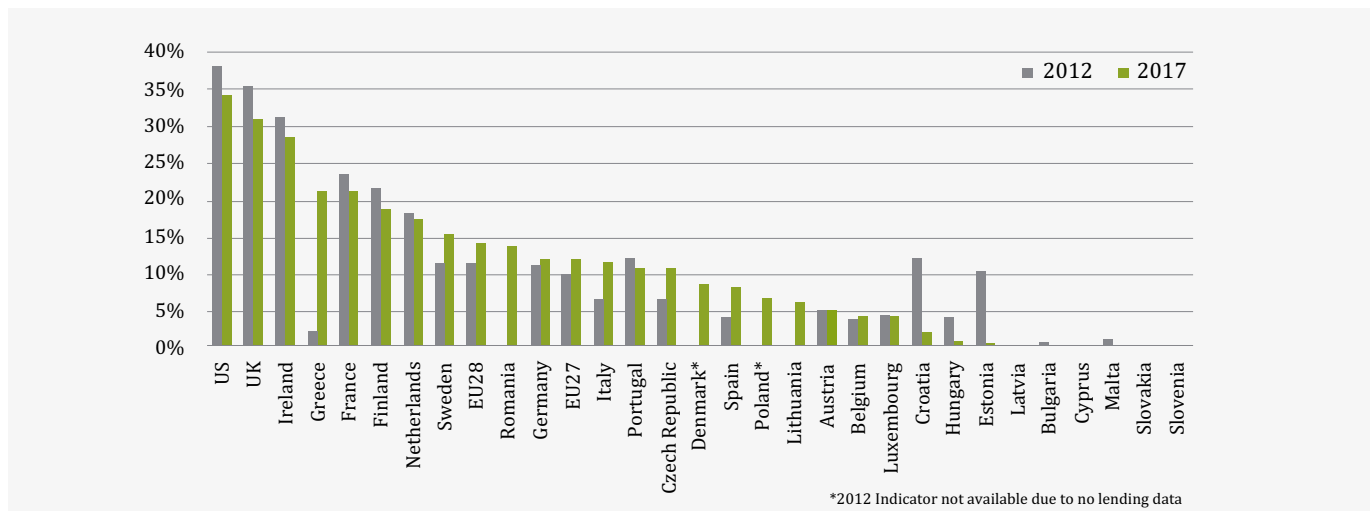
18 This trend appears to contrast with the reduction in banks' capital markets assets, including credit (see AFME PwC on the impact of regulations on capital markets activities). During the period, however, private pension funds and investment funds have taken a more prominent role in holdings of capital markets assets, partially offsetting the decrease banks' capital markets activities

19 While equity and bond issuance data are available for all countries since 2003, bank lending data is not available from 2003 for all EU27 countries. The countries for which bank lending data is available in 2003 represent 87% of the EU27 bank lending in 2017, when data is available for all countries. As a result, EU27 bank lending may be slightly underestimated, and the market finance index overestimated for early years in the time series.

Country comparison

When the index for 2017 is compiled for countries individually, the UK and Ireland are revealed to have the highest percentages of NFC finance from markets instruments, only slightly lower than the 34% value for the US in 2017. Of the nine countries with 2017 indicator values of less than 3%, seven are CEE countries reflecting their less developed capital markets.

1.3: 2017 Market Finance Indicator by country and comparison with 2012 Market Finance Indicator



Source: Dealogic, US FED, ECB, BoE and other European central banks

Chart 1.3 also illustrates the change in the indicator for each country between 2012 and 2017. Most countries with the highest 2017 index values have seen a declining trend in their indicator since 2012, except for Greece and Romania which have increased significantly from very low values in 2012, driven by a combination of increased in bond issuance and a substantial decrease in new lending amounts. In Greece in 2017, the large increase in the indicator compared to 2012 was due to the issuance of nine NFC bonds, compared to four in 2012, as well as new lending falling from €22 bn in 2012 to €7 bn in 2017. For Romania, no NFC bonds or equity were issued in 2012, giving a 0% indicator value, whereas in 2017, two NFC bonds were issued totalling €1.05 billion, leading to a large increase of the indicator value to 14%. As a result, these indicator changes are not necessarily showing a significant increase in the use of market finance for funding NFCs in these countries, but rather annual fluctuations in the issuance of a small number of bonds with low levels of lending.

The overall values for the EU27 and EU28 have increased in this period, but Croatia, Hungary and Estonia have decreased significantly. Again, the large fluctuation in the indicator values for Croatia, Hungary and Estonia are primarily due to changes in the issuance of a small number of bonds, for Croatia four bonds in 2012 compared to one in 2017, and for Hungary and Estonia, one bond in 2012 compared to none in 2017

Virtuous cycle between primary and secondary markets

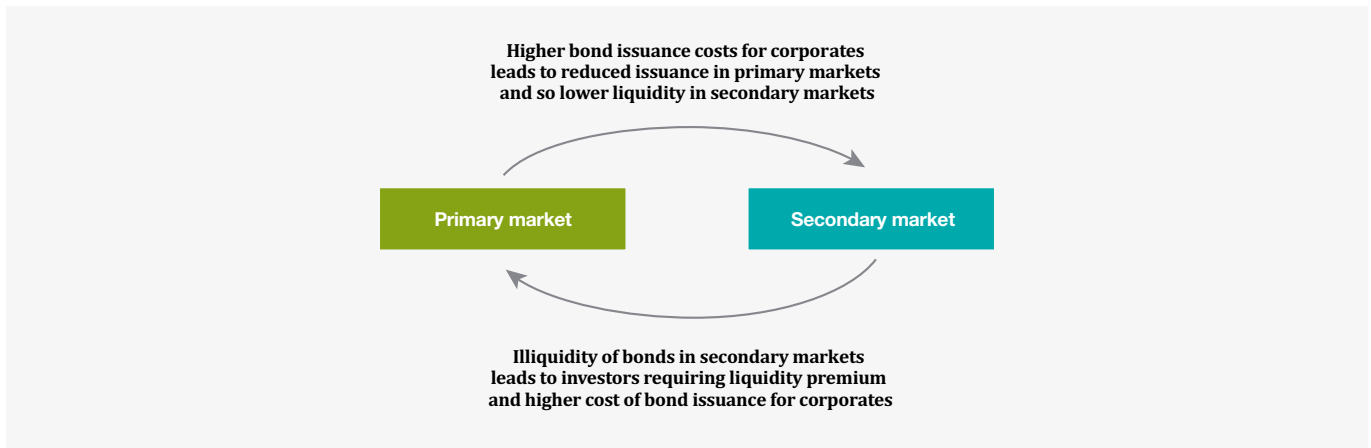
Primary and secondary markets are mutually dependent. Liquid secondary markets determine asset valuations (liquidity premia) which in turn influence issuance in the primary market. Likewise, an active primary market is necessary to encourage the trading of a diverse range of assets to satisfy investor demands for instruments with differing risk profiles and other characteristics.

This 'feedback loop' between primary and secondary markets is fundamental in ensuring that market finance is an attractive source of funding for NFCs. The diagram on chart 1.4 illustrates the interaction between primary and secondary markets for corporate bond issuance, where imperfect secondary market liquidity results in positive liquidity premia and lower debt issuance²⁰.

²⁰ See 'Secondary Market Liquidity and the Optimal Capital Structure' Arseneau, Rappoport, Vardoulakis (April 2015)

1. Market Finance Indicator

1.4: Feedback loop between primary and secondary markets



CMU should continue to address the functioning of primary and secondary markets from a holistic perspective by facilitating the issuance of market instruments by corporates, and by ensuring an adequate institutional framework for the functioning of secondary markets and post trade activities in a context of rapid technology evolution.

Comparison of stock and flow measures

Traditionally, measures of market finance compared to lending for NFCs have used stocks of outstanding instruments, rather than annual flows as used in the construction of the Market Finance indicator. These stock measures have tended to show that roughly 70% of funding for EU NFCs has been in the form of lending with the remaining 30% from market finance. In the US this is reversed and around 70% of finance for NFCs has come from capital markets instruments and the remainder has been lending.

The values in the Market Finance indicator are significantly lower than stock measures due to the fact that the maturity of loans is much shorter than the average maturity of bond issuance (equity has no maturity). The shorter maturity of loans means that annual new issuance will be relatively higher than bonds in comparison to the outstanding amounts, and as a result the indicator results in a lower number than stock measures.

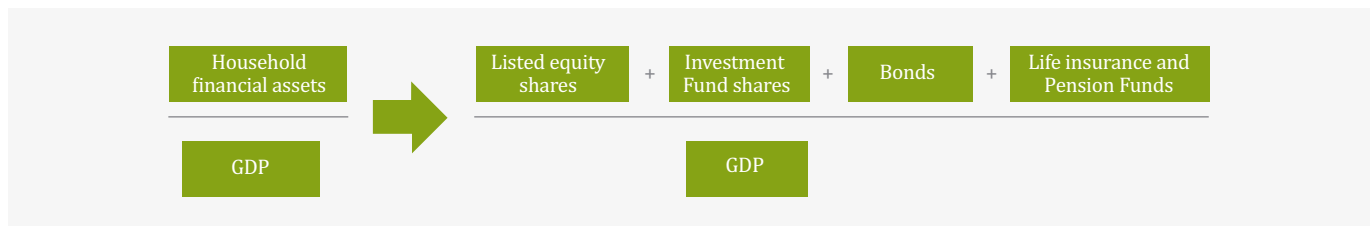
In the EU28, outstanding loans to NFCs at the end of 2017 totalled €5.4 trillion (ECB data) and new loan issuance in 2017 was €3.2 trillion. For bonds, the outstanding amount for EU28 NFCs at the end of 2017 was €2.7 trillion (Dealogic) and new issuance in 2017 was €442 billion. Thus, bonds were responsible for 33% of outstanding EU28 NFC debt (bonds and bank loans), in line with similar stock measures, but only 12% of new debt issuance (as measured by this indicator using flows).

In the US in 2017, there were €2.5 trillion (Federal Reserve) of outstanding loans to NFCs and new loan issuance was €2 trillion. For bonds, the outstanding amounts for US NFCs at the end of 2017 was €5.7 trillion (Dealogic) and new issuance was €918 billion. Thus in 2017, bonds were responsible for 70% of outstanding US NFC debt (bonds and bank loans) but only 31% of new debt issuance.

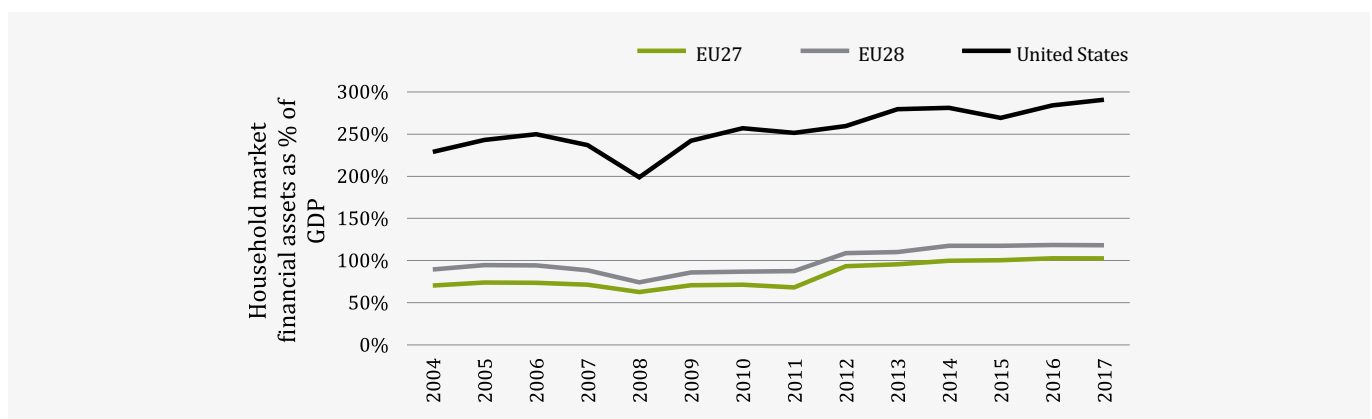
2. Household Market Investment Indicator

Although the average EU household accumulates savings at around twice the rate as the US, Europe's pool of investments in capital markets instruments made by retail investors is relatively underdeveloped compared to the US²¹, Switzerland and other countries. The deployment of a robust pool of savings into capital markets is fundamental to support risk finance, infrastructure development, company growth, and more broadly job creation and economic growth.

We have constructed a simple ratio to measure the availability of savings from retail investors to support capital markets financing. This ratio is estimated as household financial assets (excluding cash, deposits and unlisted equity) as a percentage of GDP. The asset classes aggregated as "Household financial assets" in this indicator include listed equity shares²², investment fund shares, bonds, life insurance reserves and pension fund holdings.



2.1: Evolution of Household Market Investment Indicator: household market financial assets (excluding cash, deposits and unlisted equity) as % of GDP



Source: Eurostat and OECD

Over the last five years, the total amount of EU household savings in financial assets has shown a positive increase from 108.7% of GDP in 2012 to 118.2% of GDP in 2017, although admittedly with minor improvements since 2014 when households had accumulated an amount of 117% of GDP in financial assets.

The widening gap of EU households' stock of financial assets with that of the US over the last decade is striking, from a difference of 124% of GDP in 2008 to 170% of GDP in 2017. This is in part attributed to the fact that since 2008 US asset prices have risen faster than in Europe (S&P500 has gained 195% during 2008-17 vs. 96% by STOXX600 in the same period) which, for purposes of the indicator, has been partially offset by a faster GDP growth in the US than in Europe (32% nominal increase in GDP vs 17% in the EU during 2008-17).

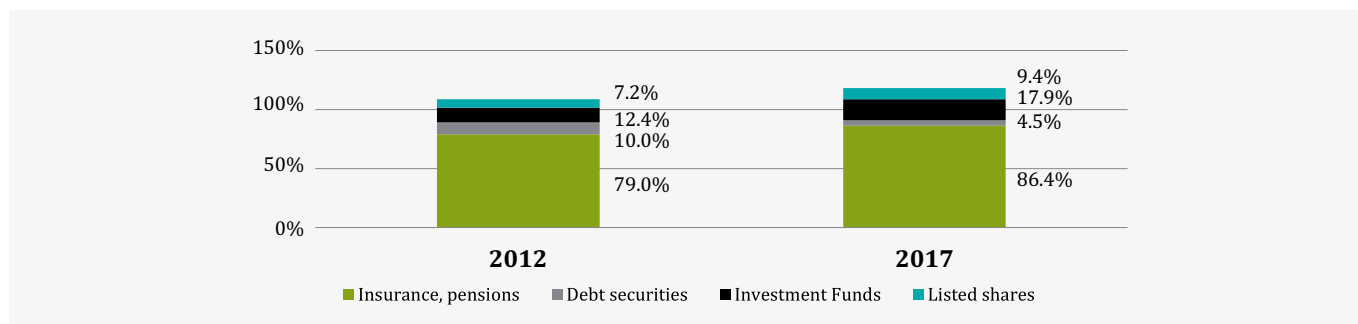
By asset classes, in the EU the most prominent increase in the indicator over the last five years has been households' holdings of insurance and pension products (+7.4pp), followed by savings in investment funds (+5.4 pp). See chart 2.2

²¹ One factor to consider, however, is the high level of financial wealth inequality in the US. According to Allianz (2017), the average financial assets in the US are six times higher than those of the median household, compared with a national average of 2x for other emerging and developed countries analysed in the report.

²² Unlisted shares, which are not necessarily a capital markets instrument, are not included in the indicator.

2. Household Market Investment Indicator

2.2: Household Market Investment Indicator by components: households' financial assets as % of GDP: EU28



Source: Eurostat

High savings rates invested in low-yield instruments

The average EU household accumulates savings at a higher rate than in other jurisdictions (net savings rate of c. 6%, compared with 3.3% in the US, and 2.6% in Japan), but invests 35% of those savings in conservative instruments like cash or deposits, while in the US households allocate only 15% in such instruments.

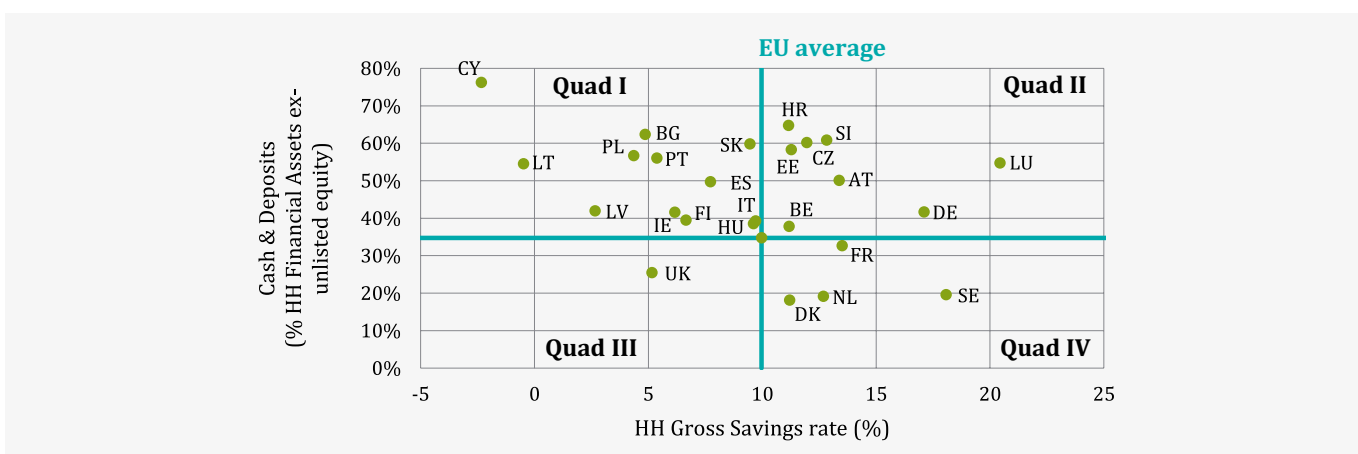
Differences in the regulatory framework of pension systems are among the reasons behind the contrast in asset allocation decisions between countries. In the United States, for example, 30% of household financial assets are saved on pension funds (e.g. retirement funds like employer-sponsored 401K retirement accounts) compared with a median of 14% in the EU where some countries' private pension systems are comparatively underdeveloped.

As shown by the Household Market Investment Indicator in chart 2.1, European households have accumulated only around 1.18 times their annual income (GDP) in non-cash or deposits financial savings (excluding non-listed equity), compared with 2.9 in the US. **That is, Europe is not converting its higher savings rates into productive long-term capital markets securities.**

There is, however, considerable heterogeneity between EU Member States in their savings amount and asset allocation profile. Chart 2.3 shows the gross savings rates²³ for EU Member States and percentage of financial assets saved in the form of cash and deposits. Four quadrants in Chart 2.3 characterise the savings-asset allocation mix for EU countries:

- Quadrant I: Low savings rate, suboptimal asset allocation
- Quadrant II: High savings rate, suboptimal asset allocation
- Quadrant III: Low savings rate, allocation of savings in long-term assets
- Quadrant IV: High savings rate, allocation of savings in long-term assets

2.3: Cash & deposits savings and household gross savings rate: 2017

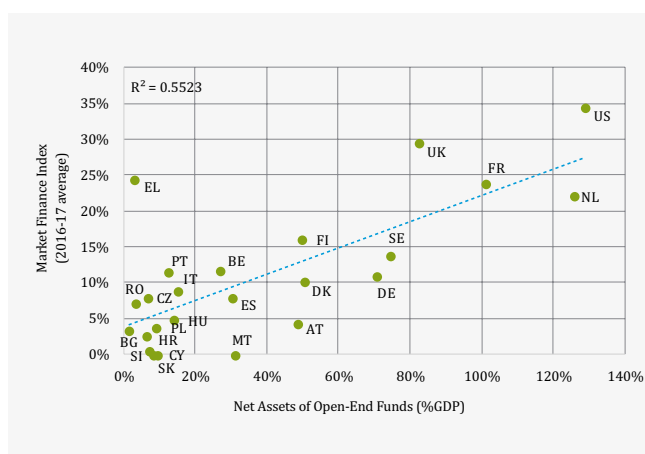


²³ The average gross savings rate for EU countries is 10%, which is equivalent to a c6% net rate after deducting for depreciation of fixed assets consumption

As shown in chart 2.3 most CEE countries have household saving rates²⁴ below the EU average, which results in a minimum contribution of funds for corporate capital raising, or to support economic convergence with the rest of Europe. The Netherlands, Sweden, and Denmark are in the ideal quadrant, characterised by a combination of high savings rate and low allocation of savings in cash or deposits. Germany, Luxembourg and Austria have high savings rates but invest assets in conservative non-capital markets instruments²⁵.

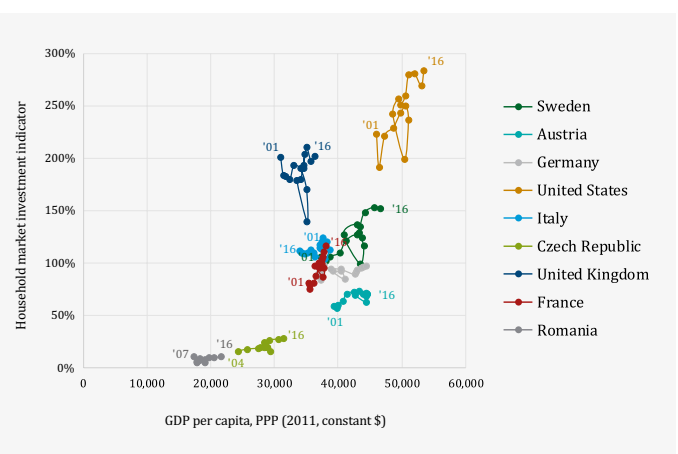
The relationship between the availability of deep savings in capital markets instruments and the capacity of corporates to raise finance in markets is strong, as illustrated in chart 2.4. This shows the correlation between assets of open-end investment funds and the Market Finance Index discussed in Section 1 (percentage of market-based finance in NFC annual external funding). That is why one of the key components for a successful CMU is the potential for countries to transition to Quadrant 4 with high savings rates and financial assets invested in long-term capital markets products.

2.4: Assets of open-end investment funds and Market Finance Index



Source: AFME and ICI Global

2.5: Evolution of household financial assets (excluding cash, deposits and unlisted shares as % of GDP and GDP per capita



Source: Eurostat, OECD, World Bank

There are structural factors that impede the development of robust pools of capital which cannot be addressed sufficiently through CMU policy interventions. As shown in chart 2.5, household financial assets (excluding cash and deposits) as % of GDP are strongly correlated with per capita incomes— as household income and net wealth improves, there is a larger propensity to accumulate savings and wealth in financial instruments. Other factors such as preferences towards highly liquid low-yield assets in response to uncertainty regarding economic future (i.e. precautionary savings), pensions taxation, or population dynamics, are also outside CMU’s policy remit.

However, CMU can help households channel savings into productive assets, for example, by encouraging the accumulation of personal long-term retirement savings or removing barriers that impede an optimal allocation of retirement assets.

Retirement savings

A common characteristic of countries with high savings rate and low allocation of assets in cash or deposits is the importance of retirement savings as a proportion of their financial wealth. Swedish, Danish, and Dutch households have an above-average proportion of savings in pension funds or life insurance reserves (including annuity technical reserves), in part due to compulsory or quasi-compulsory Pillar II pension systems that encourage individuals to save in individual retirement accounts.

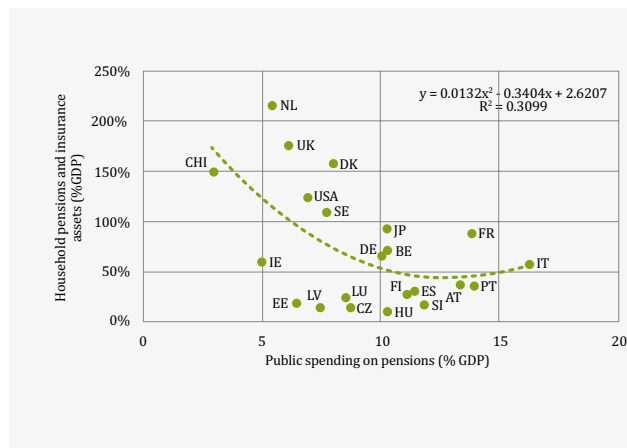
²⁴ The AFME New Financial report finds, however, that enterprise savings in CEE are above the EU average. These enterprise savings are typically retained earnings with short-term investment horizon.

²⁵ A Bundesbank paper attributes the underinvestment on capital markets instruments and high savings rates to structural risk aversion of German households following the capital market turmoil of the financial crisis, and historical concerns on hyperinflation and asset prices fluctuation https://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Monthly_Report_Articles/2015/2015_10_households.pdf?__blob=publicationFile

2. Household Market Investment Indicator

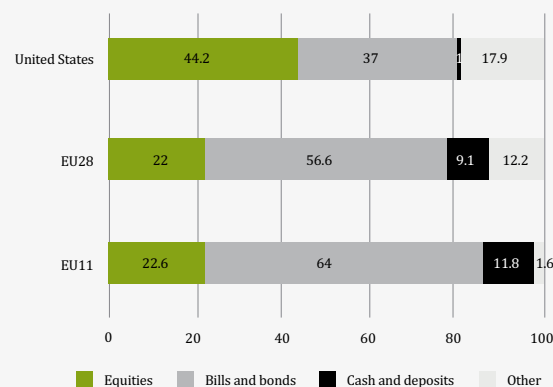
Building pools of private retirement savings not only contributes to develop capital markets but also results in lower public spending on pensions (see chart 2.6), freeing-up public resources dedicated to finance pay-as-you-go state pension systems- some of which are under funding pressure due to demographic changes, rising life expectancy and very low bond yields. Policymakers face the challenge of developing policies that build public safety nets (care and pensions) for the elderly, optimise the allocation of public and private resources, and support the development of capital markets.

2.6: Household pensions and insurance assets and public spending on pensions



Source: OECD and Eurostat

2.7: Pension fund asset allocation for EU, US and EU11 countries²⁶, 2015 (% of total investment)



Source: OECD

Facilitating the optimal allocation of long-term retirement savings is equally important. Statutory limits on portfolio allocations of institutional investors setting minimum or maximum restrictions on investing in certain asset classes (most commonly Government bonds) and regulations requiring the provision of a capital guarantee²⁷ can discourage investment and reduce long-term risk-adjusted returns of private pensions assets. Overly conservative regimes that favour investment in low-yield instruments or limit the allocation in e.g. foreign assets, venture capital funds, infrastructure or private equity to very restrictive levels, reduce long-term returns and discourage the development of alternative sources of financing. Pension assets should be invested cautiously, with an asset allocation profile that considers the investor's age, investment horizon, risk aversion and expected age of retirement. Over-investment in a limited variety of asset classes due to statutory limits can undermine this objective.

Favourable tax treatments to retirement accounts, including flexible limits on tax relief on retirement savings are also relevant considerations. Retirement savings (and more generally long-term savings) can be influenced by the fiscal regime applied to them, both in terms of income tax relief and capital gains tax treatment. Tax policy strategies, however, are at discretion of Member States and are not currently part of CMU, but it is relevant to consider their significant influence for the implementation of instruments like the pan-European Personal Pension Product (PEPP) by Member States and more generally when developing strategies for retirement and capital markets development.

²⁶ Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia, Slovakia,

²⁷ See for example EFAMA <https://www.efama.org/Pages/Bocconi-study-shows-benefits-for-consumers-of-life-cycle-investment-as-a-PEPP-default-option.aspx>

3. Loan Transfer Indicator

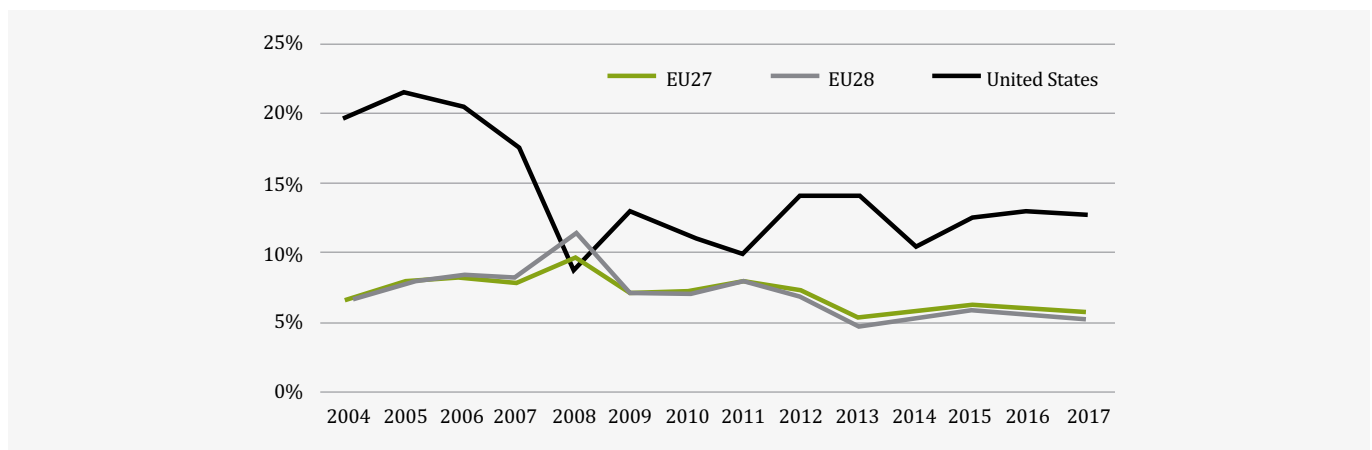
The Loan Transfer indicator seeks to measure the extent to which corporate and household loans are converted into capital markets instruments such as covered bonds, securitisations or loan portfolio sales²⁸. Such actions create tradeable instruments for investors, and in the case of securitisation and loan portfolio sales, enable the transfer of risk from the original owner of the loans to investors, thus freeing up capital originally held by banks against these loans to support further lending to the economy.

The Loan Transfer Indicator is estimated as a simple ratio of annual placed and retained securitisation issuance, covered bond issuance and loan portfolio sales relative to outstanding loans to NFCs and households. The indicator is calculated by dividing flow measures by stock measures which reflects the intent of the indicator, to show what proportion of outstanding loans have been converted into capital markets instruments each year.



In recent years in Europe, over 50% of securitisation issuance has been retained by the issuer rather than placed on the public markets, whereas in the US, all issuance has been placed on the public markets. Both placed and retained issuance have been used for the calculation of this index, as even though retained securitisations are not bought by investors, they are still a tradeable capital markets instrument that could be sold to investors if needed. Retained issuance has also tended to be used by banks as collateral in repo transactions with central banks, thus providing them with funding.

3.1: Loan Transfer Index: covered bond, securitisation and portfolio sales as % of outstanding loans



Source: AFME, SIFMA, ECBC, KPMG, FDIC, ECB and US Fed

The EU28 loan transfer index increased from 7% to 11% in the years leading up to 2008, as total securitisation increased from €244 billion in 2004 to €813 billion in 2008, outpacing the increase in outstanding loans (€9.4 trillion to €12.8 trillion). There was then a sharp and sustained decline in the EU28 Loan Transfer Indicator, driven by a spill over effect of the fallout from issues with sub-prime mortgage securitisation in the US and a depressed housing market following the financial crisis, to below 5% in 2013, before a stabilisation in the following years.

²⁸ These include private debt sales of mostly problem loans and non-performing loans packaged in portfolio instruments. In some countries like Italy it is common that a SPV is used, but these are most frequently private deals and not included as “securitisations” for purposes of this report.

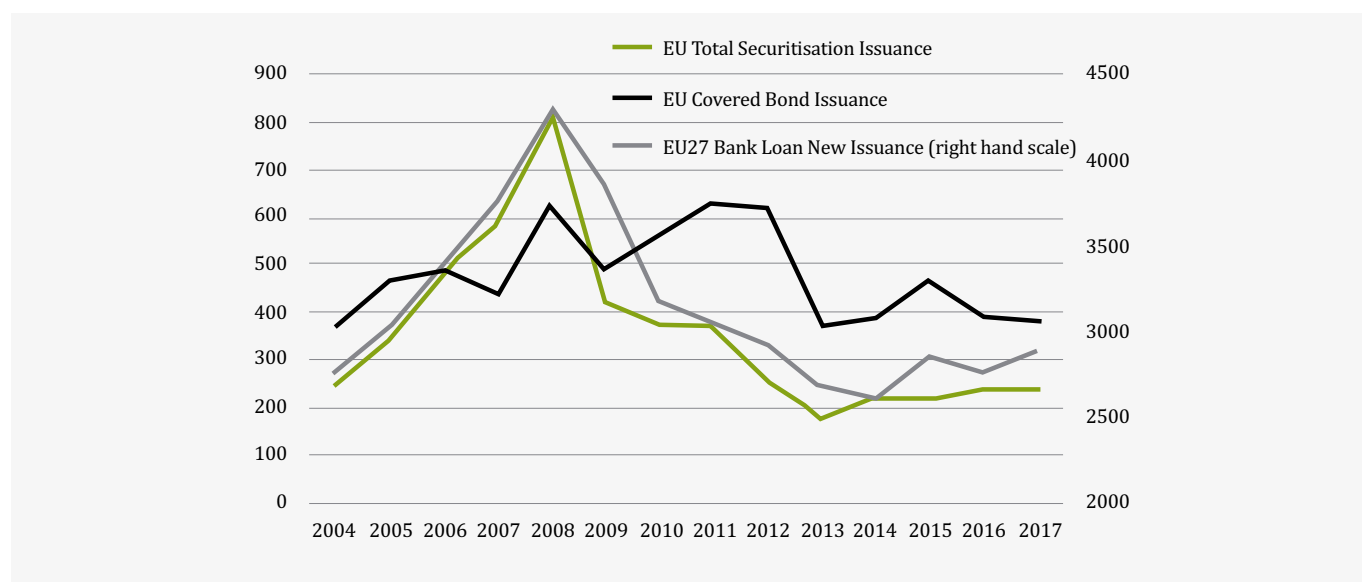
3. Loan Transfer Indicator

In the US, the indicator exhibited different behaviour prior to 2008, as it fell from over 20% to less than 10% in 2008. From 2004 to 2007, the fall in the US indicator was primarily due to significantly increased outstanding loans (€9.7 trillion to €11.8 trillion) rather than a decrease in securitisation issuance. The fall of the US indicator from 2007 to 2008, however, was driven by a fall in securitisation issuance from €2.1 trillion to €1 trillion, driven by concerns over the quality of underlying loans. At this point, the indicator value for the US fell below that of the EU28. After 2008, the indicators in the US and EU again showed different trends, as the US indicator value has increased slowly, whereas the EU value has fallen lower.

A comparison between EU28 securitisation issuance and covered bond issuance is set out in chart 3.2. Before 2008, both securitisation and covered bond issuance grew, significantly more quickly in the former case, but after 2008 the issuance trends were very different. As has been well documented, European securitisation issuance has fallen sharply since 2008, from €813 bn to €177 bn in 2013. Covered bond issuance, however, continued to increase before a sharp fall in 2013.

Chart 3.2 also includes bank loan new issuance in the EU27 (UK is not included as new issuance data is not available before 2012), showing a strong relationship between securitisation issuance and bank loan new issuance. On one hand, a robust lending market increases the pool of loans to securitise; likewise, although securitisation does not directly affect the demand for mortgage borrowing, a dynamic securitisation market supports the supply and financing of new bank loans by enabling capital relief (by transferring the risk associated with a pool of loans to investors) that can be utilised for further lending to the economy.

3.2: EU28 total securitisation and covered bond issuance (€ bn)

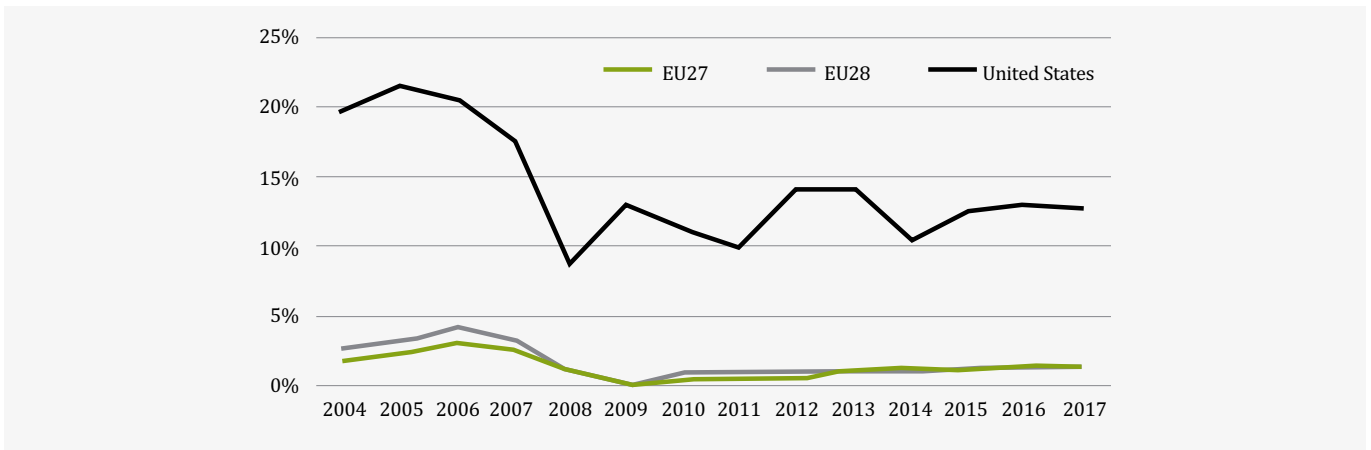


Source: AFME, ECBC, ECB, BoE and other European central banks

An alternative version of the loan transfer indicator is set out in chart 3.3, which only looks at the instruments that enable the risk associated with loans to be transferred to investors (placed securitisation and loan portfolio sales) and so does not consider covered bonds or retained securitisation²⁹. This also allows for a more direct comparison with the US, as covered bonds are very rarely issued in the US, and all US securitisation issuance is placed on the public markets. This version of the indicator illustrates a much greater difference between the values in the US and the EU, as the EU value has not exceeded 2% since 2007.

²⁹ When securitisation notes are retained by the originator, they also retain the portion of risk associated with the pool of loans underlying those notes.

3.3: Loan Transfer Indicator – placed securitisation and loan portfolio sales only

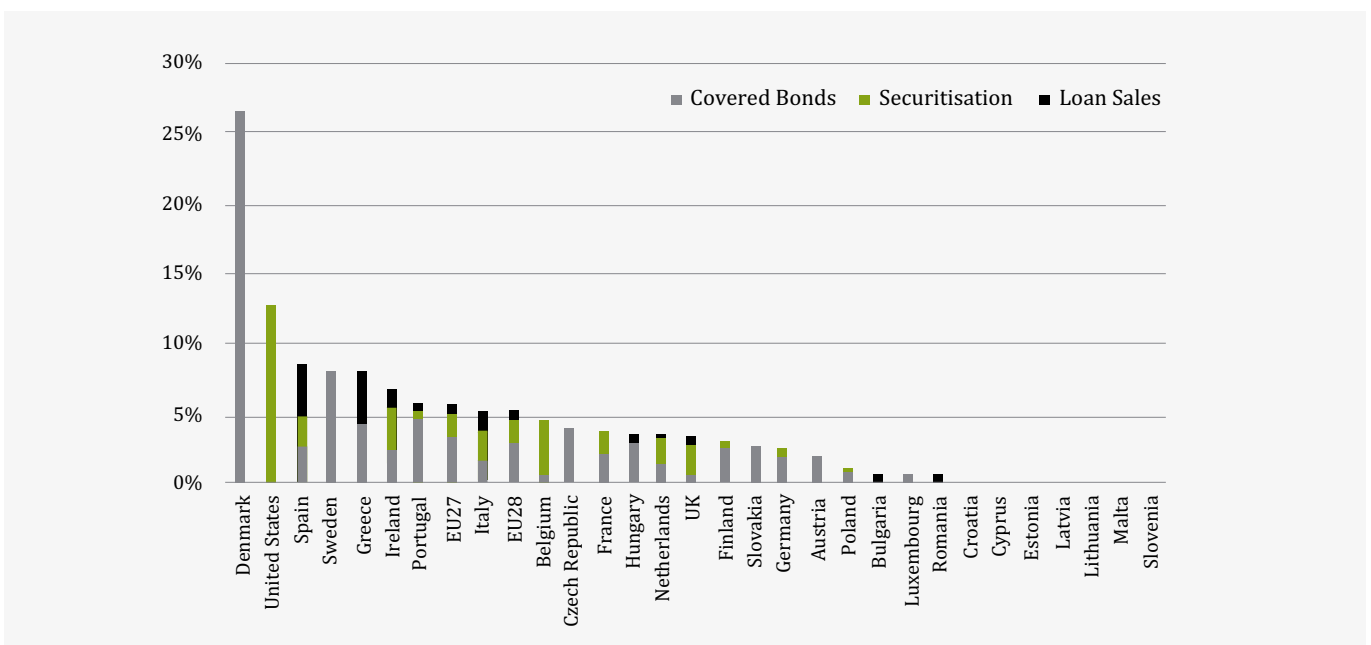


Source: AFME, SIFMA, ECBC, KPMG, FDIC, ECB and US Fed

Country comparison

In the EU in 2017, five of the countries with the highest values for the loan transfer index, are countries that have had significant issues with NPLs in recent years, Spain, Italy, Ireland, Greece, and Portugal. This is encouraging for several reasons, firstly it shows that efforts are being made to deal with non-performing loans on bank balance sheets in these countries with a significant contribution of loan sale disposals (the most prominent instrument used by banks for distressed asset sales) in the indicator values as shown in chart 3.4. Secondly the indicator values for four of these countries have increased significantly since 2012, as illustrated in chart 3.5, with Italy the exception.

3.4: 2017 Loan Transfer Index – national comparison (covered bond, securitisation and portfolio sales as % of outstanding loans)



Source: AFME, SIFMA, ECBC, KPMG, FDIC, ECB and US Fed

In 2017, a mix of the three loan transfer instruments has been used in Spain, Italy and Ireland, whereas Greece has not issued a securitisation and Portugal has relied upon covered bonds. The advantage of loan sales and securitisation in this respect is that risk can be transferred to investors and so banks can achieve regulatory capital relief. This is beneficial in terms of freeing-up balance sheets for further lending to the real economy. As loans backing covered bonds remain on bank

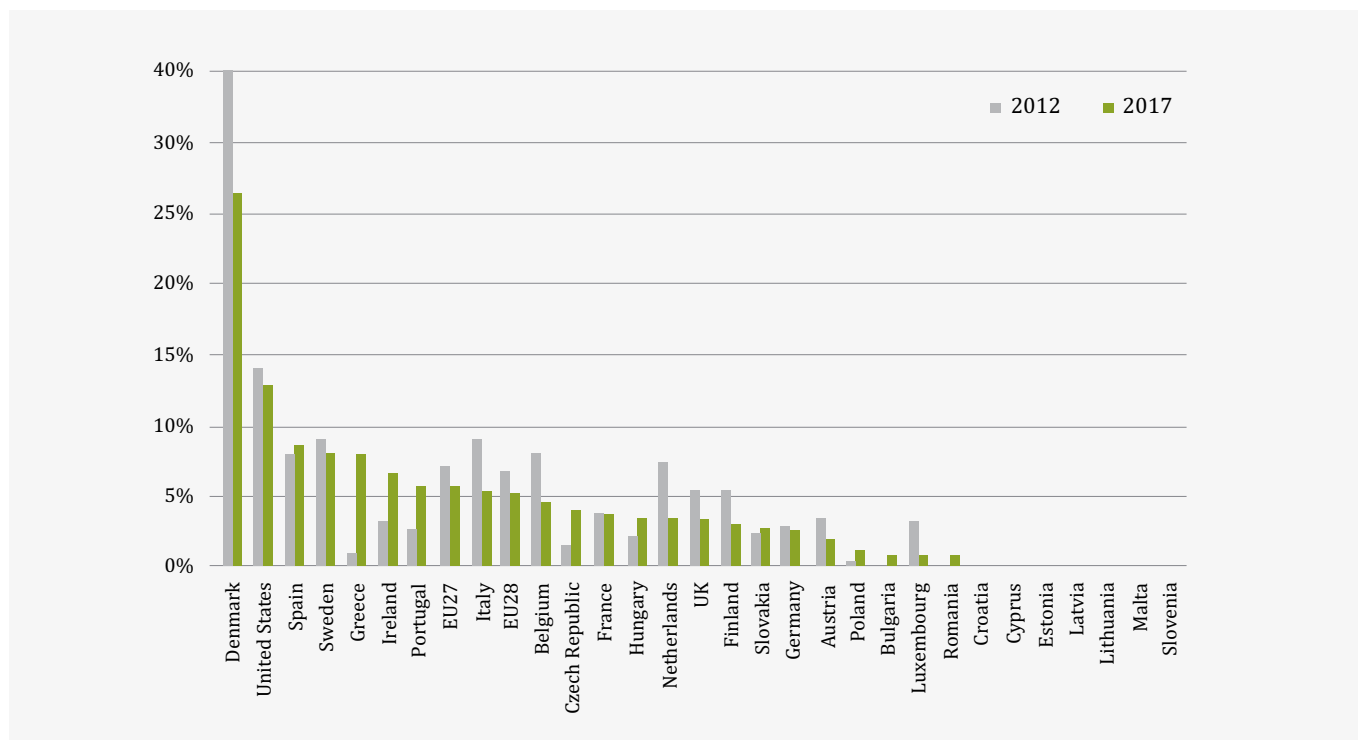
3. Loan Transfer Indicator

balance sheets, such regulatory capital relief benefits are not possible although such instruments attract relatively low capital consumption and provide attractively priced funding. Covered bonds also do not allow NPLs to be used in asset pools.

The comparison of the 2017 index at a national level also shows significant diversity across the EU28 in terms of instruments used. The Nordics (Denmark, Sweden and Finland), almost exclusively utilise covered bonds, whereas Northern European countries, primarily Ireland, Belgium, UK and the Netherlands have used securitisation to a greater extent. The use of these instruments in CEE countries is negligible.

Some caution is required when comparing the indicator value for Denmark to the values for other countries. Danish covered bonds are different from those in other EU countries in a couple of important respects. The assets backing Danish covered bonds are often held in a bankruptcy remote special purpose vehicle, rather than on bank balance sheets as is the norm in other EU countries, and the loan payments are passed through to the covered bond investors in a similar manner to securitisation structures, whereas covered bonds in other EU countries often have fixed interest rates as the issuer retains the prepayment risk. The size of the covered bond market in Denmark is also very different to other EU countries, as reported by the IMF³⁰, “the stock of covered bonds is equivalent to 143% of GDP, more than four times as large as in any other country. The covered bond market is also nearly four times larger than the Danish government debt market”.

3.5: 2017 Loan Transfer Index by country and national comparison with 2012 (covered bond, securitisation and portfolio sales as % of outstanding loans)



Source: AFME, SIFMA, ECBC, KPMG, FDIC, ECB and US Fed

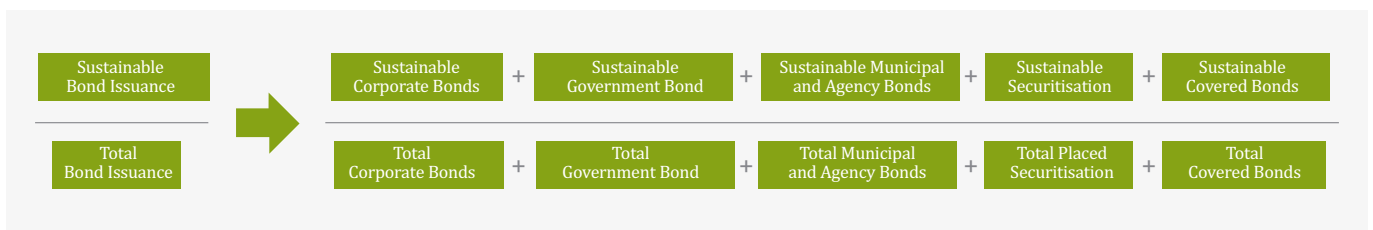
Chart 3.5 illustrates the decline in the indicator from 2012 to 2017 for countries that have traditionally had significant securitisation markets. The use of securitisation has fallen significantly since 2007, attributed to the harsh regulatory treatment of securitisation and as a legacy of the immediate aftermath of the financial crisis. Retained securitisation issuance has been higher than placed issuance since 2007, as banks have used securitisation tranches as collateral for central bank lending.

30 IMF Country Report 14/349: Denmark: Systemic Issues in Mortgage Loans and Covered Bond Finance: Technical Note

4. Sustainable Finance Indicator

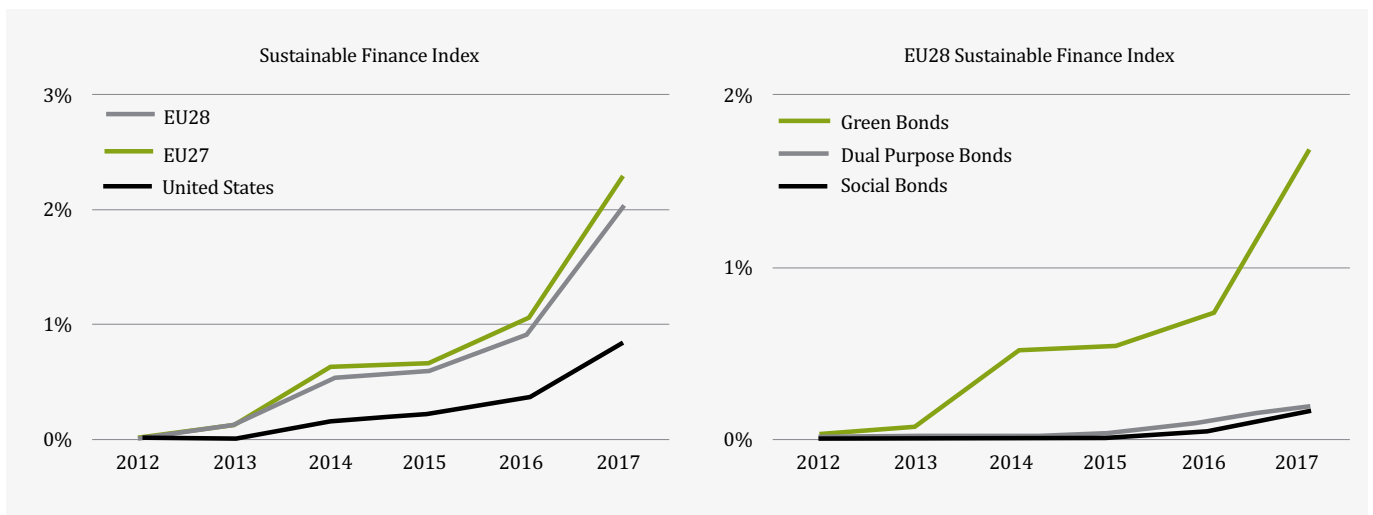
The subject of climate change and sustainable development has quickly increased in importance in recent years and a growing number of bonds have been labelled as ‘sustainable’ or ‘green’. In addition, investors are increasingly integrating environmental, social and governance (ESG) considerations in their investment decision and advisory processes. The European Commission has identified sustainable finance as an area of importance highlighted by the release of the Sustainable Finance Action Plan in March 2018 and subsequent legislative proposals on the establishment of a Taxonomy, disclosure requirements and low-carbon and positive carbon impact benchmarks.

This indicator seeks to quantify the sustainable labelling of new bond issuance and is estimated as simple ratio of issuance of sustainable securitisation, sustainable corporate bonds (financial and non-financial corporates), sustainable government, municipal and agency bonds and sustainable covered bonds relative to total issuance of placed securitisations, corporate bonds, government, municipal and agency bonds and covered bonds. The indicator does not consider sustainable equity issuance due to the difficulty in assessing and classifying organisations as sustainable or not but could evolve over time reflecting changes in the sustainable finance sector and data availability.



“Sustainable” assets include bonds that have been labelled as “Green” by the issuer and are included in the Climate Bonds Initiative database, or bonds labelled “Social” or “Sustainable” (proceeds designated to both green and social projects, and which for clarity are called Dual Purpose Bonds in this report) by the issuer and included in the Dealogic database.

4.1: Evolution of Sustainable Finance Indicator (Sustainable bond issuance as % of total bond issuance by value)



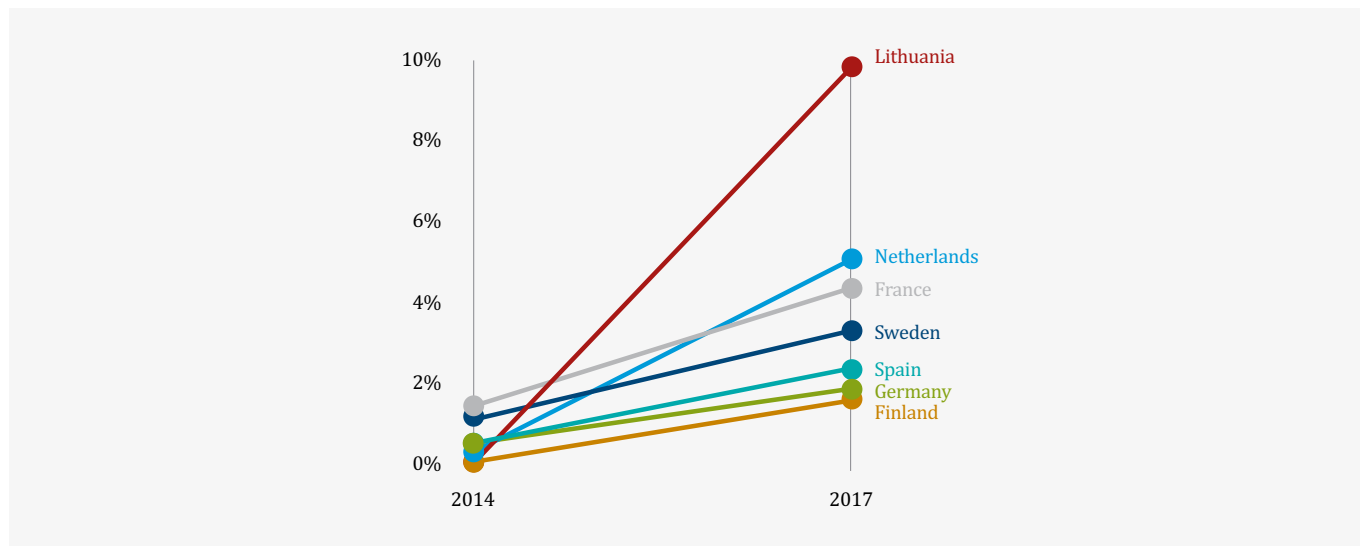
Source: CBI, Dealogic, ECB, SIFMA, ECBC and AFME

Although the first green bond was issued in 2007 by the European Investment Bank, charts 4.1 exclude supranational issuance, and as a result the first bonds considered for the indicator were issued in 2012. The chart shows strong growth in the sustainable labelling of bond markets in the EU in recent years, although the overall percentage of bonds classified as sustainable is low at around 2% in 2017. This indicator reverses the trends seen in the other indicators, as the **EU is a global leader in sustainable finance, issuing a significantly higher percentage of sustainable assets compared to the US**. The UK also trails the EU27 in this respect, as the EU27 indicator is higher and has been growing faster than the indicator for the EU28.

4. Sustainable Finance Indicator

In the EU28, the green bond sector is significantly more developed than the social and dual-purpose bond sectors. The first social bonds were issued in 2016, so the market is at an early stage and set to grow in the years ahead. As the dual-purpose bonds represent instruments where the funds are allocated to both green and social activities, it is not yet clear whether this category will continue to be a niche instrument or could grow significantly as issuers actively seek out activities for the funds raised, which incorporate both green and social benefits.

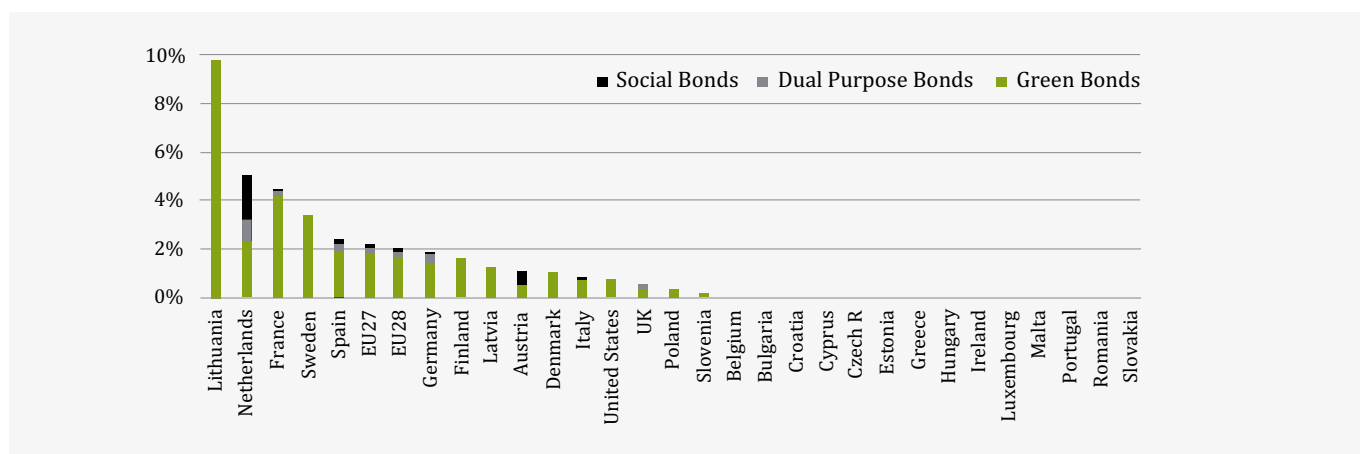
4.2: Sustainable Finance Indicator: selected EU countries (Sustainable bond issuance as % of total bond issuance)



Source: CBI, Dealogic, ECB, SIFMA, ECBC and AFME

At a national level Netherlands, France and Sweden are the leading EU nations, all with over 3% of bonds issued in 2017 classified as sustainable and significant issuance for several years. Lithuania had the highest indicator value in 2017 of almost 10%, but this reflects a single bond, the only sustainable bond to be issued in Lithuania as of the end of 2017. Spain, Germany and Finland have seen slower but consistent growth, whereas the UK has not issued more than 1% of debt instruments which are classified as sustainable in any year.

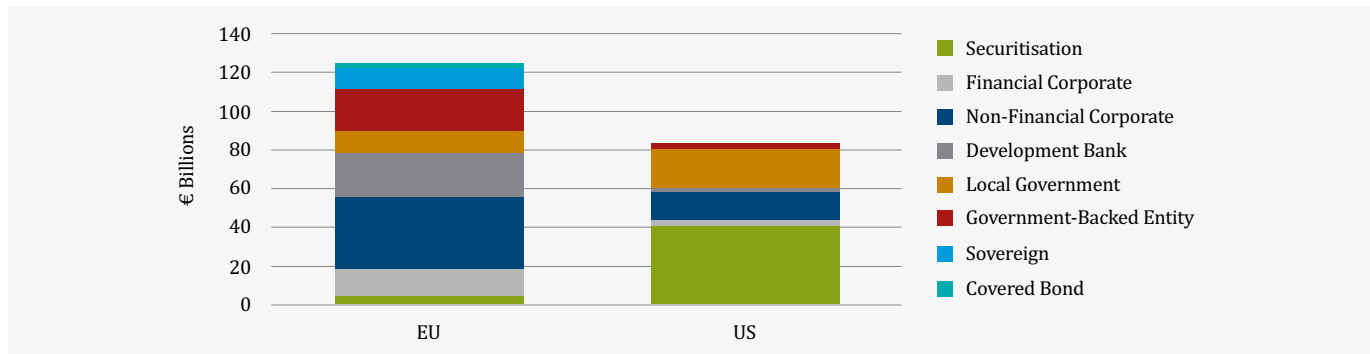
4.3: 2017 Sustainable Finance Indicator (sustainable bond issuance as % of total bond issuance)



Source: CBI, Dealogic, ECB, SIFMA, ECBC and AFME

In 2017, 14 EU member countries had sustainable debt instruments issued by institutions in their country and 14 did not. Of those that did, the clear majority of issuance was green bonds (82.3% by volume), followed by dual purpose bonds (9.4%) and social bonds (8.3%). Netherlands was a significant exception to the trend, where over 50% of 2017 issuance was classified as social and dual purpose.

4.4: Total Sustainable Bond Issuance Breakdown



Source: Climate Bonds Initiative, Dealogic

Chart 4.4 sets out the breakdown of total sustainable issuance between 2012 and 2017 into various issuance type categories, again omitting supranational issuance. The most notable difference between the US and the EU is the volume of securitisation issuance. The EU has seen diverse issuance in terms of issuer type, with non-financial corporates issuing the greatest volume, but lacks diversity in terms of bond type, as around 95% of issuance in this period were senior unsecured bonds.

The US has seen a much greater proportion of securitisation issuance, primarily from Fannie Mae³¹ (over €25bn issued in this period), but also auto ABS, solar ABS and PACE ABS³², giving a greater diversity of sustainable bond types for investors. **The US market illustrates that sustainable securitisation has significant growth potential in EU, and as other issuance types have developed well in the EU to date, focussing on developing the sustainable securitisation market would enable the EU to further establish its role as a leader in sustainable finance.**

In the most recent data available, covering the first half of 2018, there has been a notable increase in the issuance of sustainable covered bonds in the EU (€1 billion in all of 2017 compared to over €1 billion in the first half of 2018), including the first green covered bond in Sweden. Sovereign sustainable bond issuance has also increased in the first half of 2018 (€6.6 billion compared to €9.7 billion in the whole of 2017) as France and Poland have returned to the market and Belgium and Lithuania have issued their first green bonds.

Sustainable assets under management³³

Europe is the global leader in sustainable assets under management, both in terms of absolute amounts and percentage of total managed assets. It is important to note that the values in chart 4.5 do not reflect total amounts of all assets which are sustainable, but rather total assets managed under sustainable investment strategies regardless of individual asset characteristics. In Europe, the most utilised sustainable investment strategy is exclusionary screening (the exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria) and norms-based screening (screening of investments against minimum standards of business practice based on international norms), representing 44% and 22% of sustainable assets under management. Other common sustainable and responsible investment strategies³⁴ include corporate engagement and shareholder action, ESG integration, best-in class screening, sustainability themed and impact investing.

31 Fannie Mae (full name is the Federal National Mortgage Association) is a US government-sponsored enterprise which provides mortgage originators with funding for further lending by securitisation existing mortgages. There is no equivalent organisation in the EU.

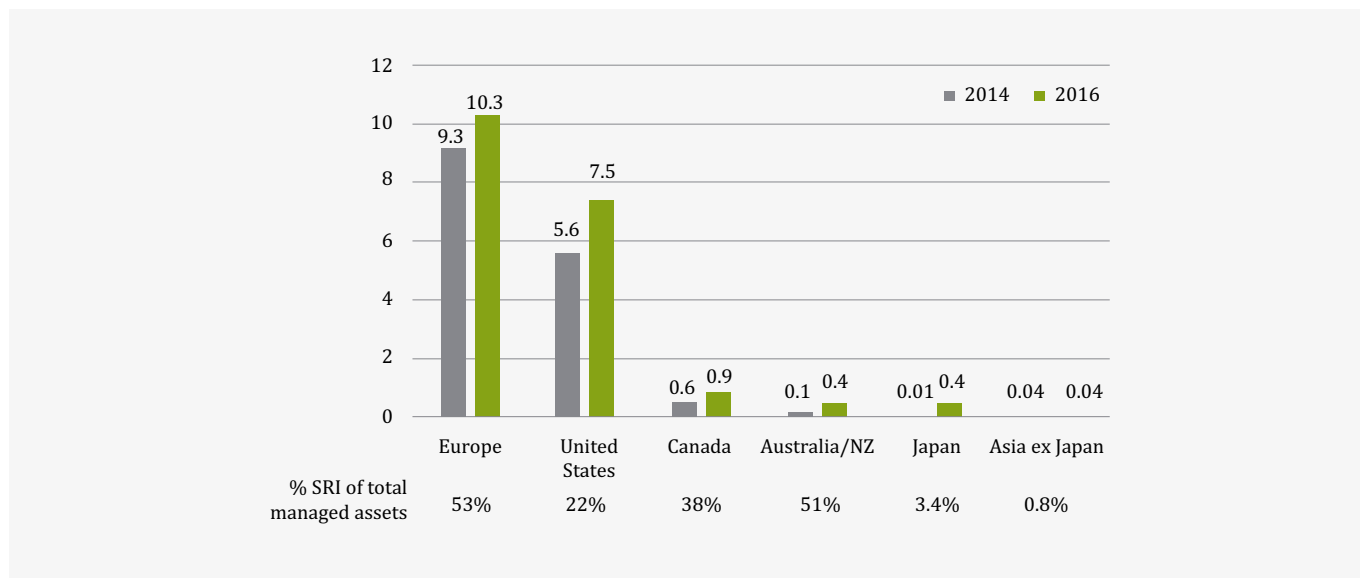
32 Property Assessed Clean Energy (PACE) is a means of financing energy efficiency upgrades or renewable energy installations for residential, commercial and industrial property owners.

33 Sustainable investing is an investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management, and in this definition include socially responsible investing (SRI).

34 ESG integration - the systematic and explicit inclusion by investment managers of ESG factors into financial analysis; Best-in-class screening - investment in sectors, companies or projects selected for positive ESG performance relative to industry peers; Sustainability themed investing - investment in themes or assets specifically related to sustainability (for example clean energy or sustainable agriculture); Impact investing - targeted investments, typically made in private markets, aimed at solving social or environmental problems, where capital is specifically directed to traditionally underserved individuals or communities, as well as financing that is provided to businesses with a clear social or environmental purpose; Corporate engagement and shareholder action - the use of shareholder power to influence corporate behaviour, including through direct corporate engagement (i.e., communicating with senior management and/or boards), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines.

4. Sustainable Finance Indicator

4.5: Sustainable assets under management (€ trillion)



Source: Global Sustainable Investment Alliance

Impact of growth in sustainable bond issuance

Global green bond issuance grew 85% in 2017; however, this was not reflected in a similar increase in green investments.

The proceeds from green bonds in the CBI dataset are primarily allocated to renewable energy (€44 billion or 33%), low carbon buildings and energy efficiency (€39 billion or 29%) and clean transport (€21 billion or 15%). According to the IEA's 2018 World Energy Investment Report, total global investments in renewable power fell 7% in 2017 to €258 billion and investments in energy efficiency (including transport) grew by only 3% to €203 billion.

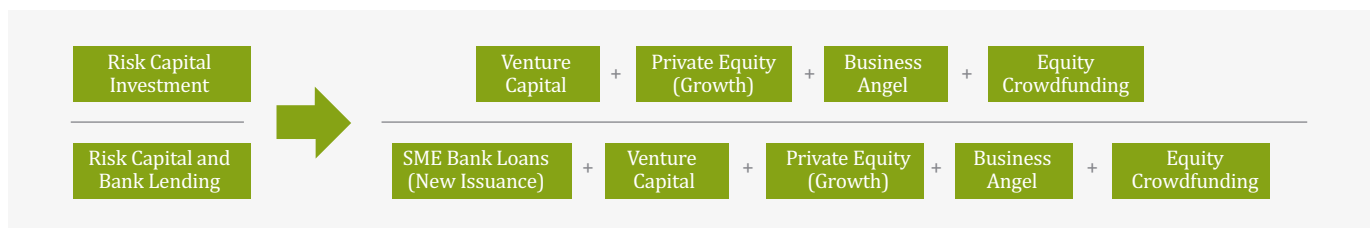
Obviously not all investments in green activities are funded by bond issuance, but this disconnect in the growth rates suggests that the growth in green bond issuance in recent years has not reflected significant overall increases in green investments, but rather an improvement in the identification and labelling of investment in green activities, and the specific bonds that provided the relevant capital. Nevertheless, this is an important development as it enables investors to make more informed investment decisions and provides a clearer identification for them, as well as underlying retail investors, of the use of their funds to meet sustainability goals. Accurate labelling of sustainable instruments is also key to ensuring that incentives for sustainable investment can be targeted correctly, and that capital can efficiently and effectively be allocated to activities that contribute to climate change mitigation and social development targets.

5. Pre-IPO Risk Capital Indicator

Small-and-medium enterprises (SMEs) are Europe's engine of growth. SMEs contribute 85% to total EU job creation and represent 99% of all EU businesses³⁵. However, EU SMEs' funding structure significantly relies on bank lending with only very limited access to other sources of finance.

Pre-IPO risk capital funding in the form of venture capital, private equity for companies at growth stage, business angel investment, or equity crowdfunding can supplement traditional forms of financing. It can also help companies grow to a point where it becomes possible for them to raise further permanent capital through a listing of their shares.

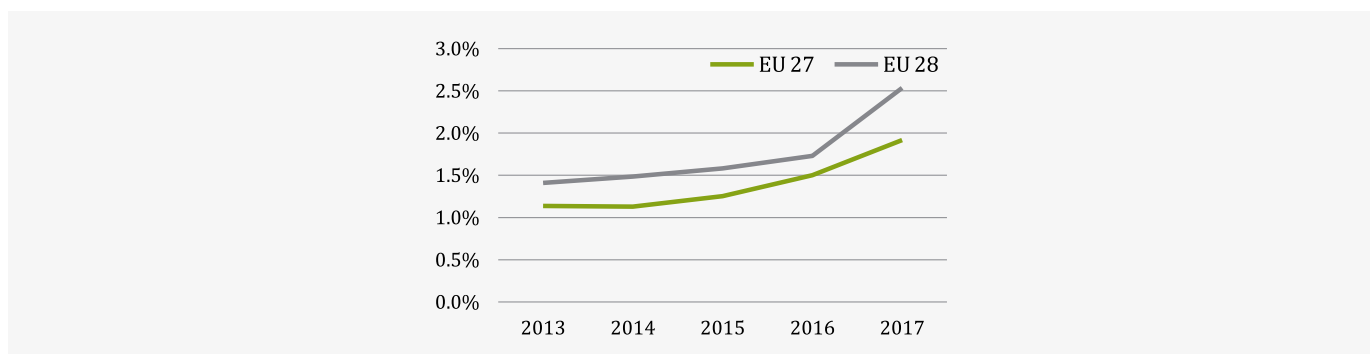
The Risk Capital Indicator quantifies the availability of pre-IPO risk capital financing for SMEs. The ratio is estimated as the aggregate amount of annual risk capital investments (i.e. venture capital, private equity investment for companies at growth stage³⁶, business angel investment³⁷ and equity crowdfunding) relative to total annual new issuance of SME bank loans and risk capital finance. SME lending is measured as the flow of new gross bank loans of below €1m to non-financial corporates.



According to this indicator, there has been encouraging progress in the availability of risk capital for SMEs over the last five years. At the end of 2017 risk capital represented 2.5% of the total annual flow of SME financing, compared to 1.4% in 2013.

By countries, Estonia, Denmark and the UK lead by the amount of available risk capital for SMEs, with a prominent participation of business angel investment in Estonia and more diversified sources of risk capital in Denmark and the UK (see chart 5.2). The country index values don't exhibit a close relationship with the contribution of SMEs to employment or value added—for example, SMEs in Ireland and the UK accounted for 36.6% and 51.8% of total value added in the non-financial sector (vs. 56.8% in the EU) but are among the countries where pre-IPO finance is more widely available according to the Risk Capital Indicator.

5.1: Evolution of Pre-IPO risk capital index (EU): 2012-17 (venture capital, growth private equity, business angel and equity crowdfunding as % of risk capital and bank lending)



Source: AFME from EBAN, InvestEurope, TAB and National Central Banks

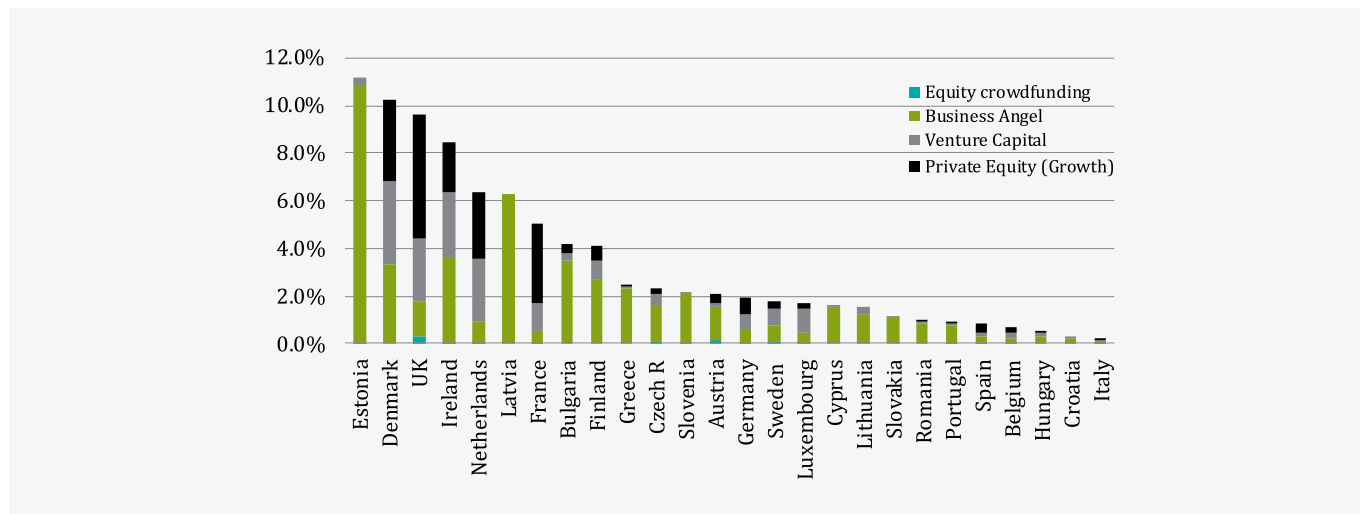
35 Source: https://ec.europa.eu/easme/sites/easme-site/files/easme_cosme_infographic.pdf

36 Growth funds that make private equity investments (often minority investments) in relatively mature companies that are looking for primary capital to expand and improve operations or enter new markets to accelerate the growth of the business, InvestEurope.

37 Measuring the size of the Business Angel investment activity is a difficult task due to underreporting of private investments to a business angels network or association, which is the current way of gathering data. In Europe, EBAN uses a multiplier of x10 applied to the "visible" market (the actual investment volume reported to business angel associations) to estimate the overall market. A comparison with the data collated by Business Angels Europe is provided in Appendix 3

5. Pre-IPO Risk Capital Indicator

5.2: Pre-IPO risk capital index: 2017 (venture capital, growth private equity, business angel and equity crowdfunding as % of risk capital and bank lending)

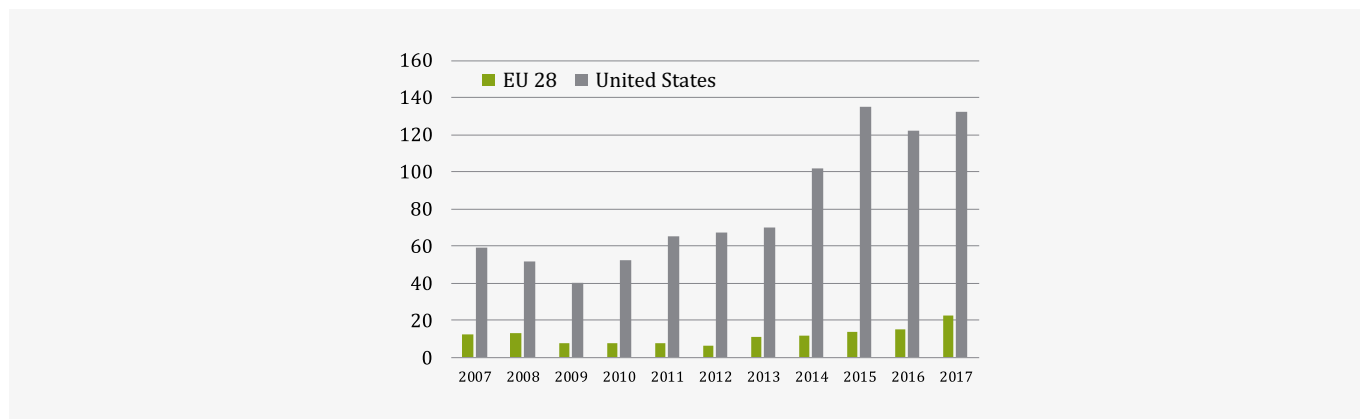


Source: AFME from EBAN, InvestEurope, TAB and National Central Banks

The absolute amount of risk capital in Europe, however, is still significantly below that of the US. As shown in graphs 5.3 and 5.4, the annual amount of risk capital in the US has more than doubled since the financial crisis, from €58.9bn in 2007 to €132.4bn in 2017. While in Europe the amount has increased from €12bn in 2007 to €22.7bn in 2017. This makes US risk capital 5.8 times the amount in Europe in 2017. Compared to the size of the respective economies, US pre-IPO risk capital represents 0.8% of GDP vs. 0.15% of GDP in the EU.

Risk capital is an appropriate source of funding for early stage enterprises with limited or no track record but above average growth prospects. Such entities may well be loss-making and have little to offer prospective lenders in terms of collateral to secure their loans. Such a profile is likely to be less appealing to bank lenders than venture capital investors with higher risk appetites. In the US³⁸, 69% of venture capital investment is allocated to information technology and 27% to medical sciences— both sectors characterised as high risk and human capital-intensive with limited capacity to set aside physical collateral to raise finance through bank loans (only patents which are not commonly accepted in bank loan originations as collateral).

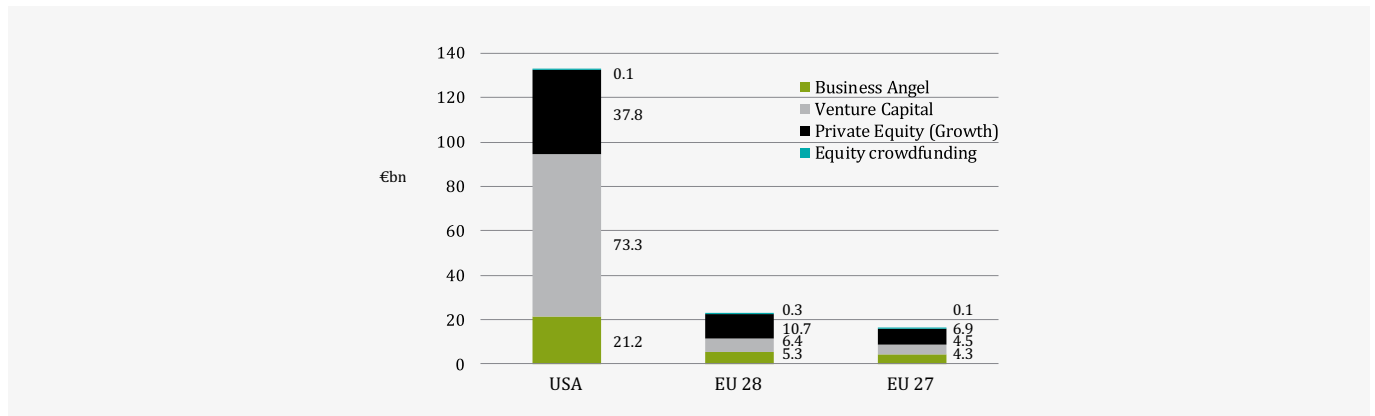
5.3: Evolution of pre-IPO risk capital (venture capital, growth private equity, business angel and equity crowdfunding, €bn)



Source: InvestEurope, EBAN, TAB, NVCA, and University of New Hampshire

38 OECD: Entrepreneurship at a Glance, 2017

5.4: Pre-IPO risk capital investment in the US and Europe by asset classes: 2017



Source: InvestEurope, EBAN, TAB, NVCA, and University of New Hampshire

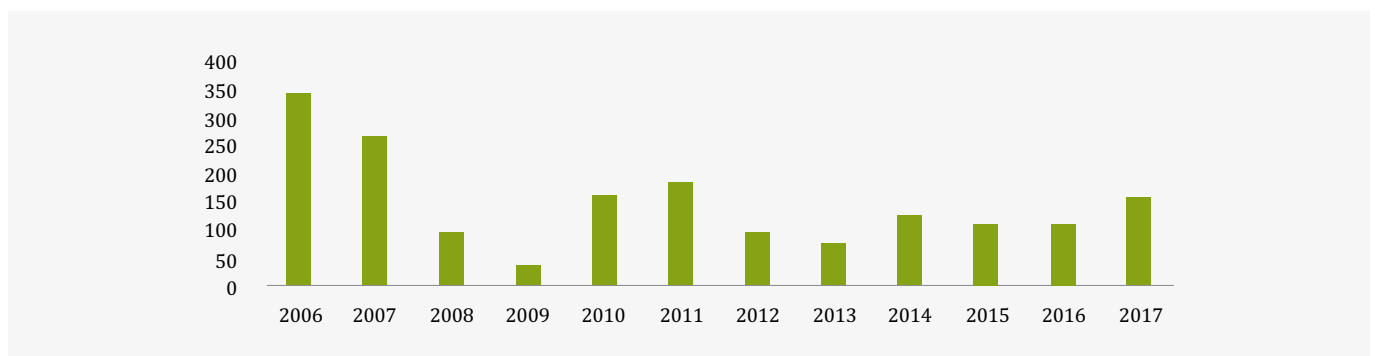
Transition from risk capital to stable sources of funding

The ability of companies to transition from relying on risk capital to a listing of their shares depends on the success of their business model, including revenue and profit generation and the development of a credible strategy and balance sheet. Robust risk capital markets enable SMEs to access early stage capital that might not otherwise be available. It also allows them time to reach a sufficient stage of maturity so that they can list their shares, raise more permanent tradeable capital and attract a broader range of investors.

A deep IPO market is also crucial for risk capital development, in that it provides early stage investors such as business angels, private equity and venture capitalists with an effective exit strategy to realise their investments. An illiquid public market for SMEs can deter these investors from putting up risk capital in the first place, if an IPO is unlikely especially given the cost, effort and time required for stock market flotations.

That is why it is disappointing that Europe’s SME IPO market continues to be subdued with the number of companies that raised capital from IPOs on junior markets³⁹ falling from 300 SME IPOs on average in 2005-07 to 153 in 2017 (see Chart 5.5). The low number of SME listings also decreases the number of growth companies that may transition to the main markets, negatively impacting the deepening of Europe’s capital markets.

5.5: Number of IPOs on Jr markets in the EU



Most recently, with the decline in the cost of equity for European companies⁴⁰ from 9.3% in 2012 to 8.0% in 2017, the number of IPOs on junior markets have increased from 96 in 2012 to 153 in 2017, reflecting a growing appetite to raise capital in equity markets with current more favourable pricing conditions.

39 London AIM, AIM Italia, Alternext, First North, Frankfurt Scale, Warsaw New Connect, Madrid Alternative Market, Prague KOBOS

40 See KPMG: <https://assets.kpmg.com/content/dam/kpmg/ch/pdf/cost-of-capital-study-2017-en.pdf>

5. Pre-IPO Risk Capital Indicator

It is crucial that CMU continues to contribute to the development of a true European market for risk capital in conjunction with the removal of barriers for company listing, including of SMEs. The recent prospectus regulation and the SME listing package are encouraging steps in the right direction.

Alternative strategies for SME finance

Public support and capacity building for SMEs and investors

The EU and Member States have dedicated programmes to support SMEs access to finance and improve the capacity of angel investors' national networks.

One example is the EU programme for Competitiveness of Enterprises and SMEs (COSME). COSME provides financial support to SMEs in the form of guarantees to financial institutions so that they can provide more loan and lease finance, and with the provision of risk capital to equity funds investing in SMEs (or "Risk capital facility"). According to official estimates, the Risk Capital facility is expected to help between 360 and 560 firms to obtain equity investment (in the period 2014-2020) and attract an overall volume of investment ranging from € 2.6 to € 4 billion. As of June 2018, 481 EU projects have been supported by COSME, attracting a total amount of €277m in financial support, or an average of €570,000 per project.

Another relevant initiative is the Early Stage Investing Launchpad (ESIL) programme. This private sector initiative (although funded with resources from the European Commission's Horizon 2020 programme) seeks to develop the capacity of business investors across Europe by connecting investors with suitable companies, peer investors, both locally and internationally. The programme is delivered in partnership with selected local partners in each EU28 country and other non-EU eastern European countries. ESIL offers interested business angel investors a wide range of activities, including access to online-based matchmaking platforms to connect with SMEs; online educational videos and webinars; training and workshop activities; and networking events.

Technology vehicles as alternative form of financing

Crypto assets have recently gained public attention as an alternative asset for trading, investment management, hedging, and capital raising activities. The number of crypto instruments has proliferated rapidly in recent years, with 1,614 crypto instruments as of May 2018.

The number of Initial Coin Offerings (ICOs) has also grown exponentially. Market data on ICO capital raising is fairly opaque, but industry sources indicate that at a global level, individuals and companies have raised a total of \$9.1bn during 2018 (as of June) through ICOs, with majority of these ICO projects in the EU. This surpasses 2017 full-year totals, notwithstanding the decline in crypto prices in the first quarter of 2018. As a comparison, European companies raised \$7.2bn through venture capital vehicles in 2017; US business angels invested \$19bn in US companies in 2016; and European SMEs raised \$5.5bn in IPOs on European junior markets during 2017.

The technology behind crypto assets brings innovative and efficient means for market transactions, particularly for clearing and settlement procedures. It also provides an expeditious way to access capital for companies. However, decentralisation and the anonymised nature of crypto transactions through ICOs pose challenges, including consumer protection, cyber risks, and risks associated with facilitating transfer of resources to finance illegal activities, money laundering, tax avoidance, or circumventing financial stability macroprudential regulations.

It may be too early to ascertain if ICOs will become a mainstream form for SME capital raising. However, with the exponential expansion of ICOs in recent years and associated risks, it is important that European authorities continue to monitor developments and determine appropriate actions.

41 Source: Autonomous Next. <https://cryptonews.com/icos/bitcoin-icos-slowng-down-and-looking-for-new-narrative-1941.htm>

42 609 of 1830 ICOs were undertaken by projects registered in the EU, compared with 378 in the US, 347 in the rest of Europe (ex-EU), 332 in APAC, 106 in Africa and Middle East and 58 in the Caribbean. <https://strategiccoin.com/mapping-bitcoin-use-and-ico-location/>

6. Cross-border Finance Indicator

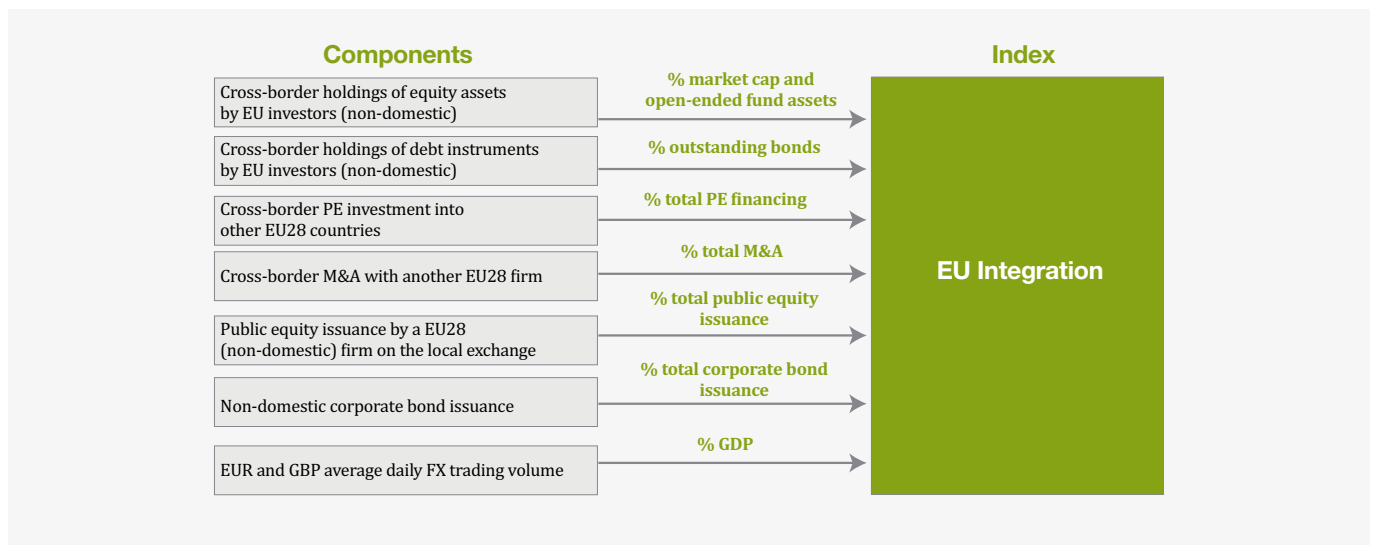
An integrated and globally competitive European Capital Markets Union is a prerequisite for a well-functioning single market. Maximising efficiencies in the EU's internal capital market by harmonising standards and removing barriers between the EU Member States is vitally important, will help Europe increase its capacity and make it globally competitive.

In this context, it is important to develop policy measures that keep Europe's capital markets sufficiently open, integrated, and competitive, that contribute to grow their capacity and boost investment. In other words, an integrated capital market in a global context.

We have produced two indicators to quantify EU capital markets integration within Europe ("intra EU") and integration of European capital markets activities with the rest of the world (RoW).

The indicators consider different capital markets dimensions by estimating two composite indicators aggregating the following features: (i) cross-border holdings of equity assets and fund shares, (ii) cross-border holdings of debt assets; (iii) cross-border private equity (PE) financing; (iv) cross-border M&A transactions; (v) cross-border public equity raising; (vi) non-domestic corporate bond issuance; and (vi) participation in intermediating foreign exchange and derivatives trading. Each of these subcomponents are quantified both for cross-border transactions within the EU28 and with the rest of the world for purposes of producing each of the indicators⁴³. Each component is quantified with the appropriate metrics as shown on Charts 6.1 and 6.2:

6.1: Capital markets intra EU integration index

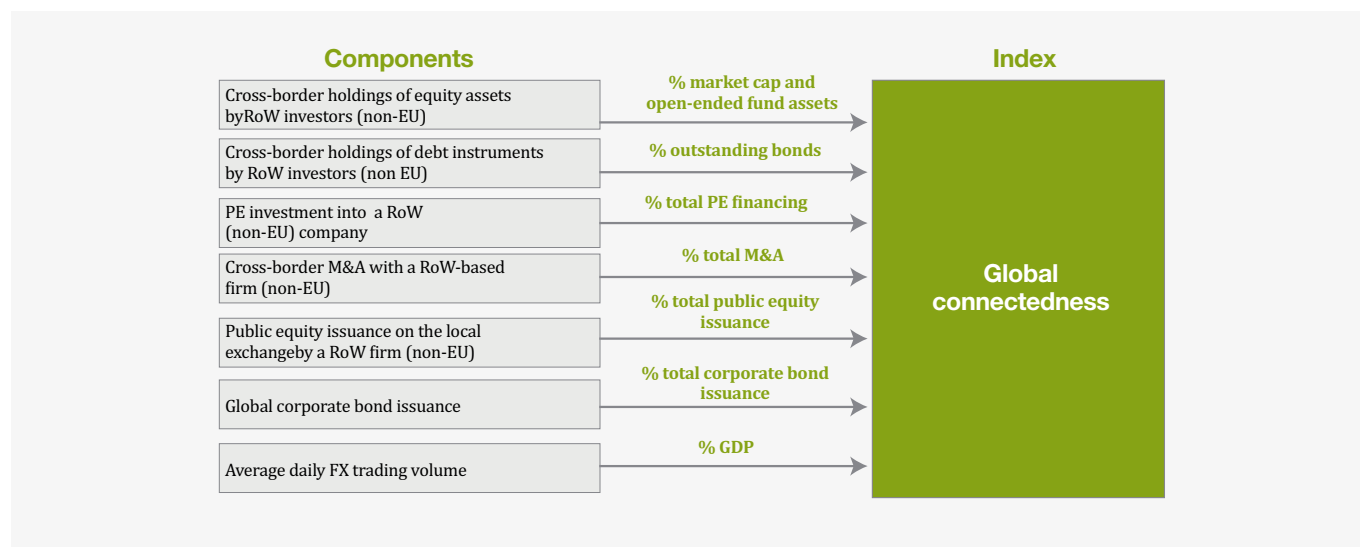


Source: AFME

⁴³ Each of the components is standardised and aggregated in a single component by a simple average and transformed in [0-1] scale.

6. Cross-border Finance Indicator

6.2: Capital markets global integration index



Source: AFME

Each component seeks to measure the volume of cross-border flows across jurisdictions through different capital markets activities and asset classes. The components are proxies of cross-border flows and may have limitations of their own. This is discussed in further detail in the methodologies section in Appendix 2. However, as a composite indicator, the weighted average transformation of multiple features into a single number should help at quantifying the relatedness (cross-covariance) and therefore the underlying relationship between different forms of integration as measured by the proxy variables.

EU28 capital markets integration

The intra EU integration index shows a rising trend in integration during the period 2003-07, temporarily interrupted by the financial crisis and the subsequent sovereign debt crisis which resulted in reduced cross-border capital markets activity between EU28 countries.

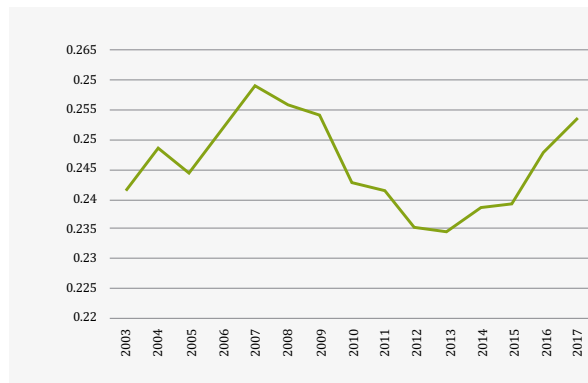
Most recently, European capital markets have almost fully recovered to pre-crisis levels of integration. As shown in chart 6.4, five of the seven components of this indicator have shown encouraging integration progress over the last five years. Specifically, cross-border holdings of equity and fund shares, cross-border holdings of bond instruments; cross-border private equity investment, cross-border M&A transactions, and issuance of corporate Eurobonds (as % of total corporate bonds), have all shown positive improvements in the last five years.

Two components have shown deterioration in capital markets integration over the last five years although these have not fully offset the aggregate improvements in this indicator: cross-border issuance of public equity and FX trading of EUR and GBP currencies. The amount of public equity raised cross-border by EU28 companies outside their domestic exchange has sustainably declined over the last decade, from 14% of total public equity raised in Europe in 2004 to 6% in 2010 and 4% most recently in 2017. See chart 6.4.

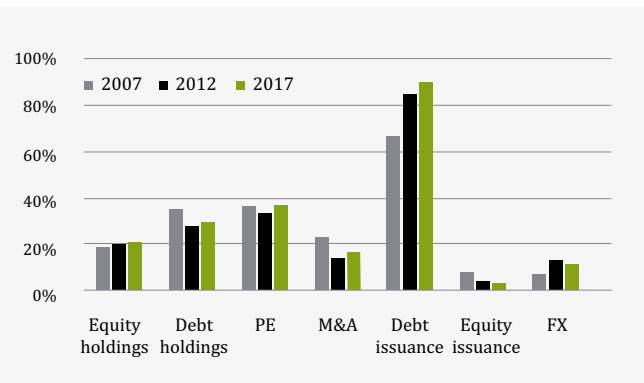
The trend exhibited by the Intra EU integration index is consistent with the ECB's financial integration composite indicators which exhibit improvements since 2012 in the Euro area's financial integration and reduced integration in recent years compared to pre-crisis levels. However, noticeably, the ECB indicators are more pessimistic about the recent improvements in euro area integration, particularly during 2016 due to a wider dispersion of cross-country asset returns in the eurozone. It is important to note, however, that the ECB and our indicator have some methodological differences, including different geographical scope (ECB only covers euro area) and asset classes coverage (ECB indicators track developments in the money markets).

44 See ECB Financial integration in Europe <https://www.ecb.europa.eu/pub/pdf/other/ecb.financialintegrationineurope201705.en.pdf>

6.3: Intra EU Integration index [0: Min, 1: Max]



Source: AFME from multiple sources

6.4: Intra EU integration index by components and evolution⁴⁵

Source: AFME from multiple sources

The Brexit vote has not so far significantly disrupted intra EU cross-border activity measured by the individual components of this indicator. However, anecdotal evidence suggests that some cross-border capital markets activities, not included in this indicator, may have affected the level of integration between euro area and UK market participants. Specifically, the ECB notes that over the last two years there has been a 33% decline in euro area significant institutions' UK-based derivative exposures⁴⁶.

As shown in chart 6.5 with the degree of capital markets integration by countries, Luxembourg, the United Kingdom, and Belgium rank as having the most integrated markets with the rest of the EU. Luxembourg's leading position is explained by the significant proportion of their fund and bond issues held within the EU, a prominent share of their total private equity activity invested in companies in other EU countries (77% vs. 37% on average by EU countries), and an oversized participation in the EUR and GBP FX trading market in relation to the size of the economy. The UK's integration with the rest of the EU is prominently explained by intermediating FX trading activity, contributing 42% of the EU27 private equity investment, and facilitating public equity raising of EU27 companies (representing 9% of total equity raised in the UK).

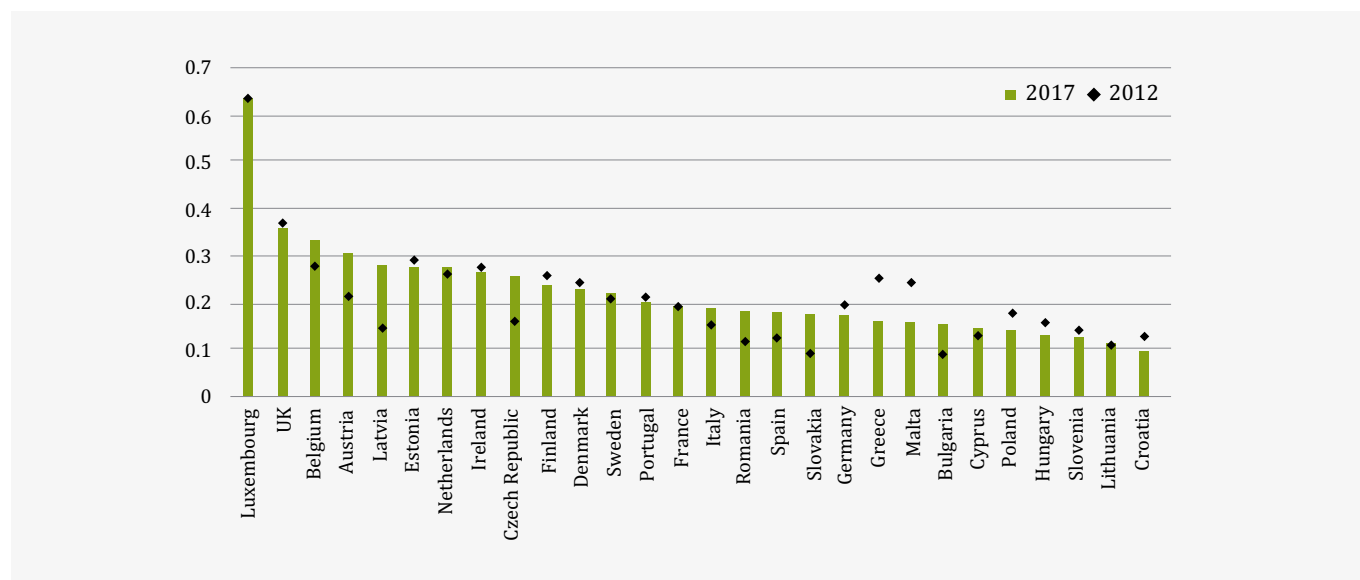
Some core euro area countries rank surprisingly low in the integration scale — namely Germany, Italy and France. This is because a good proportion of their capital markets activity is carried out domestically or globally rather than intra EU. For example, in Germany and Italy a good proportion of private equity funds are invested domestically (c70% and 90% respectively); a minor proportion of the public equity raised on the local exchanges was by non-domestic EU corporates (2% in both cases); cross-border holdings of equity and funds in other EU countries is below the EU average (14% and 19% respectively compared to 22% in the EU); and EUR and GBP FX trading is not significantly intermediated in both countries.

⁴⁵ Equity holdings: cross-border holdings within the EU28 of equity shares and fund shares issued by EU28 companies as percentage of market capitalisation of listed shares and assets of open-end investment funds; Debt holdings: cross-border holdings within the EU28 of bond instruments issued by EU28 companies as a percentage of outstanding public and corporate bonds; PE: cross-border private equity investment by EU28 funds into EU28 companies (non-domestic) as percentage of total PE investment; M&A: cross-border M&A transactions with EU28 companies (excluding domestic transactions) as percentage of total M&A activity; Debt issuance: issuance of corporate Eurobonds as percentage of total issuance of corporate bonds; Equity issuance: issuance of public equity in the national exchange by EU28 companies (excluding domestic companies) as percentage of total public issuance; FX: average daily turnover of EUR and GBP as percentage of GDP.

⁴⁶ CB May 2018 Financial Stability Review <https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr201805.en.pdf>

6. Cross-border Finance Indicator

6.5: Intra EU capital markets integration by countries: 2017 and 2012 [0: Min, 1: Max]



One of the challenges of CMU is building an institutional framework that preserves EU markets integration and risk sharing irrespective of economic fluctuations or the phase of the business cycle.

EU28 capital markets integration with the rest of the world

The Global Integration Indicator shows a sustained progress of EU integration with the rest of the world from 2001-12, with more limited improvements in recent years.

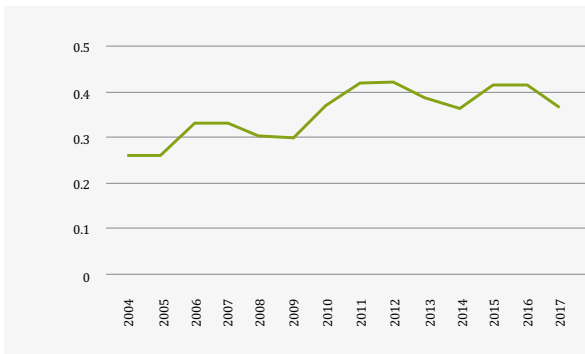
During the last decade, the contribution of the different components towards global integration has been mixed. For example, Europe recently lost market share in intermediating global FX and interest rate derivatives trading⁴⁷ (39% of GDP in 2012 to 30% most recently; see FX and IRD in chart 6.7); the proportion of equity issuance raised by RoW companies on EU28 exchanges has declined from 12.7% in 2012 to 4.8% in 2017; and RoW holdings of equity, fund shares and debt instruments has declined over the last five years (see chart 6.7).

However, there has been more evident progress in other asset classes. NFCs are now more likely to issue global bonds⁴⁸ (2.3% of total NFC bonds sold in 2007 compared with 9% in 2017); are more frequently undertaking M&A transactions with RoW firms; and have increased the proportion of private equity investment into RoW firms (9.1% of total PE investment in 2007 to 12.5% in 2017).

47 ICMA data also indicates that the proportion of European repo trading with non-euro area counterparties has increased from 17% of total transactions in 2001 to 40% in 2017. Domestic repo transaction only represented 25.9% of total repo trades, compared with 53.2% in 2001.

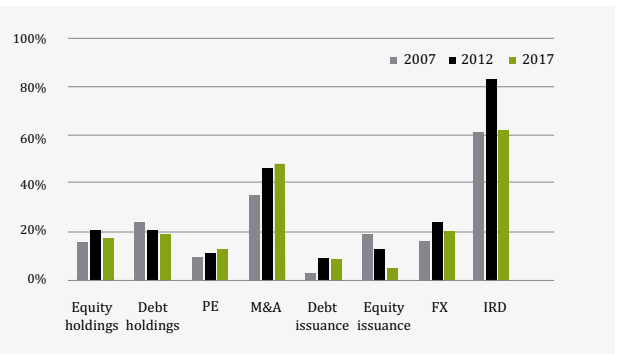
48 SEC registered securities, without restrictions to be sold in the US, as well as clearing through international clearing house

6.6: Global integration index [0: Min, 1: Max]



Source: AFME from multiple sources

6.7: Global integration index by components⁴⁹

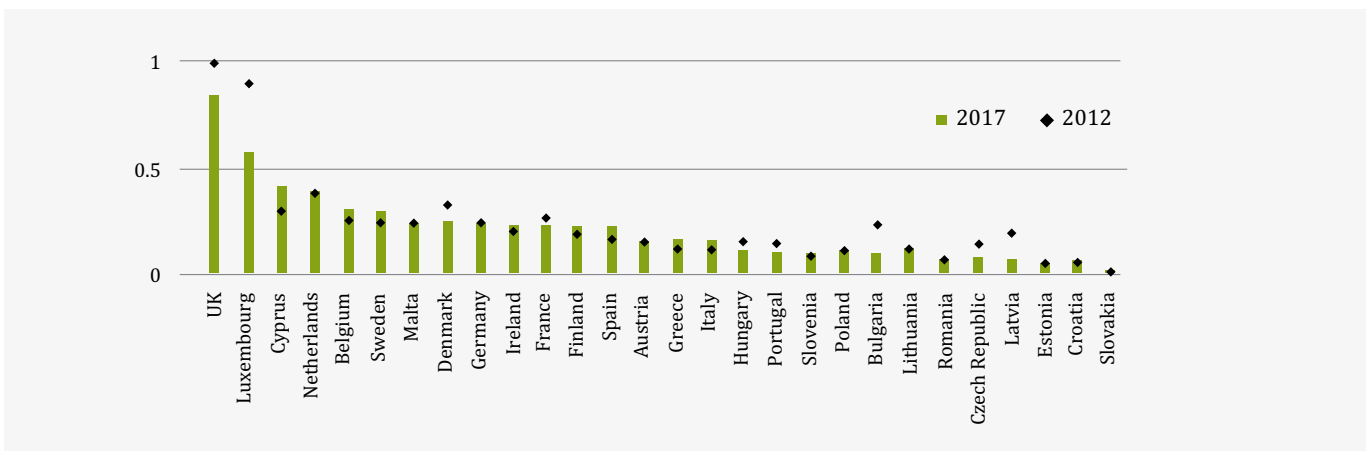


Source: AFME from multiple sources

According to the indicator, the UK is the most globally interconnected European capital market, followed by Luxembourg. The UK's leading position as global capital market centre is driven by the prominent participation in intermediating global flows of FX and derivatives trading (representing 103% and 50% of its GDP respectively⁵⁰), a large portion of its equity and fund shares held outside the EU (c31%), a significant participation in public equity raising by non-EU companies, and a large proportion of local corporates issuing global bonds (26% compared to 4% in the EU).

CEE capital markets are less globally interconnected, with a significant part of their market activities dedicated to service domestic or EU28 clients rather than cross-border transactions with the RoW.

6.8: Cross-border RoW indicator: 2017 and 2012 [0: Min, 1: Max]



49 Equity holdings: cross-border holdings in the RoW of equity shares and fund shares issued by EU28 companies as a percentage of market capitalisation of listed shares and assets of open-end investment funds; Debt holdings: cross-border holdings in the RoW of bond instruments issued by EU28 companies as a percentage of outstanding bonds (public and private); PE: cross-border private equity investment by EU28 funds into RoW companies as a percentage of total PE investment; M&A: cross-border M&A transactions with RoW companies as percentage of total M&A activity; Debt issuance: issuance of global corporate bonds as percentage of total corporate bond issuance; Equity issuance: issuance of public equity in the national exchange by RoW companies as percentage of total public equity issuance; FX: average daily turnover of FX instruments as percentage of GDP; IRD: average daily interest rate derivatives trading as percentage of GDP.

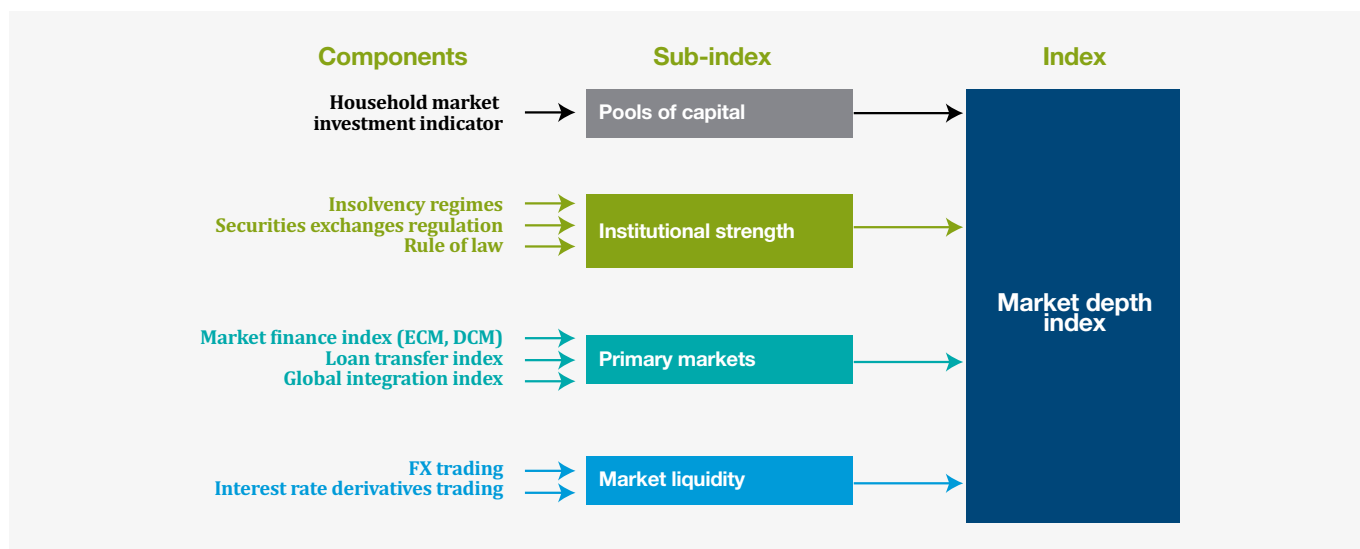
50 Average daily trading volumes relative to GDP

7. Market Depth Indicator

7. Market Depth Indicator

Successful capital markets ecosystems depend on several dimensions that co-develop collectively to support market participants, end-users, and economic growth. Each dimension contributes to build the wider ecosystem, such as the availability of private investment savings; deep primary markets where companies can raise funding; global reach with foreign corporates and investors; effective transfer of risks between market participants; liquid markets where buyers and sellers can exchange resources at efficient prices; and a predictable and harmonised regulatory environment enabling market participants to take long-term decisions across jurisdictions.

The Market Depth Indicator seeks to measure capital market depth from a holistic perspective, recognising the multiple factors behind effective capital markets development. This indicator is estimated as a composite index that considers the following dimensions: (i) supply of funds, (ii) primary markets activity in a global context, (iii) market liquidity, and (iv) institutional strength. Each of the four dimensions is composed by individual metrics as illustrated in the Figure below:



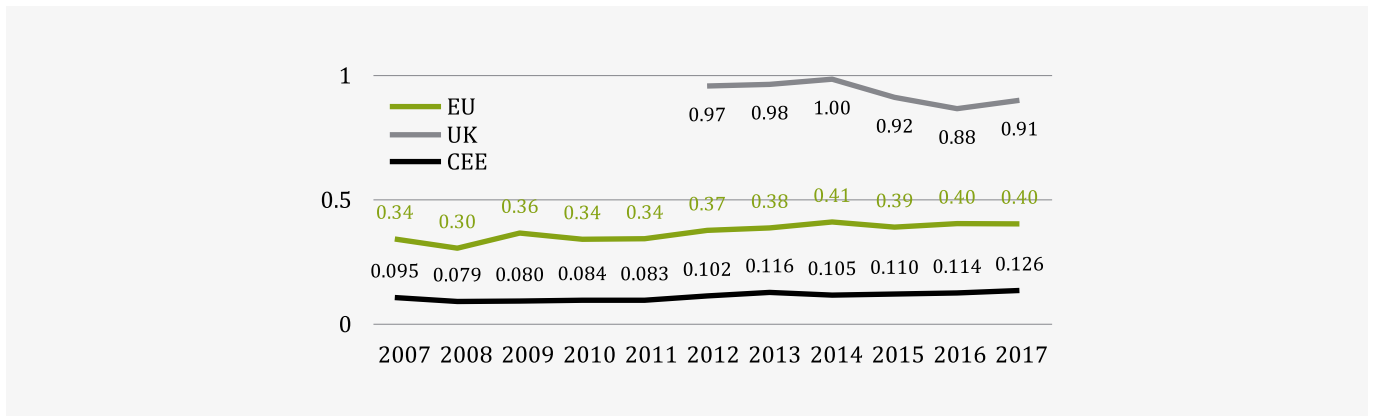
Measured as a composite indicator, it helps ascertain whether national and CEE markets have improved as an ecosystem and converged with the rest of Europe from a holistic perspective. It also helps identify the areas where policy intervention should be prioritised, and track progress for other non-CEE countries.

Chart 7.1 shows the evolution of this indicator for the EU, the UK and the CEE region. CEE in this context includes the 11 High Potential Economies⁵¹ of the Visegrad 4, the Baltic States and the EU Balkans.

Over the last decade CEE capital markets have positively evolved, initially adversely affected by the financial crisis with a reversal in market depth during 2007-09, but most recently showing a slow yet positive convergence with the EU. The improvement in the CEE markets ecosystems is encouraging although it would be more promising to see a faster pace of convergence with the rest of the EU. CEE markets in 2017 were 34% deeper than in 2007 (although progressing from a low base) while over the same time period the EU has also continued to improve capital market depth.

51 Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia

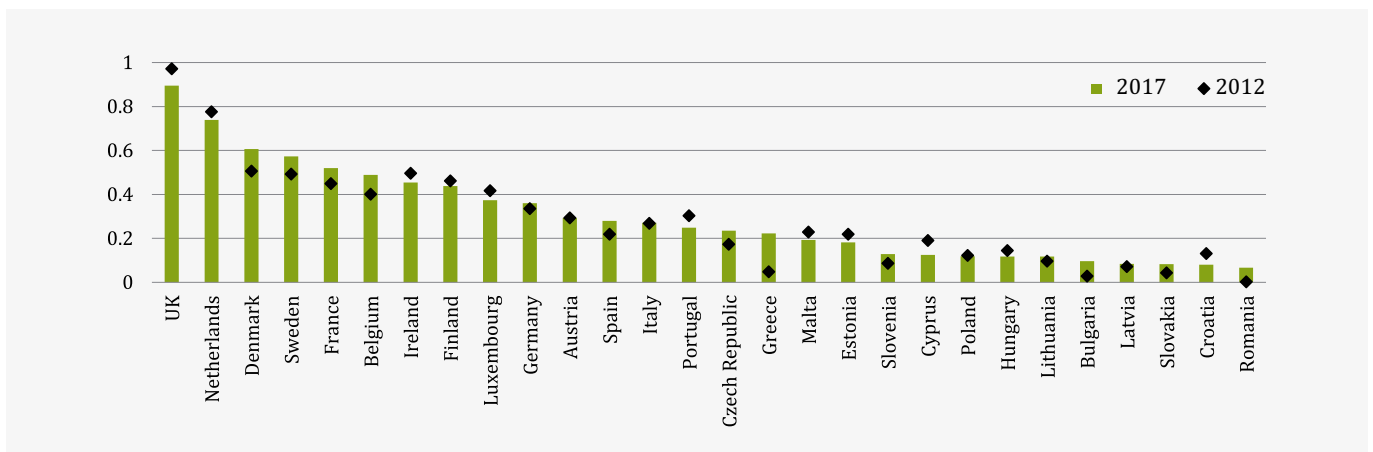
7.1: Evolution of Market Depth Indicator [0: Min, 1: Max]



Source: AFME from various sources

Over the last five years 16 of the 28 EU countries have improved their capital markets ecosystems. More specifically, of the 11 CEE countries, seven have shown improvements in capital markets depth over the last five years with Bulgaria and Romania exhibiting the most significant progress in the region (although from a low base in 2012). See chart 7.2.

7.2: Market depth indicator by countries: 2017 and 2012 [0: Min, 1: Max]



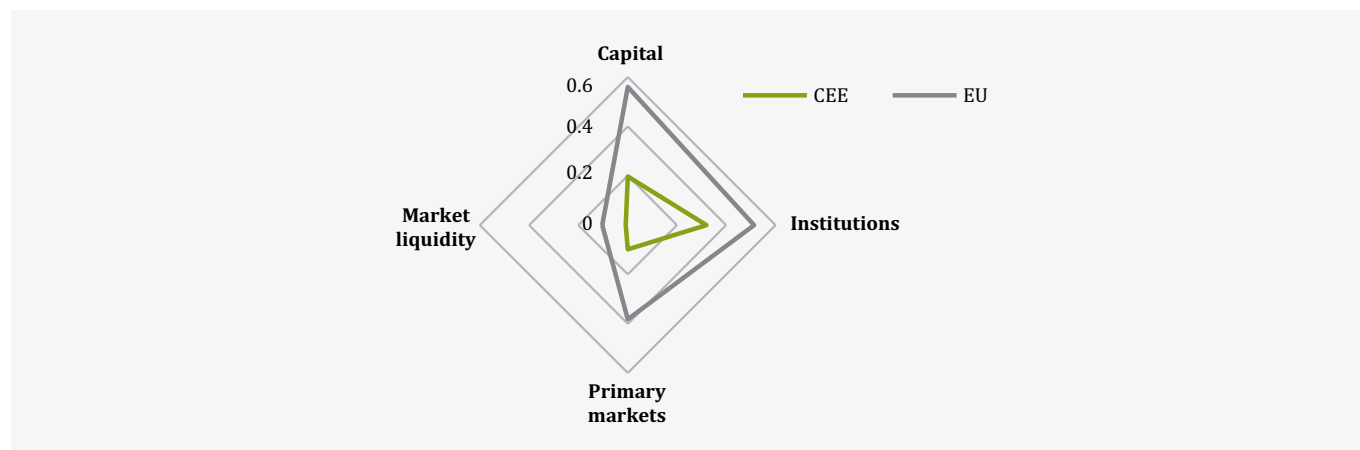
Source: AFME from various sources

Which capital market dimensions in the CEE diverge most from the EU? In other words, where is CMU policy intervention for the CEE region most needed? Chart 7.3 compares each of the dimensions of this indicator (primary markets, market liquidity, pools of capital and institutional frameworks) with the respective indicator values for the EU.

According to this comparison, **the widest gap between CEE and the EU is exhibited in the availability of pools of capital, with a difference of 36% between both.** The quality of institutional frameworks in CEE, although on average below the EU, seem to show a relatively narrow gap compared with the EU at 19%. Primary markets activity is likewise underdeveloped compared with the EU with a gap of 28%. CEE market liquidity exhibits a gap of 10% against the EU, although notably the EU also exhibits a significant gap compared to more liquid markets like the UK (of c80%).

7. Market Depth Indicator

7.3: Market Depth Indicator by components: 2017 [0: Min, 1: Max]



Source: AFME from various sources

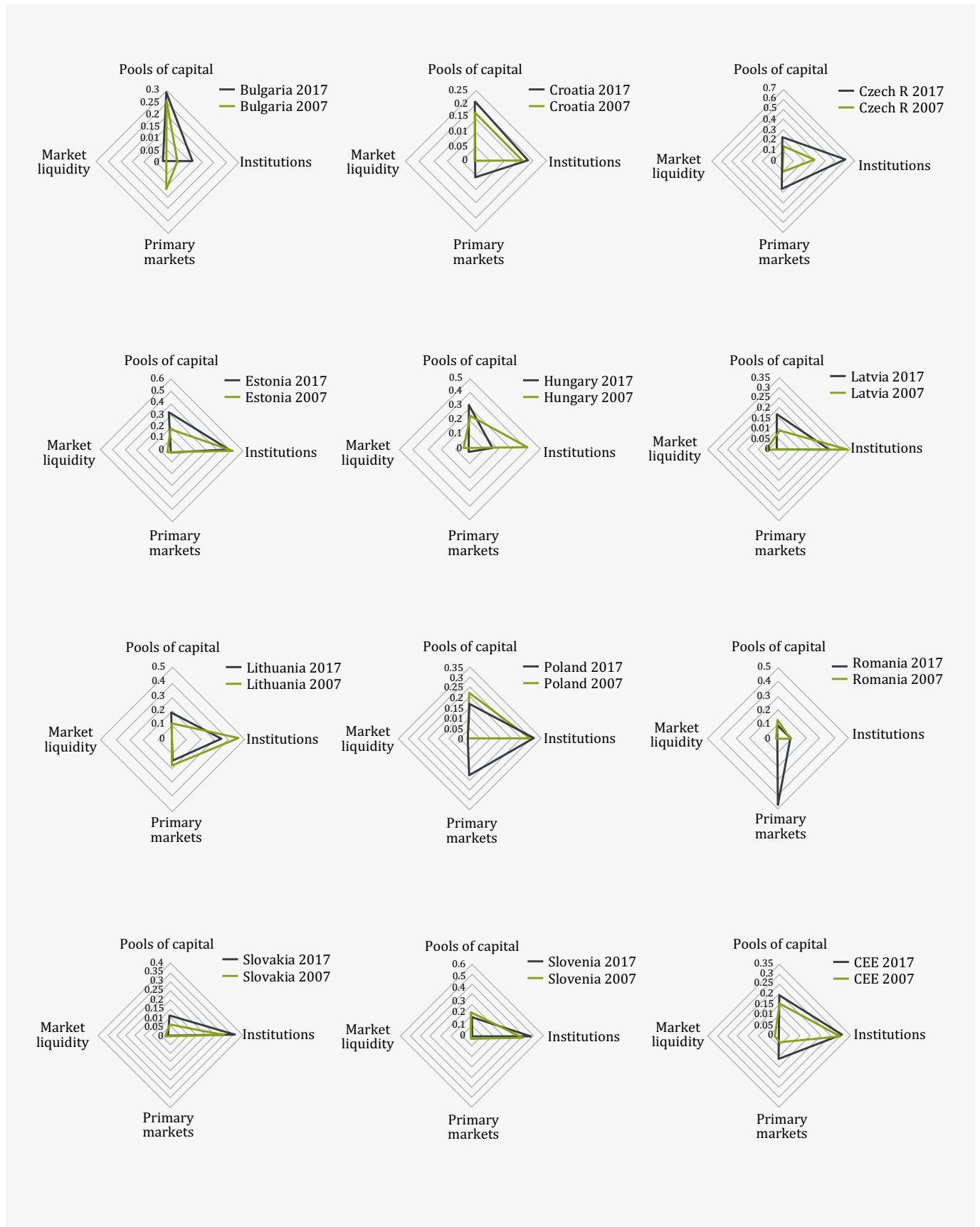
Figure 7.4 shows the progress achieved between 2007 and 2017 by the 11 CEE countries individually and the CEE region in each of the dimensions measured by this indicator. For the CEE region (bottom right graph), institutional frameworks don't seem to have deteriorated (or improved) significantly over the last 10 years, although noticeably there is important heterogeneity between countries (see for example the respective variations in Hungary and Bulgaria). **A positive contributor to the region's institutional frameworks is the fact that virtually all CEE countries in the region improved their insolvency frameworks since the financial crisis**, which however is partially offset by deterioration in the perception of the quality of exchanges regulation in 8 of the 11 countries (HR, EE, HU, LV, LT, PL, RO and SI) and in the rule of law in 2 of the 11 countries (HU and PL).

The region has shown encouraging improvements in primary markets activity, but less significant progress in the availability of pools of capital- with some countries, like Poland, decreasing the amount of private pools of capital available for investment on capital markets instruments compared to a decade ago.

Market liquidity was underdeveloped in 2007 compared with the UK and the EU and continued in 2017 without any significant improvement as measured by this indicator.

Other country-specific variations by components are shown in Figure 7.4 below.

7.4: Market depth indicator by countries and components [0: Min, 1: Max]



8. Policy Recommendations

Market Finance Indicator: Making it easier for companies to enter and raise capital on public markets

- 1. We hope that all the 22 recommendations of the European Commission's Expert Group⁵² on the functioning of European Corporate Bond Markets** are taken on board by national and European authorities. We look forward to hearing how they intend to follow them throughout the remainder of 2018. The set of recommendations include areas such as facilitating issuance for companies; ensuring the efficiency of intermediation and trading activities; promoting a diverse range of experienced and investors; the role of information and transparency; and improving the supervisory and policy frameworks.
- 2. It is crucial to develop a truly integrated, harmonised, low risk and low-cost post trading system which is understandable and reliable for investors in Europe.** We believe that such a system is necessary to support a vision of a Capital Markets Union that combines integrated pan-European markets, together with a diversity of market participants, business models and capital market eco-systems across all European countries. To achieve this vision, there is a need to a need for a high degree of harmonisation at the level of core market infrastructure⁵³. The barriers determined by the European Post Trade Forum (EPTF Barriers) in 2017 should be swiftly dismantled, with a view of designing a longer-term strategy for the future state of the post trading landscape.
- 3. Market liquidity of SME securities:** The Commission could consider the merits of introducing an EU framework on liquidity contracts (i.e. an EU framework for the participation of market makers for, usually, low free floats and illiquid SME securities) which, based on experience in some Member States, can contribute to reduce abnormal volatility levels of illiquid listed SME shares⁵⁴.
- 4. The Commission's FinTech Action Plan will foster an environment that nurtures innovation and help the EU to take advantage of the vast range of opportunities FinTech presents.** Given the significant developments in Distributed Ledger Technology (DLT) and artificial intelligence already taking place, we would urge the Commission to be more ambitious in its timing and to set up the Expert Group envisaged for Q2 2019 as soon as possible and to ensure the participation of a variety of different stakeholders.

The opportunities created by new technology (e.g. DLT, Artificial Intelligence, cloud-based services etc.) should be leveraged in areas that deal with the collection and transmission of information, such as regulatory reporting, tax reporting, registration processes, or end investor identification, among others.

Household Market Investment Indicator: Fostering retail investment

- 1. The creation of a single market for personal pensions and a standardised pan-European Personal Pension Product (PEPP) could greatly improve the ability of citizens to save for their retirement, reduce barriers for cross-border distribution of pension products, and expand the variety of retirement options.** Member States are encouraged to consider providing tax breaks for the PEPP or consider ways to harmonise tax treatment of PEPP products across Member States. The regulation should also provide enough flexibility to manage diversified asset allocation that can outpace inflation without excessive investment risk.
- 2. Member States and the Commission should look at which instruments pension funds and institutional investors can invest in and expand this range** in a way that benefits high growth companies and balances household's risk appetite and investment capabilities and horizons.

Loan Transfer Indicator: Strengthening banking capacity to support the wider economy

- 1. Recalibrating regulations impacting on securitisation:** We are confident that the long-term impact of the new STS securitisation framework will be positive. However, it is critical that related pieces of EU legislation – particularly

⁵² See report in: https://ec.europa.eu/info/sites/info/files/171120-corporate-bonds-report_en.pdf

⁵³ See AFME white paper on post-trade <https://www.afme.eu/globalassets/downloads/publications/afme-ptd-roadmap-for-integrated-safe-and-efficient-pt-services.pdf>

⁵⁴ AMAFI, Mise en œuvre de MAR, Révision de la pratique de marché admise AMF concernant les contrats de liquidité, 23 August 2017

Solvency 2 and the Liquidity Coverage Ratio– are calibrated to create the right conditions and incentives to support and encourage a recovery of the European securitisation market.

2. **Developing secondary markets for NPLs and distressed debt:** Well-designed initiatives for the development of a secondary market for NPLs under recent Commission proposals should be finalised to enable banks to accelerate the reduction of such loans on their balance sheets. Proposals for an Accelerated Extrajudicial Collateral Enforcement (AECE) mechanism should be progressed ensuring full consistency with existing insolvency regimes and other legal requirements. On the wider Council’s NPL Action Plan, we continue to strongly urge EU institutions to collaborate more in standard setting to avoid multiple non-aligned and duplicative initiatives, including on the application of prudential backstop requirements and the application of disclosure requirements of portfolio transactions.
3. **Improving the functioning of insolvency frameworks:** An ambitious set of reforms under the proposed directive on preventive restructuring frameworks and second chance should be finalised as a matter of priority – these reforms are critical to facilitating more predictable and orderly outcomes for corporate restructurings; reduce borrowing costs for issuers; encourage entrepreneurship; facilitate access to finance; attract investors and safeguard their investments; help companies and banks address the problem of high NPLs; and over all, facilitate cross-border trade and investment from a more integrated single market⁵⁵.

Sustainable Finance Indicator: Investing for long-term, infrastructure and sustainable investment

1. We consider that the Taxonomy Regulation is a foundational proposal of the Commission’s Sustainable Finance Action Plan. **A workable, flexible and dynamic EU taxonomy should be achieved prior to any important review of existing financial regulations**, including MiFID II suitability rules to require financial advisers to integrate sustainability into their suitability assessments. Efforts to unduly accelerate the incorporation of ESG considerations within the MiFID II suitability rules to require financial advisers to integrate sustainability into their suitability assessments, and the suitability assessment under the Insurance Distribution Directive (IDD) will harm the overall objective of the Commission’s action plan. We would therefore recommend the European Commission to focus on delivering a workable and flexible Taxonomy as a vital first step before incorporating ESG considerations in other parts of the financial regulations, such as intended with the amendments to the delegated acts supplementing MiFID II and IDD suitability assessment.

The European Commission should ensure that the Taxonomy Regulation is aligned with its Explanatory Memorandum⁵⁶ such that it is clear that the Taxonomy applies to economic activities rather than companies or asset classes.

2. **Sufficient disclosure and reporting of material information must play a key role in making sustainable investment** decisions and promoting socially responsible investment analysis. We support the objectives to improve the flow of ESG information, particularly related to climate risks as they would enable investors to make better informed sustainable investment decisions. The Commission’s proposed Taxonomy and Disclosures Regulations aim to provide useful information on the environmental sustainability of economic activities and of financial investments. The proposals contain a set of requirements placed on some market participants which should be carefully tailored to their specific business profiles.

Developing common impact reporting metrics is crucial to channelling funding to assets and projects that deliver. The metrics would need to be specific enough to be meaningful but not so onerous as to not be deliverable by small to medium size issuers. Striking the right balance between substantive disclosure and creating a level playing field would be fundamental to market integrity and sustainable growth.

3. **To ensure that capital frameworks achieve financial stability aims, further data and evidence is needed to accurately calibrate the adequate capital requirement of green instruments.** Green supporting factor and brown penalising factors could provide an incentive for institutions to transition to a sustainable economy, but it should be recognised that these investments will still contain risks that should be adequately represented in capital requirements.

⁵⁵ See E. Koning on the need for harmonising EU business insolvency frameworks, bank liquidation and resolution regimes http://www.eurofi.net/wp-content/uploads/2018/09/Magazine_Eurofi_Vienna.pdf

⁵⁶ See page 12 of the draft Regulation which specifies that “[t]his proposal provides the basis to establish the environmental sustainability of economic activities, rather than that of companies or assets”

8. Policy Recommendations

The recently created Network for Greening the Financial System (NGFS) could be an important platform to understand better the climate-change related risks and their impact on assets and the macroeconomy.

- 4. Further measures are needed to encourage more diversified European issuance and a wider variety of asset classes within green markets.** More initiatives to develop a pipeline of sustainable investable projects as well as to connect issuers and investors are key to develop the European market. In addition, sustainable securitisations could play a more prominent role in the future, for example, in encouraging lending to improve the energy efficiency of houses (for example, the EuroPACE initiative which is underway in a test phase in Spain and the Energy efficient Mortgages Action Plan – EeMAP). Standardised definitions of sustainable mortgage loan, sustainable SME loans and other collateral within securitised instruments would help achieve this aim.

Pre-IPO risk Finance Indicator: Financing for innovation, start-ups and non-listed companies

- 1. Barriers for SME finance:** There is a clear need for a regulatory framework that encourages institutional investors, such as insurance companies, fund managers and pension funds, to invest in both equity and debt of unlisted SMEs. The review of the Solvency II risk-weights for unlisted equity, scheduled in December 2018, provide a perfect opportunity in that regard.
- 2. To facilitate cross-border investment by business angels, it is important to create a single market for business angel investors,** as well as their syndicates and networks. To this end, we would recommend the Commission, working together with business angels, to create a passport for business angel investors. The Business Angel community can support the Commission by facilitating the coordination of pilot programmes intended to stimulate intra-EU business angel investment and cross-border investment outside the EU.
- 3. Current regulations on marketing restrictions impede high net worth individuals to invest directly in venture capital funds.** We would therefore be supportive of amending MiFID II to ensure that “sophisticated” or “semi-professional” investors are recognised as a specific investor category, accompanied by the adequate safeguards from a consumer protection perspective.
- 4. We encourage the Commission to undertake a study addressing current tax and fiscal incentives provided by Member States to business angel investment,** with the view of producing best practices recommendations for Member States adoption. For example, strategies that conduct towards the mutual recognition of existing fiscal incentives between Member States can be further analysed in such study.
- 5. It is important that the implementation of the prospectus regime strikes the right balance between the disclosure that is necessary for investor protection and the level of regulatory obligations imposed on prospective issuers.** The approach should not unduly restrict the ability of companies to disclose important information in sections of the prospectus where such information is likely to both be noticed and absorbed by prospective investors. For example, a prescriptive approach that allows a company to include a maximum of only three-line items or alternative performance measures in the summary section of a prospectus could make it more difficult for prospective investors (including prospective retail investors) to view important information in a reader friendly format and result in poorer disclosure compared to the current requirements in the EU and elsewhere.

Taking a less prescriptive approach would reduce the barriers faced by SMEs seeking to raise funds via equity capital markets and would help facilitate the CMU’s objective of, among other things, providing businesses with a greater choice of funding at a lower cost.

Cross border Finance Indicator: Facilitating cross-border investing

- 1. Barriers to post-trade and withholding taxes:** We note that there is currently work in progress related to the withholding tax barrier which is based on a nonbinding Code of Conduct. We are concerned that the Code of Conduct may not cover the full set of suggestions set out in the EPTF report, and that the non-binding nature of the Code may lead to different degrees of implementation across different Member States. We urge the that Commission and Member States be ambitious in codifying and implementing the EPTF suggestions, including such suggestions as the harmonisation of the fiscal status of market claims.

- 2. The Commission has also taken an important step to address the debt/equity bias in the tax system by proposing the introduction of an allowance for growth and investment in the Common Consolidated Corporate Tax Base (CCTB) proposal.** This would incentivise the use of equity finance and it could be decided to only make the allowance for growth and investment available for SMEs, either as part of CCTB or separately, if it otherwise would lead to significant tax revenue losses. We look forward to further progress in this important area.
- 3. To increase the role of markets-based finance to European economic growth and job creation, regulation from the EU should be firmly integrated in a global network with other leading capital markets regions.** Europe has the ability to play a leading role in the development of a coordinated and consistent global regulatory framework for cross border financial services. With the expected departure of the UK from the EU, it becomes even more important to consider the external global dimension of capital markets in both directions.
- 4. Adequate finalisation of prudential measures under the Risk Reduction Measures (RRM) package:** Building a fully integrated cross-border banking market, by removing obstacles to the flow of capital and liquidity within banks, would allow resources to be allocated more efficiently. Measures proposed in the Commission's RRM package such as cross-border waiver for capital and liquidity, intragroup exemptions from the large exposure regime, and Systemic Important Institutions (SIIs) methodology, should balance objectives of risk reduction and achievement of a well-functioning resilient CMU and Banking Union⁵⁷. Additionally, the Fundamental Review of the Trading Book (FRTB) should be adequately calibrated with due consideration of potential impacts on market liquidity and capital markets depth.

Market Depth Indicator: Strengthening the capacity of EU capital markets

- Existing national capital market eco-systems, with in many cases distinct national business models, provide valuable services to their national capital market participants. **We encourage regulators to take a holistic approach to examining the range of factors that contribute to develop market eco-systems**, for example, by evaluating the impact of regulatory initiatives on market participants as well as the role these actors play in eco-systems.

Regulators can explore how to **facilitate capital market convergence and derive full benefits from an EU integrated diversity of national eco-systems**, particularly in areas such as market infrastructure, taxation, and supervisory coherence. Specifically, regarding supervisory convergence, the national regulatory barriers to a fully integrated capital market are especially sensitive in the asset management and fund markets where national regulators may unduly protect their national ecosystems with the implementation of unharmonized and stringent rules.

Additionally, we encourage regulators to consider the different characteristics of public equity and debt markets when undertaking capital markets regulatory initiatives.

- 2. Supervisory convergence contributes to the reduction of fragmentation of the Single Market and to realising the EU's potential for growth and competitiveness.** Supervisory convergence should therefore remain a key priority for the ESAs as it enables firms to operate cross-border more easily.
- 3. The Commission can continue to monitor the implementation of key financial sector reforms and undertake regular review with market participants.** The Commission's call for evidence and recent follow ups can be part of an ongoing exercise making sure that the regulatory framework operates as anticipated and without any unintended effects or burdensome requirements that are difficult to comply with by some market participants (e.g. smaller market participants in CEE).
- 4. To facilitate the convergence of CEE capital markets with the rest of Europe, a bigger portion of EU Cohesion Funds** can be invested through investment strategies that crowds-in further resources from capital markets participants such as venture capital funds or business angel investors (e.g. through co-sponsorship mechanisms).

⁵⁷ For further details see AFME's views on the RRM package <https://www.afme.eu/globalassets/downloads/publications/afme-pre-trilogue-paper-rrm.pdf>

Appendix 1: Country Rankings by Indicator: 2017

Capitals for Market Depth Indicator [1= Top; 28=Bottom]

	Market Finance Indicator	Households Market Investment	Loan Transfer Indicator	Sustainable Finance	Risk Capital indicator	Intra-EU integration (EU)	Integration with the rest of the world	Market depth indicator
Austria	17	11	17	9	13	4	14	11
Belgium	18	5	8	28	23	3	5	6
Bulgaria	28	24	19	28	8	22	21	24
Croatia	20	16	28	28	25	28	27	27
Cyprus	28	18	28	28	17	23	3	20
Czech Republic	12	19	9	28	11	9	24	15
Denmark	13	3	1	10	2	11	8	3
Estonia	22	23	28	28	1	6	26	18
Finland	5	13	14	7	9	10	12	8
France	4	6	10	3	7	14	11	5
Germany	9	8	16	6	14	19	9	10
Greece	3	26	4	28	10	20	15	16
Hungary	21	17	11	28	24	25	17	22
Ireland	2	12	5	28	4	8	10	7
Italy	10	7	7	11	26	15	16	13
Latvia	23	25	28	8	6	5	25	25
Lithuania	16	27	28	1	18	27	22	23
Luxembourg	19	14	20	28	16	1	2	9
Malta	28	9	28	28	na	21	7	17
Netherlands	6	1	12	2	5	7	4	2
Poland	15	21	18	13	na	24	20	21
Portugal	11	15	6	28	21	13	18	14
Romania	8	28	21	28	20	16	23	28
Slovakia	28	20	15	28	19	18	28	26
Slovenia	28	22	28	14	12	26	19	19
Spain	14	10	2	5	22	17	13	12
Sweden	7	4	3	4	15	12	6	4
UK	1	2	13	12	3	2	1	1

- Top 5 countries
- Ranked 6-19
- Ranked 20-28
- na** data not available to produce the indicator

Countries with no capital markets activity in each indicator are ranked 28th

Appendix 3: Methodology and Data Sources

Scope of data collection

We have constructed seven Key Performance Indicators (KPI) in the form of composite indicators and ratios to assess progress across the seven political priorities of the CMU Action Plan.

The focus of the study is primarily European, although we have tried to compare EU capital markets with other non-EU jurisdictions on a best efforts basis where data is available.

The data is drawn from a wide range of sources, including contributions from trade associations, data platforms, Central Banks, Eurostat, and other international organisations.

All data is expressed in euros (€) and translated using period-end exchange rates as reported by the ECB.

Data collection and methodology

Market Finance Indicator

Data sources - IPOs, Secondary Offerings, Investment Grade and High Yield Bonds (all Dealogic), NFC loans new issuance (ECB, National Central Banks, Federal Reserve, OECD, Mortgage Bankers Association).

For the EU, NFC loans are estimated using bank loans to NFCs due to the relatively low participation of non-bank lenders. In the US, there is significant participation of non-banks in the loan market and so lending from non-banks needs to be accounted for in the indicator.

A recent OECD study published the amount of commercial and industrial (C&I) lending originated by banks in the US, using data originally sourced from the US Federal Reserve. The aggregation does not include loans originated by non-banks such as finance companies and insurers, and also doesn't include commercial real estate (CRE) or farm lending. Data from the Kansas City Fed was used to account for bank lending to farms and the Mortgage Bankers Association to account for bank and non-bank lending for CRE.

After adding the farm and CRE lending with C&I lending, this provides an estimate total US bank lending to NFCs, however the comparison of lending between EU and the US is not complete as non-bank lending to farms and C&I in the US needed to be accounted for (CRE lending data already included non-banks).

The Federal Reserve website states that bank lending represents c30% total outstanding lending to NFCs. This proportion is stable over the last 3 years and was used to estimate the total amount of C&I and farm lending originated by banks and non-banks. This gives the following breakdown and comparison:

US Bank lending= €2.05bn CRE: \$500bn [left unchanged as this amount includes banks and non-banks]

C&I: \$459bn / 0.3 = \$1.5tn

Farm: \$85.8bn / 0.3 = \$286bn

US bonds = €952bn

US equity = €117bn

Total financing for US NFCs = €3.1bn

EU bank lending= €3.1tn

EU bonds= €461bn

EU equity = €64bn

Total financing for EU NFCs = €3.6bn

The indicator does not consider NFC finance provided by unlisted equity and trade credit.

Loan Transfer Indicator

Data sources - Securitisation (AFME/SIFMA), Covered Bonds (ECBC), Portfolio sales (KPMG for Europe; FDIC for the US), outstanding loans (ECB, Federal Reserve).

As was the case with the Market Finance indicator, outstanding loans in Europe are estimated using outstanding bank loans, due to the relatively low participation of non-banks in the lending market in Europe. For the US, both bank and non-bank lending is considered when calculating outstanding loan volumes.

Sustainable Finance Indicator

Data sources - Green bonds (Climate Bonds Initiative), social and sustainable/dual purpose bonds (Dealogic), securitisation (AFME/SIFMA), NFC and Financial bonds (Dealogic), government bonds (ECB, SIFMA), municipal and agency bonds (Dealogic), covered bonds (ECBC).

Household Market Investment Indicator

Data sources - Household financial assets for EU countries (Eurostat and OECD), and household financial assets for the US (US Federal Reserve, Balance Sheet of Households and non-profit organisations) and for non-EU countries (OECD), GDP (Eurostat and World Bank). Cash, deposits and unlisted shares are excluded from the aggregation to include only capital markets instruments. Includes equity shares, investment fund shares, bonds, life insurance reserves and pension fund holdings.

Risk Capital Indicator

Data sources - SME loans new issuance (ECB, National Central Banks), Business Angel (EBAN and University of New Hampshire), Equity Crowdfunding (TAB), and Private Equity (InvestEurope and NVCA).

SME loans in this context are loans to NFCs with amount below €1m.

Invest Europe private equity (PE) statistics do not include infrastructure funds, real estate funds, distressed debt funds, primary funds-of-funds, secondary funds-of-funds and PE/VC-type activities that are not conducted by PE funds. The aggregation basis for these statistics are the location of the private equity firm where the resources are invested.

Business angel statistics are EBAN estimates which assume that survey results (i.e. “visible market”) represent 10% of the total market. This report includes both visible and non-visible market based on EBAN’s methodology. We compared EBAN’s visible market statistics with the market data statistics compiled by Business Angels Europe (BAE) for countries covered by BAE (ES, PT, AT, DE, NL, BE, FR, IT and UK). The number of business investors surveyed in each of the data sources varies significantly, which results in a wide difference in the total “visible investment” figures between sources (differences of between -425% and +77% depending on the country). The average amount invested by business angel varies significantly for Austria and Germany (a -216% and +70% difference respectively), but in a lower magnitude in France and Belgium (-5% and -14%). There are significant challenges at estimating the amount of business angel investing in Europe. For purposes of this report, we have utilised the EBAN figures as they cover all the EU countries, report estimates of both the visible and invisible markets, and provide a consistent time series since 2013.

Cross-border Finance Indicator

Data sources - cross-border holdings of equity shares and fund shares issued by EU28 companies (IMF); cross-border holdings of bond instruments issued by EU28 companies (IMF); cross-border private equity investment based on the location of the fund (InvestEurope); cross-border M&A transactions (Dealogic); issuance of global corporate bonds (Dealogic); issuance of corporate Eurobonds (Dealogic); cross-border issuance of public equity in the national exchange (Dealogic); FX average daily turnover (BIS); average daily interest rate derivatives trading (BIS).

Both the EU28 integration indicator and the global integration indicator are estimated as weighted averages of the standardised value of the different inputs. The results are later normalised into an index that ranges from 0-1 subtracting from each score the minimum score value from the sample divided by the maximum and minimum values: $(X - \min) / (\max - \min)$

The results were validated using principal components analysis, with minor differences in trends and rankings. A sensitivity analysis was also undertaken by removing FX and cross-border equity issuance (using principal components analysis), which resulted in a significantly lower integration level in 2017 compared to that pre-crisis— the country rankings also exhibited variation compared to those presented in the report.

Appendix 3: Methodology and Data Sources

Market Depth Indicator

Data sources – HH savings for investment index (see sources in the relevant section), insolvency regimes (recovery rate as estimated by the World Bank), Securities regulation (WEF), Rule of law (World Bank), Market Finance indicator (see sources in the relevant section), loan transfer indicator (see sources in the relevant section), Global integration indicator (see sources in the relevant section), FX trading (BIS), interest rate derivatives (BIS).

The indicator is estimated as a weighted average of the standardised value of the different inputs. The results were validated using principal components analysis, with minor differences in trends and rankings. The results are later normalised into an index that ranges from 0-1 subtracting from each score the minimum score value from the sample divided by the maximum and minimum values: $(X-\text{min}/\text{max}-\text{min})$.

Admittedly, the market liquidity subcomponent does not include trading activity of other instruments like equity shares, corporate bonds or government bonds. This is due to data availability as bond trading is frequently traded over the counter (OTC) and therefore underreported, while for equity instruments a consistent time series was not available by location of venue (MTF or exchange).

Considerations on the indicators

The indicators are most valuable when used on a relative basis for analysing trends and comparison between countries. Different methodologies are used to calculate the indicators to reflect the most useful approach for each CMU priority, and although they have been prepared as accurately and transparently as possible, data sources are not always perfectly comparable between countries and asset classes. Where these discrepancies arise, we have identified them and explained the approach taken to remedy the issue.

In the report we have compared average values for 2012 to 2016 with 2017 values to assess how the 2017 values have changed with respect to longer term averages. But there may be significant volatility in the 2017 values, especially for countries with relatively small capital markets.

Other organisations and think tanks⁵⁹ have produced market indicators that rank countries across different features such as capital markets depth, stages of financial development, or financial integration. Some of these indicators use similar inputs as those used in this report⁶⁰. However, this report offers a more granular analysis of CMU evolution and assesses progress of additional capital markets dimensions like sustainable finance, risk capital, risk transfer, and global integration.

For the construction of the cross-border composite indicators, it is important to consider that each of the components are proxies of the cross-border flow they intend to measure and may have limitations of their own. For example, global and Eurobond issuance doesn't consider that bonds could be held domestically and rather measures the possibility that a non-domestic investor has the capacity to easily purchase an issue. Public equity issuance outside local exchange intends to measure the relevance of barriers to cross-border listing, but can be masked by dual listings and the removal of cross-border barriers for secondary markets trading, whereby it is not necessary for an EU corporate to issue a liquid tradeable instrument by listing across multiple venues and MTFs. However, as a composite indicator, the weighted average transformation of multiple features into a single number should help when quantifying the relatedness (cross-covariance) and therefore the underlying relationship between different forms of integration as measured by the proxy variables.

59 IMF Staff Discussion Note (2015) "Rethinking Financial Deepening: Stability and Growth in Emerging Markets. May 2015. Available in: <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1508.pdf>. New Financial capital markets depth index used in the AFME HPE report <https://www.afme.eu/globalassets/downloads/publications/afme-new-financial-report-benefits-of-capital-markets-to-high-potential-eu-economies.pdf>. ECB Financial integration in Europe <https://www.ecb.europa.eu/pub/pdf/other/ecb.financialintegrationineurope201705.en.pdf>.

60 Specifically, we note that New Financial's capital markets index exhibits a correlation of 88% with the Market Depth indicator of section 7, 68% correlation with the Loan transfer indicator, 77% with the Household market investment indicator and 55% with the Market Finance indicator.

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The Association for Financial Markets in Europe (AFME) is the voice of all Europe's wholesale financial markets, providing expertise across a broad range of regulatory and capital markets issues.

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