

COMPLETING CAPITAL MARKETS UNION

Enabling EU-27 markets
to play a bigger role
in the financing of
the Union's economy



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CEPS-ECMI provided the background analysis of the report, and do not necessarily endorse or subscribe to the recommendations put forward by AMAFI.



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Association française des marchés financiers (AMAFI)

AMAFI is the trade organisation working at national, European and international levels to represent financial market participants in France. AMAFI members consist of investment firms and credit institutions (French, European and global firms), operating in and/or from France (corporate and investment banks (CIBs), brokers-dealers, exchanges, and private banks). As far as financial products are concerned, we mostly represent all issuers/manufacturers of products (CIBs) and, through our private bank members, distributors as well. AMAFI has more than 150 members operating in equities and fixed-income and interest rate products, as well as commodities, derivatives and structured products for both professional and retail clients.



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ECMI conducts in-depth research aimed at informing the debate and policy-making process on a broad range of issues related to capital markets. Through its various activities, ECMI facilitates interaction among market participants, policy-makers and academics. These exchanges are fuelled by the various outputs ECMI produces, such as regular commentaries, policy briefs, working papers, statistics, task forces, conferences, workshops and seminars. In addition, ECMI undertakes studies commissioned by the EU institutions and other organisations, and publishes contributions from high-profile external researchers.

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GLOSSARY OF ACRONYMS

CCP	Central clearing counterparty	HLF	High-Level Forum
CEE	Central and Eastern European	IPO	Initial public offering
CEPS	Centre for European Policy Studies	ICPF	Insurance company and pension fund
CIB	Corporate & Investment Banking	IRD	Interest rates derivatives
CMU	Capital Markets Union	LSE	London Stock Exchange
CRR	Capital Requirements Regulation	MAR	Market Abuse Regulation
CSD	Central Securities Depository	MiFID	Markets in Financial Instruments Directive
CSDR	Central Securities Depositories Regulation	MiFIR	Markets in Financial Instruments Regulation
CVA	Credit valuation adjustment	MTF	Multilateral trading facility
D2C	Dealer to customer	NCA	National competent authority
DTO	Derivative trading obligation	NFC	Non-financial corporation
EC	European Commission	NSFR	Net stable funding ratio
ECB	European Central Bank	OTC	Over the counter
ECMI	European Capital Markets Institute	OTF	Organised trading facility
EDDI	European Distribution of Debt Instruments	PE	Private equity
EIB	European Investment Bank	PEPP	Pandemic Emergency Purchase Programme
EMIR	European Market Infrastructure Regulation	PRIIPs	Packaged Retail Investment and Insurance Products
ESG	Environmental, social & governance	QE	Quantitative easing
ESMA	European Securities and Markets Authority	SA-CCR	Standardized approach for counterparty credit risk
EU	European Union	SME	Small and medium enterprise
Eu VECA	European venture capital funds	STO	Share trading obligation
FRTB	Fundamental review of the trading book	UK	United Kingdom
FX	Foreign exchange	US	United States
GDP	Gross domestic product	USD	US dollar
GFC	Global financial crisis	VC	Venture capital
GSE	Government-sponsored enterprise		

The background features a dark blue field with several light blue stars of varying sizes scattered across it. On the left side, there are vertical, semi-transparent rectangular bars of different heights, resembling a bar chart. At the bottom, there are two wavy, light blue lines that suggest a rising trend or a path. The overall aesthetic is modern and data-oriented.

PART A

An ambitious path of reforms to successfully accelerate the market-based financing of the Union's economy

The Capital Markets Union initiative was fully justified in the context born of the Global Financial Crisis

In the wake of the Global Financial Crisis (GFC), the issue of the stability of the financial system in general, and the banking system in particular, has become central. Various regulations, particularly in the prudential field, have thus been adopted, one of the very direct effects of which is the considerable increase in the constraints weighing on banks and on their ability to distribute credit. This has resulted in the need to change the financing model of the European economy, which has hitherto been credit-based, to ensure that it could increasingly rely on financial markets.

The Capital Markets Union (CMU) Action Plan unveiled in September 2015⁽¹⁾ aimed to achieve this transition. But, almost five years after its inception, it is still far from being complete – with only sparse legislations implemented to-date and very limited impact.

The development of deeper, autonomous and more integrated EU-27 capital markets is all the more essential as the Union today faces a number of financing challenges. These arise in particular from (i) the mitigation of climate change, (ii) the ageing of its population and (iii) the need to encourage the development of companies within the EU that can be global champions, especially in the digital field.

But the context in which these challenges can be managed has been renewed with Brexit. Brexit means the looming departure of the financial centre around which the financing of the European economy has largely revolved in recent years. The deepening and intensifying reflections around the future of the CMU initiative is therefore now an urgent issue.

With this in mind, initiatives to revamp the CMU project were initiated in the second half of 2019 shortly after a new European Parliament was elected and not long before the new European Commission was officially due to take office. While the European Parliament's own-initiative report is still underway as these lines are being written, two main workstreams deserve being mentioned: one at Member States' level, the Next CMU High-Level Group chaired by Fabrice Demarigny whose report published in October 2019⁽²⁾ very much inspired the Council's conclusions on the deepening of the CMU adopted in December 2019⁽³⁾, and the other at the European Commission (EC) level with the High-Level Forum chaired by Thomas Wieser whose final report has been recently issued⁽⁴⁾.

Building on the contributions it has been making for many years to the process of developing an integrated market, the French Financial Markets Association (AMAFI) has decided to contribute to ongoing initiatives: CMU has been a core priority for its members since the early days of the Action Plan, and AMAFI has been closely following discussions on the proposed legislations and has answered most of the related consultations. To ensure that its reflections and proposals receive academic support from experts at the heart of these issues, the Association mandated the Centre for European Policy Studies (CEPS) and the European Capital Markets Institute (ECMI) to provide with data and analysis⁽⁵⁾ in order for AMAFI to work on a full set of policy recommendations to EU co-legislators⁽⁶⁾. Through this report, AMAFI's primary objective is to contribute to the EC's ongoing reflections to complete the CMU project which will materialize later this Autumn by the adoption of the Action Plan.

(1) Action Plan on Building a Capital Markets Union, 2015, [link](#)

(2) The Next CMU High-Level Group has been tasked by the ministers of finance of Germany, France and the Netherlands to report on recommendations for deepening the CMU. The report was published in October 2019 and is available [here](#).

(3) <https://www.consilium.europa.eu/en/press/press-releases/2019/12/05/capital-markets-union-council-sets-objectives-for-the-deepening-of-the-project/>

(4) The High-Level Forum on capital markets union final report was published in June 2020 and is available [here](#).

(5) CEPS-ECMI provided the support/background analysis of this report and does not necessarily endorse or subscribe to the recommendations put forward by AMAFI.

(6) For a first set of policy recommendations, see ([AMAFI / 19-46](#)) and ([AMAFI / 19-88](#)).

AMAFI's members are the heart of market financing and keen to share their expertise with the aim to build a coherent and ambitious approach. As financial market intermediaries, some of them also acting as market makers, they play a central role in connecting financing providers on the one hand and entrepreneurial project holders on the other, thus contributing to markets' efficiency. As such they help governments and corporates meet their financing needs while also enabling them – along with investors – to hedge risk.

The Covid-19 crisis and the consequences of the Great Lockdown have only made CMU more indispensable for the Union

The burst of the Covid-19 pandemic in March 2020 has completely shifted priorities of policy makers especially in Europe⁽⁷⁾.

The Great Lockdown⁽⁸⁾ resulting from the Covid-19 pandemic has yielded a crisis on an unprecedented scale. The global economy is expected to contract by 3% in 2020 with the United States at -5.9%, and Japan not far behind at -5.2%, damages much worse than those caused by the Global Financial Crisis⁽⁹⁾. China is but one of the few economic powers with a predicted positive growth rate, which is forecast to average 1.2%⁽¹⁰⁾. Meanwhile, the economy is expected to contract by -7.1% in the European Union and by -7.5% in the Eurozone⁽¹¹⁾.

As a clear acknowledgment of the scale of the expected economic shock, the European Central Bank (ECB) launched a €750 billion Pandemic Emergency Purchase Programme (PEPP)⁽¹²⁾ to which was allocated an additional €600 billion in early June. On 27th May, the EC presented a €750 billion crisis recovery package (Next Generation EU)⁽¹³⁾ embedded within a revamped long-term EU budget of €1.1 trillion for 2021-2027⁽¹⁴⁾.

Member states – with varying degrees of intensity depending on their exposure to the pandemic – have been facing a double shock of supply and demand, which will lead to unprecedented increase of public and private indebtedness.

In this context, while bank lending is placed at the heart of the first phase of the response to the Union current economic and financing difficulties, the need to develop more integrated and deeper European financial markets has become even more obvious. It is largely an issue of economic sovereignty for the Union, as emphasized in the Franco-German initiative proposed on 18th May 2020⁽¹⁵⁾:

- The current crisis has highlighted and worsened EU corporates' equity shortage, and with it the necessity to ease access to equity financing to better absorb losses and restore the competitiveness of European companies;
- Similarly to what was observed during the 2011 Debt Crisis, the strong reliance on offshore resources for the financing of European economies is a clear weak point for the Union, as such resources tend to be repatriated to their home market in crisis times⁽¹⁶⁾. As an illustration, US banks' market share in EU loans slipped to 12.1% by mid-May, compared to 22,1% for the same period last year⁽¹⁷⁾.

To ensure the success of a relaunched CMU, lessons can be learnt from the transition achieved in the US from a bank to a market-based financing system

The US financing ecosystem is often considered as the most accomplished example of a market-based financial system. This has however not always been the case. In just under twenty years, the share of

(7) At this point in time we have decided to delay the publication of the report to ensure it remained relevant both from a content and timing perspectives.

(8) World Economic Outlook, Chapter 1 : the Great Lockdown, The International Monetary Fund, April 2020, [link](#)

(9) *Ibid*

(10) *Ibid*

(11) https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/EU/EURO/EUQ

(12) https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200318_1~3949d6f266.en.html

(13) Recovery Plan Communication: « Europe's moment : Repair and Prepare for the next Generation », May 2020, [link](#)

(14) EU Budget Communication: « The EU budget powering the recovery plan for Europe », May 2020, [link](#)

(15) <https://www.elysee.fr/emmanuel-macron/2020/05/18/initiative-franco-allemande-pour-la-relance-europeenne-face-a-la-crise-du-coronavirus>

(16) <https://www.ft.com/content/835c6106-e728-4f58-930e-b94641a752f2>

(17) Source: Thomson Reuters/Refinitiv

banks in the financing of the US economy shrunk drastically in favour of financial markets: in the 1970s, the ratio of bank credit to the private sector had stood at an average 45% – close to its current level in the EU (47%) – taking a plunge in the early 1990s before eventually landing to about 20% in the 2000s⁽¹⁸⁾.

It is therefore particularly useful to look at features of the US market, and at the reforms that have been implemented in the US and to determine to what extent they could be transposed for the EU-27 to transition from a bank-based to a market-based model. We consider that the successful US transition has been based on the following five pillars:

(i) A unified legal, regulatory and fiscal framework;

(ii) The consolidation of the banking system;

(iii) A strong public involvement in selected domains where private initiative would not be sufficient to ensure success *i.e.* the Small Business Administration (SBA)⁽¹⁹⁾;

(iv) The depth of the securitization market;

(v) The consistence of the pension funds ecosystem.

While these five pillars could not be transposed as such in the EU-27, in particular because the Union is not a federal state, they are definitely useful as a benchmark to guide policy recommendations.

More precisely, at a time when the Union is facing an unprecedented sanitary and economic crisis, where EU banks' financing capacity is limited by heavy regulatory constraints, CMU has had so far limited results, and with the UK, the main financial centre, leaving the Union, our ambition, through the analyses and recommendations contained in the report, is to highlight the reforms that should be undertaken for EU-27 markets to: (i) contribute to the financing of the EU's economic recovery; and (ii) play a critical role in financing the mitigation of climate change, the ageing of the population, and the fostering of EU champions and especially in the digital and energy transition fields.

We will first compare the strengths and weaknesses of the EU-28 (EU-27 + UK) & US financial systems to stress key sectors of EU-27 financial markets where reforms should be targeted. We will then emphasize the key financing challenges for EU-27 financial markets and the central role of the UK in the functioning of EU financial markets. We will finally highlight short-term reforms necessary to support the EU's economic recovery and medium- to long-term reforms to enable EU-27 financial markets to weigh more heavily in the financing of EU economies.

(18) The ratio of bank credit to the private sector is expressed as a percentage of the sum of bank credit plus bond and equity market capitalisation. Data: <https://www.bis.org/statistics/totcredit/totcredit.xlsx> ; <https://fred.stlouisfed.org/series/NCBEILQ027S> ; <https://fred.stlouisfed.org/series/NCBCBIA027N>

(19) <https://www.sba.gov/>

A.1

THE STRUCTURE OF EU FINANCIAL MARKETS

This section aims to provide an overview of the different components of financial markets. To give its full meaning to this overview, the situation of the US market is distinguished insofar as it is some kind of a benchmark in terms of market financing model. Furthermore, as Brexit must also be considered, the share represented by the United Kingdom is also distinguished. Each subsection thus compares, for the different market segments, the recent evolution and current situation in the EU-28 (EU-27 + UK) with that of the US market.

The elements presented below are therefore very factual, based on the data collected by CEPS-ECMI in the preparation of this report⁽²⁰⁾. Their juxtaposition thus forms the overall picture on which the analysis carried out is based. As many of the figures provided below are related to GDP, it is worthwhile to recall some comparisons. Thus, according to the IMF in 2018, China's GDP was \$25,270.07 billion, EU was \$22,023.14 billion (of which \$3,037.79 billion for the UK) and US was \$20,494.05 billion.

Bank based vs market based financial system

Between 1975 and end 2017, the US stock market capitalisation has grown rapidly, to represent 153% of GDP and three times the size of the bank credit market, which remained steady (from 53% in 1975 to 52% end 2017).

Over the same period, the credit markets in the EU-27 went from 45% to 75% of GDP, while stock market capitalisation went from 13% to 58% of GDP highlighting the enduring preference for bank financing. During the same period, while the credit markets have remained strong in the UK (it went from 30% to 132% of GDP), stock market capitalisation grew from 33% to 127% of GDP with a peak at 162% in 2000s stressing the rise of London as a global financial centre.

(20) It should be noted that the reader can find more detailed information in the Part 2 of this report.

Equity and debt securities markets

The combined size of EU-27 equity and debt securities markets relative to GDP (207%) is one third smaller than in the UK (332%) and in the US (367%). EU-27 markets for corporations represents 10% of GDP versus 20% in the UK and 32% in the US.

Zooming in EU-27 markets for equity and debt, we see different levels of development between the national financial markets. In most Member States, debt markets are much bigger than equity markets, accounting for more than two thirds of their combined size, Sweden and Finland set apart.

Stock markets

At the end of 2018, while the combined GDP of EU-28 was similar to the US one, its total stock market capitalisation only represented 40% of the one in the US. Taking the UK out of the panel would have brought the ratio to 30%.

The EU still hosts 28 stock markets but only three are in the top 10 worldwide in terms of market capitalisation with one being the London Stock Exchange. The market capitalisation of domestic stocks differs greatly, as only seven Member States are above the EU average of 64% of GDP with three of them being Nordics and a fourth one being the UK (110%). Excluding the UK, the EU market capitalisation drops at 56% of GDP. In comparison, the rate is at 163% in the US.

While the number of listed companies in the EU-27 is higher (5,692) than in the UK (2,027) and even than in the US (5,343), the average capitalisation of a US-listed company is significantly higher than for their European peers, standing at €4,8 billion compared to €1,3 billion for the EU-27 and €1.3 billion in the UK.

Bond markets

At the end of 2018, even though debt securities markets were one of the most important sources of financing in the EU-27, they only represented €1.4 trillion for corporates compared to €8,8 trillion for governments and €8.6 trillion for financial insti-

tutions. There is a certain degree of heterogeneity between EU-27 Member States because of national practices and legislations as well as business cultures.

Compared to the US (€5.5 trillion), debt securities markets remain underdeveloped for EU-27 (€1,4 trillion) and UK (€0.4 trillion) non-financial corporates which rely more on bank lending and unlisted equity capital.

OTC derivatives market

In 2019, the OTC derivatives⁽²¹⁾ market was the biggest global market with interest rate derivatives representing on average 80% in terms of global notional amounts outstanding⁽²²⁾.

In that same year, 50% of the turnover in OTC derivatives took place in the UK and 32% in the US. While in the US the turnover doubled over the last three years, it went up by 216% in the UK at €3.3 trillion in 2019. In comparison, between 2016 and 2019, the growth was limited to 9% in the EU-27.

At the end of 2019, the UK represented 93% of the EU-28 derivatives market.

The securitisation market

In the EU-28, the securitisation market never really recovered after its peak of €819 billion in issuances in 2008 and closed 2018 at €269 billion. The issuance mainly revolves around the repackaging of residential mortgages and other loans with SMEs loans only representing 12% of the total of EU securitisation issuance. The volumes of outstanding securitized products have remained stable over the past years at around €1.2 trillion, 46% lower than the 2009 peak.

Pan-European and multinational instruments remained limited respectively to 7% and 1% of that market in 2018, highlighting a still rather fragmented and underdeveloped European market.

In 2018, the UK was the biggest European market representing a quarter of the total outstanding issuance.

(21) Over-the-counter (OTC) derivatives when used properly are a powerful tool enabling investors and businesses to hedge against risks linked to their core economic activities and to invest. They are an important driver to economic growth globally as they help lower the cost of capital and enable investors and businesses to efficiently invest and allocate their resources.

(22) Notional amount outstanding refers to the value of all derivatives contracts concluded and not yet settled

In the US, mainly resulting from the massive buying of securitized mortgage by the Government Sponsored Enterprises (GSEs), the issuance grew by 79% between 2008 and 2018 while it fell by 67% in Europe.

The asset management sector

The European pool of assets under management is concentrated in three countries, the UK, France and Germany, representing on average 63% of the total.

Asset managers located in the UK⁽²³⁾ dominate both the investment funds (23%) and discretionary mandates (49%) segments of the market.

Funds located in the EU-27 are far more numerous, but also much smaller (47,486 funds with €237 million under management each on average) than in the UK (2,850 funds, €504 million) or in the US (9,743 funds, €1,759 million).

Private equity (PE) and venture capital (VC)

These two types of funding have shown some sign of recovery since the GFC but the EU-28 is still lagging far behind the US. Between 2014 and 2018, EU-27 PE and VC funds invested approximately €40 billion on average per year, UK funds invested €24 billion and US funds invested €602 billion.

VC market is heterogeneous because of national legal and regulatory regimes. 72% of VC investments comes from France, Germany, Denmark and the Netherlands. The lack of stable pan-European funding base is highlighted by the fact that in 2018, as much as 41% of PE and VC funds came from non-EU investors.

The main problem in Europe is the size of funds. In 2018, 185 EU-27 VC funds raised €7.2 billion compared to €46.7 billion raised by 273 funds in the US, and €4.2 billion raised by 44 funds in the UK. Consequently, EU-27 VCs invest more on seed and start-ups

(in 2018 71% of total VC investment) compared to their US counterparts (37%), and less into companies that are in their later stage (29%), compared to 63% in the US and 36% in the UK.

Households

On average, safe assets⁽²⁴⁾ represent 65% of EU-27 households' total financial assets. Interestingly, while they have in average a smaller amount of savings, EU-27 households appear to be more incline to hold risky assets than in the UK, where households hold approximately 85% of their financial assets in safe assets. But, by comparison, US households hold only 47% of their assets in safe assets. This highlights EU-28 households' risk adverse behaviours.

Looking at the composition of household's financial assets across Member States, one can notice that the more financial markets are developed (e.g. the UK, Netherlands), the smaller the direct participation in equity markets (9% and 11% respectively).

Non-financial corporations

In the EU-27 and in the UK, NFCs rely mainly on bank funding which represented respectively 85% and 77% of total NFC debt originated over the period 2014-2019. In comparison in the US it only represented 32% over the same period.

Now, if one considers all NFCs liabilities (incl. debt financing) between 2014 and 2018, on average EU-27 firms continued to rely on sources other than debt capital markets with equity representing 56% of total liabilities, bank loans 30% and debt securities 5%. In the UK, equity represents 51%, bank loans 24% and debt securities 7%.

In the US, equity represents 59%, debt securities represent 13% while bank loans are way less important representing only 6%.

(23) Meaning assets managed in the UK, and not domiciled in the UK

(24) For the purpose of this section, safe assets are defined as currency and deposits, and insurance and pension schemes. Risky financial assets are defined as shares and other equities, mutual funds, and debt securities.

Insurance companies and pension funds

While traditionally ICPFs have been long term equity investors in capital markets, equity investments by insurers are still below the level reached before the GFC. At the end of 2018, the share of ICPFs in national economies varies significantly, ranging from 77% of GDP in EU-27, 117% in the US to 192% in the UK. At the end of 2018, on average in the EU-27, the largest part of insurers' assets continues to be invested in bonds (26% in government bonds and 22% in corporate bonds), with only 21% invested in equity, either directly (12%) or indirectly (9%) through funds.

With regards to the pension fund industry, in the EU-28, only the Netherlands and the UK have a well-developed second pillar pension schemes. Pension funds' assets in these two countries represent 78% of EU-28 total assets. The volume of assets under management in relative terms at the end of 2018 represented 18% of GDP within the EU-27 compared to 102% in the UK and 86% in the US. In 2018, fixed income securities were the main investment asset class, representing more than half (54%) of total investments, while equity exposure accounted for approximately 30%. In comparison, the US has a less conservative strategy of asset allocation as only 32% of assets were allocated to bills and bonds.

In a nutshell

- Previously collected data highlight that, although EU-27 financial markets have grown since the 1970s, the Union's financial system remains first and foremost bank-based. A similar pattern could initially be observed in the UK, however the growth of British financial markets really took off in the 1990s. As for the US financial system, it was bank-based up until the late 1970s and has since then become the world's deepest and most liquid capital market.

- This section also emphasizes the central role of the UK in the functioning of EU-28 financial markets. Owing to their maturity, British financial markets make up an important share across sectors in terms of amounts and volume treated. This is particularly true with regards to the OTC derivatives market – London being the leading place worldwide – and the stock market capitalisation with the London Stock Exchange.
- In the assessment that can be made by observing the very different levels of development of the different EU-27 Member States, it is necessary to take the measure of what may be due, on the one hand, to choices of specialisation in certain sectors (e.g. venture capital, insurance, asset management, etc.), for various reasons, and, on the other hand, to a cross-border supply of financial services and products which, being insufficient, would leave unanswered needs in the relevant member state(s). This is particularly detrimental to CEE (Central and Eastern European) households who despite owning smaller savings and being more inclined to hold risky assets are not able to do so.
- Overall and having in mind the five pillars highlighted in the introduction which enabled the US financial system to transition from a bank-based to a market-based financial system, EU-27 financial markets show weaknesses in light of the low level of issuance on the securitization market, the low volume of assets under management, the lack of long-term asset allocation strategy by well-developed pension funds, and the prominent role of banks in the financing of corporates (including SMEs).

A.2

KEY CHALLENGES FOR EU-27 FINANCIAL MARKETS

The purpose of this section is two-fold:

- (i) Highlighting the importance of the four main financing challenges the Union is facing for which EU-27 financial markets have a central role to play;
- (ii) Emphasizing the importance of the UK in the current functioning of EU financial markets.

2.1 The four main financing challenges

The European Union faces various funding challenges which are all sources of concern in terms of sovereignty. For not being able to implement the conditions to ensure this financing on its territory, Europe may become dependent on offshore investors with all the risks that this entails. While most of these challenges have been more or less clearly identified for some time now, the Covid-19 crisis has brutally re-emphasized, the need for the Union not only to ensure that it is not excessively dependent on foreign supply in certain sectors considered to be strategic, of which funding is obviously a part, but also to be in a position to revive an economy that has been largely at a standstill in the past weeks in most Member States.

2.1.1 The Union's economic recovery

As a result of the Great Lockdown, Member States have been facing a double shock of supply and demand. In this context, economies of the European Union and the Eurozone are expected to contract by 7.4% and 7.7% respectively in 2020⁽²⁵⁾.

(25) European Commission, European Economic Forecast, Spring 2020, May 2020, [link](#)

To support their economies, EU Governments and Heads of States have taken fiscal measures and launched guarantees programs, with a direct impact on the public debt-to-GDP ratio. In the EU, it is expected to increase from 79,4% in 2019 to 95% by the end of the year and from 86% to almost 103%⁽²⁶⁾ in the euro area.

At the same time, European companies, from SMEs to large groups, have massively increased their indebtedness, especially in Member States most hit by the pandemic and in the sectors most affected by the lockdown.

While EU banks are expected to be instrumental in the short to medium term to finance the Union's economic recovery, financial markets will also have a key role to play, (i) to refinance public debt, (ii) to help corporate companies raise capital to restore more decent leverage ratios and (iii) to free banks' balance sheets so they can allocate further resources to the financing of the economy, and especially to SMEs for which bank credit is often a central, if not sole, source of financing.

By its very nature and uniqueness, this crisis has exacerbated the need to tackle well identified challenges. To that end, EU-27 financial markets' contribution appears critical.

2.1.2 The mitigation of climate change

Over the last 20-25 years, Europe has often been at the forefront of efforts to build a financial system that would be able to support sustainable development. Sustainable development is indeed today a major challenge that our planet is collectively facing, and it is Europe's role, as one of the major developed economies, to lead the way in this respect. To date, however, too little has been achieved in the area of sustainable finance, despite it being recognised as one of the key priorities of the CMU project. If we break down investment needs, the latest estimates from the European Investment Bank (EIB) put the annual overall investment gap in transport, energy and resource management infrastructure at around €270 billion⁽²⁷⁾. Against this backdrop it is notable

that renewable energy investment in the EU has been on a downward trend over the last seven years. In 2018, investments in renewable energy stood at €54 billion, down from its 2011 peak of €100 billion.

The 2019 European parliament election as well as some recently elected Member States governments have put the mitigation of climate change even higher on the European agenda. As a direct consequence, the mitigation of climate change is one of the top priorities of the new European Commission President Ursula Von der Leyen. In December 2019, the EC published the European Green Deal. Its main objective is for the EU economy to have no net emissions of greenhouse gases as soon as 2050 which would require the financial sector to play a central to support that transition⁽²⁸⁾. To that end, several pieces of legislations have been adopted recently and are currently in the process of being implemented with for instance the EU taxonomy whose objective is to ensure investments are in line with the EU's ambition.

Even though the World Health Organisation highlights that there is no direct link between climate change and the emergence or transmission of the Covid-19, it also stresses that the emergence of infectious diseases may result from "increasing pressure on the natural environment"⁽²⁹⁾ confirming that the fight against climate change should be a priority. While the EC's recovery package has secured that part of financial resources will be allocated to the Just Transition Fund – which could be strengthened up to €40 billion – to accelerate the transition towards climate neutrality, much more financing resources are needed to reach the main objective of the Green Deal.

2.1.3 Fostering the development of EU champions especially in the digital and energy transition spheres

Enabling the Union's economic sovereignty

A company can be considered a «champion» when it is one of the leaders, if not the leader, in its industry at the global level. Having «champions» in an economy,

(26) *Ibid.*

(27) <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN>

(28) https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

(29) <https://www.who.int/news-room/q-a-detail/q-a-on-climate-change-and-covid-19>

especially in strategic sectors, is important. Not only because, even if by their very nature the bulk of their turnover is generated outside the territory where their head office is located, they form a significant driving force in the economic fabric that surrounds them locally. But also because these champions are a central indicator of the strength of an economy and its ability to be a key player in shaping the standards around which future developments in a given sector are determined.

But if a champion's attachment to a territory depends on the location of its head office, the nationality of origin of its capital holders also matters. As owners of the company, these holders exercise the decision-making power. To be a European champion in the long term therefore presupposes that a sufficient share of its capital, if not the majority of it, is in European hands.

The current situation in the EU-27 is particularly preoccupying because not only do we lack EU champions but EU companies operating in strategic sectors are more and more foreign-owned⁽³⁰⁾. Foreign ownership is especially high in several sectors that play a central role in the economy including oil refining (67% of total assets of the sector), pharmaceuticals (56%), electronic and optical products (54%) or insurance (45%)⁽³¹⁾.

Besides, looking at the landscape of the Top 50 companies worldwide (based on their brand value)⁽³²⁾, only seven of them are Europeans. Only one is from the technology sector (SAP), one from the personal care sector (L'Oréal), two are a telecom provider (T-mobile & Vodafone) and three are from the luxury sector (Louis Vuitton, Chanel, Hermes). The rest of the ranking is mostly made of Chinese and US companies. A further sign of Europe's lack of industrial strategy appears when looking at the date of foundation: only two of European companies have been created in the past 40 years (Vodafone and T-mobile), others are much older. By contrast, US and Chinese technology, retail and payment companies that occupy the first places of the ranking have been founded for the oldest in the mid 1970s but generally much more recently.

The Covid-19 crisis has strengthened the necessity for the EU-27 to grow EU champions – as highlighted in the recent Franco-German initiative from 18 May. To enable the Union's economic sovereignty in strategic sectors (e.g. digital, aeronautics, automotive, pharmaceuticals, cybersecurity, energy), financial sovereignty is a pre-condition and with EU banks subject to heavy regulatory constraints limiting their ability to finance the economy, the development of EU-27 financial markets is critical.

The lack of an accepted European definition of what defines a company as a «champion» is particularly important, because not only does this mean that state support can be purely subjective, but also that there is no coordinated European strategy. The European Union must therefore be particularly attentive to the fate of its champions, by ensuring that they are given favourable treatment at national and European level (in terms notably of state aid and merger rules) without any false naivety, so that they are able to compete successfully at a global level, particularly with American and Chinese companies.

Adapting to the digital revolution

In the Fourth Industrial Revolution, Europe stands far behind the US and China. While the EU's GDP is almost one fourth of the world GDP, the Union is home to only 10% of global emerging technology firms⁽³³⁾. Furthermore, EU start-ups fundraising only represented 10% of global financing in 2018, far behind the US with 53% and China with 27% (10% in 2013)⁽³⁴⁾. As a result, amongst the 372 unicorns in the world mid-July 2019, 182 were American, 94 were Chinese and only 45 were European. According to Forbes, if we look at leading companies from the digital sector, 49 were American, 14 Chinese and only 12 European in 2018.

Amongst European countries, the UK has been a leader in the FinTech sector, fostering innovation through sandboxes and encouraging entrepreneurship. British FinTech firms attract more VC funding than any other European country, with the share of FinTech in total VC investment at 30% in the UK against 20% in Europe.

(30) European Commission, Foreign Direct Investment, March 2019, [link](#)

(31) European Commission, Foreign Direct Investment, March 2019, [link](#)

(32) <https://www.ladn.eu/nouveaux-usages/etude-marketing/top-100-plus-grosses-entreprises-mondiales-2019/>

(33) Financer la quatrième révolution industrielle, Philippe Tibi, Juillet 2019, [link](#)

(34) *Ibid*

Generally speaking, Europe has strong assets to become a leading region for tech companies. It is endowed with high quality scientific research and a growing number of innovative firms. However, in order for these companies to be at the forefront of technological innovation, access to capital is vital and currently, the EU financing scheme (i.e. venture capital and equity) is not as efficient as it should be, especially compared with the US market, as illustrated p. 13. One of the major issues from this point of view is less the capacity to finance the early stages of development of innovative companies than to be able to provide them⁽³⁵⁾, through late stage funds, with the capital they need to develop to the Licorn (valuation greater than \$1 billion), decacorn (valuation greater than \$10 billion) or even hectocorn (valuation greater than \$100 billion) stage.

Ensuring the Union's autonomy for energy transition

The indispensable mitigation of climate change (see 2.1.2) and the related transition in the field of energy will undoubtedly require a drastic change of business model for whole sectors of "traditional" industries in which European companies excel⁽³⁶⁾.

Ensuring that European companies successfully take new technologies (electric propulsion, batteries, hydrogen mobility, etc.) to the industrial stage is critical for the contribution of the Union to the fight against climate change, but it is also of the utmost importance for social and geopolitical reasons. Relying on third countries companies to provide for these technologies would have devastating consequences on employment across Europe, and on the sovereignty of the Union.

2.1.4 The ageing of the population

According to the EC, the 65+ population as a percentage of the population aged 15-64 is expected to increase to 53% in 2060⁽³⁷⁾. Consequently and while the situation differs from a member state to another, overall there will be an increase in Europe's old-age dependency ratio with only two people in the working age between 15 and 64 for each person aged of 65+ while they were four in 2010. By the same

token, according to the ECB, total public ageing cost in the euro area is expected to rise from 26% of GDP in 2016 to 28,2% of GDP in 2040⁽³⁸⁾.

With baby-boomers retiring and Europeans expected to live longer, Member States' governments are facing growing pressure on their public finances which will entail significant changes in their long-term spending.

They have to decide whether to fund the coming spending for the elderly either by debt or by taxes. While a higher tax burden is expected to reduce savings by those in their middle years and therefore investments in capital markets, a higher level of government debt, on the other hand, may crowd out demand for other relatively risk-free assets, notwithstanding the questioning on the sustainability of ever growing levels of public debts. Furthermore, if households foresee that higher debt today will have to be financed by increased taxes in the future, private spending will also go down.

Ensuring the sustainable performance of European retirement systems is all the more important as the retirement issue echoes other social issues, with the risk of growing gaps and tension within European societies, between "left behinds" and wealthier people, or between the young and the elders.

In that context, while issues around ageing require policy actions at different levels from structural reforms to immigration policies, financial markets and pension funds in particular have a critical role to play to complement pay-as-you-go systems and contribute to ensuring their performance while channelling capital to long term and risky projects.

(35) For a global ranking, see [CB Insights](#).

(36) 10 out of the 50 companies in the Euro Stoxx index belong to electric utility, oil & gas, automotive or aerospace industry sectors.

(37) European Commission, The 2018 Ageing Report, November 2017, [link](#)

(38) European Central Bank, The Economic Impact of Population Ageing and Pension Reforms, 2018, [link](#)

2.2 Brexit: the importance of the UK in the functioning of EU financial markets

Analysis from this section is based on findings from section 1 “The structure of EU financial markets”.

2.2.1 The emergence of London as a global financial centre

The establishment of the Interest Equalization Tax in 1963 in the US triggered the relocation of major US CIB players to London and the development of the Eurodollar bond market. Quickly the US dollar rather than the Sterling became the basis for international operations from London and the entry point for companies and investors willing to access Euro-markets.

Other factors contributed to the establishment of the City as a leading international financial centre, but also as the nerve centre of Europe in the field of financial markets. Firstly, the language community with the US, where powerful market players are established, secondly, the regulatory «big bang» (including on taxation) led by the UK in the second half of the 1980s, thirdly, the impetus created by the implementation of the European passport in 1993 and finally, the introduction of the euro in 1999: all were major boosters in the development of London’s financial centre.

However, the global financial centre that London has become was also based on its ability to adapt and change over time, including through the formation of clusters and networks of firms connected by common products, technologies, markets, or institutional frameworks. Such clusters have increased productivity, drive innovation and stimulate new business creation through the sharing of common services, access to pools of skills, and speed of dissemination of information and risk.

The gravitational force⁽³⁹⁾ resulting from the concentration of non-European financial institutions in the

United Kingdom and the creation of a network of financial service providers within a single platform then prompted their European counterparts to expand their operations in London. The increase of international players based in London, as well as the location advantage with trading hours between Asia and the US, resulted in euro transactions being settled in London. While paradoxically, it did not join the Single currency, London became the undisputed largest financial centre for euro-denominated trading (particularly for OTC derivatives).

2.2.2 Trading

The primary equity markets

Over 2015-2018 period, out of 382 initial public offerings (IPOs) in the EU-28, 119 took place in the UK. In other words, 31% of IPOs took place in the UK while its GDP represented only 15,6% on average of the EU-28 GDP⁽⁴⁰⁾.

Besides, between 2014 and 2018, on average only 16% of the total investment flows in EU-27 has been channeled to newly listed companies. Although it should be taken into account that London is a listing centre for many non-EU issuers, this is half the size of the investment that UK (32%) newly listed companies has received. Relative to GDP, the size of investment in EU-27 (0.1% of GDP) is four to five times lower than in the UK.

The secondary equity markets

While the value of share trading in EU-27 went up by 12% since 2014, it is still much lower than the growth rate observed in London (28%). In comparison, by the end of 2018, the US average daily traded value was six times higher than that in the EU-28.

The introduction of new technologies (algorithmic trading and high frequency trading) and new regulation (MiFID 1) have had in a short amount of time a major impact on the landscape of equity trading in Europe. Trading has largely moved from traditional stock exchanges to other venues, mostly based

(39) Through highly specialised financial services, such as international bank lending, foreign exchange trading, cross-border securities trading, the issuance of Eurobonds and global fund management.

(40) http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-406763_QID_-1FAD35E9_UID_-3F171EB0&layout=UNIT,L,X,0;-TIME,C,X,1;GEO,L,Y,0;NA_ITEM,L,Z,0;INDICATORS,C,Z,1;&zSelection=DS-406763INDICATORS.OBS_FLAG;DS-406763NA_ITEM,B1GQ;&rankName1=INDICATORS_1_2_-1_2&rankName2=NA-ITEM_1_2_-1_2&rankName3=UNIT_1_2_0_0&rankName4=TIME_1_0_1_0&rankName5=GEO_1_2_0_1&rStp=&cStp=&rDCh=&cDCh=&rDM=true&cDM=true&footnes=false&empty=false&wai=false&time_mode=ROLLING&time_most_recent=true&lang=EN&cfo=%23%23%23%2C%23%23%23.%23%23%23

in the UK. As a result, London accounted for one fifth (20%) of the value of European shares traded in 2018, followed by Frankfurt (19%) and Paris (16%).

The primary bond markets

Following up from the GFC and sovereign debt crisis, gross debt issuance has dropped below €12 trillion in 2018 while it was at almost €18 trillion in 2009 for all types of issuers (sovereign, financial institutions, corporates, etc.). In the meantime, the emission of corporate debt securities has remained stable since 2010 at almost €1 trillion.

More specifically, on average between 2014 and 2018, the gross issuance of corporate debt securities represented 4% of the GDP in the UK against 6% in the EU-27 stressing that this market remains largely underdeveloped when it comes to the financing of the economy.

The secondary bond markets

The secondary bond market is all the more important from the stand point of the financing of the European economy as, between 2000 and 2019, euro area NFCs have relied more and more on bond market financing which increased from less than 7% to almost 13% of total debt funding⁽⁴¹⁾.

London does play a central role in this market.

If we consider the EU-28 government bonds in 2019, 75% of D2C volumes executed on MTFs were on UK MTFs. Besides, if we look at EUR Investment Grade bonds also in 2019, more than 80% of D2C volumes executed on MTFs were on UK MTFs.

Similarly, even though no official data are available, a significant part of traders providing liquidity on European bonds are located in London.

These elements are all the more relevant as the liquidity of the bond market for NFCs remains rather fragile: net market maker inventories of EU corporate bonds decreased from around €40 billion in 2Q08 to

less than €20 billion in 2Q15⁽⁴²⁾ and data relating to the March 2019 to February 2020 period suggest that the dealer bid has disappeared during the first phase of the Covid-19 crisis⁽⁴³⁾.

Foreign exchange

The foreign exchange (FX) market is one of the largest markets in the world as measured by the volume of transactions, with an average daily turnover of €7.4 trillion in April 2019, up by 152% compared to 2007.

London's convenient time zone and its grip on FX trading infrastructure (and personnel), resulted to being a global player and a European hub for trading – both in terms of the size and diversity of its markets. In 2019, sales desks located in London intermediated €3.2 trillion in daily average turnover, or 43% of the global FX trading activity.

Despite the decline in Euro's share at the global FX market, its turnover increased by 63% between 2010 and 2019 (from €1.2 trillion to €1.9 trillion). However, much of this development is due to London's turnover in euro transactions, which rose by 86% over the same period (from €616 billion in 2010 to €1.1 trillion in 2019). As a result, in 2019 48% of the Euro FX trading was concentrated in London, and only 15% took place in the EU-27.

As a result, London is, by far, the world's dominant FX dealing centre, and the one which buys and sells more than thrice as many euros as the EU-27 and more dollars than the US.

Derivative markets

While OTC interest rates derivatives (IRD) were cleared in London long before the GFC, the implementation of EMIR has required for a large share of OTC derivatives to be cleared centrally. The main beneficiary of this was London, not only because most OTC business is traded by banks based there, but also because derivatives contract are underpinned by English commercial law. On top of that,

(41) https://www.ecb.europa.eu/paym/groups/pdf/bmcg/200304/2020-03-04_-_BMCG_-_Item_3_-_Update_on_the_Corporate_Bond_Market_-_Union_Investment.pdf, page 2. Obviously, this split may be modified for some time by the massive distribution of loans in the context of the Covid-19 crisis.

(42) ESMA's report on bond liquidity https://www.esma.europa.eu/sites/default/files/library/esma50-165-651_wp_bond_liquidity.pdf

(43) https://www.ecb.europa.eu/paym/groups/pdf/bmcg/200304/2020-03-04_-_BMCG_-_Item_3_-_Update_on_the_Corporate_Bond_Market_-_Union_Investment.pdf, page 12.

over the years London has created and developed a local ecosystem of infrastructures and actors. As a result, London has become the epicentre for the OTC derivatives market.

With regards to euro-denominated OTC IRD, the UK continues to be the leader regarding this type of derivatives contracts accounting for 90% of the global market in 2019 when an all-time high of €1.6 trillion was reached. In the EU-27 market, France – the largest trading centre – saw its turnover decreased by 12% to €78 billion in 2019. Its share in euro-denominated IRD fell from 14,7% to 5% between 2010 and 2019.

2.2.3 Clearing and settlement

Clearing

The offsetting of matched positions that a central clearing counterparty (CCP) performs is characterized both by economies of scale (i.e. the marginal costs of clearing is close to zero) and by network effects (i.e. the greater the number of participants in a CCP, the more effective it is). Thus, there is a natural tendency towards large-scale concentration in the clearing space.

For the EU-28 financial markets, as they are currently organised, the 3 UK CCPs – LCH Ltd, ICE Clear Ltd and LME Clear Ltd – play a crucial role. This is particularly well illustrated with SwapClear (LCH Ltd) that has a 95% market share for the clearing of swaps and holds around 3,000,000 open positions for a notional of 374 trillion USD⁽⁴⁴⁾ in May 2020, of which one third approximately are linked to EU-27 entities. In terms of the number of participants, at the end of 2018, the 3 UK CCPs accounted for 28% of the total European participants (1,039). In comparison, the German EU-REX Clearing and LCH Clearent SA⁽⁴⁵⁾ followed with respectively 209 and 125 participants.

Looking at the number of securities transactions submitted and cleared through a CCP, LCH is the largest European clearinghouse with approximately 1.7 billion transactions taking place in 2018, followed by the European Central Counterparty (ECC) based in

the Netherlands. Examining the value of the transactions cleared through CCPs, both LCH Clearent and ECC account for 29% (approximately €10.1 trillion) of the total European value.

Settlement

The European CSD market is dominated by two groups, Euroclear and Clearstream, which operate several CSDs in different countries.

Euroclear UK and Ireland (EUI) CSD, which is based in the UK, holds 77% of all European participants.

Approximately 15% of the total European value was processed by CSDs in non-EA countries, with EUI in the UK processing 64% (or €5.3 trillion).

(44) <https://www.lch.com/services/swapclear/volumes>

(45) LCH SA is the France-registered clearing house of LCH Group

A.3

REFORMING EU-27 FINANCIAL MARKETS

In light of the financing needs the Union is facing and the necessity to develop the EU-27 financing sovereignty, the challenge is to identify the developments needed to enable financial markets to play their full role given the constraints that now exist on the distribution of credit. It was therefore particularly important to prioritise the recommendations made to identify those that are most likely to increase rapidly the efficiency of the market in financing the economy. This prioritisation takes into account the specific needs unfolding from the Covid-19 crisis and the essential role that short- and medium-term bank financing is called upon to play in supporting the EU's economic recovery.

Several policy recommendations below have already been developed in various works and as such do not require lengthy development. Above all, the ambition is to trace a coherent path based on the experience of AMAFI's members of the functioning of EU financial markets.

RECOMMENDATION

A targeted support from EU authorities is required, similar to what other market segments (covered bonds, government bonds, corporate bonds) benefited from. We call on the EC to review the regulatory framework for securitisation, especially the STS Securitisation Regulation and the Capital Requirement Regulation (CRR) to:

- (i) Review eligibility criteria for assets born of securitisation as collateral for Eurosystem market repo operations and for the ECB's purchase programmes;
- (ii) Ease the Significant Risk Transfer assessment process;
- (iii) Adapt the prudential treatment of securitisation for banks and insurers;
- (iv) Enable the development of synthetic securitisation;
- (v) Upgrade eligibility of securitization in the LCR ratio; and
- (vi) Differentiate between public and private securitisations for disclosure requirements.

PRIORITY 1

Revamping the securitisation market

Previously in this report, we have stressed the depth of the US securitisation market as one of the five pillars that enabled the US to transition from a bank-based to a market-based financial system. However, replicating the mechanisms implemented for this purpose in the US cannot be achieved in Europe at least in the short to medium term especially because there is no equivalent to the US GSEs. The importance of securitisation in freeing up banks' balance sheets and enabling them to renew their capacity to distribute credit has been stressed on many occasions, particularly in view of the crucial nature of this source of financing for most SMEs. The current economic context gives new urgency to this issue, as their role will be essential in the early stages of the Union's economic recovery. Besides, in the context of the Green Deal, targeted securitisation could broaden the range of green assets available to investors.

PRIORITY 2

Developing the flexibility of the prudential regulatory framework

In the wake of the 2008 GFC, the transposition of the Basel 3 capital rules at EU level has established a rather comprehensive regulatory framework for EU banks to restore confidence and trust. While the EU-27 banking system has undeniably become more resilient as a result of increased capital buffers, banks are also less in a capacity to inject massive amount of liquidity into the economy when that is needed i.e. when a crisis does not originate from the financial sector as it is currently the case.

On top of the ability to adapt the regulatory constraints on a temporary basis to face exceptional conditions, the European implementation of the “fully phased-in Basel III package” should make sure, while ensuring the control of systemic risk, not to unduly penalise European market activities. With this in mind, it is particularly striking that the implementation of the final Basel III rules is set to induce a significant increase in the required capital for European banks (by 20% to 25%)⁽⁴⁶⁾. It would be at odds with the expectations expressed by the Council in July 2016⁽⁴⁹⁾, all the more as it will be neutral for non-European banks.

PRIORITY 3

Managing Brexit and potential hard-Brexit implications

Market fragmentation

As a global financial centre, but above all as the EU’s main financial centre, London has in recent years played a central role in the various market segments which, within the EU-28, serve to finance the economy and hedge the risks borne by its companies and investors. It is therefore natural to anticipate that Brexit could lead to a certain degree of fragmentation, with counterproductive effects in terms of market efficiency and availability of effective solutions for European issuers, companies and investors. Measuring this risk as precisely as possible requires, however, a distinction between two dimensions.

Fragmentation notably results from varying degrees of restrictions on the ability of market players located outside a given geographic area to offer services or products to customers located in that

RECOMMENDATION

While it is of the utmost importance not to threaten financial stability, we consider a broad reflexion should be initiated by the EC to consider which core elements of the prudential regulatory framework for banks (e.g. leverage ratio, Fundamental Review of the Trading Book) could be alleviated. The objective is to ease the allocation of resources to the financing of EU’s economic recovery when a crisis does not originate from the financial system. This should notably consider the necessary legal tools (e.g. no-action letter) to enable such flexibility. The “CRR quick fix” proposed by the EC on 28th April ⁽⁴⁶⁾ is a first step but we consider further work is required to avoid facing such situation when a future crisis burst so the EU prudential regulatory framework can adapt in a more dynamic way to financing needs. For instance, a temporary easing of the leverage ratio similar to what has been done in the US should be considered ⁽⁴⁷⁾.

RECOMMENDATION

- (i) Preserve the European exemption from holding capital against CVA risk on corporate derivatives exposures;
- (ii) Replicate as much as possible US specificities and deviations in the implementation of final Basel provisions (notably, target a capital neutral implementation of FRTB, set the alpha-factor at 1 with end-clients in the Standardised Approach for Counterparty Credit Risk, etc.);
- (iii) Provide clarifications on certain topics for the European implementation of fully phased-in Basel III rules (treatment of repos and reverse repos under the Leverage Ratio, treatment of derivatives hedges under NSFR, implementation of FRTB, refinements in the implementation of SA-CCR, use of discretion in the ongoing reform of Credit Valuation Adjustment, level of the Internal Loss Multiplier in the implementation of provisions related to operational risk).

(46) https://ec.europa.eu/commission/presscorner/detail/en/ip_20_740

(47) <https://www.federalreserve.gov/covid-19-supervisory-regulatory-faqs.htm>

(48) <https://eba.europa.eu/eba-updates-estimates-impact-implementation-basel-iii-and-provides-assessment-its-effect-eu-economy>

(49) <https://www.consilium.europa.eu/en/press/press-releases/2016/07/12/conclusions-banking-reform/>

RECOMMENDATION

A priority for dealers established in the EU-27 is therefore to continue to have access to other large pools of liquidity in order to continue to serve their customers in an optimal manner. Indeed, it is essential to ensure that those dealers do not depend on a limited number of operators in their access to liquidity and in the management of the risks arising from the services they offer to their European customers. In France, a decree adopted in June 2019⁽⁵⁰⁾ has confirmed that post-Brexit French investment firms will still be able to have access to major liquidity pools outside the Union under the same conditions.

RECOMMENDATION

While the temporary equivalence ends on 31 January 2021, it appears necessary for EU-27 market actors to continue having access to UK CCPs beyond that date and in the absence of a deal. The extension by EC of the temporary recognition of UK CCPs is necessary to enable the implementation of EMIR 2.2 and the gradual transfer of liquidity from the UK to the EU-27. In fact, the development of clearing services within the EU is necessary but can only be achieved in the long term, in a progressive and orderly way.

area. Since the GFC, such fragmentation has become inevitable: legitimate concerns in the different jurisdictions about financial stability, investor protection and the smooth functioning of markets are too strong for these barriers not to be noticeable.

This is particularly true for the European Union. In terms of financial stability, investor protection and the proper functioning of markets, the EU has made regulatory choices that have led it to adopt high standards. It is therefore natural for the EU to strictly regulate the conditions under which market participants not established under its authority can offer their services to EU customers. The resulting fragmentation certainly reduces market efficiency, but it is counterbalanced by the imperatives recalled. In any event, it does not prevent third country players seeking access to EU-27 financial markets from Europeanising some of their activities by locating branches or subsidiaries with the necessary level of resources (capital, liquidity, teams and systems), in the Union, under ECB or NCAs supervision.

Furthermore, the undesirable effects of fragmentation can be further reduced if the interdealer market – eased by digitalization – can function smoothly. It should explicitly be kept immune from the effect of rules that may otherwise induce some fragmentation, considering that the intervention of regulators to protect investors and market integrity is certainly less needed in interdealer relations.

Maintaining access to UK CCPs

Because of the central role of London in the OTC derivatives segment – the biggest global market – in which it represented 93% of the EU-28 derivatives market at the end of 2019, a continued access to UK CCPs is instrumental to preserve the EU-27 sovereignty in the financing of its economy.

In the absence of a deal, UK CCPs would lose their status of qualified CCPs (i.e. not recognized by ESMA) and become third country CCPs. Therefore, EU-27 members would no longer be able to clear instruments subject to EMIR mandatory clearing in UK CCPs while UK CCPs would stop providing clearing services to EU-27 members in order to be compliant with EU law and their own internal rules.

Over the short term, the anticipated exclusion of EU-27 entities from UK CCPs would highly likely result in: (i) a very important transfer of income from EU-27 entities to their competitors; (ii) an immediate and deep deterioration of market conditions on FIC derivatives; (iii) the simultaneous triggering of numerous auctions just before the temporary equivalence ends (31 January 2021), potentially 10 times the size of the auction that followed the collapse of Lehman Brothers, leading to chaotic market conditions.

(50) <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000038695937&dateTexte=&categorieLien=id>

The absence of a temporary equivalence would also have deep medium term consequences. Overall, deprived of their access to UK CCPs with no time to adapt, EU-27 banks would lose their credibility in the client clearing business, lose access to non EU-27 clients willing to continue clearing at UK CCPs, and would see their hedging cost increasing making their business less profitable. Such outcome, affecting all EU-27 entities in parallel, would result in making the financing of the EU economy extremely difficult and is hardly compatible with the objective of building a Capital Markets Union post-Brexit.

Managing MiFIR trading obligations

According to the STO rule, EU MiFID II firms are required to trade certain shares only on EU venues, Systematic Internalisers (SIs) or equivalent third-country trading venues. The obligation applies to all shares traded on venues in the UK.⁽⁵¹⁾ In particular, and according to ESMA which regulates the scope of the STO in Europe, the trading obligation applies to the shares of all companies headquartered in the EU that are traded on a trading venue in the EU.

Through its onshoring of EU rules, the UK has adopted a similar trading obligation, that is expected to apply to shares of companies headquartered in the UK and to shares with a primary listing on the LSE.

This could create situations of conflict of laws, as an EU share with primary listings both in the EU-27 and in the UK is traded on a UK venue and an EU-27 venue, it could be subject to both STOs. Thus, the question that arises is what will happen to EU shares traded in the UK, as there is a number of shares with EU-27 ISINs that have both listing, as well as their main or only significant centre of market liquidity, in the UK.⁽⁵²⁾ Such an overlapping will create many unintended consequences for the ability of market participants, in particular EU-27 investment firms and their clients, to manage their portfolios and to achieve best execution (i.e. EU investors will not be able to access liquidity on EU shares listed in London).⁽⁵³⁾

Furthermore, under the Derivatives Trading Obligation (DTO)⁽⁵⁴⁾ EU firms are required to trade certain classes of OTC derivatives on EU or equivalent third country trading venues. The DTO raises similar issues to the STO, including a clash between EU-27 and UK obligations. Unlike shares, derivatives can be traded on Organised Trading Facilities (OTFs), which would expand the scope of venues and participants affected by the competing obligations.

RECOMMENDATION

In case of a hard-Brexit, one can expect the UK STO and DTO to overlap with those foreseen in MiFIR, creating a conflict of law, unless trading venues are recognized equivalent by both EU and UK authorities. While the easiest way on the short term would probably be to achieve some kind of mutual recognitions of trading venues, a long term solution would be for the EC to decide not to apply its STO and DTO to third country branches of EU-27 investment firms and to revisit the condition of its market access from a client business perspective. Indeed, the application of these rules would have serious impact on the competitiveness of EU entities without contributing to the protection of investors or the integrity of EU markets, so that the application of local rules only should be preferred.

(51) Except where trading is non-systematic, ad hoc, irregular and infrequent.

(52) https://www.fca.org.uk/news/statements/fca-photo_la_date_et_creation_Diane_Rigolot-share-trading-obligations

(53) See LSEG's impact assessment on hard Brexit: <https://www.londonstockexchange.com/traders-and-brokers/rules-regulations/change-and-updates/lse-plc-hard-brexit-impact-assessment.pdf>

(54) Article 28 of MiFIR.

RECOMMENDATION

Even though important political hurdles would have to be overcome, the creation of an EU safe asset would significantly increase financial integration and would represent an important milestone for the completion of the CMU:

- (i) The mutualisation of existing public debts, that could build on mechanisms that have been discussed in recent years (“blue”, “red” or “purple bonds”) to ensure that the creation of the safe asset does not endanger, and rather strengthen fiscal discipline by complying with the Fiscal Compact⁽⁵⁵⁾;
- (ii) The issuance of new debt by European bodies;
- (iii) The issuance of EU level instruments based on the securitisation of pan-European assets. For instance, similarly to what has been done in the US, an option could be to use EU mortgage loans as collateral to create liquid and safe mortgage-backed assets. A side benefit would be to ultimately finance mortgage loans by capital markets and to free banks’ balance sheets.

RECOMMENDATION

The US example shows that the central role of the SEC has been critical to enable the development of US financial markets. While supervisory convergence is already one of ESMA’s strategic priorities for 2020-22⁽⁵⁶⁾, we believe its powers should be strengthened. In order to ensure that the interpretation of the legislation is the same for both the supervisor and the supervised entity and hence to favor harmonized supervisory practices, a gradual two-step approach appears necessary:

- (i) In the short term, the development by ESMA of specific tools and common trainings for EU-27 NCAs on the implementation and enforcement of new legislations. We would also encourage further joint work between NCAs within ESMA to ease the development of common supervisory practices especially in new areas such as sustainable finance and crypto assets⁽⁵⁷⁾.
- (ii) In the medium to long term, ESMA’s direct supervisory powers could only become a reality over time, based on experience. In particular, we would call on ESMA to directly supervise EU CCPs.

PRIORITY 4

Creating an EU safe asset

The US capital market was created and developed around the US Treasury market, which is the largest and most liquid in the world and represents the key benchmark for asset pricing.

Similarly, a European safe asset would (i) act as a stabilization factor, notably by helping to reduce the sovereign-financial nexus, (ii) provide a deeply liquid source of high quality collateral to favour cross-border transactions and (iii) offer a risk reference and help to achieve a more efficient allocation of risk amongst the financial system. On top of playing the role of a backbone to EU integrated financial markets, a Euro-denominated safe asset would also serve the objective of fostering the international role of the Euro.

It should be noted that, even though it is limited in time and supposed to be a one-time emergency measure, the recovery fund recently proposed by the EC – which still has to be approved by the 27 members states – can be seen as laying the foundation for the creation of a European safe-asset. In fact, the EC will raise money from financial markets based on guarantees from Member States.

PRIORITY 5

Strengthening supervisory convergence

Competition between national competent authorities (NCAs) is unhealthy as it goes against the objective of achieving a single market for financial services. The implementation of the Single Rulebook for financial markets and its related supervision remains heterogeneous across the EU-27. Looking at the recent ESAs review, while we consider that the outcome was highly disappointing compared to the EC’s legislative proposal, ESMA has at its disposal several tools including peer reviews to facilitate supervisory convergence which will be key, in a post-Brexit environment, where we will likely have several financial centres of different sizes and specializing in different types of activities. Treasur

(55) For further details see: The Blue bond proposal ([link](#)) & Delivering a safe asset for the euro area: a proposal for a Purple bond transition ([link](#))

(56) https://www.esma.europa.eu/sites/default/files/library/esma22-106-1942_strategic_orientation_2020-22.pdf

(57) *Ibid*

PRIORITY 6

Developing an ecosystem of pension funds

The success of a market-based model for financing the economy is directly linked to the presence of long-term investors. It is they who can provide the patient resources to support the development of companies and infrastructure projects. Pension funds, with an average horizon of 30 or 40 years, are key players in this respect. In the US, they also play a very important role in various market segments, particularly in the equity segment, which is vital for the long-term financing of companies and infrastructure projects. The EU should build the same capacities. This is even more necessary since, in view of the ageing of European populations, the development of pension funds is it is now essential to supplement the pay-as-you-go pension systems that remain core for many Member States.

PRIORITY 7

Facilitating companies' access to investors

Currently, companies that want to find financial resources from investors have two main routes depending on whether they favour «public» or «private» financing. «Public» financing consists in soliciting a multitude of investors not determined beforehand: this is the classic way of listing on a stock exchange, with intermediaries ensuring the underwriting and placement of the public offering. «Private» financing, on the other hand, consists of soliciting only a small number of investors, or even just one, with whom the company shares a certain unity of view as regards its strategic development: this is the venture capital route, which can range from the very early stages of the company's development to stages which make it possible to provide fairly significant resources, that can exceed €100 million.

These two paths are naturally complementary. Listing on a stock exchange is not suitable for companies starting up their activity, while venture capital is less relevant to support companies past a certain stage of development. Still, they may compete at intermediate stages of development where both venture capital and stock exchange listing may be able to offer suitable solutions. In this area, while the challenge is to ensure that the market can now fully support the financing of the European economy, it is essential to ensure that companies can choose the alternative that best suits their needs.

RECOMMENDATION

We call for the EC to remove existing restrictions to enable long-term funding sources to be channelled to the financing of innovations, mitigation of climate change and risky projects.

We also call for the creation of pension products with an advantageous tax treatment while we are conscious it is highly dependent on Member States fiscal strategy. We are therefore supportive of the EC's proposal to gradually transition from unanimity voting to the ordinary legislative procedure for EU law on taxation⁽⁵⁸⁾.

(58) https://ec.europa.eu/taxation_customs/taxation/decision-making-eu-tax-policy_en

RECOMMENDATION

We call for an in-depth reflection on the right balance to be struck between public and private funding in the light of the advantages and disadvantages of each.

SME research financing

We call on the EC to integrate SMEs research financing as part of the MiFID 2 quick fix. More precisely, we consider that (i) more proportionality should be introduced in the inducement regime for SMEs research and that (ii) the framework for sponsored research - that could constitute a credible alternative to “traditional” SMEs research - should be reviewed to ensure that that issuer-sponsored can qualify as “investment research” and not marketing communication provided that the research provider strictly comply with MiFID II and MAR rules.

Venture capital

We call on the EC to encourage the development of Venture Capital funds including Eu VECA to ensure they contribute efficiently to the development of companies. Particular attention should be paid to late stage financing to avoid EU companies in strategic sectors (incl. digital) to rely on third country capital.

To do so, two directions must be explored. On the one hand, with regard to listing on stock exchange, authorities should review the trade-offs that have led to the listing conditions of issuers. It is indeed necessary to review listing conditions that have been determined based on the situation of the largest companies: the constraints thus posed are indeed unsuitable and disproportionate for those that are still at intermediate stages of development. Among these arbitrations, those relating to recent changes in the conditions under which fund managers can acquire financial research should be given special attention in view of their negative effects on the supply of research concerning SMEs. On the other hand, with regard to venture capital, it should be taken into account that, compared to the US, the EU-27 is lagging behind, especially when it comes to the size of its funds (*see section 1 - p. 7*). EU venture funds have a very limited capacity to invest in companies that are at an advanced stage of development, whereas this is one of the main conditions for adapting to the digital revolution, fostering the development of European champions and thus supporting the development of the Union’s economic sovereignty.

But beyond these complementarities between stock market listing and venture capital, other factors must also be considered which have a negative effect in terms of risk and allocation. On the one hand, private financing is by its very nature less widely accessible to investors than public financing: savings, particularly those of households, do not have easy access to the most performing assets of the major private equity funds. On the other hand, the development of venture capital has, in some cases, led to large financing capacity, notably due to the acceptance of significant debt leverage ratio, which the sustainable QE measures put in place by central banks has only facilitated. This has led to an increase in companies’ valuations, the consequences of which should not be underestimated. As the frequency of economic or financial shocks of significant magnitude increases, the financial structure of these companies is less optimal in terms of the proportion of equity capital. Furthermore, the impact on valuation of companies turning towards private equity also explains the increase in the number of stock market exits currently observed.

PRIORITY 8

Encouraging debt-equity swap transactions

With the number of companies listed on European stock exchanges being in a constant decline, the cost of debt finance significantly cheaper than that of equity, and the fact that European capital markets have always been less equity-centric than the US, corporate debt levels are at or near all-time highs and the credit quality of the outstanding debt is deteriorating. As the cost of servicing the debt interest is low, due to the low interest rate environment, the real risk in a crisis situation (like the one we are going through now) where growth slows down, is that credit spreads widen, debt levels increase and default rates climb.

PRIORITY 9

Creating the regulatory conditions for the emergence of European champions in the digital and energy transition fields

Proactive positioning has made the EU a standard-setter in regulations related to sustainable finance, and a global leader in this domain. While this position is a geopolitical asset for the Union, there is a risk that decisions taken in the internal market become constraints for European companies when they compete outside the Union's borders, and paradoxically reduce their contribution to the mitigation of climate change.

Typically, the efforts produced by the EC on the taxonomy are very welcome but need to go further by completing the approach with a framework that could help in assessing the transition efforts made at companies level, which are key to achieve the EU's 2050 climate-related objective. It would also help to reward companies which are engaged into a robust science-based transition pathway and ensure that the energy transition will be as inclusive as possible.

In addition, the development of the market requires to make available better-quality data from more numerous stakeholders. In that sense, the Non-financial Reporting Directive (NFRD) regulation review is key in getting more stakeholders to publish on their non-financial performance, while adapting the disclosure requirements for smaller counterparties. Moreover, ESG-related data collection could be organised and centralised at the EU level to ensure a fair and reasonable access while trading them with non-EU players where relevant.

(59) Debt-to-equity swap refers to the conversion of a heavily indebted or financially distressed company's debt into equity or the acquisition by a company's creditors of shares in that company paid for by the value of their loans to the company.

RECOMMENDATION

In order to tackle increased levels corporate leverage and the growing numbers of impaired bank loans – some of the long-term risks of the current responses to the Covid-19 pandemic –, the re-equitisation of European companies must be considered a priority. With this in mind, we call on the EC to encourage (i) the ending of Debt-Equity tax bias which always exists in different Member States and (ii) the setting of pan-European funds dedicated to the acquisition of loans to companies and their transformation into equity through debt-to-equity swaps.⁽⁵⁹⁾ Such debt restructuring instrument would allow companies to restore their business model so that they can compete in the market on a long-term basis, while also providing retail and institutional investors with opportunities to participate to capital markets.

RECOMMENDATION

A targeted support from EU authorities is required, to:

- (i) Create the relevant regulatory framework to establish a common language including with regard the transition strategies and the data collection & disclosure,
- (ii) Promote international standards consistency including by addressing the risk of unlevel playing field which could result from the regulatory fragmentation in this field,
- (iii) Create a pan-European CMU ESG system (staff, infrastructure, database),
- (iv) Develop product-neutral approaches on labels and frameworks to onboard retail clients,
- (v) Create incentives (fiscal, public co-financing) to redirect capital flow toward sustainable activities while ensuring that usual risk analysis are performed.

RECOMMENDATION

The EC should build an ambitious legislative program on various aspects of the digital economy, to:

- (i) Clarify which digital assets fall under the scope of existing European legislations, and establish a dedicated framework for those that do not,
- (ii) Provide for a legislative framework related to the use of cloud services, that take into account the risks of dependencies on non-EU providers, and encourage the development of European cloud providers,
- (iii) Create the relevant regulatory framework to establish the value and determine the various categories of data, encourage the location in the EU of data answering reporting obligations, and ensure a level playing field in the access of data between jurisdictions and between economic actors,
- (iv) Build European Artificial Intelligence “code of conduct rules”, ensuring that AI used in the EU (e.g. for EU activities or in relation to EU customers) rely on appropriate governance frameworks.

Onboarding the retail clients will be key in the development of the sustainable finance market: there needs to be simple, easy to understand and product neutral tools and processes at their disposals in order to match their increasing demand for sustainable products. If the Ecolabel will help achieve that, additional standards or frameworks could be developed.

Finally, sustainable regulation/standard fragmentation at international level should also be addressed in order to level the playing field, and to ensure that EU stakeholders can continue to play a significant role in financing energy transition of the emerging economies.

Contrary to the situation on sustainable finance, the Union appears to be lagging behind in the regulatory and industrial fields of the digital economy.

The Union should take a leading role in international debates relating to key digital challenges, while adopting standards that factor in considerations linked to the competitiveness of its companies and financial markets.

Proposed reforms with a more medium to long term perspective

Generally speaking, the following reforms have been identified and described in other reports and while we consider them important they are less critical than the priorities described previously.

Consolidation of EU post trade infrastructures

Overall, we believe it is important to facilitate the development of pan-European platforms (CCPs & CSDs) to enable more flexibility and efficiency in the services provided by EU-27 investment firms to their clients but also to ensure they are in a capacity to provide the same quality of services they used to before Brexit.

Harmonizing procedures for repayment of withholding taxes to investors

The development of cross-border investments from institutional investors is slowed down by inappropriate withholding tax regimes across Europe. There is a need to have repayment procedures that are less heavy, less costly and more predictable. Besides, agreement procedures between Member States too often do not result in fair outcomes.

(60) *Ibid*

(61) [https://www.afme.eu/Portals/0/globalassets/downloads/letters/20200122%20Letter%20re%20CSDR%20Settlement%20Discipline%20\(redacted\).pdf?ver=2020-01-24-091342-630](https://www.afme.eu/Portals/0/globalassets/downloads/letters/20200122%20Letter%20re%20CSDR%20Settlement%20Discipline%20(redacted).pdf?ver=2020-01-24-091342-630)

(62) https://www.ecb.europa.eu/paym/intro/events/shared/pdf/20190621/20190621_eddi_presentation.pdf

(63) See AFTI answer, https://www.ecb.europa.eu/paym/pdf/consultations/2019_EDDI_market_consultation_responses.xlsx

(64) https://www.ecb.europa.eu/paym/pdf/consultations/market_consultation_on_european_distribution_of_debt_securities.en.pdf

RECOMMENDATION

For CCPs

While we believe the EU should encourage the development of clearing services based in the EU-27, it should be done with a long-term perspective in an organized and gradual way. Should it be done too bluntly there is a strong risk it would have a detrimental impact on EU-27 investment firms' competitiveness. Furthermore, AMAFI believes that open access to trading and clearing infrastructures will foster competition and provide market participants with choice, therefore pushing for lower costs, deeper pools of liquidity and higher service quality. Greater competition would also encourage innovation among service providers, and lead to concrete transformations of the trading landscape.

For CSDs

As CSDs are in the process of implementing CSDR, we believe the EC should take the opportunity of the implementation process to improve CSDs services efficiency. For instance, they need an affordable access to non-domestic currencies, and they should have the ability to offer collateral management, securities lending and borrowing services. Besides, the upcoming review of CSDR should focus on facilitating more cross-border post trade services to improve the integration of EU financial markets⁽⁶⁰⁾. We would also call on a deferral of the mandatory buy-in regime until the effects of penalties and other measures to promote settlement efficiency can be assessed⁽⁶¹⁾. With regards to the European mechanism for issuance and initial Distribution of Debt Initiative (EDDI)⁽⁶²⁾, considering the complexity induced by the insufficient harmonization and the multiplicity of non-EU initiatives around the same issue, the implementation of such a project should take place in the short term to benefit from an important first mover advantage⁽⁶³⁾. Besides, several major concerns not discussed in the May 2019 ECB consultation⁽⁶⁴⁾ would have to be taken into account including the governance and the legal status of EDDI.

RECOMMENDATION

We call for the EC to at least work towards an EU harmonized based procedure that could be used in all Member States, and ideally to remove the different national regimes. We would also call on the EC to regularly update the industry on progress achieved.

RECOMMENDATION

We consider it is essential to complete the construction of the Banking Union project by (i) finalising the long-awaited common deposit insurance system, and (ii) working towards means to solve the home-host issue that hinder the perspective of cross-border consolidation of the EU banking sector.

We call for the branches of third country banks operating in Europe to be subject to a coherent regulatory framework articulated around investor protection and market access to improve the level playing field with EU banks. We note that ECB's supervisory expectations have a critical role to play to that end and we call for their strengthening.

RECOMMENDATION

The recommendations below are not exhaustive but aim to provide concrete examples of legislations where provisions should be reconsidered.

MiFID2/MiFIR ⁽⁶⁶⁾

With regards to investors protection rules, the cost and charges disclosure regime is highly complex and generates flows of information which are of limited use by clients, especially for wholesale ones. In that context, we advocate for a simpler and more proportionate approach to cost and charges disclosure requirements. Besides, we consider it is crucial to introduce a more proportionate approach to the product governance rules both for wholesale products and for ordinary shares and bonds as several of them make little to no sense at all. Some of these amendments are being considered in the Covid-19 recovery package for financial markets.

PRIIPs ⁽⁶⁷⁾

We believe the regime should be simplified and in particular the KID should be made more understandable by retail investors and less complex for manufacturers to implement and comply with, while preserving some continuity with the existing KID. To that end, amendments should aim at improving and avoiding any over complicated and costly changes for all stakeholders.

MAR ⁽⁶⁸⁾

With regards to the scope of reporting obligations under the exemption for buyback programmes (BBPs), we very much support ESMA proposals for simplification of the reporting and transparency obligations of BBPs. We would also suggest that similar reflections should be conducted on stabilisation programs to simplify the reporting obligations as well.

Solvency II

In light of the Solvency II review, we would suggest adapting the framework in order to encourage insurers and pension funds long-term investments.

Enabling EU-27 investment banks to play a central role in the financing of EU economy to compete at EU and international levels

The consolidation of the US banking system played a critical role in the emergence of US champions in the field of investment banking. As a result, US banks now outperformed massively EU banks in terms of market share. By comparison, the EU banking sector remains too fragmented and European banks struggle to compete with foreign banks at domestic and EU levels which is a major issue with regards to the EU's financing sovereignty. In that context, the creation of pan-European investment banks appears critical not only to compete with US banks in EU capital markets but also as a necessary condition to develop competitive EU-27 capital markets. As financial intermediaries, they play a central role in providing investment services across borders and in enabling corporates and investors to access EU capital markets. We therefore welcomed the recent announcement from the Chair of the Supervisory Board of the ECB, that the ECB should soon issue guidelines to remove regulatory hurdles to consolidation.⁽⁶⁵⁾ Nevertheless, we are conscious that because EU banks are playing a central role by giving out state-guaranteed loans to support SMEs liquidity needs, now might not be the right time to consolidate the EU-27 banking system.

With this in mind, while being conscious that the current crisis context goes against the case of a rapid cross-border consolidation of the EU banking system (because of its impact on valuations, but also because it has reinforced the financing-sovereign nexus, with banks used to channel state-guaranteed loans to SMEs), we consider that steps must be taken to complete the Banking Union.

Simplifying the EU regulatory framework for financial markets

Following the 2008 GFC, most legislations were drafted and rightly so with the objective of strengthening investor protection. The final texts of key legislations (MiFID2/MiFIR, MAR, PRIIPs) have integrated provisions in light of post-crisis priorities which have very much evolved and should therefore be reviewed. After several years of implementations, we consider the expertise gained by industry and regulators in implementing these legislations should be used to fine tune the existing regulatory framework.

The importance of financial literacy for EU citizens

Financial education is a central element for young generations to become acquainted with financial markets as retail investors

(65) <https://pro.politico.eu/news/ecb-prepares-bank-merger-guidance-to-assuage-lenders-doubts>

(66) For further details see (AMAFI / 20-03) and (AMAFI / 20-32).

(67) See AMAFI answer to ESAs consultation on amendments to PRIIPs KID 20-02 ([link](#)).

(68) For further details see (AMAFI / 19-113).

currently do not invest sufficiently in capital markets. As a result, cash and deposits together with insurance and pension schemes represent 65% of EU-27 households' total financial assets while US households hold only 47% of their assets in safe assets. It is unfortunate because a substantial share of these savings could be allocated to markets and contribute to the Union financing needs. There is an underlying issue of trust that should be solved which is directly linked to financial literacy and the necessity for retail investors to improve their investment culture.

A targeted public support from EU institutions

As illustrated by the US example, a targeted public support should be considered where initiatives from the private sector are not sufficient. As specified in the introduction of this report, we believe the revamp of the CMU project should be considered in the long term. Public involvement very much reflects this approach as it should be planned on the long-run and geared towards effectiveness from the viewpoint of the financing of the economy, rather than dictated by crisis situations.

Connecting EU trading venues for SMEs

Requirements and listing costs that small and mid-caps are facing represent a massive burden when they want to access financing via trading venues. While it is too early to assess the efficiency of the recently adopted SME Growth Market Regulation⁽⁷⁰⁾ which aims at facilitating SMEs access to capital by creating a new category of multilateral trading facilities, we consider further reflexions should be initiated.

Enhancing insolvency regimes

Insolvency regimes have a direct impact on the optimal allocation of resources. Currently, it exists a wide diversity amongst national regimes leading to regulatory arbitrage where investors could decide on the prospect of their investment rather than on the efficiency of national insolvency procedures.

Corporate actions

Differences in shareholders exercise of voting rights and in rules governing the attribution of entitlements is another important hurdle for cross border investments.

(69) See Markets4Europe report, p. 32-33 ([link](#))

(70) [https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/630311/EPRS_BRI\(2018\)630311_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/630311/EPRS_BRI(2018)630311_EN.pdf)

(71) <https://www.sec.gov/edgar/about>

(72) Mission letter, Valdis Dombrovskis ([link](#))

(73) We have decided to keep this recommendation rather short as it has been extensively developed in recent reports.

(74) <https://www.afti.asso.fr/l-afti/2groupes-de-travail/services-aux-emetteurs/definition>

RECOMMENDATION

We call for financial education to be taught as part of school curricula to ensure main issues at stake are understood at an early age. Financial education should be easily accessible to EU citizens to encourage them to invest into products that meet their long-term objectives. To that end, we consider the financial services industry has a central role to play in developing partnerships with governments, universities and schools⁽⁶⁹⁾.

RECOMMENDATION

While rather ambitious politically, we believe the EC should consider the creation of an EU agency like Fanny Mae and Freddy Mac. The European Investment Bank (EIB) could be an option. This would complement the review of the STS securitisation Regulation and enable EU banks to hold only a limited share of mortgages on their balance sheets.

We would also recommend initiating reflexions around the creation of an EU agency similar to the Small Business Administration in the US to support SMEs access to finance. The EIB could be a candidate to play such a role.

RECOMMENDATION

We call on the EC to consider solutions to connect EU trading venues for SMEs while stressing that in parallel further harmonization is required notably when it comes to collective redress.

In light of what has been achieved in the US with the EDGAR system⁽⁷¹⁾, we would call on the EC to consider whether SMEs financing would not benefit from such an information system which we consider should integrate ESG reporting.

RECOMMENDATION

We very much support the objective of the EC to improve the consistency of existing EU regimes⁽⁷²⁾. Nevertheless, this is a long-term project where Member States are the ones which eventually decide to tend towards more harmonisation⁽⁷³⁾.

RECOMMENDATION

We call on the EC to amend the Shareholders' Rights Directive to harmonize and secure the exercise of voting rights and corporate action processing. The use of technology should be considered to facilitate investors' engagement across border⁽⁷⁴⁾.

Conclusion

This report is rooted in CEPS-ECMI's analysis and the result of several months of reflexion stemming from the expertise of AMAFI's members. In light of the economic consequences of the Covid-19 crisis, of the major financing challenges faced by the Union and of uncertainties around the future EU-UK relationship, this report highlights the central challenge of completing CMU. Especially at a time when the financing capacity of EU banks is limited by the regulatory requirements put in place in response to the financial crisis, and has been massively called upon in the first phase of the answer to the Covid-19 crisis. Bold reforms are needed to ensure that EU-27 financial markets can play a bigger role in the financing of the Union's economy.

In order to identify areas where reforms are needed, it has proved useful to compare the strengths and weaknesses of EU-28 (EU-27 and UK) financial markets with the US financial system, which certainly represents the most successful model in terms of market-based financing of the economy. This comparison underlines the weaknesses of EU-27 financial markets in specific areas as notably illustrated by the low level of issuance on the securitization market, the low volume of assets under management and the low development at EU level of long and very long-term investors such as pension funds.

Finding relevant responses to these financing issues is all the more vital for the Union as they are also sovereignty issues, with the risk that strategic sectors of the EU-27 economy may become massively dependent on offshore investors, intermediaries and infrastructures. Two factors further increase the emergency of revamping the CMU initiative: financial markets will undoubtedly be instrumental in ensuring the enduring recovery of the Union's economy after the Covid-19 crisis, and the completion of Brexit at the end of the year also means the departure of the financial centre around which the EU's markets have been organised for years.

Thus, based on these various elements, this report seeks to bring together and prioritise the policy reforms that we consider essential to achieve the ambition behind the CMU project. While some of these reforms are undoubtedly likely to rapidly improve market efficiency in the financing of the economy, others have a more medium- to long-term perspective. One can notice that some of our recommendations overlap with those proposed by the EC High Level Forum and by the Next CMU High-Level Group which demonstrates some potential consensus on the necessity of certain reforms.

But to complete the CMU project, political commitment at the highest level of each EU co-legislator is an essential precondition for deepening and making EU-27 capital markets more efficient. This is the only way to move forward on an ambitious path of reforms which we expect to be materialised in the European Commission Action Plan scheduled for the Autumn. Otherwise, there is a risk, as in the past five years, of failing to implement the significant changes that are now needed.

The background of the left side of the page is a dark blue vertical strip. It features several light blue stars of varying sizes scattered across the top and middle sections. Below the stars, there is a faint, stylized bar chart with several vertical bars of different heights. The right side of the page is a solid, medium blue color.

PART B

**An analysis based on
economic data illustrating
the challenges faced
by EU-27 markets**

B.1 The unified legal, regulatory and fiscal framework of the US

Today, the US financial system is heavily market dominated, but this was not always the case. It's a transformation that has taken place mainly over the past 35 to 40 years,⁽¹⁾ though it can be explained by a longer series of events that include regulatory changes, policy decisions and cultural factors. In the 1930s and 40s, a legal framework was enacted that created the conditions for a market-based financial system. A new regulatory framework was introduced with a federal securities regulator that suppressed state securities regulation. A unified fiscal system that allows for risk sharing through fiscal transfers and centralised public spending was a further innovation.

The legal system (legislations, rulebooks, market regulators, civil courts and so on) represents a fundamental determinant of the development of a financial system. In particular, an efficient legal system is a key ingredient to competitiveness between financial centres.⁽²⁾ One of the reasons for the traditional lead of US financial markets over those of Europe (and the rest of the world) is its greater standardisation of legal norms and systems, where the European financial system is still characterised by considerable fragmentation of legislation, regulation and enforcement.⁽³⁾

On the regulatory side, and in order to restore confidence in the securities markets in the wake of the stock market crash of 1929, the US Congress passed the Securities Exchange Act of 1934, which authorised the creation of the Securities and Exchange Commission (SEC). Among other things, the SEC had the mandate to establish an extensive disclosure and transparency system for both initial public offerings (IPOs) and firms' ongoing financial results, as well as to protect markets from fraud. A further step in developing a strong US capital market was the creation in 1973 of the Financial Accounting Standards Board (FASB) in order to establish generally accepted accounting standards and principles.⁽⁴⁾

As for the US fiscal system, prior to the establishment of the fiscal federal government, the union that existed under the Articles of Confederation of 1777 constituted a league of sovereign states.⁽⁵⁾ An early form of federal aid came in 1789 with the ratification of the US Constitution, and this was followed by an era of dual federalism that lasted until 1901 (Corwin, 1950).⁽⁶⁾ The ensuing decades were characterised by different types of federalism: cooperative until 1960 (Elazar, 1966);⁽⁷⁾ creative until 1968 (by President Lyndon Johnson);⁽⁸⁾ and the contemporary period that has lasted from 1970 to the present.⁽⁹⁾

(1) In 1980, banks held approximately 60% of total debt instruments (i.e. loans and debt securities) held by the financial sector. However, the emergence of institutions such as Government Sponsored Enterprises (GSEs), Asset-Backed Securities (ABS) issuers and mutual funds (alongside insurance companies and pension funds, which have long been important credit providers), meant that, by the beginning of 1990s, the total nonbank lending significantly outpaced bank lending. By the late 1990s, all nonbank financial institutions held around two-thirds of total debt instruments, while banks held the remaining third.

(2) A fair and predictable legal environment is the second most important criterion (after a comprehensive and principles-based regulatory framework) determining a financial centre's competitiveness (Bloomberg and Schumer, 2007).

(3) The US has the significant advantage over the EU of offering across its 50 states similar property, contract, insolvency and federal tax laws. In contrast, European legislation has generally aimed to create a minimum set of rules among its member countries to offer a more level playing field among the various operators competing in the bloc.

(4) The "Wheat Committee Report" of 1972 – named after the report committee chairman, Francis M. Wheat – revealed an accounting standard-setting regime dominated by the major accounting firms and operating in a non-transparent process.

(5) While the states had the power to levy taxes, issue currency and provide certain public services, very few responsibilities were delegated to the federal government (e.g. control foreign policy and conclude treaties).

(6) The dual federalism period was characterised by very little collaboration between the national and state governments. Between 1820 and 1840 in particular, states engaged in extensive borrowing to finance their internal activities and development, which resulted in high debts. Assuming that their debt implicitly carried a federal guarantee, instead of introducing new taxes or adjusting their spending, numerous states demanded bailouts from the federal government. Congress refusal to bailout indebted states forced several states to default their debt and undertake painful adjustment measures (Bordo *et al.*, 2013).

(7) The cooperative federalism implies that the federal and state governments share power equally in order to resolve common problems collectively. This type of cooperation was popular all the way through the Great Depression, the Second World War, the Cold War and up until the 1960s. During that period, the two levels of government worked together, but the lines between the two governments' powers were blurred.

(8) The creative federalism allowed the federal government to decide what the states needed, and then provide them with the resources. It essentially shifted power to the federal government.

One of the benefits of having a unified fiscal system is risk sharing, and in particular public risk sharing.⁽¹⁰⁾ The mechanism behind this channel is smoothing via (federal) tax transfers (e.g. unemployment insurance, revenues sharing, and automatic stabilisation through centralised taxes and social benefits). This means that in the case of an asymmetric shock, a certain degree of the disturbance can be smoothed by fiscal arrangements. Several empirical studies have shown that fiscal flows can smooth on average about a fifth of all shocks faced by a region or state (Sala-i-Martin and Sachs, 1991; Asdrubali *et al.*, 1996; Sorensen and Yosha, 1998; Hepp and von Hagen, 2012; Furceri and Zdzienicka, 2015; Alcidi *et al.*, 2017; Cimadomo *et al.*, 2020).

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- (9) Fiscal governance in the EU today is characterised by a set of commonly agreed rules at the supranational level, and fiscal policy decisions taken by the sovereign Member States at the national level within the agreed EU legal framework. This 'rule-based system' has been one of the building blocks of the Economic and Monetary Union (EMU), which binds participating Member States to a single monetary policy while preserving their autonomy over taxation and spending decisions.
- (10) Risk sharing in a common monetary union, such as the US and the euro area, is meant to provide an insurance mechanism that allows households, firms, countries or regions hit by an asymmetric economic shock to mitigate the impact of the resulting decline in consumption, income or output growth. Risk sharing can be achieved through public policies at the national and supranational level (i.e. public risk sharing), but it can also be achieved through integrated financial and capital markets (i.e. private risk sharing).

B.2 The consolidation of the US banking system

The US banking system is very distinctive, and much of the debate since its founding has focused on two axes: state versus federal power and concentrated versus small banking institutions (Carnell et al., 2013; Calomiris and Haber, 2014). Indeed, from the Revolutionary War and throughout the early nineteenth century, states had a powerful role, as they could limit the chartering of banks to protect local market power. Furthermore, and as an exchange for allowing a bank to operate, states insisted that banknote issuances required the backing of state bonds. In other words, banks had to help finance the state's public debt.

However, in a political system characterised by federalism and populism, such a state-oriented power model could not be sustained. It therefore gave way to small 'unit banks', meaning banks that could operate out of only one location (i.e. no branches). Even in states that permitted banks to open additional branches, branching was limited and under developed. This unit banking/limited branching structure arose from state level decision-making, but it persisted even after the National Bank Act of 1863, which permitted the chartering of national banks. National banks were made subject to the restrictions on branching in the state in which they were chartered.

The outcome of such organisation was a highly fragmented and decentralised banking system, as it was composed of thousands of small banks that operated local monopolies. Thus, they were able to charge more for loans and pay less for deposits than they would have had they been obliged to compete with one another. The absence of branches meant that these banks could neither spread risk across regions nor easily move funds to head off bank runs.⁽¹¹⁾

In the 1920s, a succession of bank failures culminated in the stock market crash of 1929, which led to economic depression, decreased public confidence, and the need for government intervention.⁽¹²⁾ In response to this, and to the general belief that the stock market crash resulted from the lack of separation between lending and underwriting activities that had allowed banks to engage in speculative investments, the US Congress passed the Glass-Steagall Act in 1933. The Act aimed to separate commercial banking from investment banking, thus prohibiting commercial banks from underwriting most securities.

If the Glass-Steagall Act had been effective, it would have minimised direct competition between commercial banks and investment banks. However, it was unsuccessful in maintaining these legal barriers. This means that by 1990 the largest banks were able to participate in almost all of the securities activities that they had engaged in before the Glass-Steagall Act (Kaufman, 2000; Cuaresma, 2002).⁽¹³⁾

Despite some liberalisation of state and federal branching rules that occurred in the 1970s and 80s,⁽¹⁴⁾ it was not until the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 that the barriers to interstate branching were comprehensively eliminated. This triggered rapid consolidation in US banking. Within a few years of the passage of the Riegle-Neal Act, there was a series of rapid-fire mergers and acquisitions (Lamoreaux, 1991). For example, JPMorgan Chase was created from the merger of no less than 37 banks, while the Bank of America (originally a Californian bank) merged or acquired more than 50 other banks.

(11) Even the Great Depression of the 1930s was not able to break such an inefficient and unstable system. Instead, unit bankers used the Depression to create a new set of institutions designed to prop up what was, fundamentally, a system that was fragile by design. These institutions included deposit insurance and a set of laws (e.g. Regulation Q of 1933) that made it illegal for banks to pay interest on checking accounts and limited the interest rates they could pay on other types of accounts.

(12) On average, from 1921 to 1929, there were 635 bank suspensions per year, mostly small banks (Davison and Ramirez, 2014). Previous research has highlighted several causes for these suspensions: agricultural shocks (Alston et al., 1994), overbanking (O'Hara, 1983), government policy (Calomiris, 1992; Calomiris, 1993; Mitchener, 2005; Wheelock, 1993; Wheelock and Wilson, 1994), and lax supervision by state banking authorities (Gambs, 1977; White, 1983).

(13) For an overview of the factors that explain the deficiencies of the Glass-Steagall Act, see Cuaresma (2002).

(14) Once the US government began to depart from conservative monetary and fiscal policies in the 1960s, and inflation started to increase in the 1970s, the interest rates that banks could offer turned negative. Consequently, the public began to withdraw their savings out of banks and place them with other types of investments, such as money-market mutual funds. Technological innovations, such as the invention of the ATM in the 1970s, further undermined the system by allowing banks to skirt laws against branching. Moreover, the savings and loan crisis of the late 1980s, in which hundreds of small banks failed, was another driver that underscored the fragility of undiversified unit banks.

Another Act that tried to increase the competition of the financial services industry by enabling the merger of different types of financial institutions (e.g. banks, stock brokerage companies, insurance companies, investment companies and financial advisers) was the Gramm-Leach-Bliley Act (GLBA) of 1999, also known as the Financial Services Modernisation Act.⁽¹⁵⁾ Based on this Act, Citicorp bank merged with Travelers Insurance, forming Citigroup. The result of such mergers was high concentration, which further accelerated in the 2000s.

Before the recent trend for large banks, individual banks were relatively small. The US banking system was shaped by restrictions on branching and consolidation that protected unit banks. Thus, large-scale single bank loans were not feasible (Calomiris, 1995). Such an environment favoured conditions for the development of market-based debt finance. While debt financing for large-scale firms would require loan syndication (which entailed significant transactions costs), bond issuance could benefit from regional, national and even international distribution networks to access national credit pools (Gordon and Judge, 2019).

Over the 19th century, as industrial firms grew in size and became more concentrated, the role of banks as suppliers of industrial credit diminished, and commercial banks focused increasingly on financing commerce (Lamoreaux, 1994). Private bankers operating partnerships (i.e. investment bankers) filled the financing gap, but because they had limited resources, they relied on underwriting syndicates, funded in a decentralised way by an elaborate network of commercial banks, trust companies and brokers, in order to raise funds for the firms they financed (Morrison and Wilhelm, 2007).⁽¹⁶⁾

An example of an industrial sector in need of such a type of financing were railroads. Railroad development started in the 1820s, with the level of investment in construction and equipment escalating from approximately \$89 million in 1828-38 to \$5 billion by 1900-09 (Gordon and Judge, 2019). The financing of railroads with bank loans was too costly and risky. The costs of organising a large-enough syndicate of small banks to provide and monitor a large-scale loan were prohibitive, and the riskiness of the investment required either extreme diversification or a substantial increase in capital to avoid the risk of bank insolvency from a railroad default.

Most of the finance was therefore in bonds, with a smaller part coming from foreign (especially UK) investors.

Thus, the demand for debt markets that could reliably supply large-scale, long-term debt finance resulted in a US bond market consistently larger than Europe's, and a bank lending market consistently smaller. But there was also a demand for equity markets that could provide fundraising opportunities through stock issuance as well as liquidity.

(15) The GLBA did not only affect the financial services industry, but also consumers. Because the new merged institutions would have access to tremendous amounts of customer information, the GLBA included new rules on how financial institutions would have to protect consumer financial information. Thus, it required financial institutions to establish standards for protecting the security, integrity and confidentiality of their customers' non-public personal information (NPI).

(16) The issuance and trading of bonds became concentrated in a single venue, a national market centralised and institutionalised in New York City (Chandler, 1977). The use of national markets rather than local institutions to intermediate debt gave rise to a capital market union.

B.3 The depth of the US securities market

On the surface, the EU and the US have similar rules governing securities markets transactions, requiring best execution of trades and protection of orderly markets. A closer look reveals fundamental differences, however. The US securities markets are very centralised, including in their regulation and supervision, as in the infrastructure underpinning the markets. They largely explain the advantage of the US markets today, and point to some difficult decisions the EU may have to take regarding settlement and financial data. But at the same time this raises fundamental questions regarding the role of authorities in governing securities markets.

The core rule in the US is the Regulation National Market System (Reg NMS) of 2006 that aims to modernise and strengthen the National Market System (NMS) for equity securities trading. Reg NMS is a further adaptation of the 1934 Securities Exchange Act and the SEC, which laid the basis of the US structure as we know it today. The SEC acts as a powerful central regulator, but with important powers assigned to self-regulatory organisations (SROs). By contrast, EU efforts to create a single capital market did not start until the 1980s, because of the large differences between the Member States.

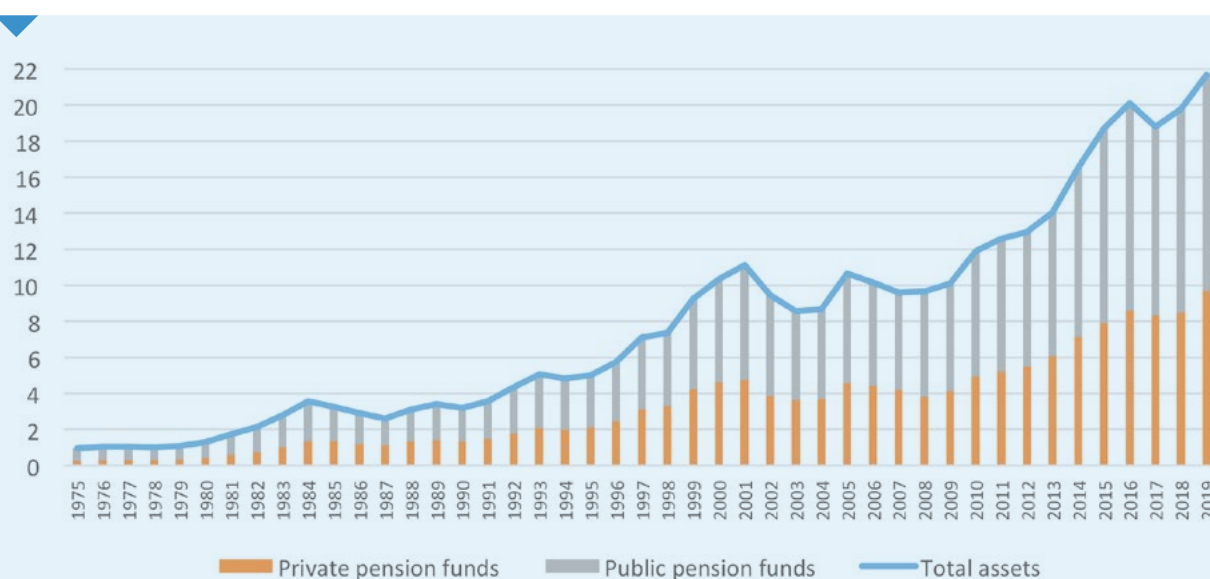
As in the EU, Reg NMS mandates best execution of trades, but it is less flexible in terms of the criteria that can be taken into account. Reg NMS protects the incumbent stock exchanges against competition from 'alternative' markets, whereas the Markets in Financial Instruments Directive (MiFID) increases the competition to exchanges. Reg NMS was adopted because of the growing fragmentation of markets, which affected the quality of the price discovery process, the market depth and liquidity. Overall, it can be argued that regulation in both blocs went in opposite directions: the EU abolished the requirement to concentrate orders on the large markets in 2007 in MiFID, whereas the US went for more protection of the 'regulated markets' in Reg NMS. Increased competition in the EU has reduced bid-ask spreads, but there are crucial elements where fragmentation is too high, such as the financial data to check best execution, or the settlement of trades, which happens mostly in the central securities depository (CSD) of the home market.

B.4 The consistency of the US pension funds ecosystem

The first corporate pension in the US was established by the American Express Company in 1875, followed by other banking, railroad and manufacturing companies. The Internal Revenue Act of 1921 spurred further growth in pensions by exempting contributions made to employee pensions from federal corporate income tax. However, after a few pensions began to fail, the government enacted the Employee Retirement Income Security Act (ERISA) in 1974, which aimed to protect the benefit rights and ensure the retirement security of plan participants and beneficiaries through increased reporting to the government and disclosure to participating workers (Hutchinson, 1979).⁽¹⁷⁾

The US now has the largest pension market, with financial assets worth €21.7 trillion at the end of 2019 (Figure 1). Assets in private pension plans reached €9.7 trillion, representing 45% of total financial assets, while public pension funds – which include federal, state and local pension plans – held €12 trillion. From these, state and locally run retirement systems manage approximately 70% of public fund investments.

Figure 1 Financial assets of US pension funds (€ trillion, 1975-2019)



Notes: Public pension funds include federal government retirement funds, as well as state and government employee retirement funds.
Source: FRED Economic Data.

However, there are significant differences in regulation between private and public pension plans. Public pension funds are subject to the Government Accounting Standards Board (GASB) guidelines for discounting liabilities. According to these guidelines, public pension funds are allowed to base their liability discount rates on the expected rate of returns on their assets. As public pension fund boards are largely unconstrained in the proportion of their assets that can be invested in risky assets and in their assumptions on the expected rate of return in the various asset classes, this gives these boards very significant freedom to choose their liability discount rate (Andonov *et al.*, 2017). This freedom gives rise to strong incentives to invest more in risky assets that can be assumed to have higher expected rates of return (Novy-Marx and Rauh, 2009; Brown and Wilcox, 2009; Novy-Marx and Rauh, 2011).

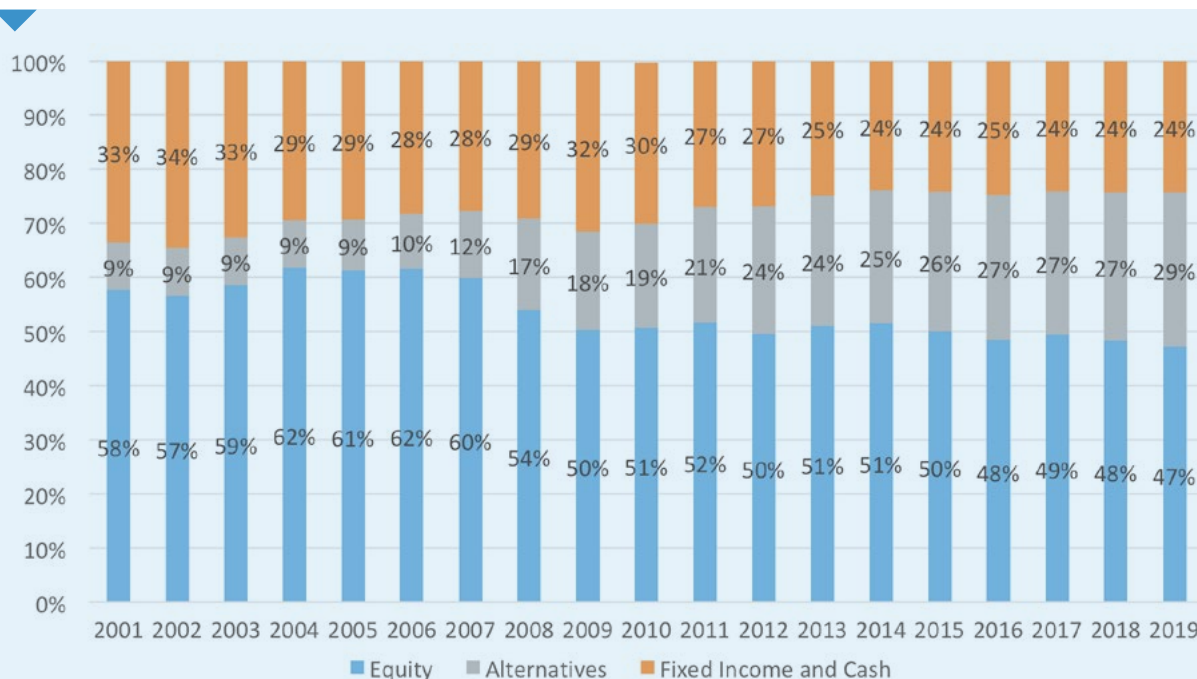
(17) Moreover, ERISA introduced minimum standards for participation, vesting, benefit accrual and funding, uniform federal fiduciary standards governing the conduct of persons who manage or control the operations and assets of benefit plans, as well as a government insurance programme for certain retirement plans that terminate.

Private pension funds, however, face different regulatory standards and do not have clear incentives to invest more in riskier assets over time. In these types of funds, risk management incentives to avoid costly financial distress dominate risk-shifting incentives. This is particularly the case for defined benefit (DB) pension funds, especially amid tightening regulation (Rauh, 2009).

Historically, public pension funds invested the majority of their assets in fixed-income investments such as government and corporate bonds.⁽¹⁸⁾ Before the early 1980s, many public retirement plans were bound by strict regulations limiting their investment options.⁽¹⁹⁾ But these restrictions were gradually relaxed in the 1980s and 90s, allowing pension plans much more latitude to invest in a broad variety of financial instruments, including stocks (Munnell, 2012; Ivashina and Lerner, 2018). As a result, pension plans began shifting large portions of their portfolios, away from fixed-income securities and towards equities.

The change in allocation occurred slowly at first but picked up speed through the 1990s. Whereas in 1952, nearly 96% of public pension assets were invested in fixed-income asset classes and cash, by 1992 the proportion of pension assets in fixed-income investments and cash had decreased to 47% (see PwC, 2016; PEW, 2018), and by 2019 it had fallen to 24% (Figure 2). By contrast, pension funds significantly increased their reliance on equity, while since the 2000s they have increasingly turned to alternative investments.

Figure 2 Investment allocation of US public pension funds



Notes: Alternatives include: private equity, real estate, commodities, hedge funds, miscellaneous and other alternatives. Cash and other cash equivalents, such as certificates of deposit, account for 2-2.5% of pension fund assets on average and are added to fixed income investments as part of what the Federal Reserve defines as ‘safe assets’.

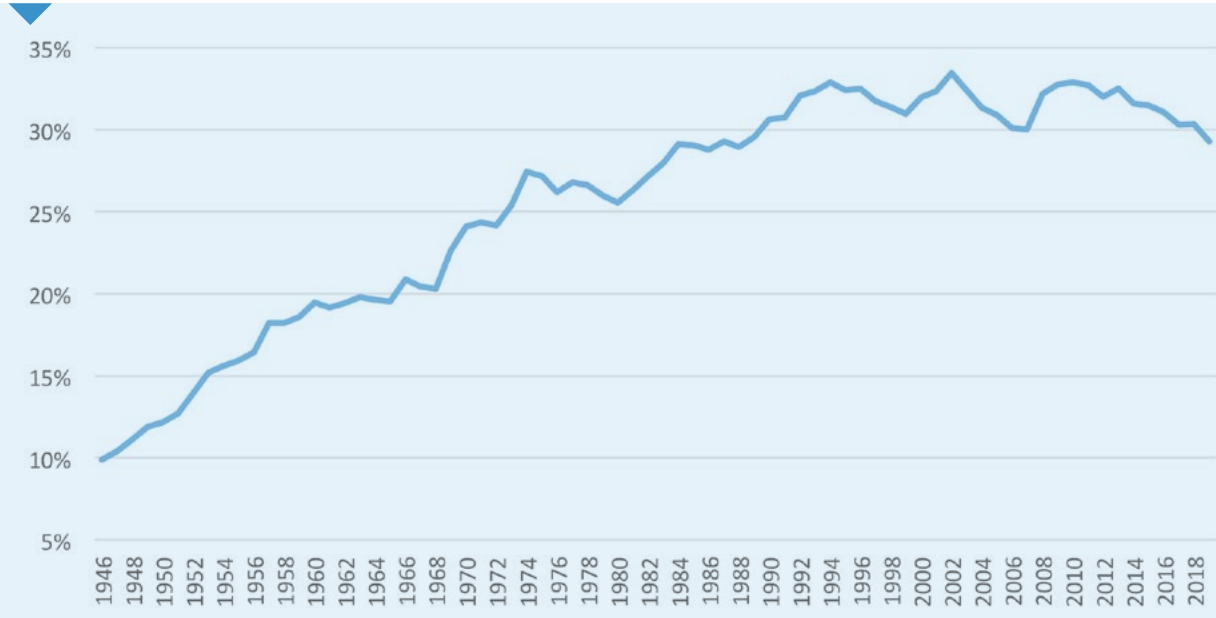
Source: Public Plans Database – National Association of State Retirement Administrators (NASRA).

(18) Government bonds and highly rated corporate bonds are considered safer investments because their realised rate of return is not likely to be too far above or below expectations. The return on publicly traded stocks and other equity investments is less certain, and their value can fluctuate more significantly with changes in the economy.

(19) States, for example, were previously limited in their investment options by restrictive ‘legal lists’ that were also used to regulate insurance and savings banks, for which safety was the principal concern (Legal Lists in Trust Investment, 1940).

Retirement assets make up around 30% of total US household financial assets (Figure 3). Private sector pension plans and individual retirement plans make up the majority of total retirement market assets (around 70%), with federal, state and local pension plans share standing at just 20%. The remaining 10% is allocated to life insurance annuities.

Figure 3 Share of US households' financial assets held in pension funds (1946-2019)

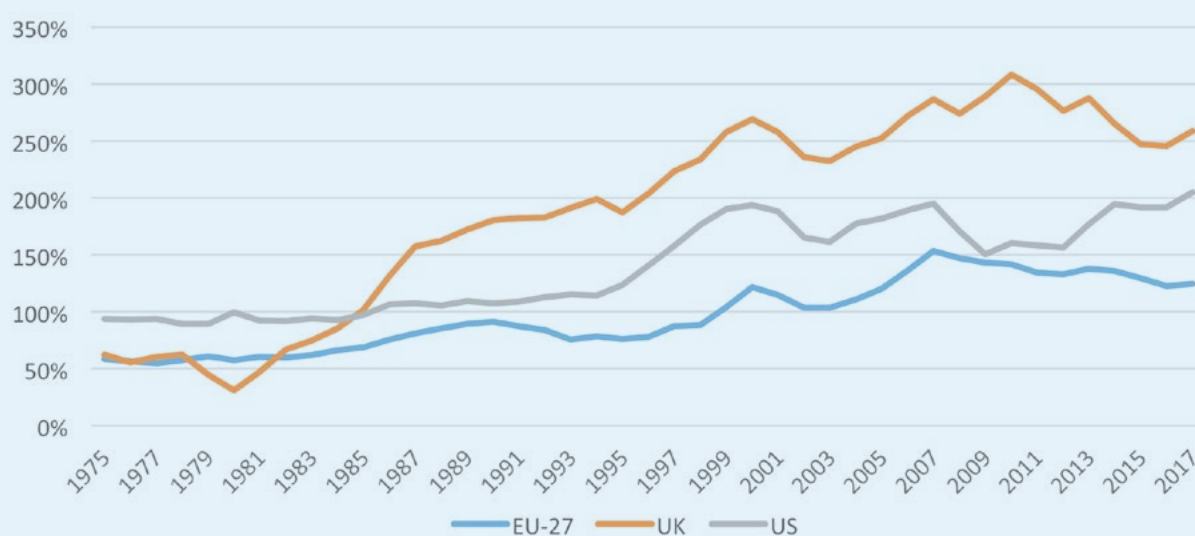


Notes: FRED Economic Data.

B.5 Bank-based versus market-based financial system

The development of European financial markets has been significant over the years. Since 1975, the overall size of the financial markets of EU-27 (measured as the sum of bank credit to the private sector and stock market capitalisation divided by GDP), has doubled, from 60% of GDP to 125% in 2017 (Figure 4). However, over the same period, UK financial markets have more than quadrupled, from 60% of GDP in 1975 to 260% in 2017, representing twice that of EU-27.

Figure 4 Financial development in EU-27, UK and US (% GDP, 1975-2017)



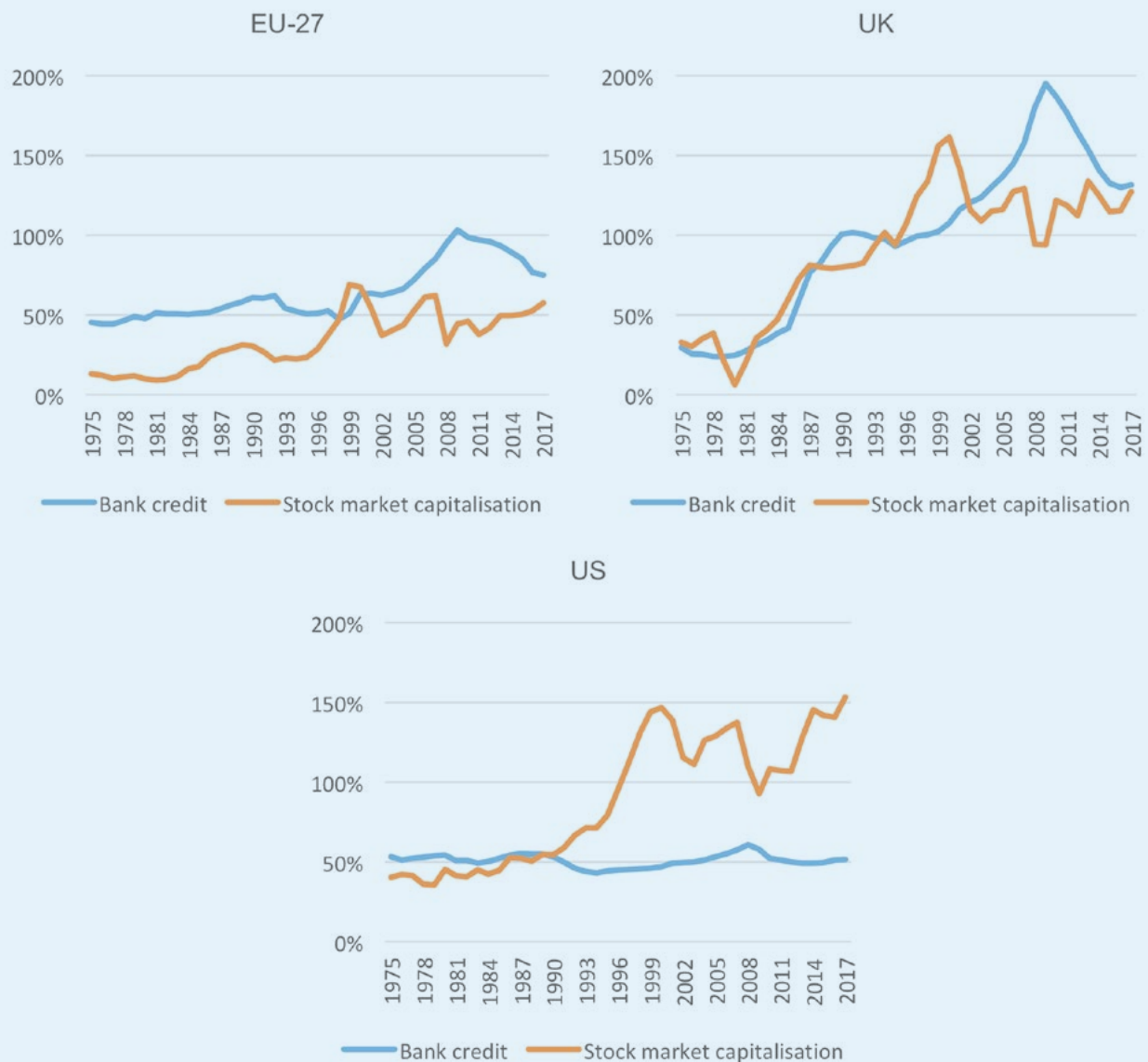
Note: Financial development is measured as the sum of bank credit to the private sector and stock market capitalisation, divided by GDP. Data refer to the period 1975-2017.

Source: World Bank Financial Structure Database, FRED Economic Research.

Further differences between EU-27 and the UK are revealed by the components of financial development: credit markets and stock markets (Figure 5). While the development of the credit markets in the two regions followed a similar path, in terms of the size they are very different – both in absolute and relative terms. Credit markets grew significantly until the early 1990s, followed by a short stagnation, then doubled in size over the next decade. They reached their peak in 2009 and since then have been on a downward trend. This is much more profound in the UK, where credit markets lost around 63% of GDP (since the onset of the global financial crisis), representing 127% at the end of 2017.

The bursting of the dot-com bubble and the global financial crisis has made the development of stock markets much more volatile, especially in the UK. Until the end of the 20th century, the expansion of the stock market went hand in hand with that of the credit market in the UK, whereas in Europe there was always a gap between the two. This shows that Europe's financial system is considerably more bank-based than market-based. However, over the past years the size of equity markets has been growing and, at the end of 2017 it accounted for approximately 58% of GDP in EU-27 and 127% of GDP in the UK.

Figure 5 Bank credit and stock market capitalisation, EU-27, UK and US (% GDP, 1975-2017)



Notes: The graphs show the private credit by deposit money banks to GDP (for EU-27 this is expressed as an unweighted average) and the stock market capitalisation to GDP, over the period 1975-2017.
 Source: World Bank Financial Structure Database, FRED Economic Research.

A completely contrasting picture emerges for the US. In the world’s deepest and most liquid capital market, equity financing represents 153% of GDP, three times more than the size of bank credit (52%). This clearly illustrates that having robust, well-functioning and integrated capital markets enhances not only resilience to economic shocks,⁽²⁰⁾ but also efficiency – by providing savers with a wider array of investment opportunities and offering firms greater access to financing.

(20) One reason US banks recovered more quickly from the crisis is that the alternative credit market channels provided a route for selling off troubled assets at manageable discount.

B.6 Debt and securities markets

A closer look at how capital markets are structured reveals that the combined size of European equity and debt securities markets is about one-third smaller relative to GDP than that of the UK and the US (Figure 6). While this is less evident for government and financial debt securities, corporate bond and equity markets remain very small compared to the same markets in other big economies. European securities markets for corporations are half the size of their UK and US counterparts.

Figure 6 Capital market structure (% GDP, average 2014-18)



Europe's fragmentation towards debt and securities markets is also evident at the national level (Figure 7). Local equity and debt securities markets range from more than three times the national GDP (e.g. in the Netherlands) to less than 40% (e.g. in the three Baltic states). In most of countries, debt markets are much bigger than equity markets, accounting for more than two thirds of their combined size (except for Sweden and Finland).

Figure 7 Stock market capitalisation and outstanding debt securities (% GDP, end-2018)

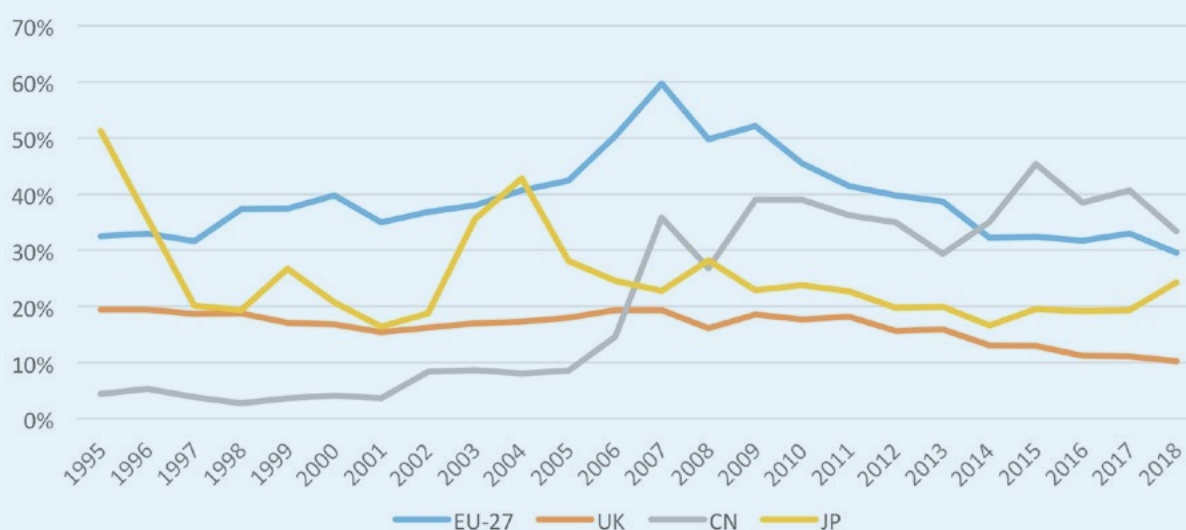


Notes: Luxembourg has been excluded so as not to distort the graph (stock market capitalisation: 73%, outstanding debt securities: 1,464%). Switzerland has also been excluded as data on debt securities are not available.
Source: 2019 ECMI Statistical Package.

B.7 Stock markets

Although the combined GDP of the EU-28 is similar of that of the US, its total stock market capitalisation amounted to only 40% of the US stock market capitalisation at the end of 2018 (Figure 8). When one excludes the UK, the figure drops to 30%. Furthermore, Europe's share of world market capitalisation amounts to about 18%, compared to 46% for US and 26% for China and Japan.

Figure 8 Share of stock market capitalisation as % of US stock market capitalisation (1995-2018)



Source: 2019 ECMI Statistical Package.

Europe currently hosts 28 national stock exchanges (without considering the regional or specialised exchanges), compared to only two in the US (NASDAQ and NYSE). However, only three of these 28 exchanges are in the worldwide top 10 for market capitalisation (Table 1). While their relative importance differs to a high degree and generalisations are difficult to make, fundamental differences exist in their role, international orientation, trading techniques, business mix and governance. Furthermore, they reflect differences in the origin of the exchanges, in corporate finance and shareholding structures, in the role of financial intermediaries and the competitive strength of financial centres.

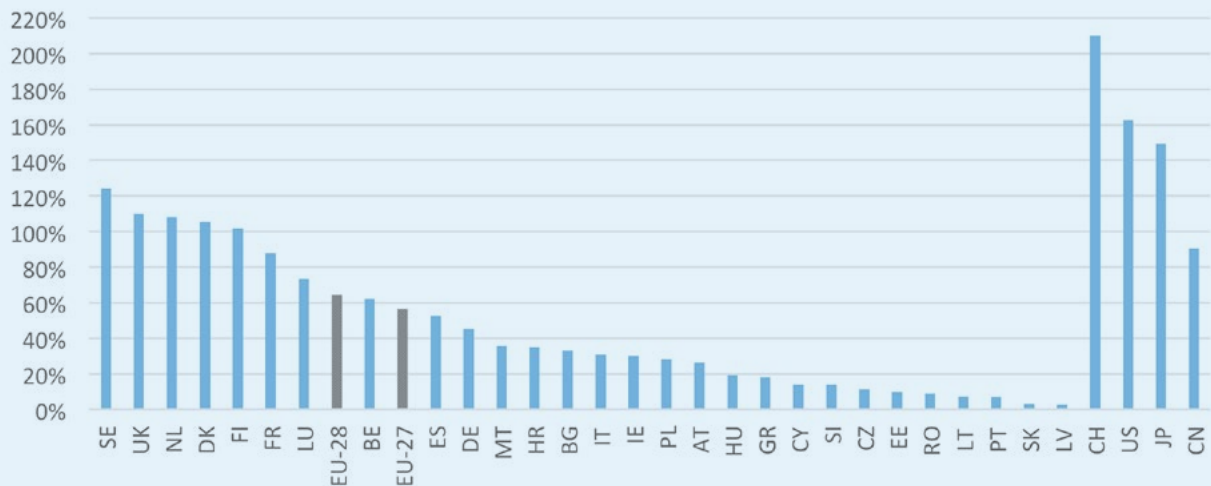
Table 1 Top 10 stock exchanges in market capitalisation (end-2018)

Stock exchange	Market capitalisation (€ billion)
NYSE Euronext (US)	17,510
Nasdaq America (US)	8,262
Japan SE (JP)	6,256
Shanghai SE (CN)	3,319
Hong Kong Exchanges (CN)	3,234
London SE (UK)	2,636
Euronext Paris (FR)	2,067
Shenzhen SE (CN)	2,037
Toronto Stock Exchange (CA)	1,631
Deutsche Börse (DE)	1,533

Source: 2019 ECMI Statistical Package.

At the end of 2018, market capitalisation of domestic stock expressed as a percentage of GDP ranged from 210% in Switzerland, 124% in Sweden and 110% in the UK, to 3% and 2.5% in Slovakia and Latvia respectively (Figure 9). Only seven countries are above the EU-28 average of 64%, three of which are Nordic: Sweden (124%), Denmark (105%) and Finland (102%). Excluding the UK, the average stock market capitalisation drops to 56% of GDP. Large countries, such as Spain, Germany and Italy are below the European average. Compared to third countries, Europe falls well below the levels registered, for example, in Switzerland (210%), the US (163%), Japan (149%) and China (90%).

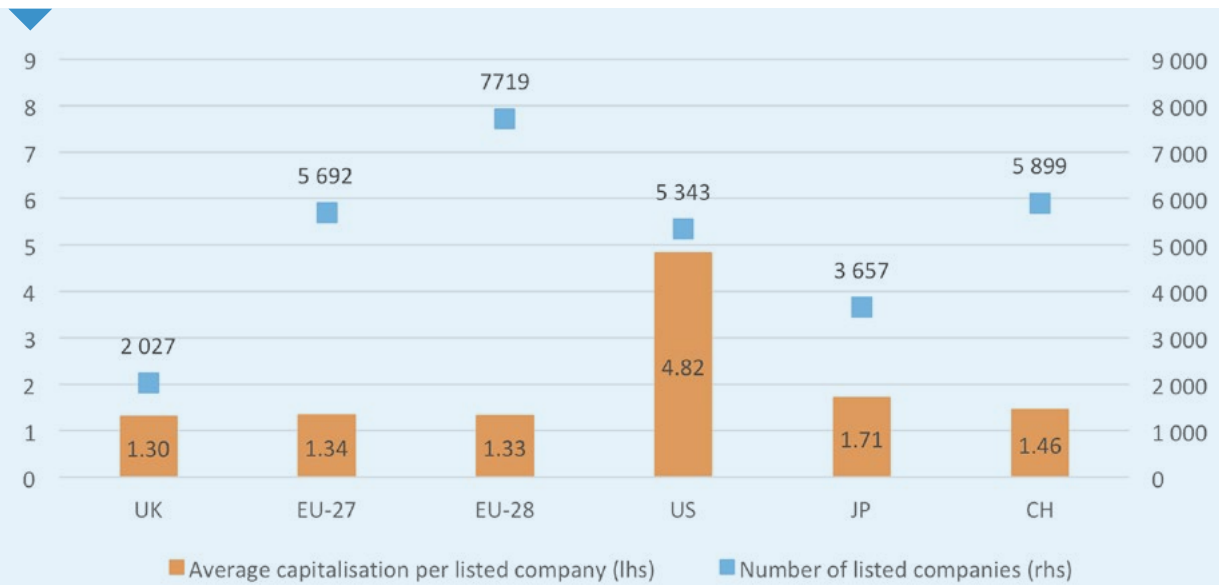
Figure 9 Stock market capitalisation (% GDP, end-2018)



Source: 2019 ECMI Statistical Package.

Of the companies listed in European exchanges, the difference between the UK on the one hand, and the other Member States on the other, is considerable. For example, in 2018 the number ranged from 2,027 in the UK and 852 in Poland, to 17 and 20 in Estonia and Latvia respectively. The total number of listed companies in EU-27 (5,692) is higher than that in the US (5,343 in NYSE and NASDAQ) and lower than that in China (5,889 in Hong Kong, Shanghai and Shenzhen). However, this is not the case for the average capitalisation per listed company (Figure 10), which for EU-27 stood at €1.3 billion in 2018. This is more than three-and-a-half times lower than the capitalisation of a typical US company.

Figure 10 Average capitalisation (€ billion) and number (thousands) of listed companies (end-2018)

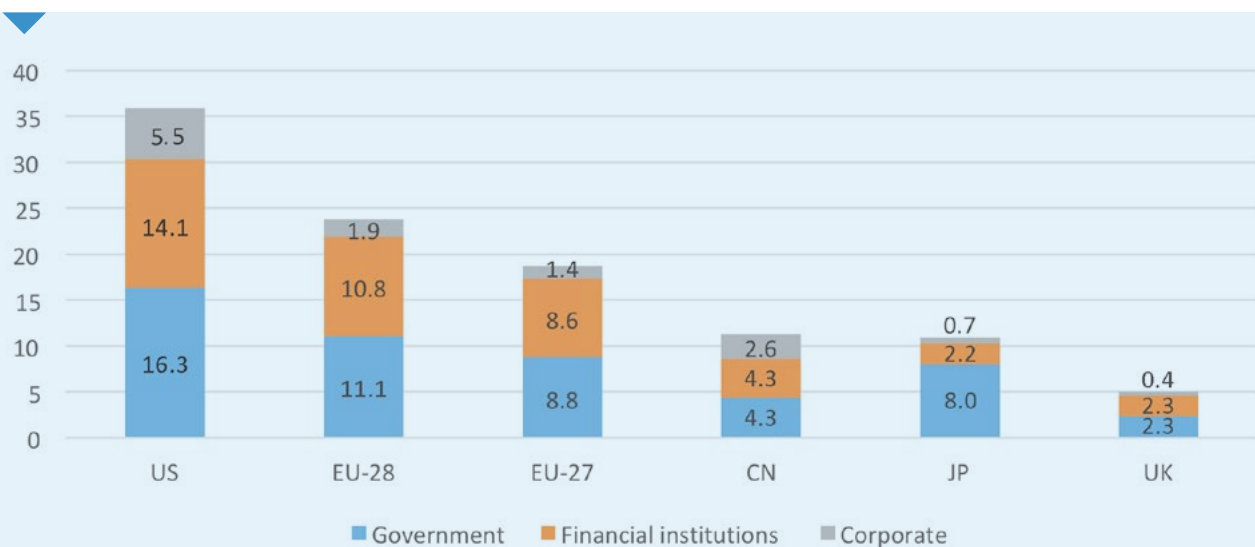


Source: 2019 ECMI Statistical Package.

B.8 Divided and diverse bond markets

Debt securities markets offer some of the most important funding sources in Europe, especially for governments and financial institutions. The sector is half the size of that of the US, larger than those of China and Japan, and almost four times bigger than the UK's (Figure 11). While debt securities issued by governments and financial institutions, which are of similar size, have taken up the largest part of the financial system (97%), corporate debt securities represent a very small fraction. This is because of the reliance of European non-financial corporations (NFCs) on bank lending and unlisted equity capital.

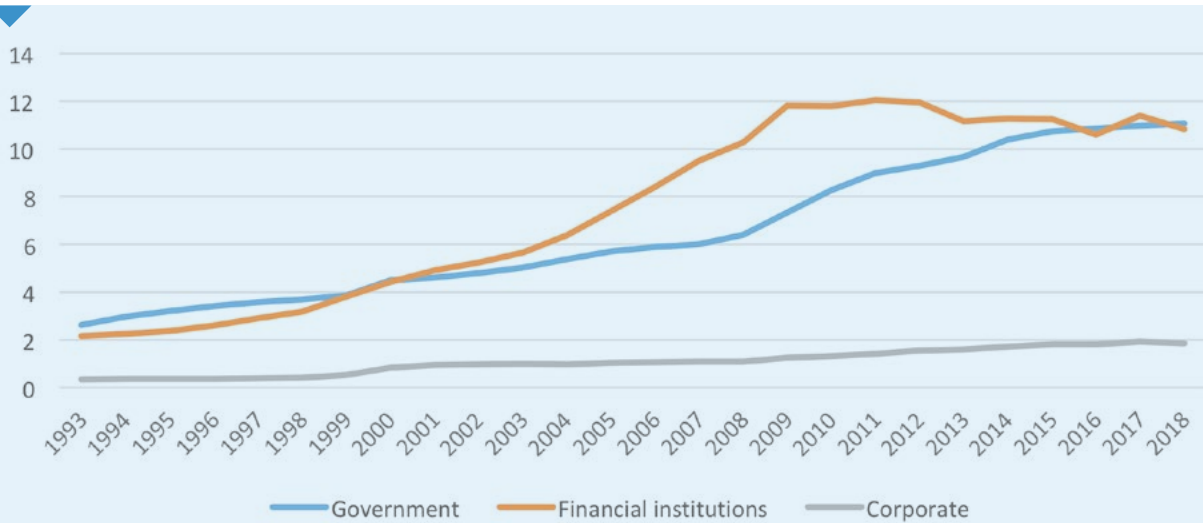
Figure 11 Debt securities, amounts outstanding (€ trillion, end-2018)



Source: 2019 ECMI Statistical Package.

The amount of outstanding debt securities in the EU has been steadily growing over the past years, with financial institutions driving the growth before the financial crisis and governments thereafter (Figure 12). In particular, in the years leading up to the 2008 crisis, financial institutions doubled the amounts of their outstanding debt securities by 96% (from 2001 to 2008), which have since remained stable. Since 2008, however, government debt structure in EU-28 has been significantly increased (outstanding amount up by 73%), mainly due to the fiscal and monetary policy responses to the GFC. Finally, corporate debt securities represent a very small part of the market, accounting for 8% of the European outstanding debt securities at the end of 2018.

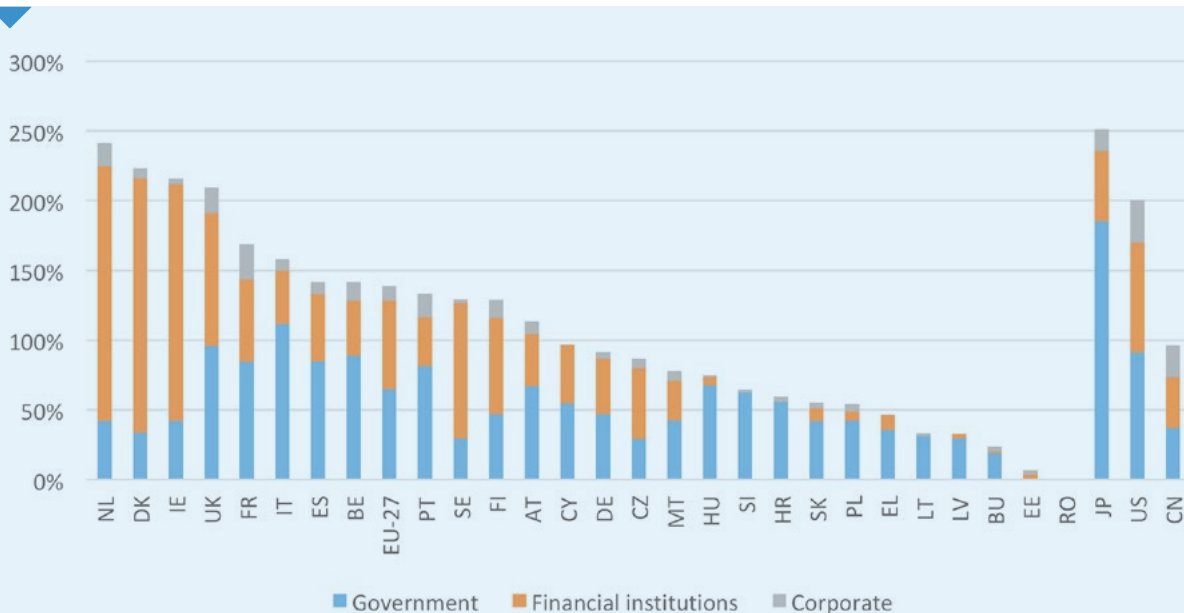
Figure 12 EU-28 debt securities, amounts outstanding (€ trillion, 1993-2018)



Source: 2019 ECMI Statistical Package.

Zooming in at national level, significant differences occur that indicate regional divergence (Figure 13). In countries such as the Netherlands, Denmark, Ireland and Sweden, debt securities issued by financial institutions are four to five times more than those issued by the government, and almost three times the EU-27 average (63% of GDP). In others, including Italy, Belgium, Spain and France, the ratio of government debt to GDP is higher than the European average (65%). As for corporate bonds, they are more significant in France (25%), the UK (19%), the Netherlands (17%) and Portugal (15%), while they represent 5% or less in 15 Member States.

Figure 13 Debt securities at national level, amounts outstanding (% GDP, end-2018)



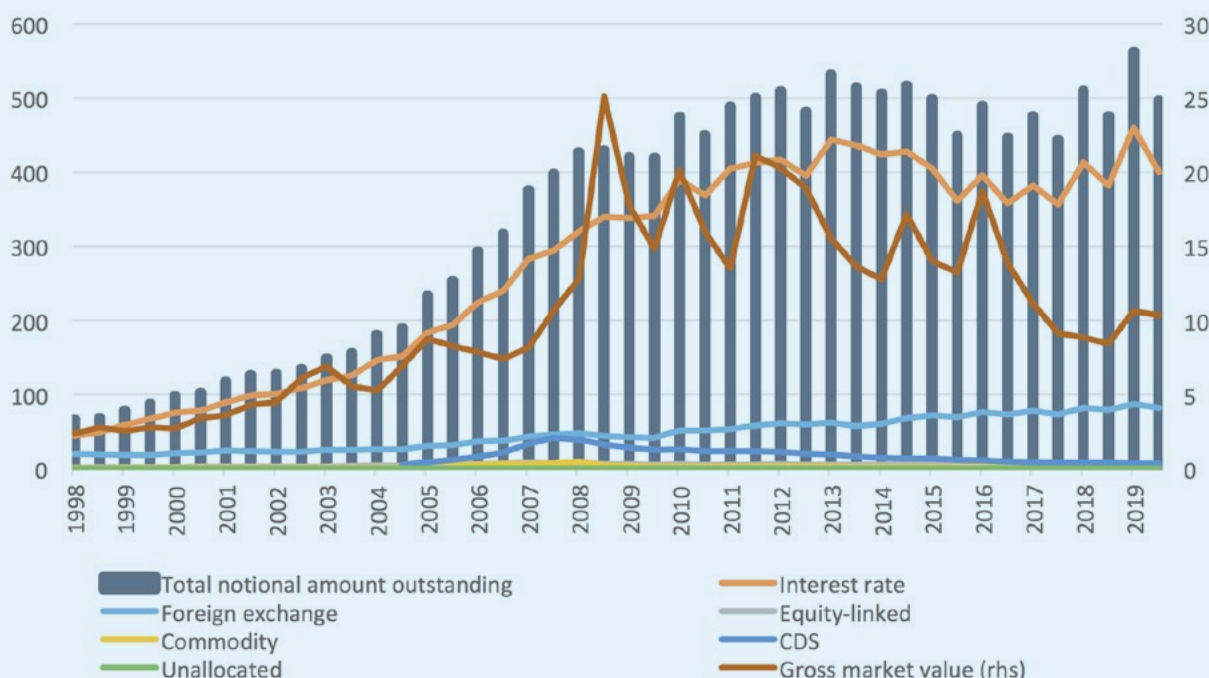
Note: Luxembourg, for which financial institutions represent 1,457% of GDP (corporate: 39%, government: 13%), has been excluded.
Source: 2019 ECMI Statistical Package.

Overall, European debt markets remain highly fragmented and diverse, with notable differences (e.g. tax, legal and fiscal frameworks) and distinctions (e.g. business culture and practices). As a result, this fragmentation limits Europe’s ability to capture the economies of scale and efficiencies that a single capital market could potentially deliver.

B.9 London as the epicentre of the OTC derivative market

Over-the-counter (OTC) derivatives markets have grown significantly in recent decades, and constitute a systemically important component of financial services activity (Tadi and Thomadakis, 2019). Retaining its position as one of the biggest global markets, in June 2019 the derivatives market reached an all-time high of €563 trillion in notional amounts outstanding,⁽²¹⁾ before closing the year at €497 trillion.⁽²²⁾ By far the largest proportion of activity is in interest rate derivatives (IRD), which represent on average 80% in terms of global notional amounts outstanding (Figure 14).

Figure 14 Notional amounts outstanding of global OTC derivatives market (€ trillion, 1998-2019)



Notes: The notional amount of outstanding OTC derivatives contracts determines contractual payments and is an indicator of activity in OTC derivatives markets. The gross market value represents the maximum loss that market participants would incur if all counterparties failed to meet their contractual payments and the contracts could be replaced at current market prices.

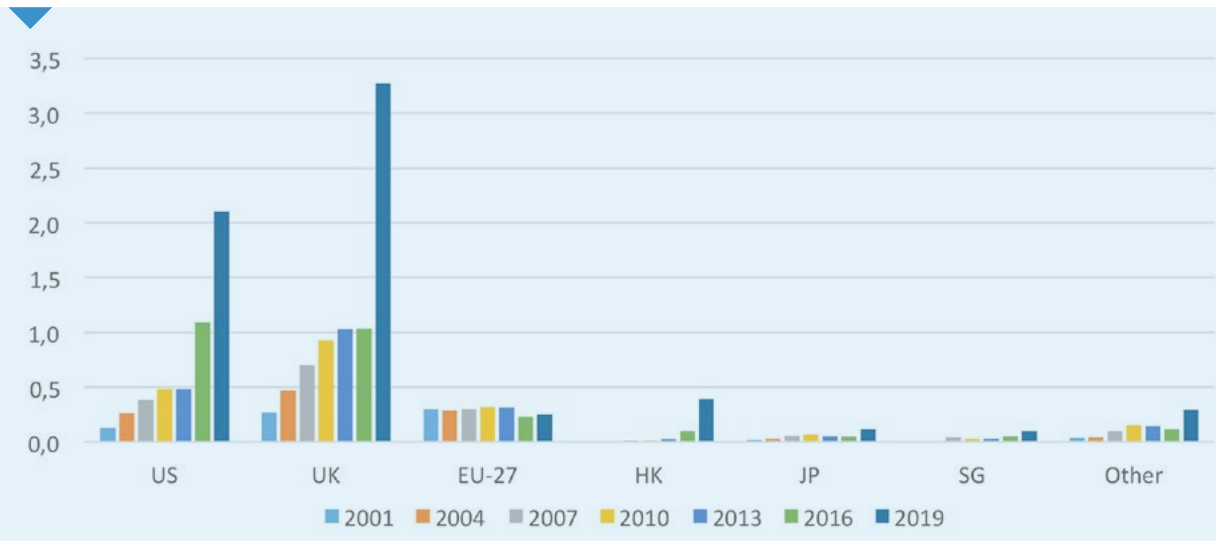
Source: BIS Statistics.

(21) Notional amount outstanding refers to the value of all derivatives contracts concluded and not yet settled.

(22) Since reaching their peak of €532 trillion in June 2013, notional amounts of OTC derivatives have been fluctuating downwards. Major factor fuelling this decline have been trade compression and the elimination of redundant contracts. In particular, a number of jurisdictions have taken steps to encourage a more widespread use of other risk-mitigation measures for non-centrally cleared derivatives (NCCDs), e.g. trade compression and portfolio reconciliation (Thomadakis, 2018). Compression allows the combining and offsetting of trades with compatible economic characteristics, resulting in a reduction in notional outstanding amount. This technique results in the reduction of the number of individual positions in the portfolio, while maintaining the same risk profile. (BIS, 2017; FSB, 2017b). Such compression reduces capital charges and trading costs by shrinking notional amounts outstanding, while leaving net exposures unchanged (BIS, 2015).

The UK and the US play a dominant role in the derivatives market, as 82% of the global daily turnover activity in 2019 took place there – 50% in the UK and 32% in the US (Figure 15). However, while turnover in the US doubled over the past three years, in the UK it went up by 216% to €3.3 trillion in 2019. Against that trend, turnover reported at sales desks in EU-27 reached €250 billion (or 9% up to 2016). In relation to EU, the UK’s importance has been since 2001 when it represented 47% of the EU-28 market. In particular, with London as the epicentre of European trading in OTC IRD, at the end of 2019 the UK accounted for 93% of the EU28 market. When excluding London, EU-27 represented only 4% of the global market in 2019.

Figure 15 Turnover of OTC interest rate derivatives, by country (€ trillion, 2001-2019)



Note: Net turnover (net-gross basis), April 2001-2019 daily averages. Adjusted for local inter-dealer double counting. EU-27 includes: AT, BE, BG, CZ, DK, EE, FI, FR, DE, EL, HU, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE.
 Source: BIS Triannual Central Bank Survey.

B.10 The difficult recovery of the EU securitisation market

Securitisation, which is an important driver of funding for financial institutions and firms, has never really recovered from its peak of €819 billion in 2008. The market has partially rebounded since the low of €181 billion in 2013, and closed 2018 at €269 billion (Figure 16). The issuance is mainly related to repackaging of residential mortgages and other loans/securities, while SME loans' repackaging is very limited, representing on average 12% of the total EU securitisation issuance.

Figure 16 European securitisation issuance by collateral (€ billion, 2010-2018)

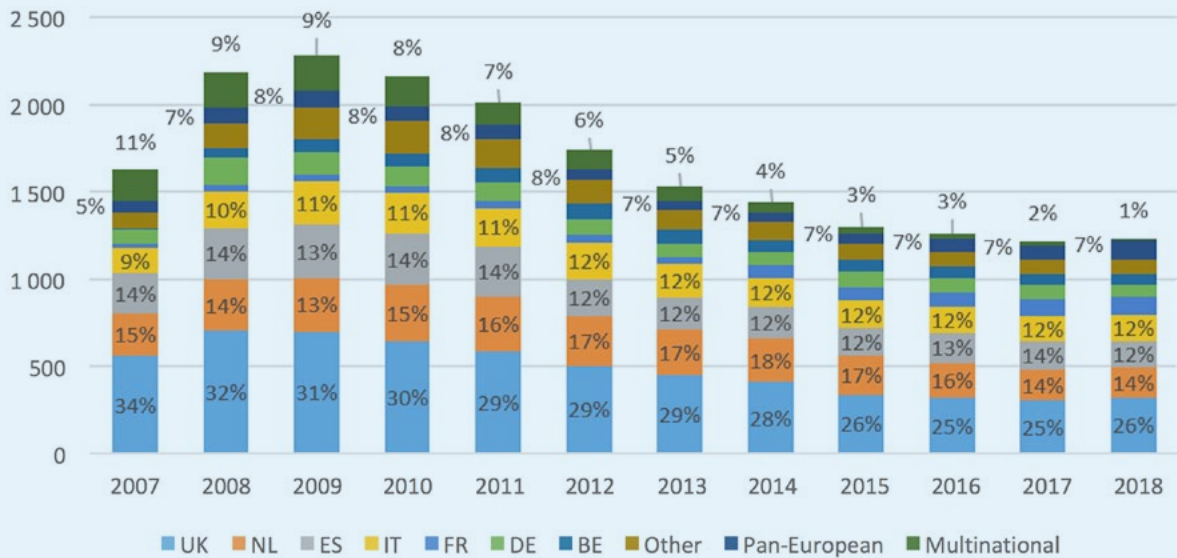


Note: Asset-backed securities (ABS), collateralised debt obligations/collateralised loan obligations (CDO/CLO), commercial mortgage-backed securities (CMBS), residential mortgage-back securities (RMBS), whole business securitisation/public finance initiatives (WBS/PFI).

Source: AFME.

In terms of outstanding securitised products, volumes have remained stable over the past years at around €1.2 trillion, which is 46% lower than the 2009 peak of €2.3 trillion (Figure 17). The biggest European market is the UK, representing a quarter of the total outstanding issuance, followed by the Netherlands, Spain and Italy. Cross-border activity remains very limited, as pan-European and multinational issued instruments are just a fraction of the outstanding amounts (7% and 1% respectively).

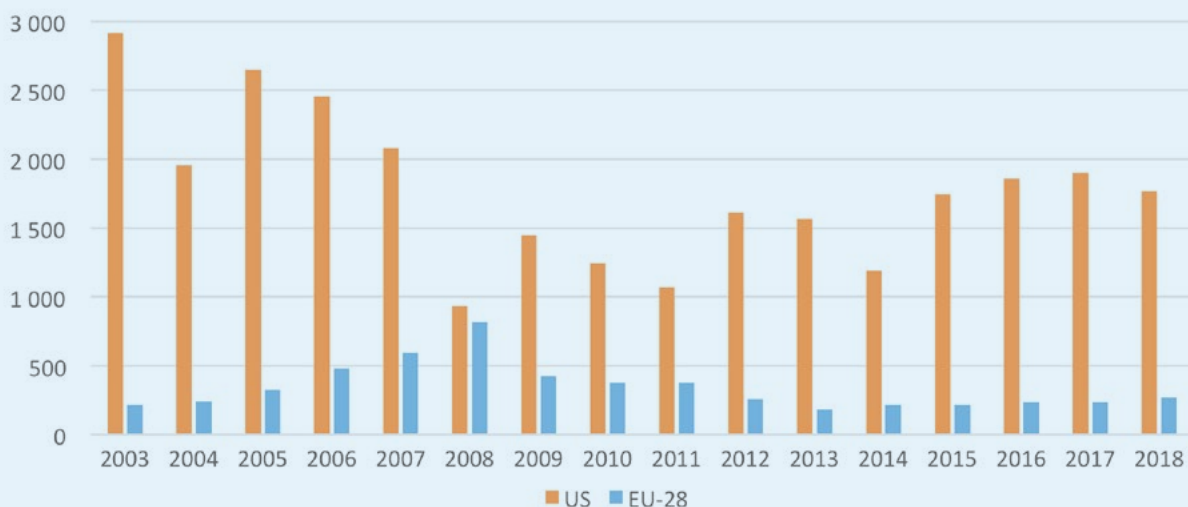
Figure 17 Outstanding securitised products by country of collateral (€ billion, 2007-2018)



Notes: The category 'Other' includes: AT, EL, FI, HU, IE, PT, SE, IS, CH, GE and UA.
Source: AFME.

A comparison of securitisation issuance between the US and the EU highlights key differences between the two markets. In the US, securitisation issuance grew by 79% between 2008 and 2018, whereas in Europe it fell by 67% (Figure 18). As a result, at the end of 2018 EU issuance represented just 15% of US issuance. There are several reasons for that development. Perhaps the most important is the fact that in the US there are Government Sponsored Enterprises (GSEs) – such as Fannie Mae, Freddie Mac and Ginnie Mae – that are big buyers of securitised mortgages. ⁽²³⁾ On the regulatory side, US regulation allows for a greater proportion of structured finance vehicles to be treated as instruments that are off banks' balance sheets, while Europe has substituted securitisation with covered bonds, which require higher collateralisation. Such substitution has not taken place in the US (PwC, 2015).

Figure 18 Securitisation issuance in EU-28 and US (€ billion, 2003-2018)



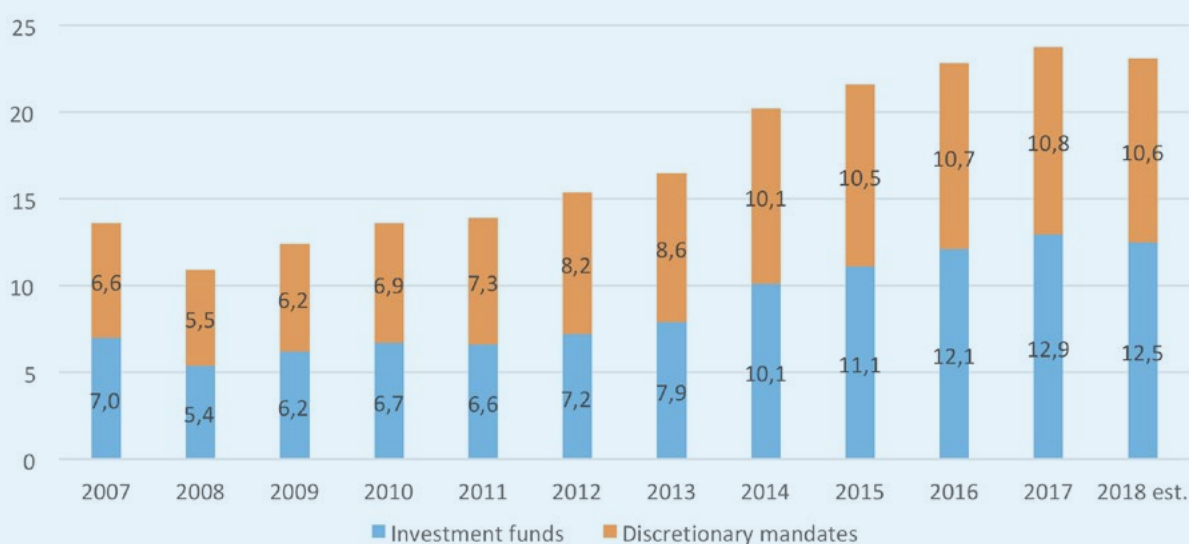
Source: AFME.

(23) These GSEs buy up mortgage loans to facilitate a secondary market. The securities carry an implicit guarantee from the federal government, and they are required to conform to underwriting standards that ensure loan quality and limited risk.

B.11 Asset management: a growing sector since 2008

The asset management industry plays an important role in financial markets, by connecting investors and companies. Asset managers channel savings towards investments by creating products that match investors' needs with companies in need of capital. Since 2008, both investment funds and discretionary mandates have enjoyed strong growth in Europe, as the flows of new money have more than doubled from almost €11 trillion to €23 trillion in 2018 (Figure 19).⁽²⁴⁾ Between 2008 and 2014, assets managed under discretionary mandates used to be on average 6% larger than investment funds' assets, whereas over the past few years the opposite is the case (i.e. investment funds up by 7%).⁽²⁵⁾

Figure 19 Total assets under management in Europe (€ trillion, 2007-2018)



Source: EFAMA Asset Management Report.

The European pool of assets remains highly fragmented with three countries (the UK, France and Germany) representing on average 63% of the total assets under management in Europe. In particular, asset managers located in the UK (meaning assets managed but not domiciled in the UK) dominate both the investment funds (23%) and discretionary mandates (49%) segments of the market (Figure 20). This is because of the very large base of pension fund assets managed for UK and overseas pension funds, as well as the role of London as an international financial centre and the accumulated pool of capital over the years. At the end of 2017 the size of the UK industry represented 373% of GDP, up by 35 percentage points from 2016. By comparison, the average proportion of GDP represented by asset management in Europe was about 130%.

(24) Investment funds are regulated funds that pool together savings of investors with similar investment goals. A discretionary mandate is a specific investment 'mandate' delegated to an asset manager by a specific investor, tailor-made to that particular investor's precise investment goals. Asset managers typically receive mandates from institutional clients, whereas retail investors are generally offered investment funds.

(25) The erosion of discretionary mandates' share mirrors the rise in stock markets from which investment funds benefited more, due to their relatively high exposure to equity in their portfolio: 37% against 26% for discretionary mandates (EFAMA, 2017).

Figure 20 Total assets under management in Europe by geographic breakdown (% of total European, average 2012-17)



Notes: Reported data refer to financial assets managed through investment funds and discretionary mandates based on where the assets are managed (and not on the country in which the funds are domiciled).

For 2017, Dutch data include investment fund assets only.

Investment funds are regulated funds that pool together savings of investors with similar investment goals. A discretionary mandate refers to a specific investment 'mandate' delegated to an asset manager by a specific investor, tailor-made to that particular investor's precise investment goals.

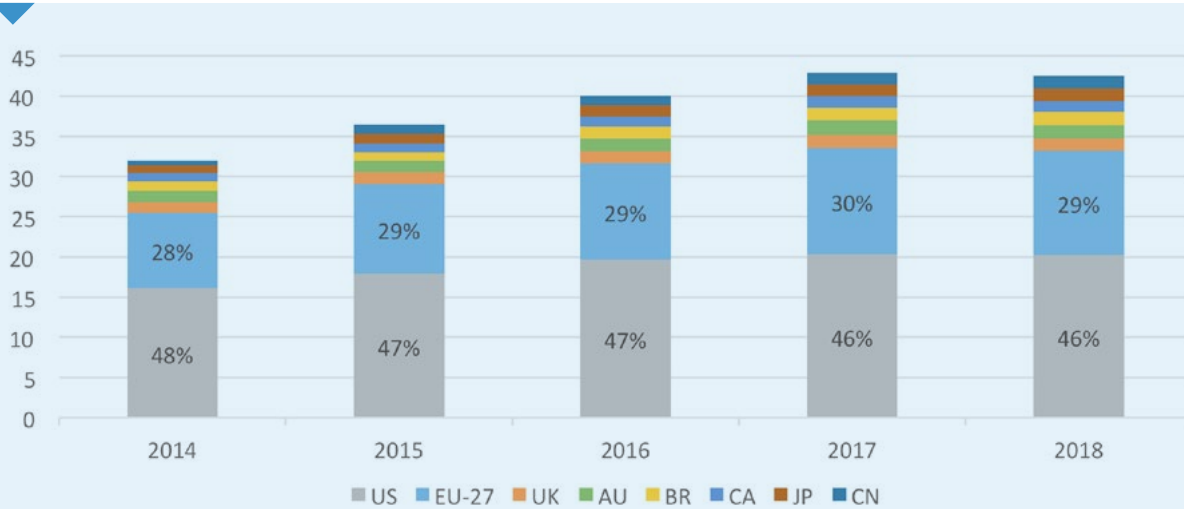
Despite the fact that they have a very large number of asset management companies, countries such as Luxembourg and Ireland don't appear in this figure. The high number of asset management companies operating there mirrors the role played by these two countries in the cross-border distribution of UCITS. Until the introduction of UCITS IV (Directive 2009/65/EC), fund houses were required to have a management company in each country where they had funds domiciled. This does not mean, however, that Luxembourg and Ireland are asset management centres similar to London, Paris and Frankfurt. Indeed, most global asset management groups with a fund range in Luxembourg or Ireland operate under a 'delegation model', whereby the investment management functions are carried out in their asset management centres.

Source: EFAMA Asset Management Report.

Globally, the investment fund industry grew significantly after the onset of the financial crisis. Since 2008 total net assets under management of investment funds rose by 161% to €44 trillion at the end of 2018. However, this growth is not evenly spread across economic regions. On the one hand, the US and the EU – the regions with the largest stock of investment fund assets – experienced a growth of 26% and 37% respectively, from 2014 to 2018. On the other hand, areas with lower volumes of assets experienced much higher growth rates (e.g. 164% in China and 63% in Japan).

The investment fund industry is dominated by US asset managers, who managed almost half (46%) of the globally outstanding assets at the end of 2018 (Figure 21). In Europe, investment funds manage almost €13 trillion in assets (representing 29% of assets worldwide), while in the UK the figure is €1.5 trillion (or 3% globally). In relative terms, the US fund industry constitutes around 128% of GDP, whereas in Europe the size is 82% of GDP in 2018, compared to 67% in 2014.

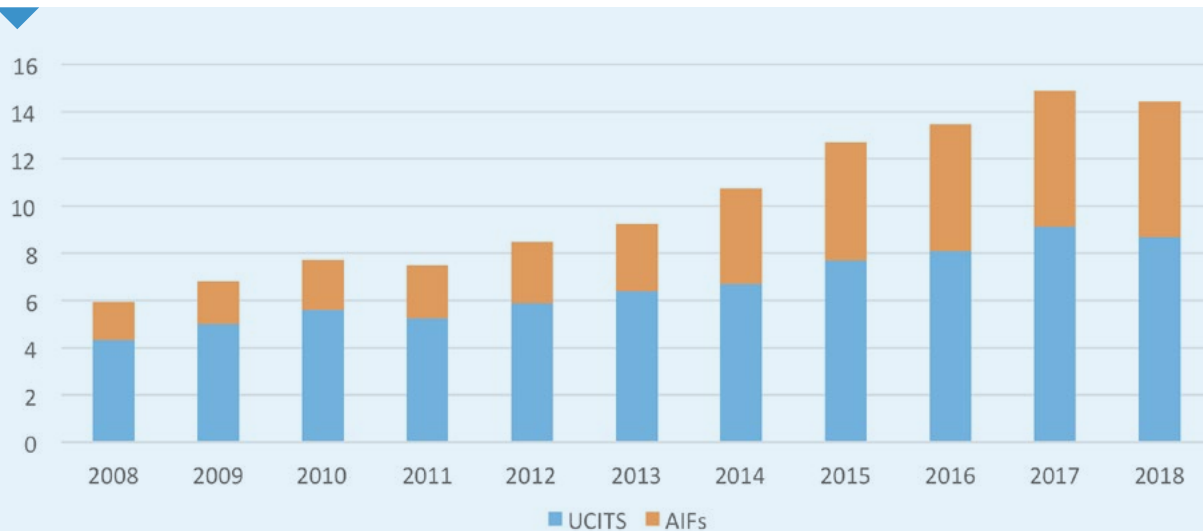
Figure 21 Worldwide total net assets of investment funds, by region (€ trillion, 2014-18)



Note: EU includes: AT, BE, BG, HR, CY, CZ, DK, FI, FR, DE, EL, HU, IE, IT, LU, MT, NL, PL, PT, RO, SK, SI, ED, and SE.
Source: 2019 EFAMA Fact Book.

Since 2018 European investment funds have doubled their total net assets (Figure 22). The composition of these assets under management includes two broad categories of products: undertakings of collective investments (UCITS) – funds directly regulated by EU law – and alternative investment funds (AIFs) – such as real estate funds and institutional funds. The fact that the UCITS can be sold to any investor within the EU under a harmonised regulatory regime has resulted in these funds being the most widely used, representing 60% of the total funds.⁽²⁶⁾

Figure 22 Total net assets under management of European investment funds (€ trillion, 2008-18)

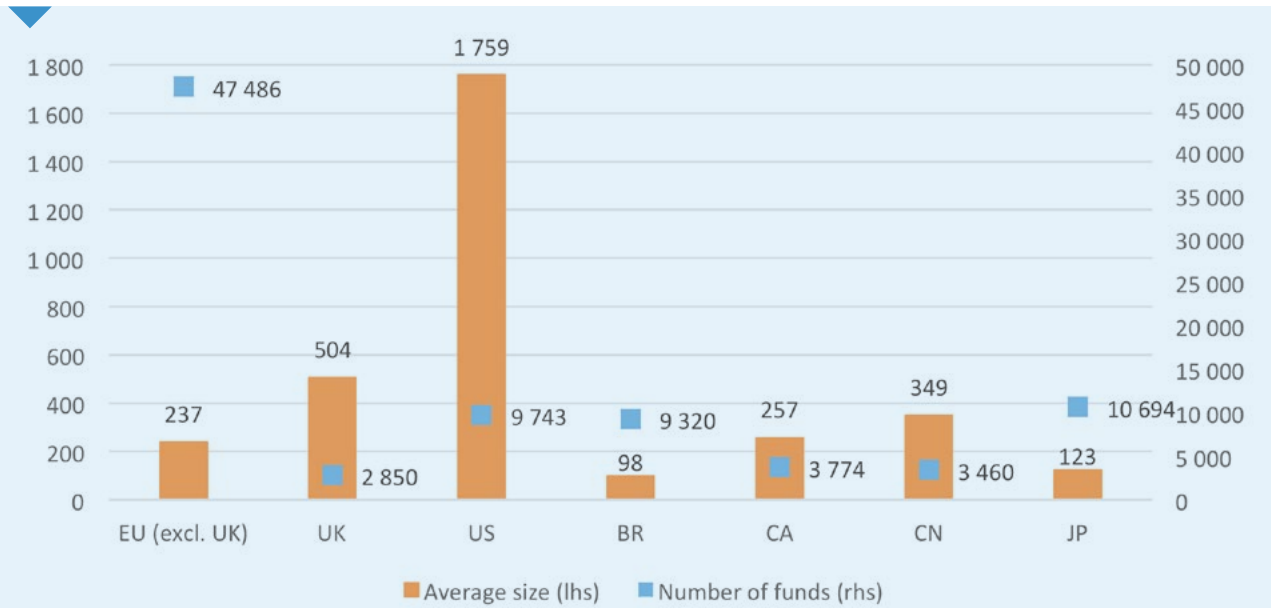


Note: UCITS funds include: equity, bond, multi-asset, money-market, and other UCITS funds (i.e. funds of funds from 2008-2013, as well as guaranteed/protected funds and Absolute Return Innovative Strategy (ARIS) funds since 2014). AIFs funds include: equity, bond multi-asset, real estate, institutional and other AIFs funds (i.e. funds of funds from 2008-2013, as well as guaranteed/protected funds and Absolute Return Innovative Strategy (ARIS) funds since 2014). EU includes: AT, BE, BG, HR, CY, CZ, DK, FI, FR, DE, EL, HU, IE, IT, LU, MT, NL, PL, PT, RO, SK, SI, ED, SE and UK.
Source: 2019 EFAMA Fact Book.

(26) Additionally, many countries outside Europe, such as those in the Asia and Pacific region, allow UCITS to be offered for sale to their citizens. The pooling of assets from investors in a range of countries allows for economies of scale that help to lower the costs of funds to individual investors. Furthermore, the UCITS framework promotes asset pooling across countries by allowing an individual fund to offer share classes that are denominated in a range of different currencies (e.g. EUR, USD, GBP) and adaptable to tax structures that differ across jurisdictions (ICI, 2019).

Fragmentation is the first thing that someone looking at the structure of the European asset management industry would notice. While the overall size in terms of assets is roughly comparable to that of the US (€18 trillion) and much larger than other regions (two-and-a-half times the size of Asia and Pacific, for example, and almost six times that of the Americas without the US), at regional level the market is highly fragmented along national barriers. The majority of European funds – 88% of the total 49,287 at the end of 2018 – are concentrated in just six countries (Luxembourg, France, Ireland, Germany, Spain and Austria). As a result, the average size of an EU fund (€237 million) is much less than one in the UK, China, or even Canada (Figure 23).

Figure 23 Average size (€ million) and number (thousands) of mutual funds (average 2014-18)

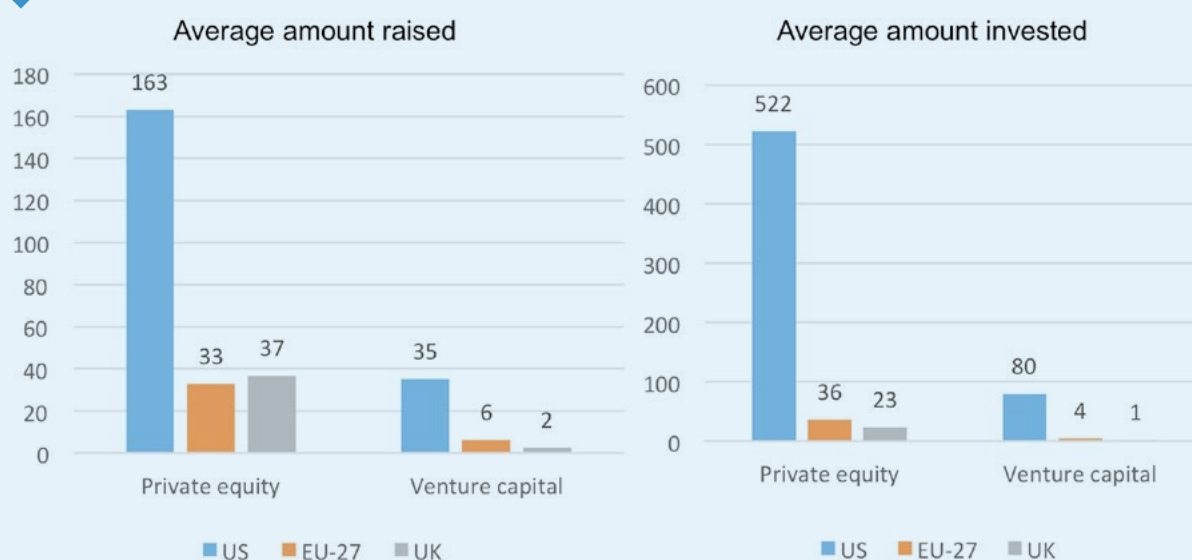


Note: Data refer to regulated open-end mutual funds. Mutual funds include equity, bonds, money market, multi-asset, and other funds. Funds of funds are excluded. EU includes: AT, BE, BG, HR, CY, CZ, DK, FI, FR, DE, EL, HU, IE, IT, LU, MT, NL, PL, PT, RO, SK, SI, ED and SE.
 Source: Investment Company Institute.

B.12 Private equity and venture capital

Two forms of early-stage equity financing for fast-growing companies (usually not listed on stock exchanges), are venture capital (VC) and private equity (PE). While these types of funding have shown signs of recovery since the financial crisis (Lannoo and Thomadakis, 2019) – in terms of both funds raised and invested – there is a big gap between the US and the European industry (Figure 24). In the period 2014-18, US PE and VC funds raised on average €198 billion per year, compared to €39 billion in Europe. The gap is even wider when considering the amounts that funds invested.

Figure 24 Average amount raised (lhs) and invested (rhs) by PE and VC (€ billion, average 2014-18)



Notes: Data on funds raised refer to incremental amounts raised during the year. Data on amounts invested refer to industry statistics (i.e. location of PE/VC firm). Data on amounts invested by European and US VC companies are not directly comparable. This is because the PitchBook-NVCA Venture Monitor reports data that capture the entire investment round of VC-backed companies. Moreover, other types of investors – other than formal PE/VC funds – also participate in such rounds. Contrary to this, Invest Europe reports data that are focused on formal PE/VC funds and their equity investments.

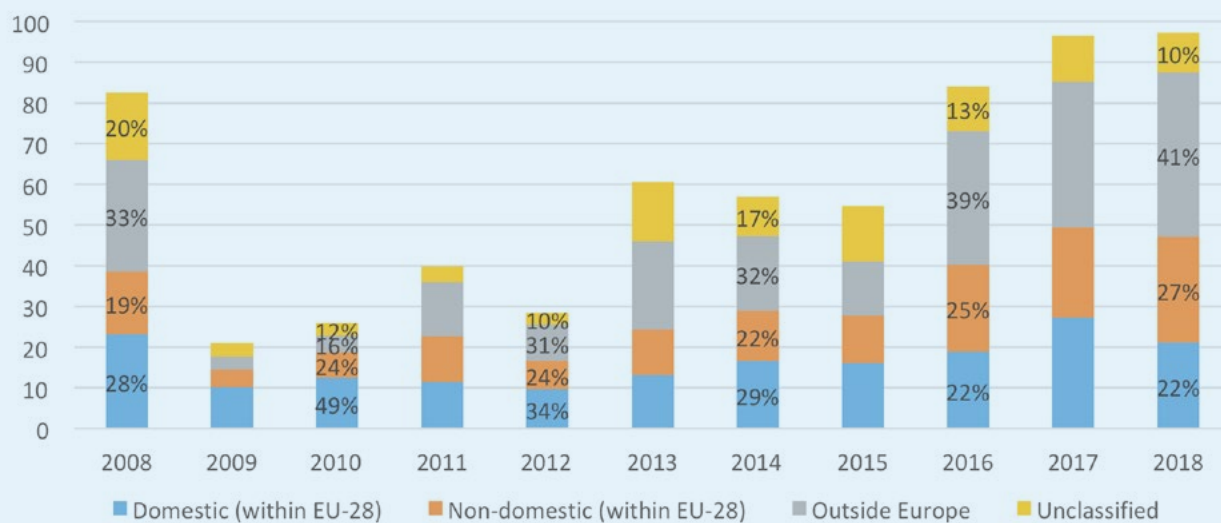
Data for EU-27 do not include Cyprus and Malta.

Source: Invest Europe (2018 European Private Equity Activity), PitchBook-NVCA (2018 Venture Monitor), and PitchBook (2018 Annual US PE Breakdown).

The main problem in Europe is size. In 2018, for example, 185 European VC funds raised €7.2 billion (-7% from 2017 and +90% from 2014) compared to €46.7 billion raised by 273 funds in the US, and €4.2 billion raised by 44 funds in the UK (up by 67% from 2017 and by 190% from 2014). This implies that US VC funds represent a larger share of the overall PE market than their European VC counterparts (32% in the US, 18% in the EU and 9% in the UK). Moreover, an average European VC-backed company receives only €1.5 million, compared to €12.1 million in the US and €2.9 million in the UK. Consequently, this scarcity of funding limits the options for fast-growing companies seeking sufficient scale to compete globally.

The lack of a stable pan-European funding base is highlighted by the fact that in 2018 41% of PE and VC funds came from non-European investors (Figure 25). This is significantly higher than the 24% observed in 2015. North American investors are among the most active (23%), followed by French and Benelux (18%) and Asian and Australian investors (14%). In addition, 75% of the EU's supply of PE and VC is concentrated in just five countries (France, the UK, Luxembourg, the Netherlands and Germany), and there is little cross-border investment.

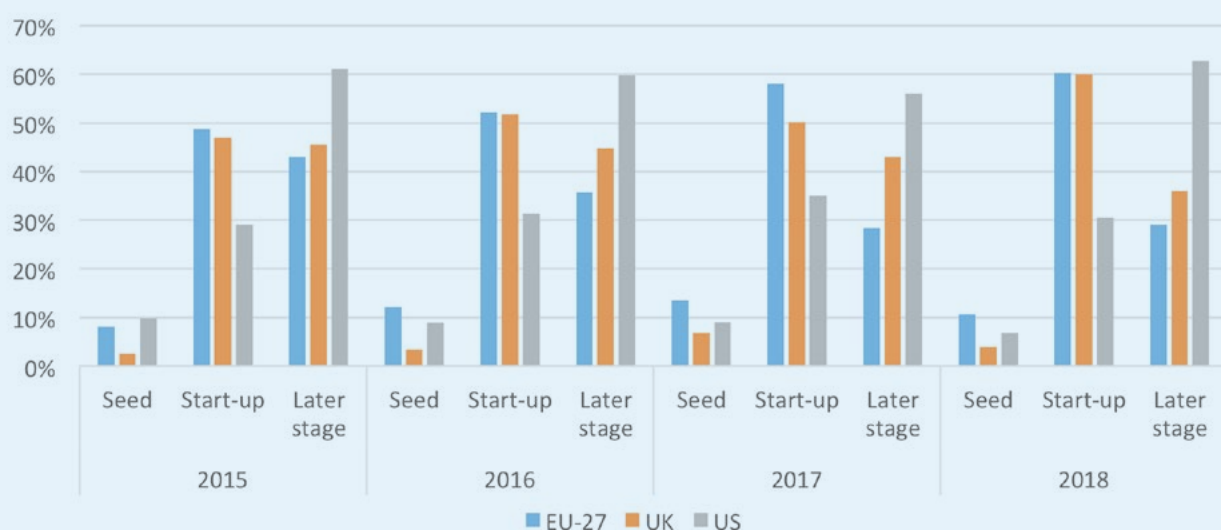
Figure 25 Geographic source of funds raised by PE and VC in EU-28 (€ billion, 2008-18)



Source: Invest Europe.

Despite the fact that European VC investment (in all three stages) has grown over the last few years, it is still tiny in comparison to the US and China. In 2018, EU-27 invested around €6 billion in VC (€2 billion in the UK), whereas the US invested €114 billion and China around €78 billion. As for the stage of investment (Figure 26), European VCs invest more on seed and startups (in 2018 71% of total VC investment) compared to their US counterparts (37%), and less in companies that are in their later stage (29% as opposed to 63% in the US). In particular, while later-stage financing has been increased in actual value (from €1.4 billion in 2015 to €1.7 billion in 2018), the percentage of total VC investment declined from 43% to 29%.

Figure 26 VC investments by stage focus (% of total VC investment in each country/region, 2015-2018)



Notes: VC seed investment refers to the funding provided before the investee company has started mass production/distribution with a view to completing research, product definition or product design. This type of finding will not to be used to start mass production/distribution. VC start-up investment refers to the funding provided to a company (once the product/service is fully developed) to start mass production/distribution and to cover initial marketing. VC later-stage investment refers to the financing provided to an operating company, which may or may not be profitable.

Data refer to investments in Europe-based and US-based companies. Data on European and US venture capital are not directly comparable. This is because NVCA/Pitchbook report data that capture the entire investment round of VC-backed companies. Moreover, other types of investors – other than formal PE/VC funds – also participate in such rounds. Contrary to this, Invest Europe reports data that are focused on formal PE/VC funds and their equity investments.

Data for EU-27 do not include Cyprus and Malta.

Source: Invest Europe and National Venture Capital Association.

A further look at the national level reveals that the VC market is highly fragmented with investments representing 0.04% of GDP (compared to 0.75% in the US) (Figure 27). Markets such as the Nordic countries, Luxembourg, the UK and France have a flourishing VC ecosystem in place, but others (e.g. Spain and Italy) are struggling to develop their VC market. Furthermore, the activity is concentrated in less than a handful of countries. For example, France, the Netherlands and Germany account for 76% of the European VC fundraising activity, while 72% of the investment comes from France, Germany, Denmark and the Netherlands.

Figure 27 VC investments by country of VC firm (% GDP)

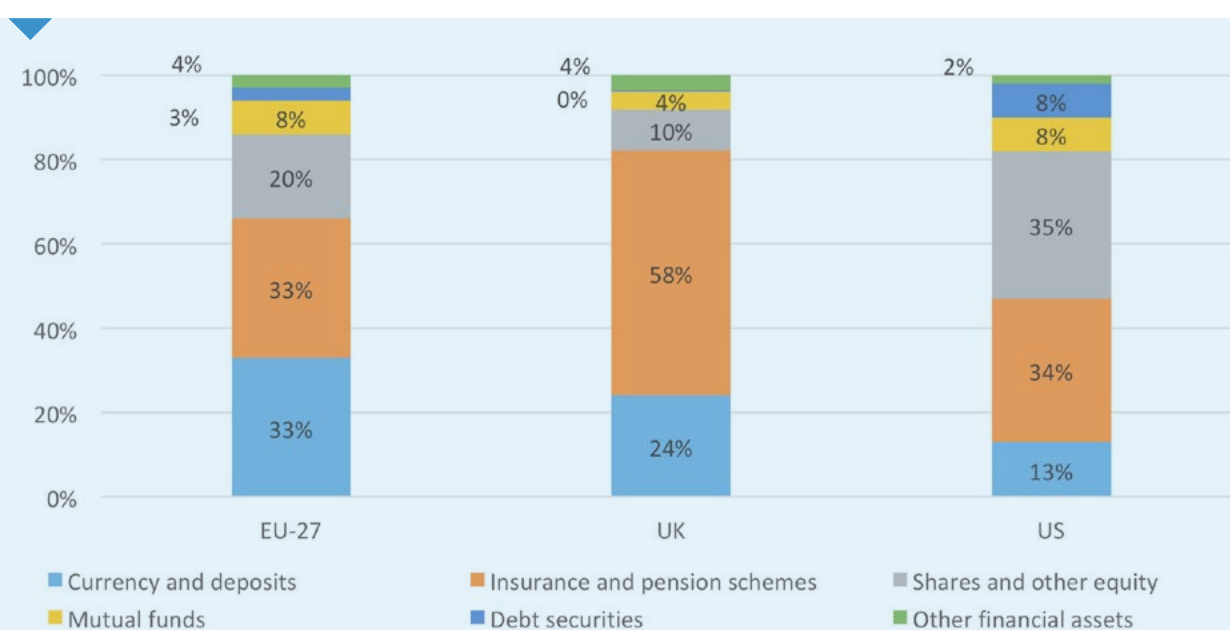


Notes: Data refer to industry statistics (location of VC firm). EU-27 does not include Cyprus and Malta. Baltics include Estonia, Latvia and Lithuania. Other CEE consists of Slovenia, Slovakia and Croatia.
 Source: Invest Europe (2018 European Private Equity Activity).

B.13 Households' risk-averse behaviours

Two thirds of European households' financial assets have been traditionally held under cash and deposits, together with insurance and pension schemes (Figure 28). In particular, these two asset classes have been the main driving force behind the increase of households' financial wealth as they have grown, by 74% and 91%, respectively, since 2003 (Lannoo and Thomadakis, 2019). Direct investment in capital markets, in the form of equity and debt securities, however, represents a small part of financial assets.

Figure 28 Financial assets of households in EU-27, UK and US (% total financial assets, average 2014-18)



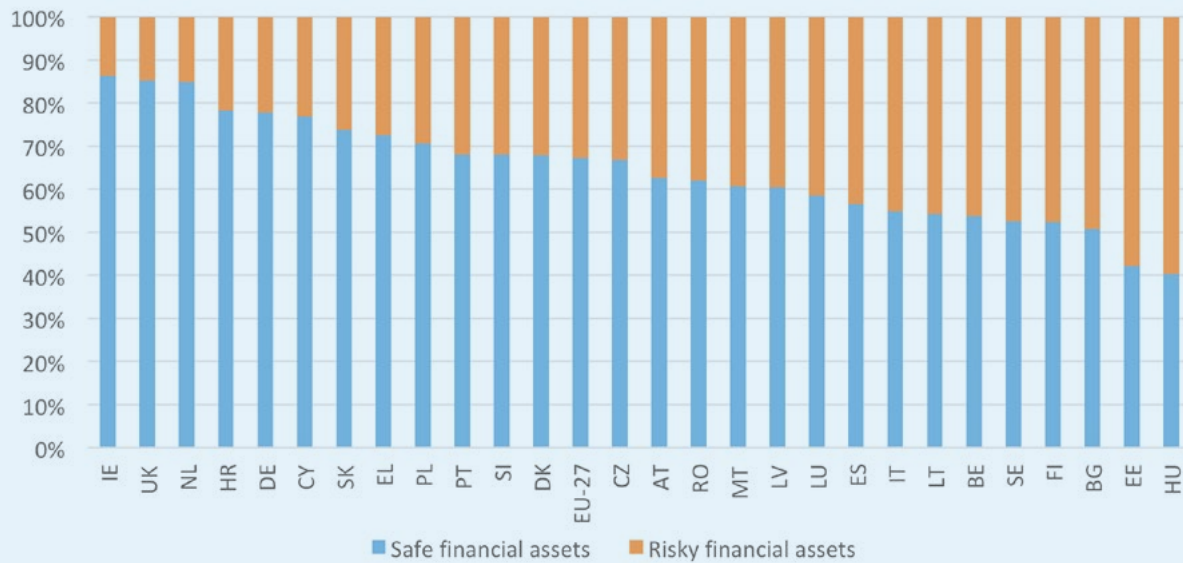
Notes: The category 'Other financial assets', for EU-27 and the UK includes: other accounts receivable, financial derivatives, and loans. For the US it includes: other accounts receivable, and loans.

Source: Eurostat, FRED Economic Data.

Several important differences can be seen when comparing the structure of households' financial assets in Europe with those in the UK and the US. For example, the portfolio of assets in the UK is largely made up of insurance and pension schemes (58%), followed by deposits and equity and investment fund shares. This could mean that compared to other countries, UK households' consumption is more resilient in the long term to the population's ageing and fluctuations in asset prices. US households, on the other hand, have a much larger share of their financial assets in equity and investment shares.

The composition of financial assets across Member States further confirms the risk-averse nature of EU households (Figure 29). In twelve out of 27 European countries, households hold a level of safe assets (defined here as deposit and savings accounts, as well as insurance and pension schemes), that is, above the EU-27 average (67%), with peaks in countries such as Ireland (86%) and the Netherlands (85%), and lows in Estonia (42%) and Hungary (40%). By comparison, US households hold approximately 46% of their financial assets in safe assets.

Figure 29 Holdings of safe and risky financial assets of EU households (% total financial assets, end-2018)

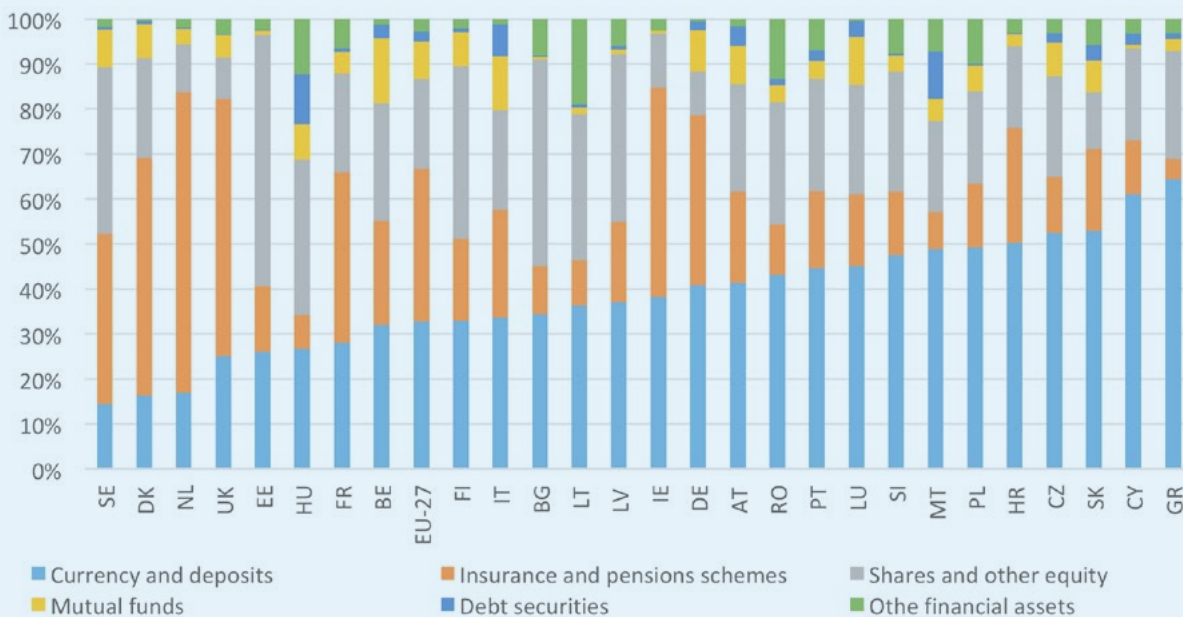


Notes: Safe assets are defined as currency and deposits, and insurance and pension schemes. Risky financial assets are defined as shares and other equities, mutual funds, and debt securities. Other financial assets, such as other accounts receivable, financial derivatives, and loans are excluded.

Source: Eurostat.

For most countries, households' holdings of shares (listed and unlisted) are above the EU-27 average of 20% (Figure 30). However, in countries where financial markets are most developed, such as the UK and the Netherlands, direct participation in equity markets is very limited (9% and 11% respectively). This may be explained by the fact that in countries where there is a competitive financial industry that can manage households' assets in an efficient and cost-effective way, direct access to markets is usually less frequent (Valiante, 2016).

Figure 30 Composition of EU households' financial assets by country (% total financial assets, end-2018)



Notes: The category 'Other financial assets' includes: other accounts receivable, financial derivatives, and loans.

Source: Eurostat.

B.14 Non-financial corporations

Corporate bond markets offer an important way of raising debt finance on a larger scale, especially for large companies. While the issuance of corporate bonds by non-financial corporations (NFCs) has increased over the past years, this instrument has not yet reached its full potential as a viable source of long-term funding for companies, as well as an attractive asset class for investors (Çelik *et al.*, 2019). In particular, despite the fact that the prominence of corporate bonds has grown recently, especially after a large increase in European corporate bond issuance in 2009 (owing to bank deleveraging), annual amounts of issuance remained modest relative to the growth in global issuance (especially in the US).

This rather stable trend further highlights the deep-rooted bias of NFCs' debt financing towards bank loans, as opposed to corporate bond markets (Figure 31). Over the period 2014-18, bank funding in Europe increased to 85% of total NFC debt (from 79% in 2010-14), while in the US it declined to 32% (from 40% in 2010-14). Overall, while the capital market contribution in the EU-27 and UK has increased (in relative terms), compared to that in the US, NFC market funding in Europe remains far lower, and among the lowest worldwide.

Figure 31 Share of market vs bank-based NFC debt financing (average 2014-18)



Source: Eurostat, FRED Economic Data.

A closer look at the composition of NFC liabilities (Figure 32) confirms that European firms have traditionally relied on sources other than debt capital markets for their external financing. The lion's share goes to equity with €15,822 billion (or 55% of total liabilities).⁽²⁷⁾ and bank loans of €8,445 billion (30% of total liabilities), compared to just €1,464 billion (5%) for corporate bonds. In the UK, bonds represent 7% of NFCs' total liabilities, while in the US it is 13%.

(27) However, a large part of that equity (66%) is held in unlisted shares and only 34% is through listed shares. The picture in the UK is opposite: around 44% of NFCs equity funding is through unlisted shares and 56% through listed shares. US data merge all equities issued by NFCs without distinguishing between the two types.

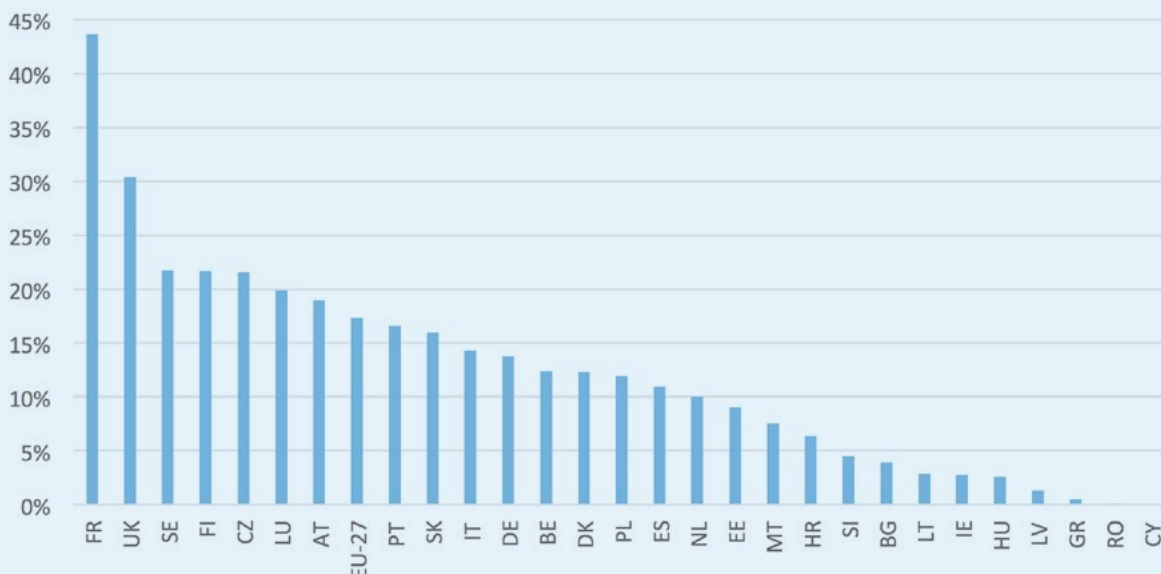
Figure 32 Financial liabilities of NFCs in EU-27, UK and US (average 2014-18)



Source: Eurostat, FRED Economic Data.

If we dig further at national level, a lot of diversification regarding the relative importance of debt securities in NFC liabilities can be found (Figure 33). While in countries such as France and the UK, corporate debt securities are well above the EU-27 average of 17%, in others there is almost no issue of corporate debt securities (e.g. in Greece, Romania and Cyprus). On the one hand, the segmentation of corporate bond markets along national borders raises concerns about liquidity on secondary markets, and their limited risk sharing capacity. On the other hand, it highlights the underused potential of the market, which currently represents 12% of the European GDP as compared to 31% in the US.

Figure 33 Corporate debt securities over corporate loans (average 2014-18)



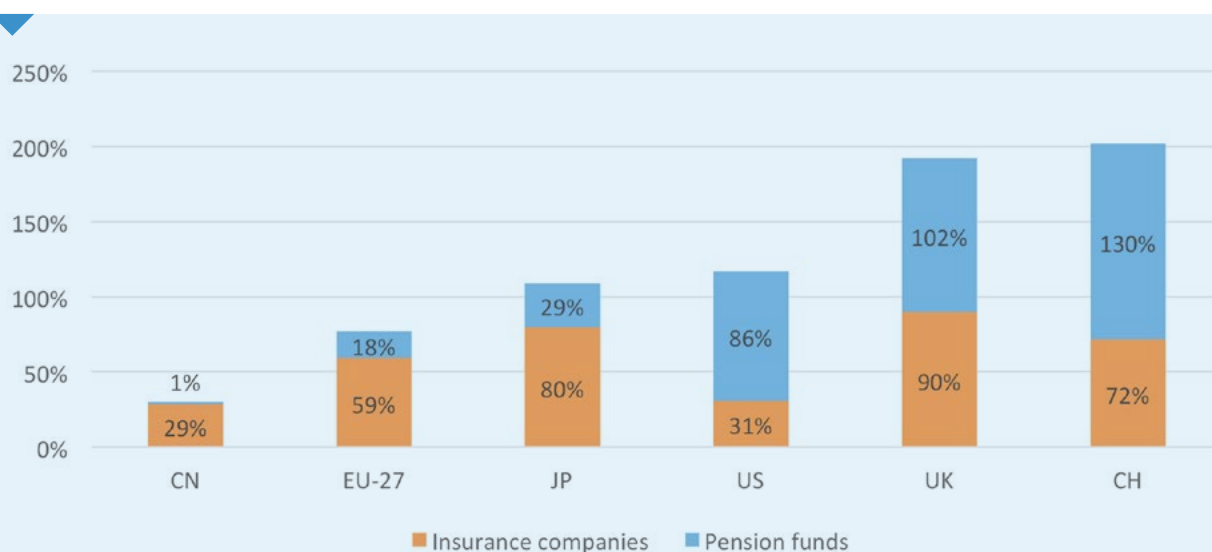
Source: Eurostat.

B.15 Insurance companies and pension funds

One of the main priorities of the Capital Markets Union (CMU) project is to foster participation of institutional investors into capital markets by unlocking funding and channelling it from savers to businesses. The importance of insurance companies and pension funds (ICPFs) in capital markets has increased considerably over the past years, both as a result of supply (e.g. increased possibilities for diversification, improved corporate control and risk management, financial and technological innovation, enhanced competition) and demand factors (e.g. demographic developments and growing wealth). The fact that they have long-term liabilities allows them to act as shock absorbers, by providing liquidity when needed and not being forced to sell assets when turbulent times arise.

The relevance of ICPFs in national economies varies significantly across countries, ranging from 30% of GDP in China to 192% and 202% in the UK and Japan respectively (Figure 34). Differences also occur regarding the importance of one type of investor against the other. In China, EU-27 and Japan, insurance companies play a much more important role than pension funds, while in the US and Switzerland pension funds possess total assets in excess of those of insurance companies.

Figure 34 Assets of insurance companies and pension funds (% GDP, end-2018)



Source: For insurance companies: EIOPA Insurance Statistics, OECD.Stat, and Winston & Strawn (2019). For pension funds: OECD Global Pension Statistics, French Asset Management Association, Bank of Japan, and Swiss Occupational Pension Supervisory Commission.

In 2018, the European insurance market was the largest in the world, having combined total assets of €7.97 trillion. However, there are remarkable cross-country differences, with the southern and eastern EU countries having a much smaller insurance sector than the western and northern European countries (Figure 35). For example, France, the UK and Germany each represent around a fifth of the total amount, while Spain represents 3%.

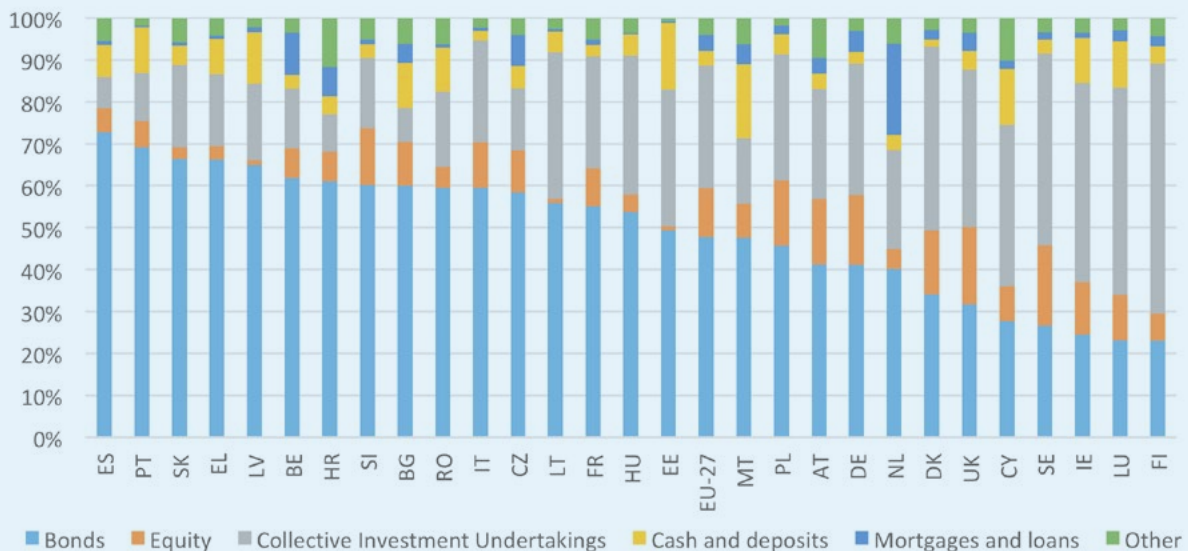
Figure 35 European insurance companies' assets under management (€ billion, end-2018)



Source: EIOPA Insurance Statistics.

While ICPFs have traditionally been long-term equity investors in capital markets, equity investments by insurance companies are now below the level reached before the financial crisis (EC, 2019).⁽²⁸⁾ European insurance companies invest less in equity compared to third-country insurers and EU pension funds. Indeed, the largest part of insurers' assets continues to be invested in bonds (26% in government bonds and 22% in corporate bonds), with only 21% invested in equity (12% directly and 9% indirectly through funds)⁽²⁹⁾ (Figure 36). Asset allocation varies largely across Member States, with Spanish and Portuguese insurers investing heavily in bonds (73% and 69%, respectively), and the UK and Sweden more in direct equity (19% each).⁽³⁰⁾

Figure 36 European insurance companies' assets under management (€ billion, end-2018)



Note: Bonds include: government bonds and corporate bonds. Equity, which means direct equity, includes: common equity, equity of real estate related corporation, equity rights, preferred equity, and other equity. Collective investment undertakings include: equity funds, debt funds, money market funds, asset allocation funds, real estate funds, alternative funds, private equity funds, infrastructure funds, and other funds. Other includes structured notes (i.e. equity risk, interest rate risk, currency risk, credit risk, real estate risk, and other risk), collateralised securities, property, as well as other investments.

Source: EIOPA Insurance Statistics.

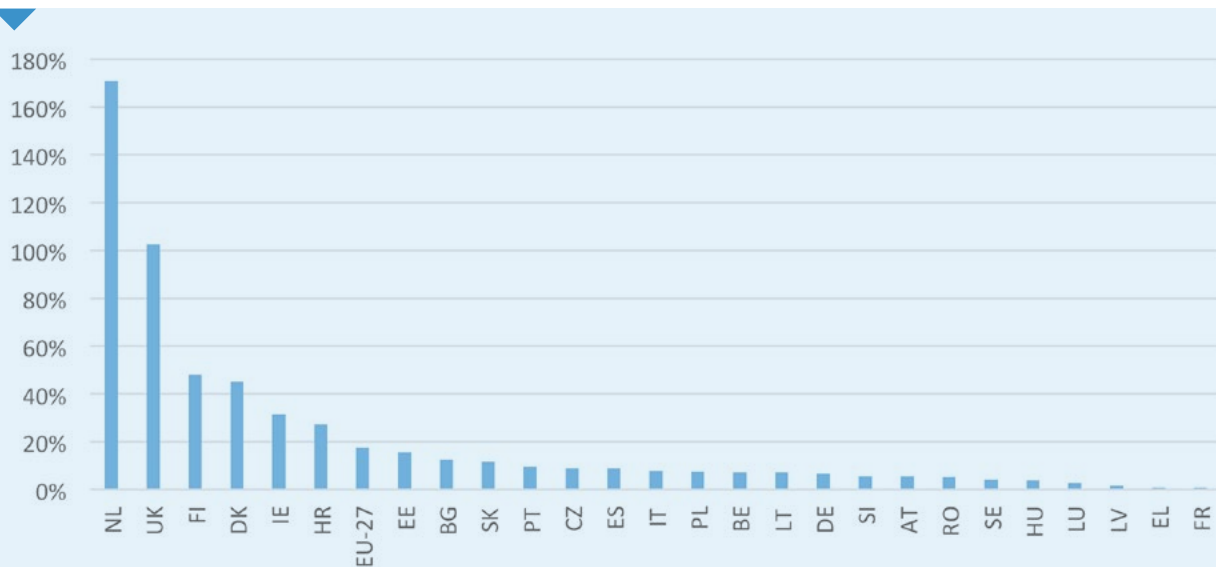
(28) Although in absolute amounts investments into equity have increased, the share of these equity investments into insurers' investment portfolios has been declining.

(29) Indirect equity refers to investment made through collective investment undertakings (i.e. equity funds and private equity funds) and structured notes (i.e. equity risk).

(30) Swedish and Finnish insurers' indirect investment into equity accounts for 22% of their total assets. The average indirect equity investment in EU-27 is at 9%.

Although the pension market in EU-27 is the second largest in the world in terms of volumes, holding in 2018 assets under management of €2.4 trillion (€13.6 trillion in the US), in relative terms it represents only 18% of EU-27 GDP (86% of GDP in the US and 102% of GDP in the UK). Pension funds are only of real importance in two countries, the Netherlands and the UK, both of which have well-developed second pillar pension schemes (Figure 37). Pension funds' assets in these two countries account for 78% of the total European assets.

Figure 37 European pension funds' assets under management (% GDP, end-2018)



Source: Data refer to the end of 2018, except for Belgium (pension savings funds) where data refer to end Q3-2018. Data on pension funds refer to: mandatory plans in Estonia, earnings-related pension companies and funds in Finland, Pensionskassen and Pensionsfonds supervised by BaFin in Germany, PERCO plans in France (as no data available yet on the newly created FRPS pension vehicle), and voluntary plans in Latvia. Source: OECD Global Pension Statistics, French Asset Management Association.

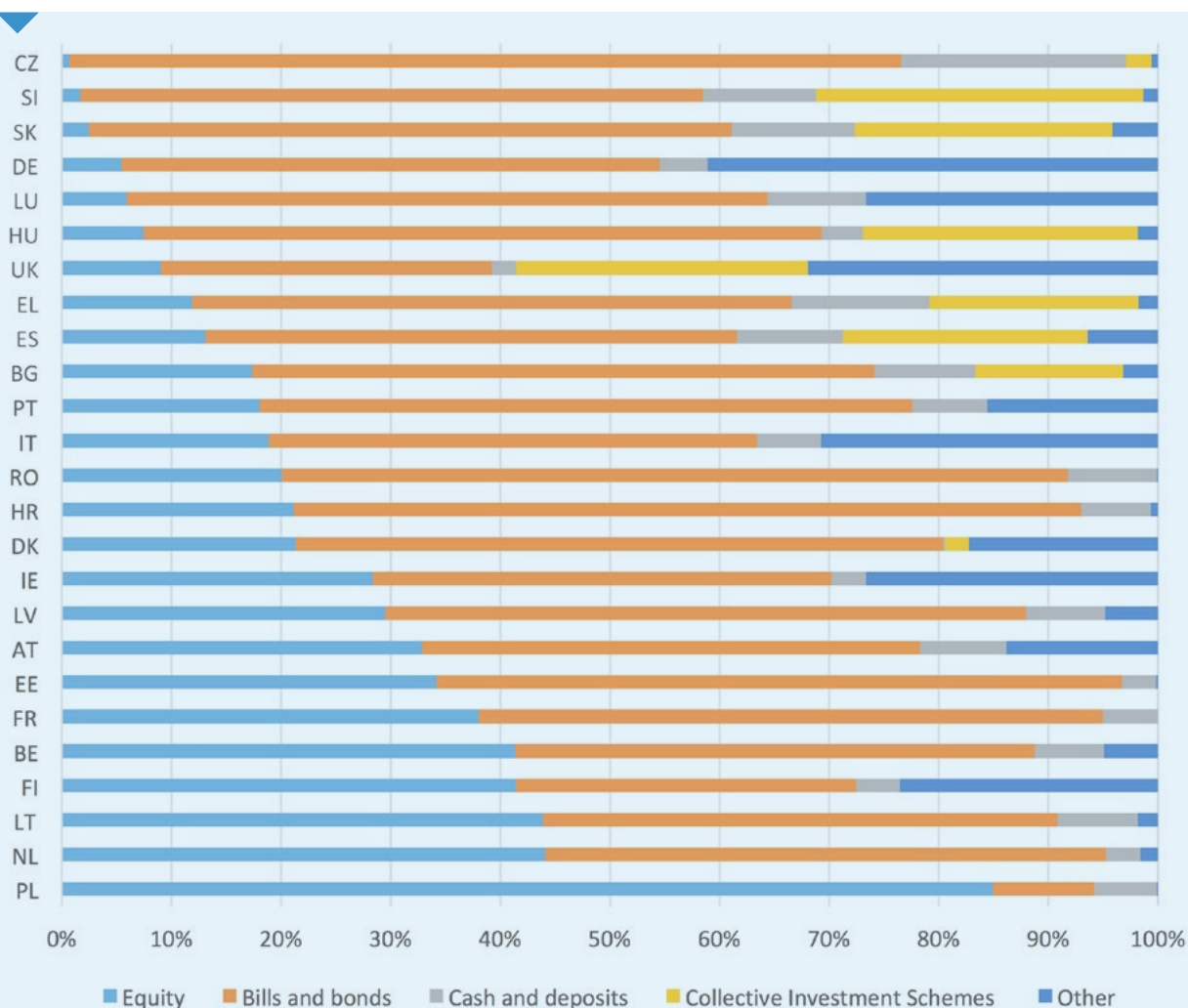
An examination of the asset structure of European pension funds shows that the investment allocation has remained almost unchanged in recent years, with debt and equity investments accounting for the highest share (EIOPA, 2018; EIOPA, 2019).⁽³¹⁾ In particular, in 2018 fixed income securities (i.e. sovereign, corporate and other bonds) were the main investment asset class, representing more than half (54%) of total investments, while equity exposure accounted for approximately 30%. Pension funds in continental Europe have a much more conservative asset allocation than their counterparts in China, the US and Japan (24%, 28% and 32% of assets were in bills and bonds). Furthermore, the aggregate equity exposure in the pension sector is relatively higher than in the insurance sector.

There is a considerable heterogeneity in the asset allocation between Member States (Figure 38). Dutch, Lithuanian, Finnish and Belgian pension funds hold more than 40% of their investments in equity (Poland is an exception with 85% of assets in equity). In most of the central and eastern European countries, however, a large share of investment has gone into bonds. This substantial variation of direct investment in bonds and equity across countries highlights the fact that countries with particularly low direct investments usually invest in these categories through UCITS. This is evident, for example, in Slovenia, the UK and Hungary, where more than a quarter of assets are allocated in collective investment schemes.⁽³²⁾

(31) The stability in the investment mix is partly due to legal or contractual investment restrictions, which are put in place for prudential reasons or to ensure long-term investments, but also to naturally, relatively infrequent trading or reallocations in the investment portfolios (EIOPA, 2018).

(32) Moreover, other reasons may also explain why the share of pension funds' investments in equities varies significantly from country to country in Europe. For example: i) the definition of a pension fund; ii) the origin of the data, iii) whether statistics contain data from defined benefit (DB) and/or defined contribution (DC) schemes; iv) whether data contain information only on pension funds' direct holdings of equities or include their indirect holdings via investment vehicles (Pensions Europe, 2019). However, in many countries, the share of pension funds' investments in equities has increased over the past years, mainly because of the low interest rate environment, a search for yield, as well as risk diversification (Pensions Europe, 2018).

Figure 38 Asset allocation of European pension funds (% of total assets, end-2018)



Note: Data refer to the end of 2018, except for Belgium (pension savings funds) where data refer to end Q3-2018. Data on pension funds refer to: mandatory plans in Estonia, earnings-related pension companies and funds in Finland, Pensionskassen and Pensionsfonds supervised by BaFin in Germany, PERCO plans in France (as no data available yet on the newly created FRPS pension vehicle), and voluntary plans in Latvia. The OECD Global Pension Statistics database gathers information on investments in Collective Investment Schemes (CIS) and the look-through of these investments in equities, bills and bonds, cash and deposits and other. Data on asset allocation in these figures include both direct investment in equities, bills and bonds, cash and deposits and indirect investment through CIS when the look-through of CIS investments is available. This implies that, for example, the 'equity' category includes both direct and indirect investment into equity. The category 'CIS' includes investments in CIS when the look-through is unavailable.

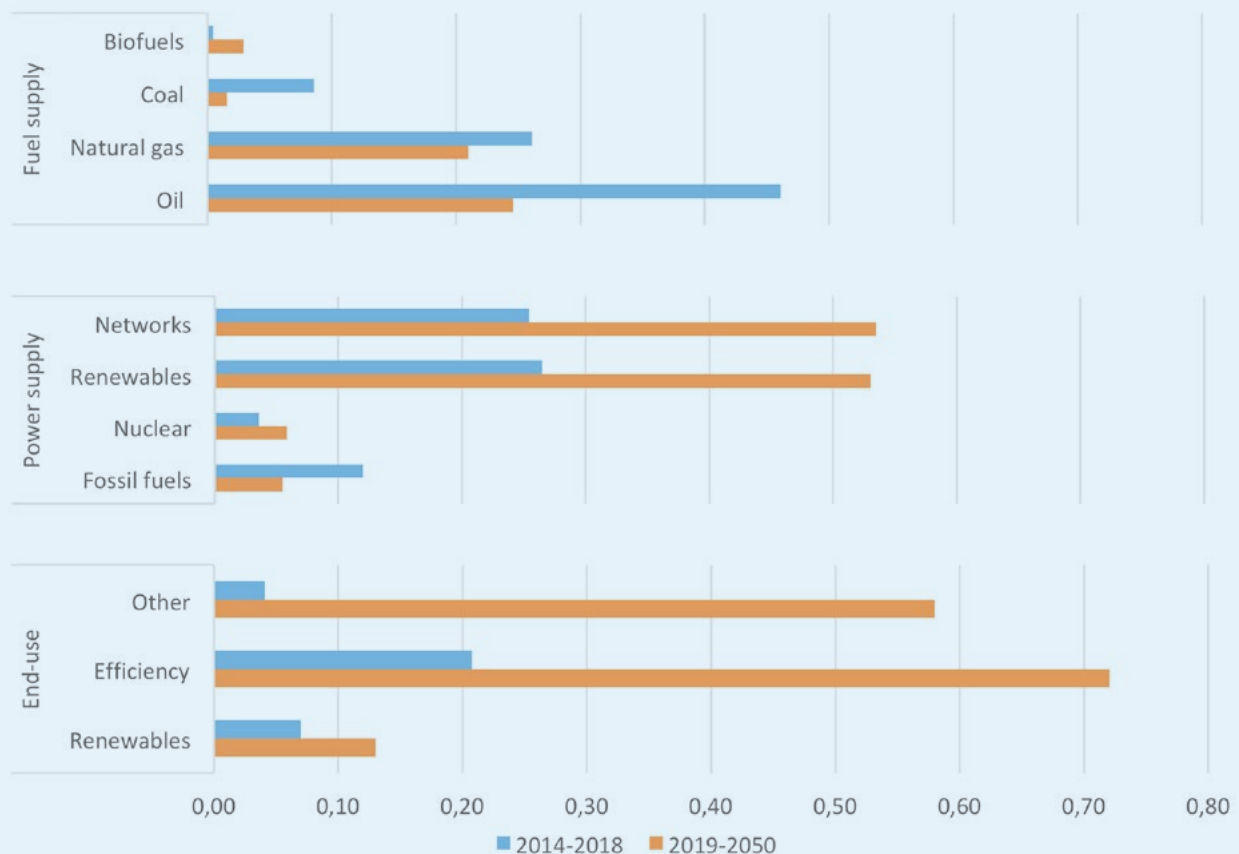
Source: OECD Global Pension Statistics, French Asset Management Association.

(32) Moreover, other reasons may also explain why the share of pension funds' investments in equities varies significantly from country to country in Europe. For example: i) the definition of a pension fund; ii) the origin of the data, iii) whether statistics contain data from defined benefit (DB) and/or defined contribution (DC) schemes; iv) whether data contain information only on pension funds' direct holdings of equities or include their indirect holdings via investment vehicles (Pensions Europe, 2019). However, in many countries, the share of pension funds' investments in equities has increased over the past years, mainly because of the low interest rate environment, a search for yield, as well as risk diversification (Pensions Europe, 2018).

B.16 The mitigation of climate change

Between 2014 and 2018, total energy investment worldwide, including capital spending on energy supply and improvements in end-use energy efficiency, amounted to €1.8 trillion annually (Figure 39).⁽³³⁾ Most of this (94%) came from capital incorporated into a company's balance sheet or from private individuals' own assets, while only 6% came from project finance structures, where risks are shared among funding providers in vehicles largely held off the balance sheet of the project owners.⁽³⁴⁾

Figure 39 Global energy sector investment in 2018 and average annual investment needs in the Sustainable Development Scenario, 2019-50 (€ trillion)



Source: International Energy Agency.

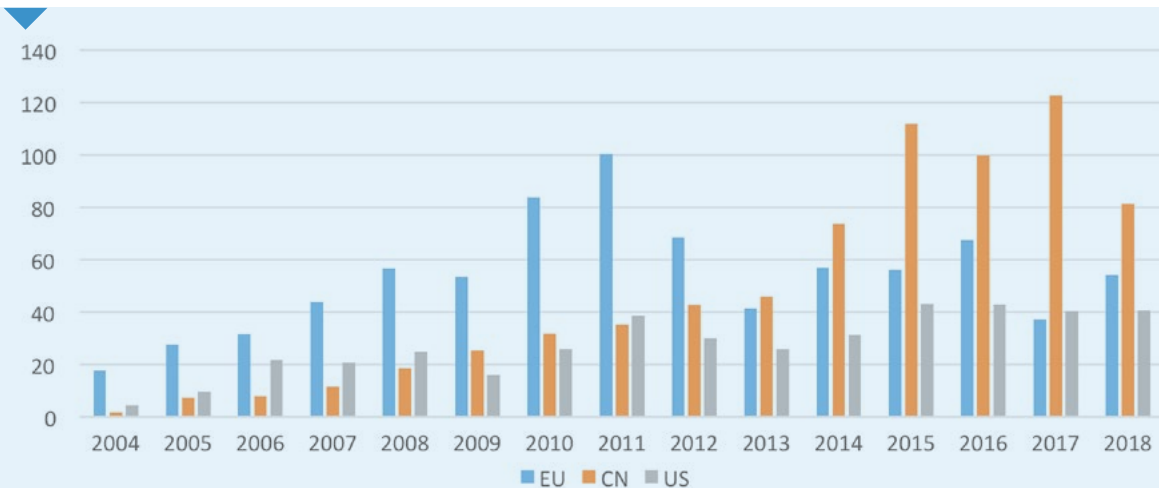
According to the International Energy Agency's Sustainable Development Scenario, the amount of total energy sector investment between 2019 and 2050 has been estimated at close to €99.5 trillion. This is equivalent to an annual average of €3.1 trillion. Compared to the 2014-18 investment level, this represents a 72% increase in investment. Such a shift will require a significant reallocation away from fossil fuels (i.e. oil, gas and coal) towards renewables and other low-carbon sources, for both fuel and power supply.

(33) Moreover, it is supported by the use of retained earnings or savings as well as corporate fundraising through borrowing or equity.

(34) Project financing involves external lenders – including commercial banks, development banks and infrastructure funds – sharing risks with the sponsor of the project. It can also involve fundraising from the debt capital markets with asset-backed project bonds.

Over the past 20 to 25 years, Europe has often been at the forefront of efforts to build a financial system that supports sustainable development. To date, however, very little has been achieved in the area of sustainable finance, despite it being recognised as one of key priorities of the CMU project. Indeed, the focus on delivery of the sustainability objectives has been inadequate. To meet its energy targets by 2030, Europe needs an estimated €11.2tn⁽³⁵⁾ (HLEG SF, 2018). Latest estimates put the annual overall investment gap in transport, energy and resource management infrastructure at around €270 billion between 2021 and 2030 (EC, 2018a). Against this backdrop it is notable that renewable energy investment in the EU has been on a downward trend over the past seven years (Figure 40). In 2018 investment stood at €54 billion, down from its 2011 peak of €100 billion.⁽³⁶⁾

Figure 40 Trends in renewable energy investment (€ billion, 2004-18)



Note: Investment volume adjusts for reinvested equity. Total values include estimates for undisclosed deals.
Source: Frankfurt School-UNEP Centre/BloombergNEF.

Given the growing consensus on the need to build sustainability into financial markets, Europe should do more to actively promote green investment, using not only regulation but also its budget, institutions and convening power. Building sustainability into capital markets would boost investment, improve Europe’s growth prospects and minimise the risk of permanent value loss in the future. Therefore, the focus should be on how sustainable finance reforms can help to deliver and ensure an orderly transition to a low carbon economy. A change in how incentives are structured and information is shared, right through the financial system, is necessary. For this to happen, three key elements are crucial: i) greater disclosure both by companies and investors to enable a shift toward mainstreaming responsible investment practices; ii) new innovative and alternative approaches to investment through the CMU; and iii) effective risk-management frameworks for infrastructure.

Policy interventions at different levels, from the micro to the macro, can play a significant role in integrating sustainability issues into financial regulation. In this context, building a sustainable financial system that can contribute to the economy by allocating capital to core growth sectors, as well as improving the efficiency and effectiveness of the capital intermediation process, will be the focus for the years to come.

However, climate change creates not only opportunities for investment portfolios, but risks too. Climate risks such as climate variability and weather extremes are facts of life, and are being increased by human activity. Technological advances and cost declines in renewable power and electric grids, electric vehicles and batteries pose a threat to incumbent industries and demand for fossil fuels. Regulatory risks stemming from efforts to combat climate change are increasing – governments, in their efforts to stick to their emissions-reduction pledges, could ratchet up targets over time (e.g. carbon taxes, emissions-trading schemes). Finally, social and corporate awareness of climate change are increasing amid a spike in global temperature (e.g. decarbonisation of portfolios, fossil fuel divestment, disclosure of carbon footprints).

(35) This figure refers to meeting the needs of climate and energy via the “Clean Energy for All Europeans” package, with an average investment gap of €180 billion per year. (<https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans>).

(36) China is the largest destination of energy investment, receiving over one fifth of the global total.

B.17 The adaptation to the digital revolution

The digital revolution (i.e. financial technology or ‘fintech’) witnessed over the past years has led to the emergence of new financial services and products, as well as new delivery channels. These have the potential to contribute enormously to three key elements of financial inclusion: i) expansion of financial services to serve the vast majority of the population (availability); ii) low cost (affordability); and iii) efficient, safe, reliable forms that meet their needs (quality).

For consumers, fintech services can offer significant benefits, such as cost reduction, efficiency improvements, better adaptation to customers’ preferences, greater transparency and a contribution to the goal of financial inclusion. Fintech services can also provide cross-border financial services between Member States and extend financing and investment alternatives to businesses and households. Furthermore, they may also contribute towards achieving some of the most relevant objectives, such as the CMU, the Digital Single Market, and the action plan for consumers’ financial services (EC, 2017a). These services also provide innovation to the market by bringing about the application of new business models and technologies to financial services (EC, 2018b).

For the financial industry, fintech adoption can provide major impacts: lowering barriers to entry by eliminating physical branches and large organisational structures; disintermediating the current value chains; introducing new business models based on platforms and sharing economies; and ensuring a more efficient provision of services (EP, 2018).

Europe has a large fintech landscape, high quality scientific research and a growing number of innovative firms. European fintech companies have created over double the value of any tech sector,⁽³⁷⁾ in terms of both realised and current pipeline of private startups (Finch Capital, 2019).⁽³⁸⁾ However, for these companies to be at the forefront of technological innovation, access to finance is necessary. Despite the fact that Europe today has more billion-euro fintech companies than ever and the largest year of fundraising on record, it lags significantly when compared to the US and Asia.⁽³⁹⁾ If billion-dollar companies are about to turn to unicorns, decacorns and titans, the European fintech landscape is going to have to start embracing risk.⁽⁴⁰⁾ This is also the case for investors, who are aiming to maximise return on capital, and thus tend to direct funds to those opportunities offering the highest return compared to risk ratio, ideally with the possibility of a fast exit.⁽⁴¹⁾

The UK has been a leader in European fintech, fostering innovation through sandboxes and encouraging entrepreneurship.⁽⁴²⁾ British fintech firms attract more VC funding than any other European country, with the share of fintech in total VC investment at 30% in the UK and 20% in Europe (Figure 41). Venture capital invested in the UK in 2018 totalled €1.5 billion across 261 deals, compared to €960 million across 125 deals in France, Germany, Italy and the Netherlands collectively. The implementation of sandboxes in the UK allowed fintechs to test their products in a live environment without adhering to the strict regulations required outside of the sandbox. Despite ongoing concerns around Brexit, it appears that the UK will still remain home to the highest concentration of fintech companies in Europe.

(37) Tech sectors such as enterprise software, gaming, food, transportation, music, travel and health.

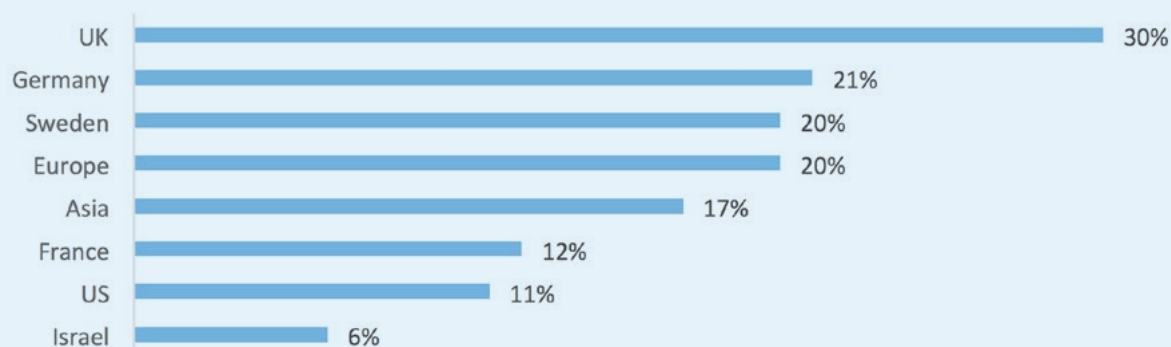
(38) European fintech exits have totalled €83 billion since 2013. On top of that, the current pipeline of fintech startups valued over €1 billion+ is worth €45 billion (unrealised value).

(39) See for example an analysis by Accenture: <https://newsroom.accenture.com/news/global-fintech-fundraising-fell-in-first-half-of-2019-with-decline-in-china-offsetting-gains-in-the-us-and-europe-accenture-analysis-finds.htm>.

(40) Unicorn is a company with valuation of \$1-10 billion, decacorn is a company with valuation of \$10-50 billion, while titan is a company with valuation in excess of \$50 billion.

(41) Traditional banks are mostly absent from big fintech acquisitions. The most viable paths to exit are IPO, sale to another fintech company, and private equity. This absence is because traditional banks are not able to gain their way into fintech, since they do not have the mandate as their valuation multiples are too low and synergies are likely limited (Finch Capital, 2019). But financial institutions and other corporates are more involved via partnerships or by investing in minority stakes.

Figure 41 Share of fintech in total VC investment per region (2017-19)



Note: The sample period is January 2017 to October 2019.
Source: Finch Capital (2019).

The ecosystem within which fintechs operate and interact is very important if they are to grow and flourish. The key actors of a fintech ecosystem are investors, regulators, academic institutions and business partners, who are able to provide the necessary capacity and expansion opportunities (Fagerberg and Mowery, 2006). Thus, the choice of location of a fintech company is one of the most important factors for its future success. Countries and cities that possess such an ecosystem are in the forefront of the digital revolution.⁽⁴³⁾ In this regard, European countries – with very few exceptions – have in general been followers, where the lead has been taken by China, the UK and the US (Castells, 2009). Latest data show that London ranks sixth out of the global leading fintech centres ranking (below four Chinese centres and New York), while the next European fintech centre is Stuttgart in 15th place, followed by Frankfurt at 20th (GFCI, 2019).

Achieving a fully functional digital finance ecosystem is today just a vision, and parts of the mosaic remain to be filled in. Obstacles, such as lack of adequate infrastructure, weak institutional frameworks that discourage private investment, unstable economic and political conditions that reduce the demand for financial services, inadequate financial regulation and legal uncertainty, remain. Advancing on multiple fronts simultaneously and overcoming heterogeneities across countries is necessary. Financial regulation can help with that, first by enabling the successful implementation of innovations in digital finance, encouraging their use and increasing competition among providers, and second by ensuring the compatibility of financial inclusion with the traditional mandates of financial regulation and supervision (e.g. safeguarding the stability of the financial system, maintaining its integrity, and protecting consumers).

However, it is important to highlight the challenge in quantifying the size of the current and potential fintech market, bearing in mind the difficulties in defining the exact scope of fintech services. An additional difficulty is the complexity of differentiating fintech services provided by traditional firms in the financial sector from other services. As a result, there are no estimates of total turnover for fintech services as a whole in Europe at the moment, and the figures reported should be treated cautiously.

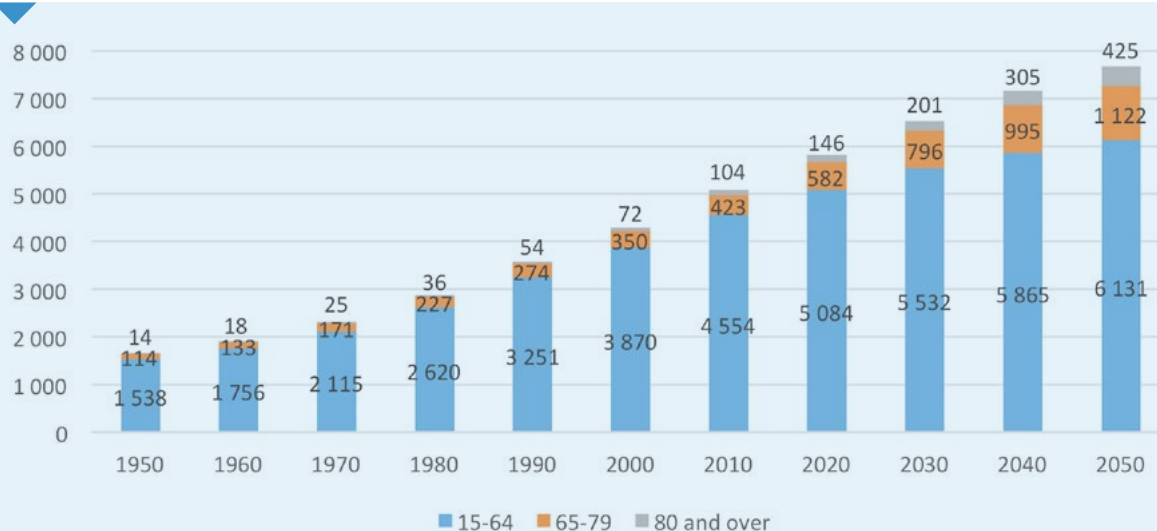
(42) In 2015, the Financial Conduct Authority (FCA) launched Project Innovate, the first regulatory sandbox for fintech startups. This example was later followed by other European countries. In 2016 the Dutch Authority for the Financial Market (AFM) and De Nederlandsche Bank (DNB), combined forces for a regulatory sandbox, while in 2018 Denmark's Financial Supervisory Authority (Finanstilsynet) launched the FT Lab.

(43) The quality of the ecosystem (i.e. access to support, partners and customers), access to talent, and access to capital are considered the most relevant factors (Basso et al., 2018; Startup Heatmap Europe, 2019).

B.18 The ageing of the population

The world's population continues to grow, although at a slower pace than at any time since 1950. From an estimated 7.7 billion people worldwide in 2019, the United Nation's projections indicate that the global population could grow to around 9.7 billion by 2050 (UN, 2019). More importantly, over the coming decades the global population of people aged 65 and older will double to 1.5 billion (Figure 42). Even more striking is the growth that will occur within the over-80 age group, which is expected to almost triple in absolute size by 2050, rising from 1.7% of the global population to 4.5% (PGIM, 2016). While Africa, Latin America and the Caribbean exhibit the largest increase, the region where the older population is expected to grow most slowly is Europe, with a projected increase of 35% between today and 2050 (UN, 2017).

Figure 42 World population (millions, 1950-2050)



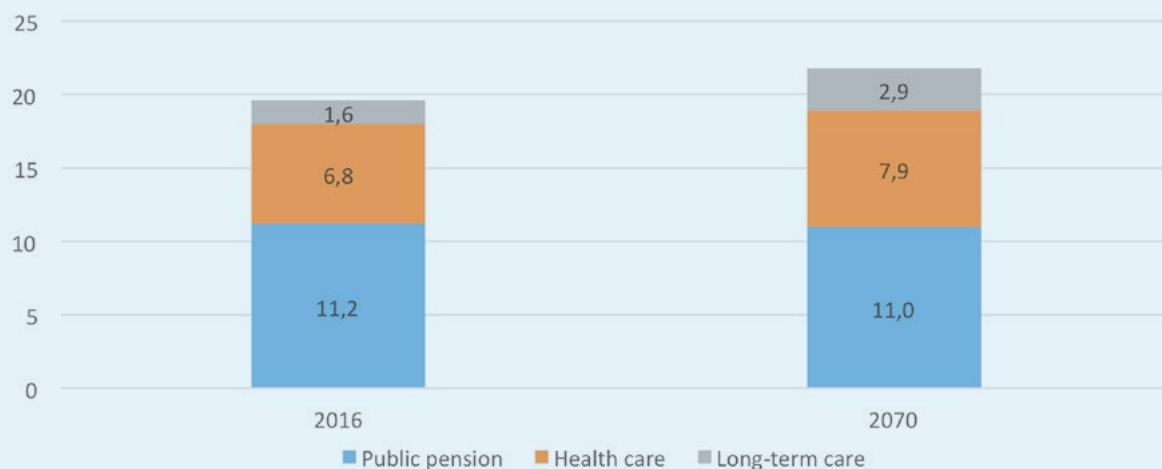
Source: United Nations Population Division.

An increase in Europe's old-age dependency ratio,⁽⁴⁴⁾ from 13% in 2015 to 25% in 2050, implies a decline in the number of workers that are potentially available to take care of each pensioner, in the absence of any changes to the statutory retirement age (ECB, 2018). Consequently, this will entail significant changes in long-term (government) spending. Indeed, the combination of population ageing and declining working age populations could place significant pressure on public pension systems and erode public savings (Clements et al., 2018). This is because more retirees will receive benefits while fewer people will work and contribute to the system through taxes.

According to EC (2018c), public expenditure on pensions, healthcare and long-term care is expected to rise from 19.6% of GDP in 2016 to 21.9% of GDP in 2060 (Figure 43). Such spending presents societies with a fundamental choice: debt or taxes to fund the coming spending needs for the elderly. While a higher tax burden is expected to reduce savings by those in their middle years and therefore investment in capital markets, a higher level of government debt may crowd out demand for other relatively risk-free assets. Furthermore, if households foresee that higher debt today will have to be financed by increased taxes in the future, private spending will also go down.

(44) This ratio is defined as the number of people aged 65 or over as a percentage of the working-age population (i.e. people aged 15 to 64).

Figure 43 Ageing-related projections of public spending in EU-28 (% GDP)



Source: 2018 Ageing Report.

It is certainly true that increased government spending will have an impact on capital markets one way or the other. The shape of that impact, though, will depend on the specifics of – and the success or failure of – of the policies chosen to address the changing needs of ageing societies. Developments in areas such as pension, insurance and labour market will have an important role to play. In particular, and given that ageing costs projections are largely influenced by public pension costs, there is an urgent need to rethink the retirement system.

The risk of longevity for capital markets has grown increasingly important in recent years. Mortality improvements around the world are putting more and more pressure on governments, pension funds and life insurance companies, as well as individuals. At the same time, the challenge for capital markets is to provide vehicles to hedge longevity risk effectively and transfer the risk from those unwilling or unable to manage it, to those willing to invest in it. Taking action now, such as facilitating social pensions, or linking pensions with other financial instruments, can help societies and individuals prepare.

B.19 The emergence of London as a global financial centre

The UK financial sector benefits not only from demand from a large domestic financial market, but also from the international market. As the largest global exporter of financial services, the UK recorded an average financial services trade surplus of €71 billion over the period 2014-18 (Figure 44). This is nearly the same as the combined surpluses of the next three leading countries (the US, Switzerland and Luxembourg), and twice as much as EU-27 exports of financial services.

Figure 44 Net exporters of financial services across the world (€ billion, average 2014-18)



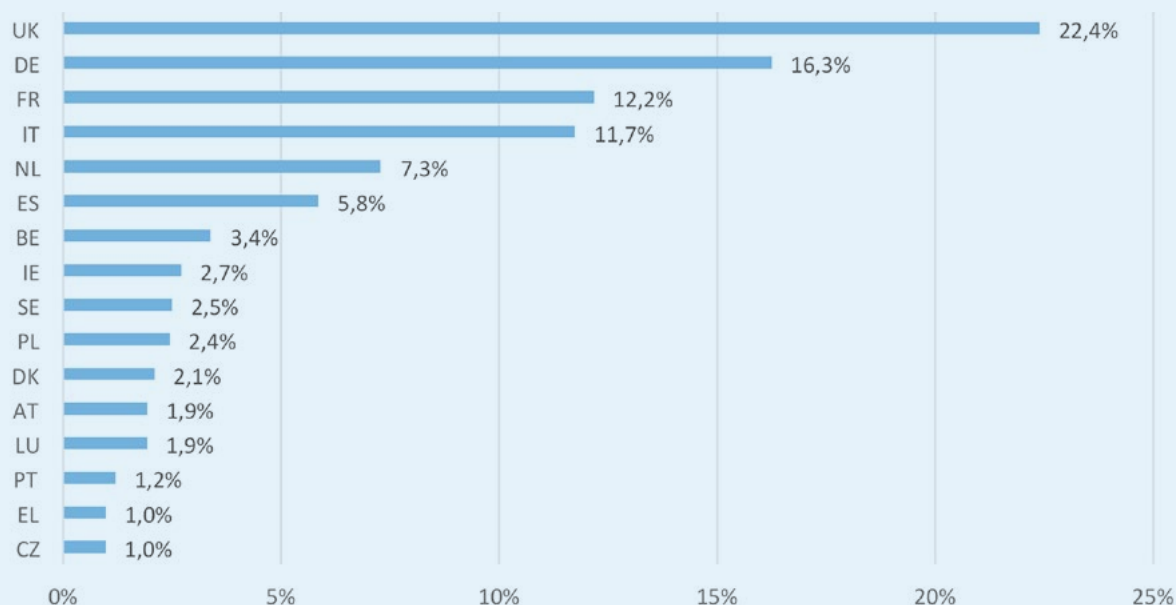
Notes: Net exports are calculated as the difference between exports and imports. Data refer to financial services and insurance and pension services. CH includes Switzerland and Liechtenstein, while CN refers to Hong Kong. Financial services cover financial intermediary and auxiliary services, except insurance and pension fund services. These services include those usually provided by banks and other financial corporations. Insurance and pension services include services providing life insurance and annuities, nonlife insurance, reinsurance, freight insurance, pensions, standardised guarantees, and auxiliary services to insurance, pension schemes, and standardised guarantee schemes. Source: UNCTAD Statistics.

The creation of the single market played an important role in this development, as it enabled UK firms to benefit from the passporting regime and provide services in other Member States. In 2018, the UK exported nearly €33 billion in financial services to the rest of EU (i.e. EU-27), while it received only €7 billion in imports of financial services.⁽⁴⁵⁾ This represents a factor of 4.7 more exports than imports. In comparison, exports of financial services from one EU country to another (intra-EU-27 exports) reached €109 billion, while imports amounted to €59 billion (a factor of 1.8).

Furthermore, the UK plays a major role in facilitating access to capital markets for EU corporates and households. The UK hosts the largest financial services sector in Europe, accounting for almost a quarter of the Gross Value Added (GVA) produced by European financial services (Figure 45). Much of this is owing to the activity of UK firms headquartered in other EU Member States and non-EU countries (PwC, 2018a).

(45) Approximately 60% of the exported €33 billion and the €7 billion imported financial services were made to and by three countries: France, Germany and the Netherlands.

Figure 45 Financial services GVA (% of total EU28 financial services GVA, average 2014-18)



Notes: Data refer to financial services, as well as insurance and pension services. Gross value added (GVA) is defined as output (at basic prices) minus intermediate consumption (at purchaser prices); it is the balancing item of the national accounts' production account.

Source: Eurostat.

However, for financial services to develop and flourish, they need to be, among other things,⁽⁴⁶⁾ complemented by financial infrastructures that will facilitate trading and exchange of information. These are necessary tools for companies and investors to operate and participate in capital markets. We can categorise such market infrastructures into: trading (exchanges), clearing (central counterparties or CCPs), and settlement (central securities depositories or CSDs). In addition, there are also a number of other services (e.g. legal, advisory, audit, and rating agencies) that are closely connected to the market for financial services.

Financial centres play a crucial role in a globalised and networked world, and almost every large economy has seen the emergence, to greater or lesser extent, of its own financial centre. Some of the key characteristics of a financial centre are: i) successful economy, ii) open and international outlook, iii) political/legal stability, iv) strong human capital base, v) sound regulatory and supervisory framework, and vi) well-developed infrastructure, such as transport, telecommunication, payment and securities settlement (Lannoo, 2007).

The dominance of London as a pre-eminent global financial centre, has sparked a great deal of scholarly work on what economic, political, legal and social forces contribute to the existence of financial centres (Cassis, 2006; Atack and Neal, 2009; Carlos and Neal, 2011). On the one hand, historians typically invoke arguments about network externalities that, once created by a diversity of trade and manufacturing opportunities, can sustain a financial centre long after trade or manufacturing activities have moved elsewhere (Spufford, 2006). On the other hand, economists elaborate on economies of scope and scale, such as the break-up of the Bretton Woods system in the 1970s (Kindleberger, 1974), and the consequences that persist to the present.

Financial services, and the financial sector in general, serve an economy in a number of ways. Developed capital markets contribute to the efficient allocation of funds and hence help the supply side of the economy, as well as offering effective payments services and a spectrum of choice to savers/investors.⁽⁴⁷⁾ In addition, the sector provides a significant amount of employment, both directly and in ancillary services, thereby makes a consistent and substantial positive contribution to the balance of payments and tax revenues.

(46) For example, sound macroeconomic policies, strong legal framework and institutional set (Laeven, 2014).

(47) However, not all these services need necessarily be provided domestically for the benefits to be realised.

There could also be disadvantages to hosting a major financial centre. Salaries and wages could be forced up, thus driving up rent and house prices, while regional disparities may be exacerbated. The economy may face risks from overdependence on a single sector, monetary policy can become complicated by the need to nurture the financial sector, and regulation becomes more complex than otherwise. It has been also argued that the financial sector merely preys on the rest of the economy (Tobin, 1984), adding to costs and distorting other markets.

In the 1990s, London's success as an international financial and commercial centre rested on the UK's continuing economic success, epitomised by the strength of sterling as the world's reserve currency.⁽⁴⁸⁾ Moreover, the UK was the largest trading nation, the dominant source of savings invested around the globe, and the provider of transport and communication services to the world economy. The City of London was the global hub for international commerce as well as international finance, and for some, the very centre of the world economy in the first era of globalisation (Smith, 1992; Sheppard, 2002).

However, by 2000, London's role had been totally transformed. It was no longer the largest trading nation or the source of funds for the world economy, nor the centre of international transport and communications. The British pound sterling had long been displaced by not only the US dollar, but also the Japanese yen and latterly the euro. Instead, the continuing success of London was based on its financial sector and a select group of highly specialised financial services, such as international bank lending, foreign exchange market, cross-border securities trading, Eurobond issues, and global fund management (Rajan and Zingales, 2003; Mollan and Michie, 2012).

London demonstrated that it could adapt and change over time. It transformed itself into something different from what it used to be, by its willingness to meet new demands and accept new participants, for example, and its ability to interact with the changing environment and accommodate new influences such as the regulatory power of state. Benefits were also derived from the formation of clusters and networks of firms connected by common products, technologies, markets or institutional frameworks (Doeringer and Terkla, 1996; Porter, 1998; Wilson and Popp, 2003). Such clusters can increase productivity, drive innovation and stimulate new business creation through the sharing of common services, access to pools of skills, and speed of dissemination of information and risk.⁽⁴⁹⁾

Other external factors, such as actions and restrictions applied in third countries, can also contribute to the dominance of a financial centre. One example was the US government applying the interest rate ceilings on bank deposits and controls on the operations of US banks and the New York Stock Exchange (NYSE).⁽⁵⁰⁾ As a result, this not only hampered the growth of New York as an international banking centre, but also encouraged US banks to locate their international operations elsewhere (Goldberg and Sanders, 1980; Gleeson, 1997; Battilossi and Cassis, 2002). London, which already had a critical mass of banks in place, was the main beneficiary (Dunning and Morgan, 1971).⁽⁵¹⁾

The US dollar quickly overtook sterling as the basis for London's international operations, and the entry point for firms and investors willing to access the euro markets (Dosoo and Gallant, 1992; Aldcroft and Oliver, 1998). With its concentration of international money and capital markets, London was ideally placed to profit from the collapse of the Bretton Woods system and the regime of fixed exchange rates that came to an end in 1973. This was even despite the fact that Britain had not participated in the formation of the European Economic Community (EEC) in 1957, only joining it in 1973.

(48) Prior to the First World War, commercial services were equally, if not more important as financial services. A network consisting of a dense grouping of merchants, commodity brokers, and markets, and served by an equally important collection of support services (e.g. shipping and marine insurance), the City was home to the largest cluster of commercial firms in the world (Diederiks and Reeder, 1996).

(49) They achieve this through shared access to labour, the support of specialist suppliers, the existence of complementary services, and an infrastructure designed to meet their needs, whether physical or regulatory (Porter, 1998).

(50) In the wake of the 1930s, and in order to promote a safe banking system, the US government imposed interest rate ceilings on bank deposits. The rationale was that if banks were not allowed to compete for deposits through interest rates, they would not be forced to invest in the high-yield, high-risk end of their portfolio opportunities. In other words, limiting what banks could pay to their depositors (i.e. eliminating interest rate competition), would limit the amount of yield they would need to earn and hence the amount of risk they would need to bear to be competitive (thus reducing the chances of repeating the 1930s banking crisis). However, as market rates increased in the 1970s, deposit rate ceilings had become more costly than they were worth, and consequently abandoned in 1980 (Rolnick, 1987).

(51) For rising US banks, London presented two major benefits of being the main hub for their presence in Europe: i) sharing the same lingua franca, and ii) having an effective and predictable financial legislative system (based on case law).

Further relaxation of government controls⁽⁵²⁾ and deregulation of financial markets in the 1980s facilitated new innovations.⁽⁵³⁾ Perhaps the most important is the ‘Big Bang’ of 1983, which brought a number of reforms and measures to the London Stock Exchange (LSE). For example, the longstanding practice of single capacity by allowing brokers and dealers to merge their functions was ended. This disintermediated access to the stock market, and commission costs fell markedly (Michie, 2001). Another innovation was allowing outside institutions to become members of LSE. This provoked mergers and acquisitions as banks sought to acquire brokerages in order to create universal banks.⁽⁵⁴⁾ As a result, market liquidity surged. Between 1988 and 2001, UK equity turnover on the LSE increased fivefold, while international equity turnover in the UK market increased 45-fold.

Further boosts to London’s attractiveness as a financial centre came with the creation of the single European market in 1993 and the introduction of the euro in 1999. The single market granted access to banks and financial firms in one member state to provide services and/or set up a branch in another, yet continue to be regulated by authorities at home (HM Treasury, 2016).⁽⁵⁵⁾ This forced many non-EU banks and other financial firms to set up regulated businesses in the UK to offer services across the whole EU without further authorisations, by simply using their passporting rights.⁽⁵⁶⁾ The resulting concentration of non-EU financial institutions in the UK, and the creation of a network of financial services providers in a single hub, attracted their EU counterparties to extend their operations in London (Kaya *et al.*, 2018).

The introduction of euro in 1999 provided a further spur to financial integration, as it partly reduced the importance of financial centres that specialised in the bilateral trading of local European currencies. The increase of international players based in London, as well as the location advantage with trading hours between Asia and the US, resulted in euro transactions being settled in London. London became the largest financial centre for euro-denominated trading (particularly for OTC derivatives), despite the UK not joining the single currency. Furthermore, gaining access to TARGET,⁽⁵⁷⁾ the eurozone’s payments system, further established the principle that institutions based in the single market, but not in the eurozone, should have equal rights to conduct transactions in the common currency.

(52) Such as the abolishment of exchange controls in 1979, which had been in place since 1939.

(53) There is a substantial literature that examines the impact of government policy and deregulation on the City of London (Michie and Williamson, 2009).

(54) Such as the Barclays’ subsidiary Barclays de Zoete Wedd (BZW), created in 1985 from the merger of Barclays international subsidiaries with the jobbing firm (i.e. market maker) Wedd Durlacher and the broking firm de Zoete & Bevan.

(55) Even though Member States agreed to common prudential and regulatory minimum standards, to prevent a race to the bottom, the impact was largely deregulatory. Countries with higher levels of regulation feared that they would lose financial activity to less regulated financial centres, and so they reduced restrictions on the trading of shares and securities, foreign direct investment in the financial sector, and bank mergers and acquisitions (CER, 2014).

(56) The passporting regime triggered a reduction of the presence of US banks in several EU countries, and their relocation to London. As a result, such a move intensified the positive externalities linked to concentration (e.g. deep labour market and level of expertise) and increased the attractiveness of London to other EU banks.

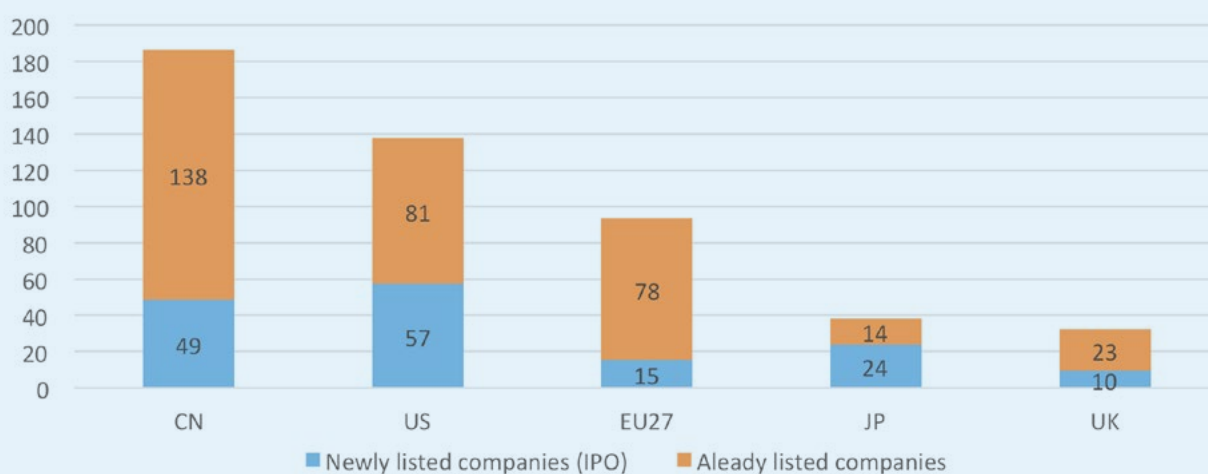
(57) The Trans-European Automated Real-time Gross settlement Express Transfer (TARGET) system, which began operation on 4 January 1999, ensures the free flow of cash, securities and collateral across Europe.

B.20 Primary and secondary equity markets

In the case of equity markets, the primary market for listed equity instruments provides a key source of long-term funding for firms, as it forms a bridge between savings and investments. The number of IPOs, which after the GFC and up until 2014 partially picked up (except for the EU-27 and China where there was a lot of instability), has since emerged differently across regions (Lannoo and Thomadakis, 2019). Between 2015 and 2018, the number of EU-27 IPOs increased by 29% (263 at end of 2018), but remained stable in the UK (119 at end of 2018). However, this increase is accompanied by a significant decrease in the investment flow, as the value of IPOs in EU-27 declined by 60% (from €34 billion in 2015 to €14 billion in 2018). The UK trend is similar, where IPOs' value dropped by 47% over the same period.⁽⁵⁸⁾

The composition of newly raised equity reveals that the majority of the equity inflow goes into already listed companies (Figure 46). However, the magnitude varies across regions. On average, only 16% and 18% of the total investment flows in EU-27 and China respectively are channelled to newly listed companies.⁽⁵⁹⁾ This is half the size of the investment that UK (32%) and US (36%) newly listed companies receive. But, also relative to GDP, the size of investment in EU-27 (0.1% of GDP) is four to five times lower than what their counterparties in other regions receive.

Figure 46 Equity flow into newly and already listed companies across regions (€ billion, end-2018)



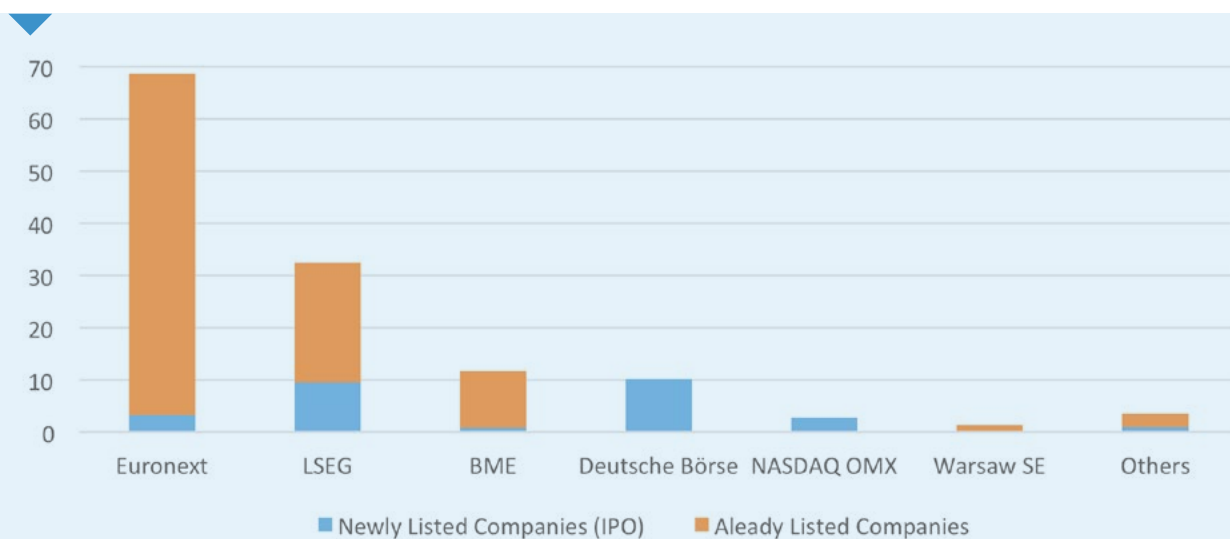
Source: 2019 ECMI Statistical Package.

At European level, and across countries, the market remains highly fragmented (Figure 47). Deutsche Borse and LSEG (a grouping of UK and Italian markets) are the largest markets for equity issued by newly listed companies with approximately €10 billion each. Euronext, however, which includes the Belgian, Dutch, French and Portuguese markets, is the largest for equity issued by already listed companies, with approximately €65 billion.

(58) The low deal volume and proceeds largely reflects the lack of investor appetite for IPOs in a volatile and uncertain market combined with the continued low value of the British pound.

(59) These numbers refer to the period 2014-18.

Figure 47 Equity flow into newly and already listed companies across exchanges (€ billion, end-2018)



Notes: Euronext includes Amsterdam, Brussels, Lisbon and Paris. LSEG includes both the UK (LSE) and Italian (Borsa Italiana) markets. NASDAQ OMX includes both the Nordics (Denmark, Finland and Sweden) and the Baltics (Estonia, Latvia and Lithuania) markets. Others include stock exchanges in Athens, Bulgaria, Ireland, Luxembourg, Malta, and Prague. No data available on already listed companies on Deutsche Börse and NASDAQ OMX.

Source: 2019 ECMI Statistical Package.

The ability to attract new funding via equity markets is also related to the market’s ability to increase the value of companies’ net worth. Even though market capitalisation has been on a growing path post-crisis, the gap between EU-27 and both the UK and the US is widening. Added to that, a quarter (26%) of Europe’s total capitalisation comes from the LSE, which is also the market with the highest number of listed companies (Table 2). However, when looking at the value of share trading in LSE, this is comparable to that of Deutsche Börse (at around €1.5 trillion).

Table 2 Comparative data on European Stock Markets (end-2018)

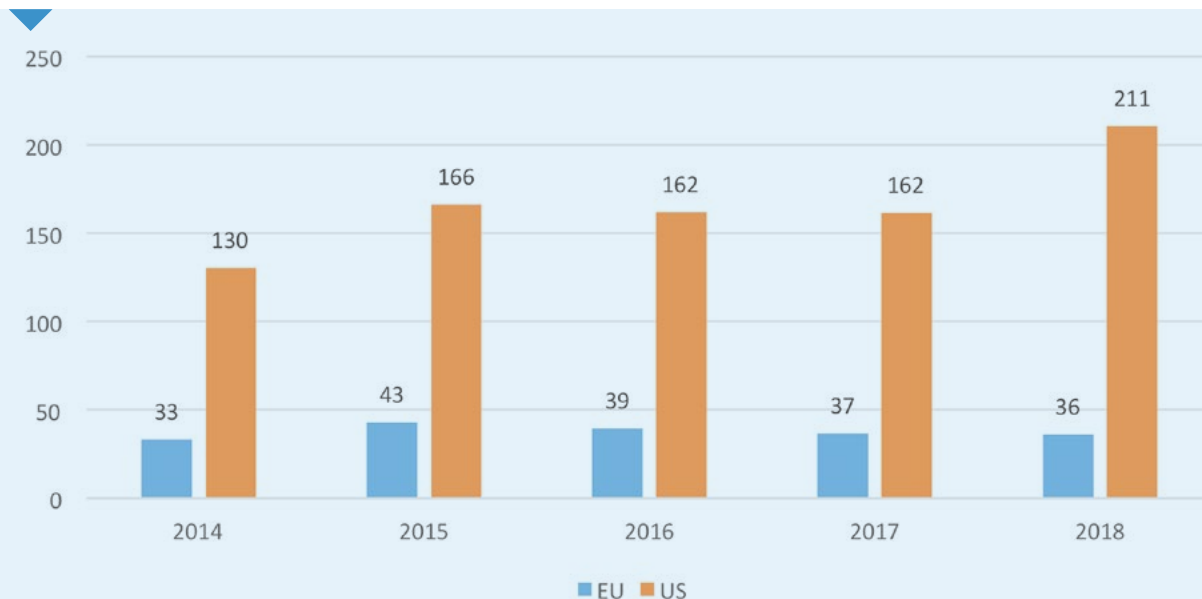
	Stock market capitalisation			Listed companies	Value of share trading
	€ billion	% GDP	% EU28	#	€ billion
LSE	2,636.2	110.1%	25.7%	2,122	1,525.5
Euronext Paris	2,067.1	87.8%	20.2%	696	1,163.4
Deutsche Börse	1,533.5	45.3%	15.0%	514	1,536.9
Euronext Amsterdam	838.5	108.3%	8.2%	133	565.8
BME	632.3	52.3%	6.2%	307	548.2
Nasdaq OMX Stockholm	579.4	124.1%	5.7%	333	437.5
Borsa Italiana	542.4	30.9%	5.3%	357	626.5
Nasdaq OMX Copenhagen	314.0	105.3%	3.1%	135	194.1
Euronext Brussels	280.5	62.3%	2.7%	145	122.7
Nasdaq OMX Helsinki	236.2	101.8%	2.3%	132	138.0
Warsaw SE	140.1	28.2%	1.4%	851	48.3
Wiener Börse	102.0	26.4%	1.0%	677	35.2
Irish SE	96.2	30.2%	0.9%	54	28.0
Euronext Lisbon	54.1	7.0%	0.5%	45	23.0
Luxembourg SE	43.2	73.4%	0.4%	162	0.1
Athens SE	33.5	26.4%	0.3%	187	10.8
Budapest SE	25.2	19.1%	0.2%	43	8.7
Prague SE	23.6	11.3%	0.2%	54	5.6
Bucharest SE	18.2	9.0%	0.2%	87	2.4
Zagreb SE	18.0	35.0%	0.2%	127	0.2
Bulgarian SE	13.7	32.9%	0.1%	274	0.2
Ljubljana SE	6.3	13.9%	0.1%	31	0.3
Malta SE	4.4	35.8%	0.0%	25	0.1
Nasdaq OMX Vilnius	3.3	7.4%	0.0%	28	0.1
Cyprus SE	2.9	14.0%	0.0%	102	0.0
Nasdaq OMX Tallinn	2.6	10.0%	0.0%	17	0.2
Bratislava SE	2.5	2.8%	0.0%	na	0.0
Nasdaq OMX Riga	0.7	2.5%	0.0%	20	0.0
EU28	10,250.8	64.5%	100%	7,658	7,021.8
US (NYSE & Nasdaq)	25,771.6	162.7%		5,343	30,593.3
CN	8,589.4	90.4%		5,899	13,442.8
JP	6,255.5	149.3%		3,657	5,141.5
SIX Swiss Exchange	1,254.7	210.1%		270	816.8

Notes: US includes NYSE and Nasdaq. China includes Hong Kong, Shanghai, and Shenzhen.

Source: 2019 ECMI Statistical Package.

Despite the fact that the value of share trading in EU-27 went up by 12% since 2014, the secondary markets activity is still much lower than the growth rate observed in London (28%) and the US (45%).⁽⁶⁰⁾ Similarly, turnover is slowly recovering, but the gap between Europe and the US is not shrinking (Figure 48). In 2014, US secondary market activities were roughly four times greater in scale than those of European markets. By the end of 2018, the US average daily traded value was six times higher than Europe's. Greater liquidity supports corporations with cheap funding, while providing an easy exit for private equity and venture capital investments (Valiante, 2016).

Figure 48 Average daily notional value traded in European and US exchanges (€ billion, 2014-18)



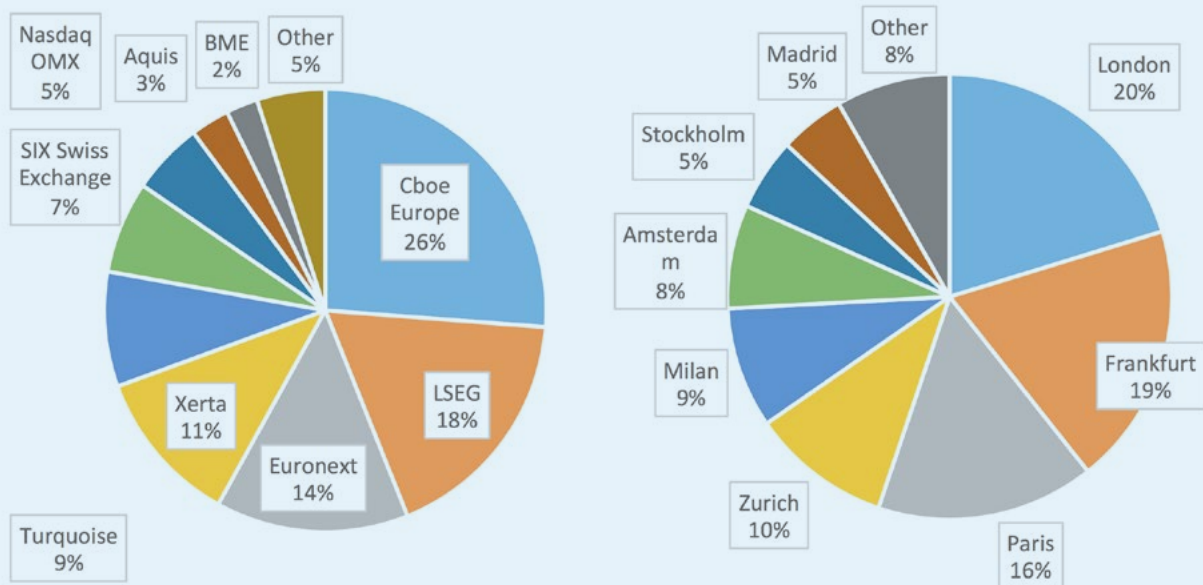
Notes: Notional value, which is also referred to as 'value traded', is calculated by multiplying the execution price of each transaction by the total number of shares executed in each transaction. EU includes: Cboe Europe, Euronext, LSEG (LSE in London and Borsa Italiana in Italy), Xetra, Turquoise, Nasdaq OMX, Aquis, Bolsa de Madrid, Liquidnet, ITG Posit, UBS MTF, Oslo, Equiduct, Instinet Blockmatch, Wiener Börse, and SIGMA X MTF. US includes: NYSE, Nasdaq, Cboe US, and IEX.
Source: Cboe Global Markets.

In recent years, technology and regulation have rapidly transformed the landscape of equity trading in Europe (Valiante and Lannoo, 2011). On the one hand, the introduction of new technologies has led trading venues to cater for automated trading and investment firms to invest in algorithmic trading and high-frequency trading (HFT) technologies. On the other hand, the Markets in Financial Instruments Directive (MiFID) unleashed competition between trading venues by abolishing concentration rules and allowing alternative trading venues. As a result, a growing share of equities trading has been moving away from traditional national stock exchanges to other venues (i.e. pan-European trading platforms).

At the end of 2018, Cboe Europe, a pan-European trading venue operating in 15 countries, accounted for 26% of the average daily turnover at European exchanges (Figure 49, left-hand side). LSEG (LSE and Borsa Italiana) accounts for another 18%, but when including Turquoise – a multilateral trading facility (MTF) owned by LSEG and accessing 13 European countries – its share goes up to 27%. As for the venue in which trading activity takes place, London and Frankfurt account for approximately a quarter of the total European value traded, while Paris totals 16%.

⁽⁶⁰⁾ This slow growth pace can be attributed to the fact that European markets are still recovering from the crisis and its effects. However, it may also be due to other various factors such as uncertainties stemming from Brexit negotiations, an impending end to easy monetary policy, economic turmoil in some markets, fluctuating oil prices, and other geopolitical tensions within and outside the continent.

Figure 49 Average daily notional value traded of European exchanges by venue (lhs) and location (rhs) (% of total, end-2018)



Notes: Notional value, which is also referred to as 'value traded', is calculated by multiplying the execution price of each transaction by the total number of shares executed in each transaction. On-order book data (including dark trading). LSEG includes the LSE in London and Borsa Italiana in Italy. Other, in the left-hand side panel, includes: UBS MTF, ITG Posit, Oslo, Liquidnet, Equiduct, Instinet Blockmatch, Wiener Börse, and SIGMA X MTF. Other, in the right-hand side panel, includes: Copenhagen, Brussels, Helsinki, Oslo, Vienna, Lisbon, and Dublin.

Source: Cboe Global Markets.

B.21 Primary and secondary bond markets

Since the onset of the financial and Eurozone crisis, there has been a significant drop off of European primary market issuance of debt securities (Figure 50). From the 2009 peak of almost €18 trillion, gross debt issuance has dropped below €12 trillion (down by 34%). This is mainly due to bank balance sheet delevering, as well as limited access to the market. Moreover, the sustained volatility in European markets had pushed issuers to the US dollar market to fulfill their funding needs (BlackRock, 2012).⁽⁶¹⁾

Figure 50 Gross issuance of European debt securities (€ trillion, 2007-18)

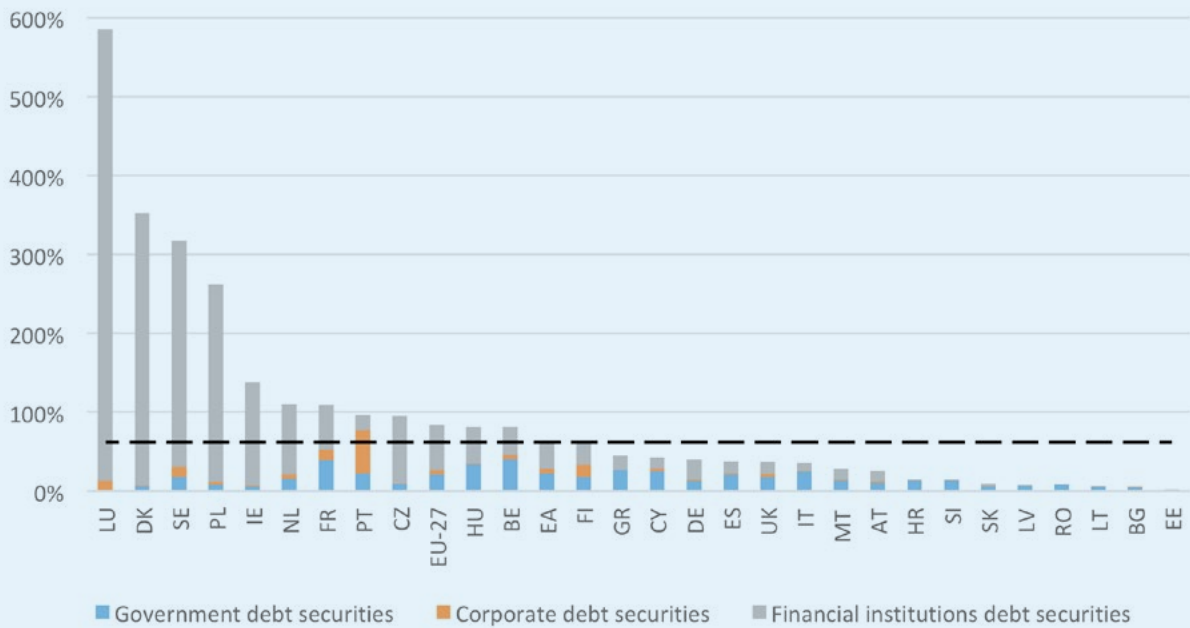


Source: 2019 ECMI Statistical Package.

Issuance by non-euro area countries has increased over the last years, as the euro area goes through a restructuring phase of its banks and government debts. Issuance by euro area countries represented 40% of the total European gross issuance in 2018 (compared to 13% in 2008). Moreover, gross issuance over GDP shows a major ongoing issuance by financial institutions in Luxembourg, Denmark, Sweden, Poland and Ireland (Figure 51). However, Portuguese corporations issue more debt (55% of GDP) to other European countries.

(61) Access to the euro primary market during and after the sovereign crisis was much more difficult over limited periods of time, as the market could suddenly and temporarily close for high-yield issuers and a substantial part of the investment grade sector (EC, 2017d).

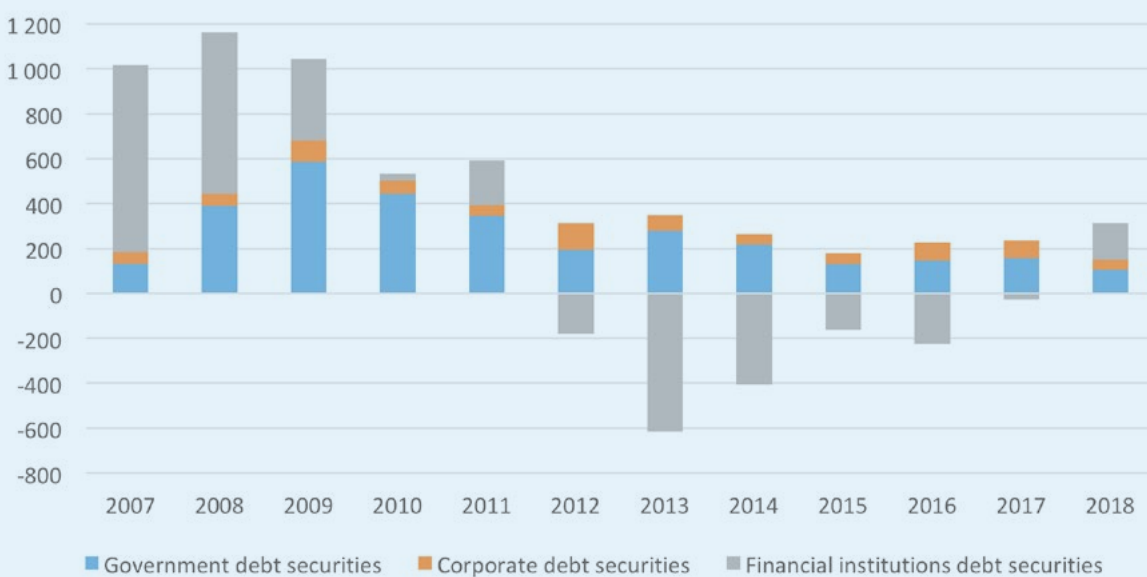
Figure 51 Gross issuance of European debt securities, by country (% GDP, average 2014-18)



Source: 2019 ECMI Statistical Package.

Looking at the net issuance, and following the reduction in financial institutions' debt exposure observed since 2012, total net issuance has been increased to €314 billion in 2018 (Figure 52). At national level, the adjustment in debt exposure has been completed for most of the countries, even in those which were facing financial difficulties, for example Greece, Italy, Portugal and Spain (Figure 53).

Figure 52 Net issuance of euro area debt securities (€ billion, 2007-18)



Source: 2019 ECMI Statistical Package.

With issuance usually taking place via dealer banks, which place securities with financial intermediaries or asset management companies, access for other types of investors (i.e. retail) remains limited. However, there is a growing interest in expanding the distribution channel. In some countries (e.g. Italy), governments frequently issue debt that is placed directly with retail investors via local trading platforms, or banks (particularly in Spain and Italy) sell fixed income securities, including corporate bonds, directly to their retail clients (EC, 2017b).⁽⁶²⁾

Figure 53 Net issuance of debt securities, by country (% GDP, end-2018)



Notes: For Luxembourg, data on financial institutions' issuance is not included for illustrative purposes (this is at 96% of local GDP). Similarly, for Cyprus, data on the issuance of government debt securities are not included for illustrative purposes (this is at 33% of local GDP).
Source: 2019 ECMI Statistical Package.

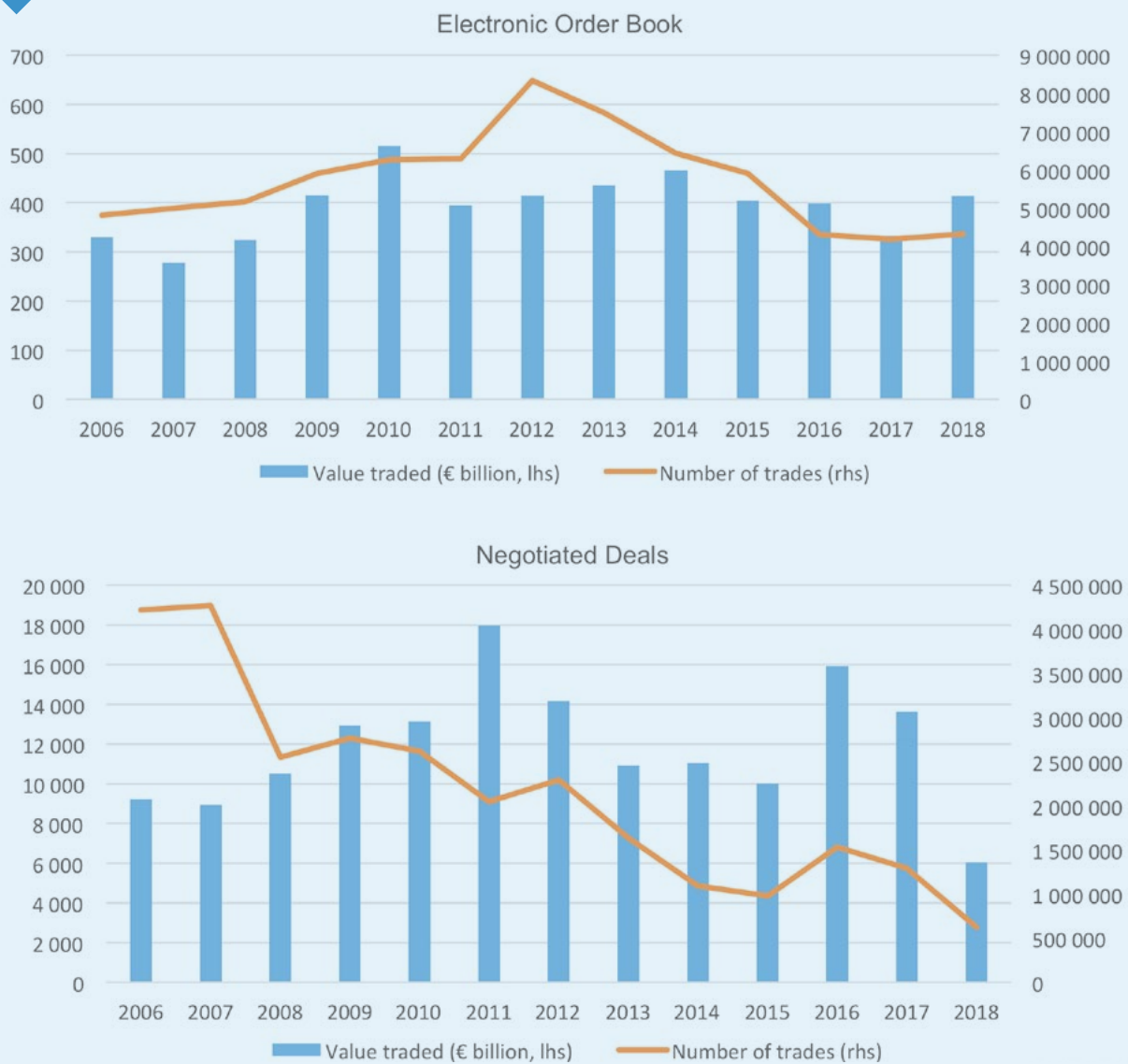
An active secondary trading activity is crucial in order to build up a significant amount of debt, that will open an alternative option for financing companies and projects, as well as attract investors. Bonds are mainly traded in two ways: via an open limit electronic order book (EOB), or bilaterally.⁽⁶³⁾ Aggregate data on both EOB and negotiated deals (OTC) that take place either through electronic platforms or voice systems, are provided by the exchanges.⁽⁶⁴⁾

Activity in open electronic order book is high in terms of trades (4.3 million trades in 2018), but relatively low in terms of turnover (around €414 billion in 2018) (Figure 54). At the same time, while the market for negotiated deals (OTC) is much smaller in terms of trades (625,000 trades in 2018), it is a lot bigger in terms of size (€6 trillion in 2018). As a result, the average size of an OTC transaction in 2018 was €9.7 million, and the average size of a trade in an EOB environment was €96 thousand. It is evident that the EOB market is typically a market for retail and small professional investors, while the collapse in the number of negotiated deals (down by 85% compared to 2006) indicates that wholesale participants operate much more frequently on alternative electronic platforms.

(63) Trades through an electronic order book (EOB) are placed by trading members and are usually exposed to all market users. They are automatically matched according to precise rules set up by the exchange, generally on a price/time priority basis. Trades carried out through negotiated deals, however, are confirmed through a system managed (directly or indirectly) by the exchange, where both seller and buyer agree on the transaction (price and quantity). This system checks automatically if the transaction is compliant with the exchange's rules, and in most cases if there is consistency with the EOB price.

(64) A survey analysis found that 81% of investment grade corporate bonds are traded by voice (Lee and Wang, 2018), while all-to-all platforms (limit order books) amount to only 5% of trading in corporate bonds (BIS, 2016a).

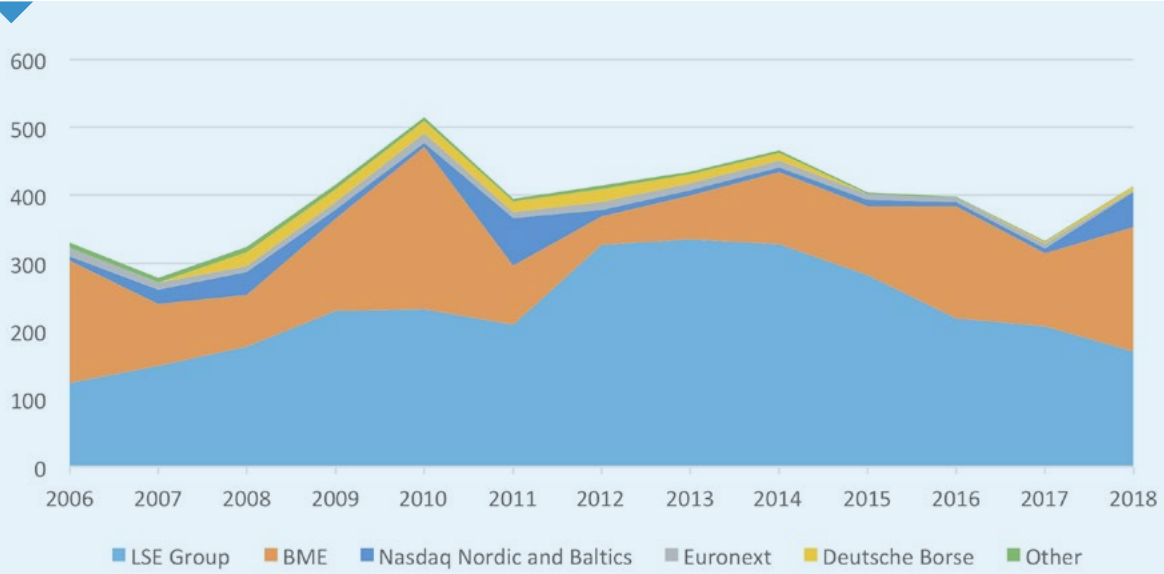
Figure 54 Electronic Order Book versus Negotiated Deals, value traded and number of trades (€ billion, 2006-18)



Source: WFE.

Nonetheless, the EOB markets (as well as the OTC) are very fragmented along national lines and dominated mainly by LSEG and BME, which collectively account for 85% (41% and 44%, respectively) of the total European EOB activity at the end of 2018 (Figure 55).

Figure 55 Electronic Order Book value traded, by exchange (€ billion, 2006-18)



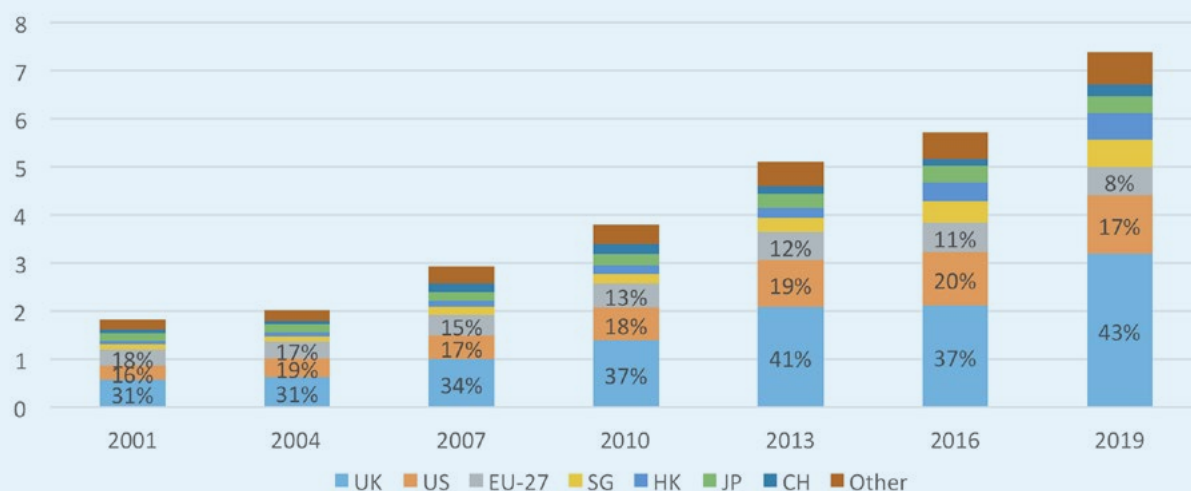
Notes: LSE Group includes: Borsa Italiana and London Stock Exchange. Nasdaq Nordic and Baltics include: Copenhagen, Helsinki, Stockholm, Riga, Tallinn and Vilnius. Euronext includes: Amsterdam, Brussels, Dublin, Lisbon and Paris. Other includes: Ljubljana SE, CEESG – Vienna, Cyprus SE, Luxemborg SE, Budapest SE, Malta SE, Waesaw SE, and Athens SE.
Source: WFE.

B.22 Foreign exchange

The foreign exchange (FX) market is one of the largest markets in the world as measured by the volume of transactions, with an average daily turnover of €7.4 trillion in April 2019, up by 152% compared to 2007 (Figure 56). Since the late 1980s, the market has undergone a dramatic transformation because of the availability of cheap and efficient information and communication technology, as well as the growth of electronic broking and trading (Eichengreen *et al.*, 2016). Technology has also economically important implications for the distribution of FX transactions across financial services, by leading to a greater concentration of transactions in a handful of major financial centres, such as London, New York and Singapore.

London's convenient time zone and its grip on FX trading infrastructure (and personnel), meant it became a global player and a European hub for trading – both in terms of the size and diversity of its markets. In 2019, sales desks located in London intermediated €3.2 trillion in daily average turnover, or 43% of the global FX trading activity (Figure 56). Compared to 2016, UK turnover rose by 51%, while in the US it rose by just 9%. In Europe, trading activity declined by 3% to €600 billion in 2019. This represents approximately 19% of the daily FX activity that took place in the UK. Furthermore, the European (EU 27) market is highly fragmented, with 44% of the turnover facilitated by two countries (France and Germany).

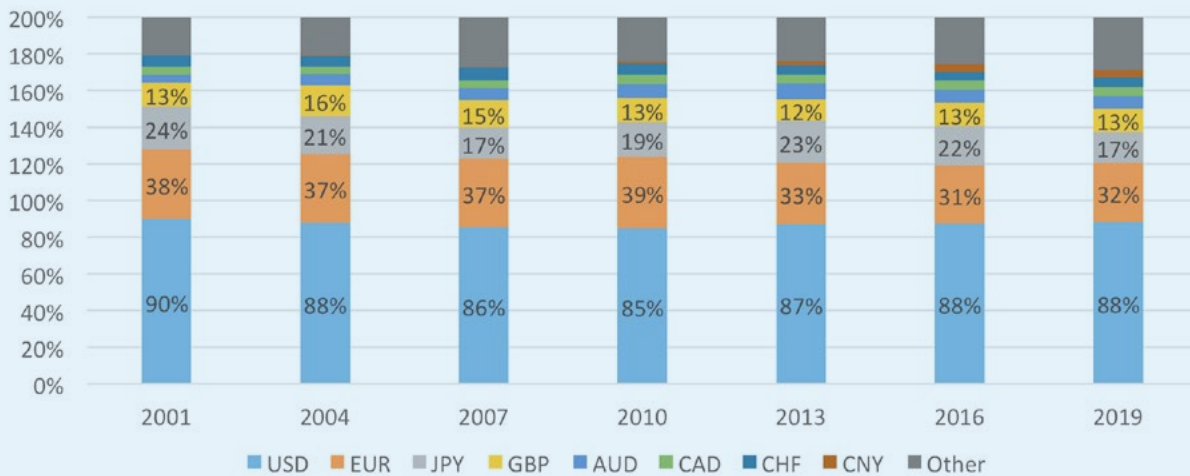
Figure 56 Geographical distribution of global foreign exchange market turnover (€ trillion and as % of global turnover, 2001-19)



Notes: Net turnover (net-gross basis), April 2001-19 daily averages. Adjusted for local inter-dealer double counting. EU-27 includes: AT, BE, BG, CZ, DK, EE, FI, FR, DE, EL, HU, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE.
Source: BIS Triennial Central Bank Survey.

The dominance of the US dollar as a vehicle currency has been sustained over the past years (Figure 57). FX deals with USD on one side of the transaction represented 88% of all deals initiated in 2019, about three percentage points higher than in 2010. But while the euro had a share of 32% of all FX transactions in 2019, its international role has shrunk by seven percentage points since the beginning of the euro area sovereign debt crisis in 2010.

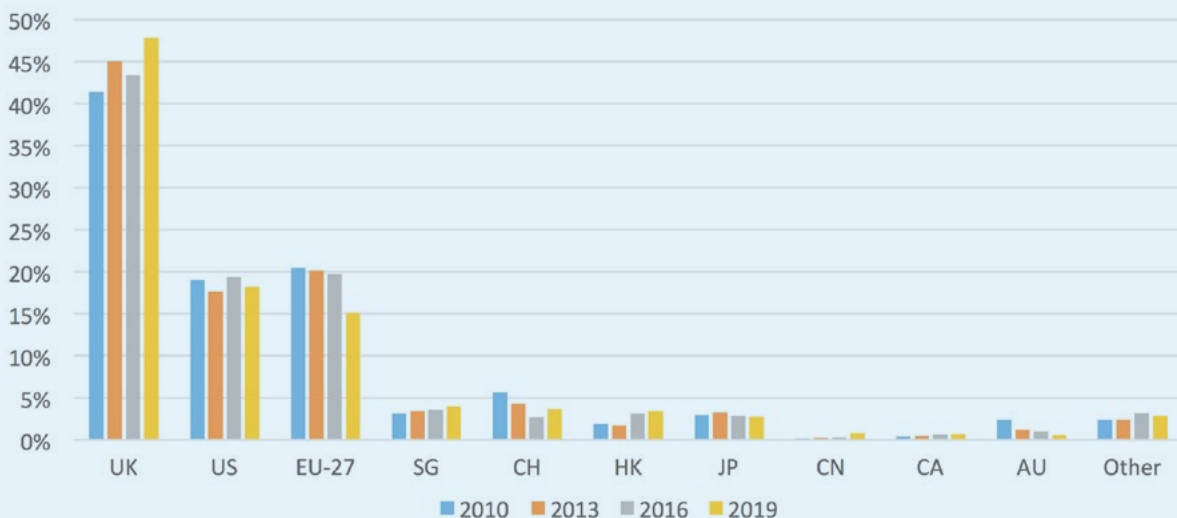
Figure 57 Share of foreign exchange market turnover by currency (2001-19)



Notes: Net-net basis, April 2001-19 daily averages. Adjusted for local and cross-border double counting. As two currencies are involved in each transaction, the sum of shares in individual currencies will total 200%.
Source: BIS Triennial Central Bank Survey.

Despite the decline in the euro’s share at the global FX market, its turnover increased by 63% between 2010 and 2019 (from €1.2 trillion to €1.9 trillion). However, much of this development is due to London’s turnover in euro transactions, which rose by 86% over the same period (from €616 billion in 2010 to €1.1 trillion in 2019). As a result, in 2019 48% of the euro FX trading took place in London, and only 15% was concentrated in EU-27 (Figure 58). Moreover, London is also the preferred location for USD FX trading, as it holds 44% of the global USD turnover.

Figure 58 Share of the Euro foreign exchange market turnover by country (2010-19)



Notes: Net turnover (net-gross basis), April 2010-19 daily averages. Adjusted for local interdealer double counting. EU-27 includes: AT, BE, BG, CZ, DK, EE, FI, FR, DE, EL, HU, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE.
Source: BIS Triennial Central Bank Survey.

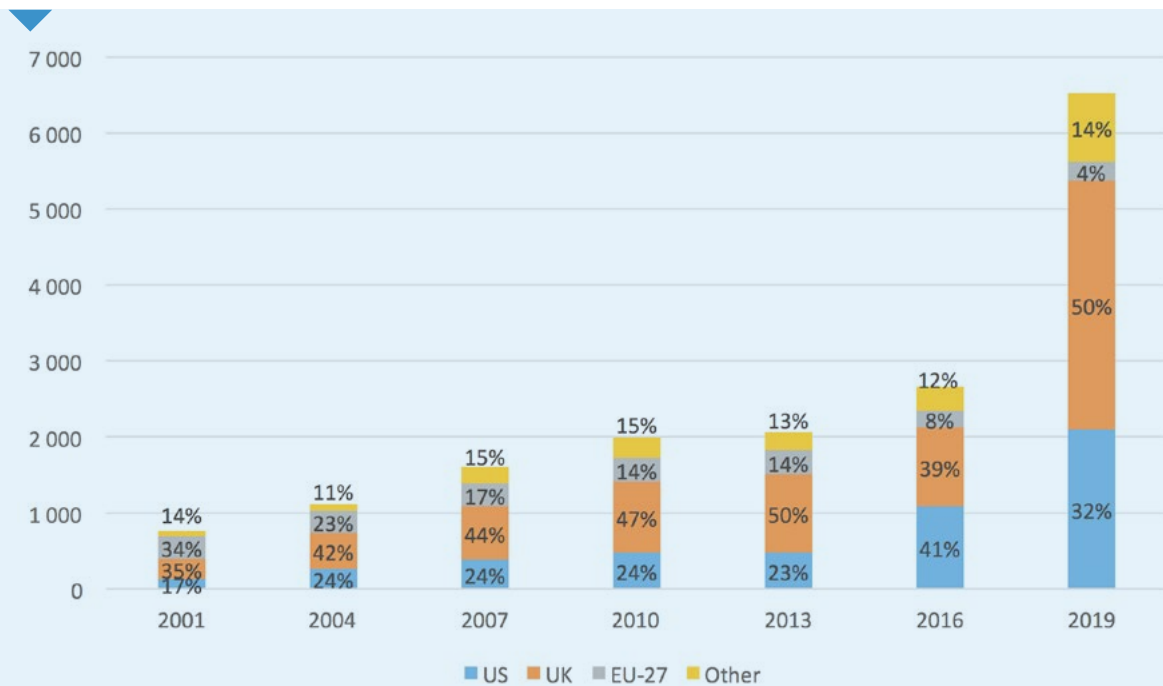
Concerns have been raised over whether Brexit could lead to the relocation of foreign exchange trading in euros (and perhaps other currencies) away from the City of London to a financial centre on the continent or elsewhere (Faulconbridge, 2015). However, London is by far the world’s dominant FX dealing centre, and the one that buys and sells more than three times as many euros as the whole 27 Member States, and more dollars than the US. Besides, FX trading in London is settled through Continuous Linked Settlement (CLS),⁽⁶⁵⁾ which is not dependent on London’s access to Target2, the ECB’s settlement system, if the access to Target2 is disrupted after Brexit (Schoenmaker, 2017).

B.23 Derivative markets

Following the global financial crisis, regulators requested a large share of the OTC derivatives markets to be cleared centrally. The main beneficiary of this resolve was London, not only because most OTC business is traded by banks based there, but also because derivatives contracts are underpinned by English commercial law, which is generally preferred to standards on the continent.⁽⁶⁶⁾ On top of that, over the years London has created and developed a local ecosystem of infrastructures and actors. Activities such as trade execution, trade capture, trade enrichment and validation, trade confirmation, settlement, collateral management, as well as IT companies and infrastructures in the very basic sense (e.g. fibre optic cables), all contributed to the role of the UK in tpday's global OTC market.

London is not only the epicentre of European trading in OTC interest rate derivatives (IRD) – accounting for 93% of the EU-28 market in 2019 in terms of daily average turnover – but also globally (Figure 59). In 2019 the global share of OTC IRD traded in the UK was 50%, compared to 39% in 2016. At the same time, while the US accounted for 41% on average of the global market in April 2016, it reached 32% three years later. While in absolute terms the EU-27 daily average turnover increased to €250 billion in 2019, its share at the global market further decreased to 4%. Moreover, French sales desks recorded around 43% of that turnover.

Figure 59 Daily average turnover of OTC IRD by region (€ billion and as % of global turnover, 2001-19)

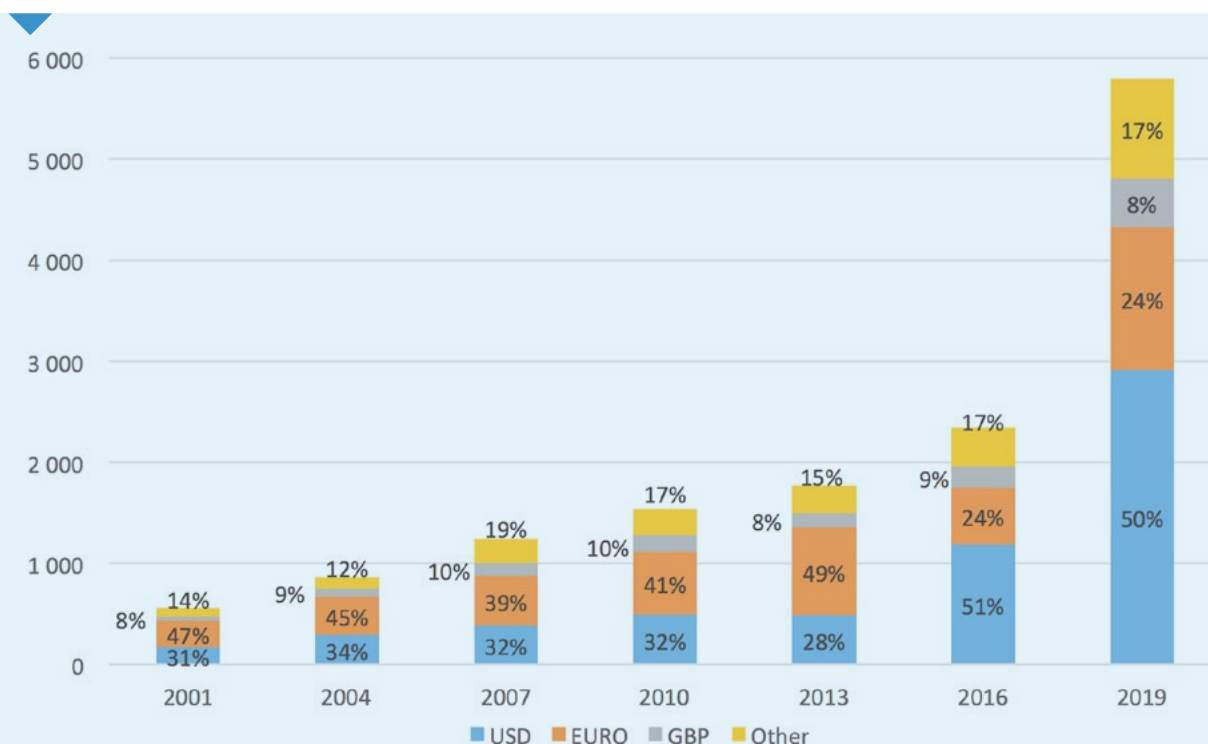


Notes: Net turnover (net-gross basis), April 2001-19 daily averages. Adjusted for local inter-dealer double counting. EU-27 includes: AT, BE, BG, CZ, DK, EE, FI, FR, DE, EL, HU, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE.

Source: BIS Triennial Central Bank Survey.

While euro-denominated contracts have historically been the most actively traded segment of global turnover, over the past years US dollar-denominated contracts overtook euro instruments to become the most actively traded OTC IRD (Figure 60). Several reasons contributed to this development, such as regulatory reforms in the derivatives market aiming to increase transparency and financial stability, the low interest rates environment, and the market infrastructure in the US, which is more beneficial to IRD growth (Thomadakis, 2018).⁽⁶⁸⁾

Figure 60 Daily average turnover of OTC IRD by currency (€ billion and as % of global turnover, 2001-19)



Notes: Net turnover (net-net basis), April 2001-19 daily averages. Adjusted for local and cross-border interdealer double counting.
Source: BIS Triennial Central Bank Survey.

Despite a drop observed in the average daily turnover of euro-denominated OTC IRD between 2013 and 2016, turnover rebounded and reached an all-time high of €1.6 trillion in 2019. The UK continues to be the leader regarding this type of derivatives contracts, accounting for 90% of the global market in 2019 (Figure 61). On continental Europe, France – the largest trading centre – saw turnover decrease by 12% to €78 billion. This resulted in a marked fall in its share in euro-denominated IRD, to 5% from 13% in 2016.

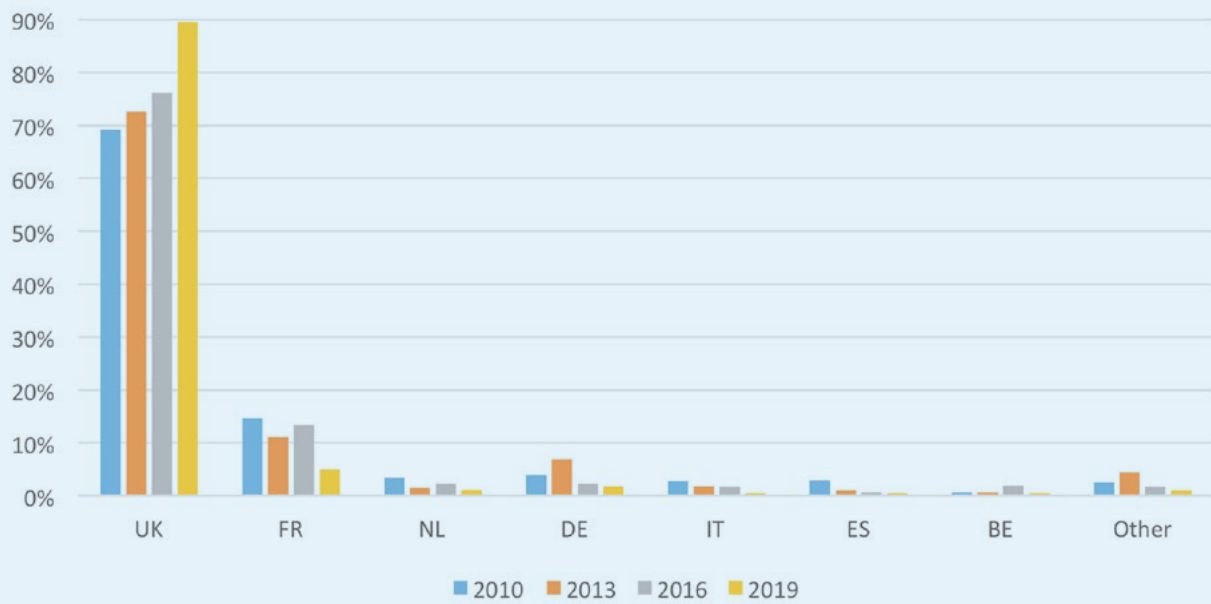
(65) CLS, which started operations in September 2002, is a global multi-currency settlement system. It has introduced payment-versus-payment in real time to address settlement risks arising from FX transactions in a number of major currencies (Schaller, 2008; BIS, 2008).

(66) OTC interest rate derivatives were cleared in London long before the financial crisis.

(67) Many factors can explain these opposing trends, such as the decision of some jurisdictions to force local counterparties to keep trades domestic (e.g. Japan), the negative interest rates in Europe as a result of the ECB's monetary policy, and the market infrastructure in the US, which is much more beneficial to IRD growth.

(68) The increased trading in US dollar-denominated instruments was also driven by increased activity in overnight index swaps (OIS). Because of the short maturity of these products, any increase in outstanding amounts is accompanied by a pronounced increase in turnover. For euro-denominated instruments, however, the decline in turnover was due to a decline in both OIS and interest rate swaps (IRS). Furthermore, and because the OIS market is linked to policy rates, the increased hedging and speculative demand in anticipation of rate rises had also contributed to the rise in US-denominated instruments activity (BIS, 2016b; BIS, 2016c). In contrast, and as market participants did not expect rate changes to occur in Europe, notional amounts outstanding of both short- and long-maturity euro-denominated contracts declined.

Figure 61 Share of euro-denominated OTC IRD by country (% of European turnover, 2010-19)



Notes: Net turnover (net-gross basis), April 2010-19 daily averages. Adjusted for local inter-dealer double counting. Other includes: AT, CZ, DK, EE, FI, EL, HU, IE, LT, LU, PL, PT, RO, SK, SE.

Source: BIS Triennial Central Bank Survey.

B.24 Clearing and settlement

Once a trade is executed in an exchange or an OTC market, there are two important stages to be followed to achieve an effective transfer of value (securities versus payment) between the counterparties. The first one is trade clearance, which refers to the procedures necessary to determine the obligations of direct market participants (broker/dealers, etc.) to deliver securities and funds following trade execution. Such procedures include: trade capture, matching, confirmation, comparison, affirmation, as well as the calculation of settlement obligations. Finally, the second stage is settlement, which involves the discharge of settlement obligations through the final transfer of securities from the seller to the buyer, and the final transfer of funds from the buyer to the seller.

Clearing is the process of replacing a bilateral trade between the buyer and the seller with two separate transactions between each of the two parties and a single participant – known as a clearing house or central clearing counterparty (CCP). This substitution is called novation, and refers to the splitting of the buyer-seller trade into two trades: buyer-CCP and seller-CCP.⁽⁶⁹⁾ By doing this, novation allows both the buyer and the seller to replace their initial counterparty risk with a risk on the CCP.⁽⁷⁰⁾ In other words, novation nets the exposure of a market participant with all of its counterparties (since all these exposures transit through a CCP), thus reducing the overall risk exposure amounts in the financial system.⁽⁷¹⁾

The offsetting of matched positions that a CCP performs is characterised both by economies of scale (i.e. the marginal costs of clearing is close to zero) and by network effects (i.e. the greater the number of participants in a CCP, the more efficient it is). Thus, there is natural tendency towards large-scale concentration. For example, in terms of number of participants, at the end of 2018 the UK – hosting three CCPs: LCH.Clearnet Ltd (owned by the LSE Group), ICE Clear Europe (owned by ICE Group) and LME Clear Ltd – accounted for 28% of the total European participants (1,039). The German EUREX Clearing and the French LCH Clearnet SA followed with 209 and 125 participants (Table 3). Furthermore, 42% of the participants authorised to clear trades are with a CCP located in a non-euro area country.

Table 3 Number of participants in CCPs

Name of CCP		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EA	EUREX Clearing (DE)	109	117	128	149	163	175	183	186	195	190	209
	Hellenic Exchanges Holdings (EL)	34	32	33	35	26	22	27	25	24	19	19
	BME Clearing (ES)	57	52	52	51	44	57	58	60	65	65	64
	LCH.Clearnet SA (FR)	106	103	103	114	114	109	110	110	100	99	125
	CC&G (IT)	75	70	71	71	76	83	81	82	87	86	84
	European Central Counterparty (NL)	57	58	51	49	48	45	48	45	43	44	42
	ICE Clear Netherlands (NL)	-	-	-	-	-	-	2	3	4	-	-
	CCP (AT)	76	75	78	73	71	67	57	53	50	49	51
	OMIClear (PT)	-	-	-	-	-	-	-	-	14	14	13
	Total EA	514	507	516	542	542	558	566	564	582	566	607

(69) CCPs effectively guarantee the obligations agreed between the two counterparties.

(70) If one party fails, the CCP has dedicated resources available to pay any outstanding obligations to the other counterparty.

(71) CCPs have become much more important in recent years, particularly as a result of regulatory reform following the global financial crisis and are considered by regulators as crucial firewalls to prevent contagion in the event of future crises.

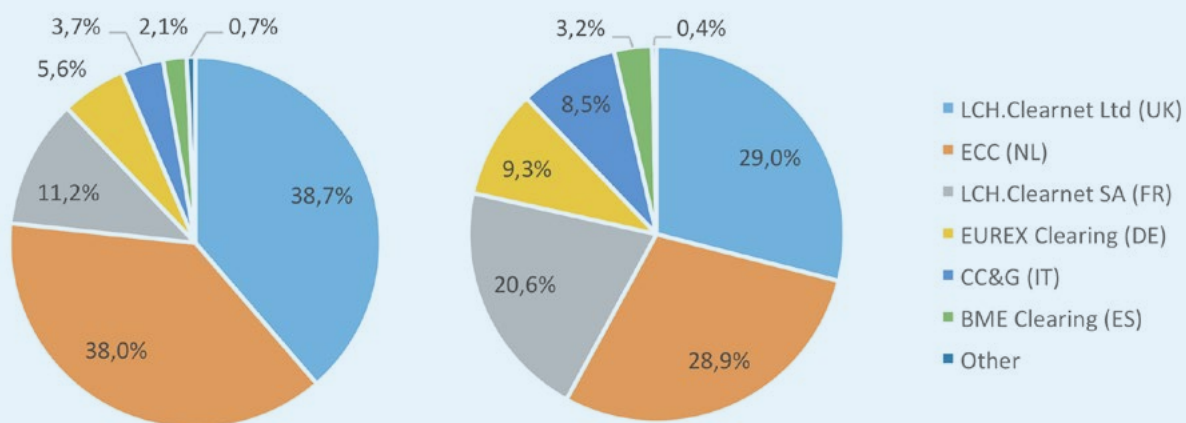
Name of CCP		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
NON-EA	KELER CCP (HU)	32	32	33	31	30	31	29	25	21	21	21
	KDPW_CCP (PL)	-	-	-	20	40	38	38	39	38	37	35
	Nasdaq OMX DM (SE)	50	82	87	89	89	93	97	92	92	88	88
	LCH.Clearnet Ltd (UK)	111	118	148	159	171	165	161	154	158	157	161
	ICE Clear Europe (UK)	-	47	50	55	69	81	80	73	78	80	81
	CME CE(UK)	-	-	-	-	-	-	-	19	17	-	-
	LME Clear (UK)	-	-	-	-	-	-	42	42	44	46	46
	Total non-EA	193	279	318	354	399	408	447	444	448	429	432

Notes: The number of clearing members refers to the last day of the year. As of May 2017, the ICE Clear Netherlands is no longer providing clearing services for the Dutch market. KDPW-CCP was created on 1 July 2011. CME Clearing Europe (CME CE) received authorisation as a CCP under the European Market Infrastructure Regulation (EMIR) on 4 August 2014 and was closed on 12 October 2017. LME Clear became operational on 22 September 2014.

Source: European Central Bank.

Looking at the number of securities transactions submitted and cleared through a CCP, LCH is the largest European clearing house, with approximately 1.7 billion transactions taking place in 2018, followed by the European Central Counterparty (ECC) based in the Netherlands (Figure 62, left-hand side). The picture does not change when examining the value of the transactions cleared through CCPs (Figure 62, right-hand side). LCH.Clearnet and ECC account for 29% each (approximately €10.1 trillion) of the total European value.

Figure 62 Right-hand side). LCH.Clearnet and ECC account for 29% each (approximately €10.1 trillion) of the total European value.



Notes: Numbers refer to cash (outright) securities transactions cleared for different types of instruments (e.g. debt securities, equities, commodities, derivatives, repos, other securities) and payment (e.g. euro and other currencies). Other includes: Hellenic Exchanges Holdings (EL), CCP (AT), KELER CCP (HU), KDPW_CCP (PL), and ICE Clear Europe (UK).

Source: European Central Bank.

London tops the list of locations in which securities transactions are cleared, both in terms of number of transactions and volume (Table 4). At the end of 2018, 76% of all European transactions submitted have been cleared in London, either by a London-based CCP (LCH.Clearnet) or by a CCP located in the euro area (EuroCCP located in the Netherlands).⁽⁷²⁾ Similarly, London accounts for 58% of the total value of transactions cleared in Europe.

(72) Indeed, from the 3.2 billion transactions cleared in London in 2018, 52% were through LCH.Clearnet Ltd and 48% through EuroCCP.

Table 4 Geographical distribution of cash (outright) securities transactions cleared (% of European total)

	Number			Volume		
	2016	2017	2018	2016	2017	2018
United Kingdom	69.6%	67.1%	76.2%	46.1%	58.8%	58.0%
France	7.7%	8.0%	7.0%	8.8%	7.1%	8.7%
Germany	6.2%	6.7%	5.8%	11.1%	8.3%	9.5%
Italy	4.5%	4.2%	3.8%	21.6%	14.4%	15.2%
Netherlands	3.3%	3.8%	3.3%	3.6%	3.1%	3.6%
Spain	1.8%	2.7%	2.1%	2.7%	3.5%	3.3%
Other	6.8%	7.5%	1.8%	6.2%	4.7%	1.8%

Notes: Numbers refer to cash (outright) securities transactions cleared for different types of instruments (e.g. debt securities, equities, commodities, derivatives, repos, other securities) and payment (e.g. euro and other)
Source: European Central Bank.

As becomes evident, the competitive structure of clearing tends towards the creation of monopolies. This is because economic efficiency increases in inverse proportion to the number of CCPs. However, with concentration, systemic risk rises. For example, in the current landscape there are monopolies both by product type and geographic area. In Europe, this is the case for LCH with interest rate swaps, for Eurex with long-term interest rate futures and equity index futures, and for ICE (Intercontinental Exchange) with short-term interest rate futures. Furthermore, the situation is similar in the US, with CME for futures, OCC (Options Clearing Corporation) for options, and ICE for credit default swaps (CDS).

While it may seem natural that clearing is concentrated in a handful of CCPs, the long-term equilibrium of the market can vary depending on the type of product. On the CDS market, for example, two CCPs (LCH SA and ICE Clear Europe) may be sustainable in the long run. But in the market for interest rate swaps (IRS), there is a significant gap between the LCH and CME, implying that a dual-CCP model may be unstable (Levy-Garboua, 2016). The main reason lies in the risk associated with each product. Every CDS has a different economic risk profile, related to the default of its underlying issuer, while interest rate swaps all share a similar risk of interest rate movements. Thus, the benefits of centralising IRS in the same place to take advantage of risk offset are structurally greater than they are for CDS.⁽⁷³⁾

The Brexit vote has cast doubt over the future of UK-based clearing. In a post-Brexit world, the largest clearing house (LCH Ltd) that clears in euro will be in a third country. Under the European Market Infrastructure Regulation (EMIR), which has a third-country provisions, it could gain access to the European market while still remaining supervised by the Bank of England and being governed by UK regulation, under the condition of equivalence. In addition, systemically important CCPs of third countries will be supervised by the European Securities and Markets Authority (ESMA).

Once a price has been set and the trade cleared, settlement takes place – that is, the buyer pays the seller, while the seller delivers the securities to the buyer. The transaction can be considered as ‘settled’ once a central securities depository (CSD) has credited the account of the buyer with the purchased securities (and debited the corresponding cash amount), while debiting the account of the seller with the securities (and crediting its account with the corresponding cash amount). In other words, CSDs guarantee the initial recording and subsequent transfer of securities, while they are primarily concerned with operational risk.

(73) In an effort to exploit the effects of correlation and diversification among several different products, CCPs use portfolio margining models. These allow them to offer market participants net margin calls that reflect the overall risk on a combination of different products (and not the sum of the risk associated with each separate product). For example, LCH Spider is such a tool that analyses a client’s listed interest rates portfolio to find trades that are eligible to offset against correlated positions in their OTC interest rates portfolio.

The European CSD market is dominated by two groups, Euroclear and Clearstream, which operate several CSDs in different countries. Their dominance is visible not only in the number of participants and the number of transactions processed, but also in the value of securities held in their accounts. Starting with the number of participants, 84% of them take part in a CSD operated by Euroclear in Belgium, France, the Netherlands, Finland, Sweden and the UK, and 9% in a CSD operated by Clearstream in Germany and Luxembourg (Table 5). Furthermore, Euroclear UK and Ireland (EUI) CSD, which is based in the UK, holds 77% of all European participants.

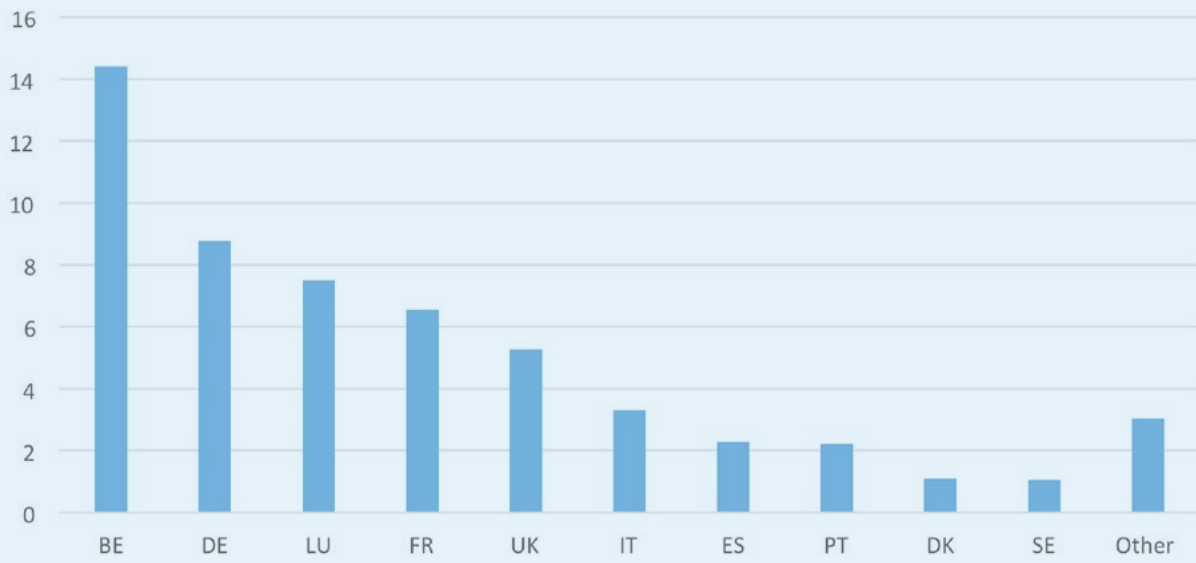
Table 5 Number of participants in CSDs

		2014	2015	2016	2017	2018
EA	BE	1,698	1,748	1,757	1,778	1,792
	DE	298	288	270	302	330
	EE	16	16	16	35	18
	EL	133	102	100	81	88
	ES	188	172	150	93	74
	FR	152	147	137	139	141
	IT	224	183	184	184	175
	CY	37	33	35	36	33
	LV	21	21	21	47	24
	LT	21	22	21	41	29
	LU	1,399	1,452	1,364	1,072	1,467
	MT	14	14	17	17	18
	NL	71	69	69	69	75
	AT	138	94	84	79	77
	PT	38	36	40	40	46
	SI	28	25	25	22	21
	SK	20	20	23	22	32
FI	24	25	24	23	23	
	Total EA	514	507	516	542	542
NON-EA	BG	123	124	120	115	114
	CZ	73	72	66	63	67
	DK	167	161	157	156	152
	HU	154	149	145	137	98
	PL	107	103	103	108	104
	RO	103	98	97	82	72
	SE	52	49	46	45	44
	UK	23,648	23,648	17,050	15,351	14,660
		Total non-EA	24,427	24,404	17,784	16,057

Notes: The number of clearing members refers to the last day of the year.
Source: European Central Bank.

In terms of value of securities held on accounts with CSDs, in 2018, a total of €55.5 trillion was processed by European CSDs, with Euroclear accounting for 50% of the market (€27.9 trillion) and Clearstream for 29% (€16.2 trillion) (Figure 63). Approximately 15% of the total European value was processed by CSDs in non-EA countries, with EUI in the UK processing 64% (or €5.3 trillion), followed by VP Securities in Denmark (13%) and Euroclear Sweden (13%).

Figure 63 Value of securities held on accounts with CSDs (€ billion, end-2018)



Notes: Other includes: EE, EL, CY, LV, LT, MT, NL, AT, SI, SK, FI, BG, CZ, HU, PL, and RO.
Source: European Central Bank.

B.25 Market fragmentation and the role of UK CCPs

With London being one of the top global financial centres in different segments of the financial sector (i.e. banking, investment management, insurance, professional services, government and regulation), it is not surprising that the most significant economic implications of the UK's withdrawal from the EU can be found in relation to financial services (Table 6). Post-Brexit, mutual market access will be restricted, leading to a reduction in the performance and functioning of the remaining segregated markets, a restriction of UK firms regarding the provision of services to EU-27 customers, and a constraint to clients' ability to substitute certain services by EU-27 market participants.

Table 6 *Global ranking of financial centres, by sectors*

Rank	Banking	Investment Management	Insurance	Professional Services	Government & Regulatory
1	New York	Hong Kong	New York	New York	New York
2	Hong Kong	New York	London	Hong Kong	London
3	Shanghai	London	Singapore	London	Hong Kong
4	London	Shanghai	Hong Kong	Singapore	San Francisco
5	Beijing	Singapore	Shanghai	Shanghai	Singapore
6	Singapore	Shenzhen	Tokyo	Tokyo	Zurich
7	Tokyo	Beijing	Luxembourg	Toronto	Shanghai
8	Sydney	Toronto	Zurich	Sydney	Luxembourg
9	Shenzhen	Zurich	Los Angeles	Dubai	Sydney
10	San Francisco	San Francisco	San Francisco	Frankfurt	Los Angeles
11	Los Angeles	Copenhagen	Monaco	Zurich	Frankfurt
12	Frankfurt	Luxembourg	Sydney	Beijing	Tokyo
13	Chicago	Boston	Shenzhen	Los Angeles	Seoul
14	Dubai	Stockholm	Chicago	Cayman Islands	Chicago
15	Toronto	Tokyo	Frankfurt	Tel Aviv	Boston

Source: The Global Financial Centres Index 26, September 2019.

The EU is often portrayed as being in crisis (Ross, 2011; Habermas, 2012) (manifested in the rise of Euroscepticism),⁽⁷⁴⁾ and the European project apparently beset by challenges: the eurozone crisis of 2010, the migration crisis of 2015, and now Brexit. The UK vote in June 2016 to leave the EU has provided a challenge not only for the UK in negotiating the terms of 'Brexit', but also for the EU itself with one of its major members opting to leave (Bulmer and Quaglia, 2018). The uncertainty caused by Brexit has reinforced both pro-EU attitudes and Euroscepticism (De Vries, 2017; Szczerbiak and Taggart, 2018).

Although the reasons behind Britain's decision to quit the EU have been adequately explained (Goodwin and Heath, 2016; Hobolt, 2016; Clark *et al.*, 2017), less attention has been paid to the consequences of the vote for public support for the EU and the future of the European project. Two competing arguments have been expressed so far. On the one hand, the Brexit vote will offer the EU an opportunity to restructure the union, restore unity among the remaining Member States and achieve an even greater EU integration. On the other hand, it will lead to social and economic changes to the EU, cause longer term political and institutional shifts, and put Jean Monnet's dream of building a European Union among people rather than states at risk (De Vries, 2017).

(74) For an overview of studies in Euroscepticism, see Szczerbiak and Taggart (2018).

Brexit has already allowed the EU to progress on dossiers which, with the UK, would have been more difficult, for example on issues relating to closer fiscal integration, financial supervision and social legislation. However, fault lines have also emerged among groups of Member States. The Hanseatic League's position on fiscal rigour and the EU budget, and the limited progress on the European Supervisory Authorities (ESAs) review, are examples of many remaining stumbling blocks to a real single services market.

Fragmentation can be described as the process in which market participants in an organic, shared market which crosses jurisdictions are less able to interact freely with one another in one or more such jurisdictions.⁽⁷⁵⁾ This implies that economic agents do not face identical rules and do not have equal access to financial instruments or services (Baele et al., 2004). Thus, market participants are limited to interacting in silos that are less liquid, less diverse and less competitive. In other words, fragmentation leads to smaller, disconnected liquidity pools and less efficient and more volatile pricing.⁽⁷⁶⁾

While fragmentation as described above refers to its cross-jurisdictional nature, it can also be defined in a domestic context (i.e. the way in which financial markets are organised). For example, trading in securities markets can be concentrated in one or two trading centres, or it can be fragmented when orders are sent to numerous trading venues that compete with each other (Claessens, 2019). Different trading venues do not only vary in terms of liquidity and transaction costs, but also in terms of transparency, speed or other characteristics important to specific segments of the market.⁽⁷⁷⁾

Derivatives markets are global, from both a demand (e.g. thousands of firms across the world use them to manage business and financial risks they face) and supply (e.g. firms that deal in derivatives manage their books and related risks on a centralised, global basis) perspective (ISDA, 2019). Since the global financial crisis, policymakers tried to establish and implement a consistent regulatory framework for derivatives across jurisdictions.⁽⁷⁸⁾ However, the trading and clearing of OTC derivatives has become segmented along geographic lines. While one part of this fragmentation arises from the national implementation of G20 reforms to OTC derivatives markets, another part comes from the margining and reporting requirements (FSB, 2018).

From a regulatory perspective, fragmentation of the OTC derivatives markets has arisen from: i) differences in the substance and timing of national implementation of standards; and ii) national policies with extraterritorial effects. In regard to the former, concerns have been raised about the scope of contracts or counterparties covered by central clearing or trading mandates, as well as for timing differences in the implementation of central clearing and platform trading reforms, which are not yet fully implemented in some jurisdictions (FSB, 2017a).⁽⁷⁹⁾

In particular, the second type of fragmentation – because of national policies with extraterritorial effects – is expected to have a bigger impact due to Brexit. Cross-border effects of jurisdictions' laws or regulations, particularly when these are not accompanied by suitable processes for international cooperation and coordination between authorities, may lead to a significantly fragmented market. One example of such regulatory fragmentation is the requirement that certain types of transactions (e.g. euro-denominated IRD) be centrally cleared at local central counterparties (i.e. euro-area located).

(75) Fragmentation can cause a decrease in cross-border holdings of a wide range of asset classes, thus resulting in a divergence of related asset prices (Ruscher and Vasicek, 2016)

(76) See the keynote address of Christopher Giancarlo, former chairman of the US Commodities and Futures Trading Commission (CFTC). Available at: <https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo63>.

(77) Many of these forms of fragmentation are not necessarily caused by regulatory/policy barriers, but they arise from market forces such as competition.

(78) The post-crisis reforms have had the benefit of improving transparency and risk management and reducing systemic risk, as well as strengthening the oversight of trading venues.

(79) For example, concerns had been raised that market participants may try to avoid clearing mandates by adjusting the terms of contracts to make them non-standardised; or that the reforms to promote central clearing may in fact lead to less-standardised or illiquid products being centrally cleared, increasing risks within CCPs. Furthermore, it was noted that some market participants were shifting activity away from counterparties in certain jurisdictions as banks undertaking similar business faced different national requirements (FSB, 2017a).

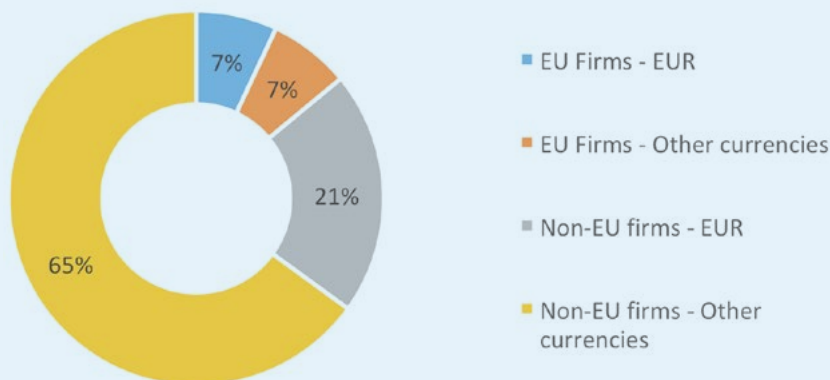
Both European and non-European jurisdictions have raised concerns about the consequences of Brexit and its effect on financial markets, given that markets that had been so deeply integrated prior to Brexit may cease to be so in the future. The focus is primarily on derivatives trading, clearing, and reporting where there is a risk that financial market infrastructure access for both financial firms and their consumers may be impacted, leading to potentially adverse consequences to market liquidity. But it is also on the consequences for participants' ability to address life-cycle events and risk management requirements for OTC derivatives portfolios.

Brexit has, in the eyes of some policymakers, necessitated changes to current regulations and even market structures (FIA, 2019). Thus, several EU proposals in response to Brexit, such as EMIR 2.2 and the Investment Firm Review (IFR), have included elements requiring direct compliance with substantial elements of EU law or supervision by EU entities so that UK market participants can continue with their existing business models, even where UK law would be substantively equivalent to EU law.

While it is difficult to measure the exact costs of market fragmentation, it has been found that regulatory divergence in the financial sector might cause material and increasing costs to the global economy, exacerbating risks in the financial system and impacting economic growth negatively (IIF, 2019). In particular, fragmentation is costing financial institutions between five and 10% of their annual revenue, which can be translated to an estimated cost to the global economy of more than \$780 billion a year (IFAC, 2018).

In regard to euro-denominated IRD, an impact analysis by SwapClear – a service of LCH.Clearnet – which clears the vast majority of the centrally cleared euro-denominated IRD,⁽⁸⁰⁾ shows that a denial of recognition/location policy covering the full portfolio cleared by EU institutions would create a restricted captive EU-based liquidity pool representing 14% of SwapClear activities (Figure 64). This would create an offshore (third country) market (86%) that would be more liquid and efficient than the nascent and fragmented onshore EU market. Having two markets for the same asset (i.e. one for EU participants and another for non-EU participants) would distort competition and increase systemic risk both in the EU and across the global markets (AFME, 2017).

Figure 64 Size of SwapClear's portfolio, by firm and currency (%)



Notes: Figures relating to the EU should be interpreted as EU-27 (i.e. excluding the UK).
Source: LCH.Clearnet.

(80) On a daily basis SwapClear clears about €3.3 trillion in interest-rate derivatives, with €1.7 trillion in US dollar-denominated contracts, and €652 billion in euro-denominated contracts as the second largest component (figures as of COB November 21, 2019).

The resulting captive market would cause an increase in the underlying costs of clearing for EU firms (subject to EMIR), as they would be required to clear OTC derivatives contracts (again subject to EMIR clearing obligations) via a less liquid – and consequently with fewer netting opportunities – EU CCP. However, non-EU firms not mandated to clear under EMIR would have access to a more liquid market.⁽⁸¹⁾ The difference in costs between an ‘onshore’ and an ‘offshore’ market might incentivise EU-27 banks (servicing EU and non-EU firms) that are subject to EMIR and that clear on EU CCPs, to pass on additional charges to their clients.⁽⁸²⁾ LSEG estimated that forcing EU firms to use EU CCPs for all interest rates derivatives would create an additional cost of approximately €23–€24 billion per annum for CCPs EU members and clients (LSEG, 2017). Over a period of five years, this would represent a cumulative cost increase of €115-120 billion.⁽⁸³⁾

For other sectors, the equivalence rules are not very generous, or there is not one standard rule. More broadly, it also depends on the breadth of the single passport for a given financial service. It is in most cases extensive, although not yet so in the areas of insurance and pensions funds. Table 7 gives an overview of the equivalence framework in three key areas of financial regulation: the regime for brokers and financial advisers under MiFID II, the UCITS regime for mutual funds, and the regime for alternative investment funds.

Table 7 *Equivalence framework in MiFID II, UCITS and AIFMD*

<p>MiFID II (brokers and trading venues)</p>	<ul style="list-style-type: none"> • Commission to adopt equivalence assessment, but this is for investment services limited to eligible counterparties and professional clients • ESMA to register third-country firms (from equivalent jurisdiction) • ESMA to establish cooperation arrangements • Member states can licence third-country service provider, but only within their territory, no Single Market access • Equivalence assessment of third-country markets (Art. 25.4)
<p>UCITS (investment funds)</p>	<ul style="list-style-type: none"> • No specific third-country regime • Equivalence assessment for third countries’ supervisory system of management companies of UCITS (Art. 7.1) (see Art. 14 MiFID) • Delegation of tasks to third-country undertaking depends on existence of equivalence agreement and appropriate exchange of information (Art. 13)
<p>AIFMD (managers of non-UCITS funds)</p>	<ul style="list-style-type: none"> • Until 2018: Non-EEA manager has to be authorised as a manager in the EEA by the EEA regulator in its ‘member state of reference’ • From 2016: EU passport co-exists with national passport • ESMA to propose standards of conditions of equivalence of third countries (Art. 37) and the extension of the passport, annual peer review by ESMA of supervision of third country AIFMs (Art. 38)

Source: Authors’ elaboration.

Finally, fragmentation might also have an impact on productivity, due to the relocation of financial services activity. The loss of market access by UK financial services firms might necessitate the relocation of certain activities in order to retain the ability to maintain existing client services. The spread into multiple competing hubs across Europe is expected to result in a reduction of labour productivity across Europe (PwC, 2018a). Estimates suggest that for the UK, labour productivity will decline by 0.6%, and for Europe by 0.2% (or €1.3 billion in EU GVA).

(81) But the possibility that operational and margin efficiencies may cause non-EU firms to decide to move their portfolios to the EU cannot be discounted. In other words, if EU firms are obliged to clear euro-denominated derivatives in the EU, it does not automatically follow that non-EU firms will keep their portfolios in the UK.

(82) Although clearing on more liquid third-country CCPs, non-EU banks servicing non-EU clients could face lower underlying costs to perform similar clearing activities.

(83) However, such an estimate should be treated cautiously because of its assumptions. For example, the additional cost of €23-24 billion is based on the assumption of a 1 basis point increase of the bid-ask spread for EU firms (as measured by PV01) or that all counterparties are affected by the basis between Eurex and SwapClear (EUR LCH/EUX Basis Swap) the same way. This represents a rather considerable increase and does not appear to be realistic given that the five-year spread, for example, on 31 January 2018 was 0.55 bps, down from 1 bps on 28 April 2017 (cut-off day for LSEG’s estimates).

B.26 The liquidity of EU-27 financial markets

Liquidity – the existence of sufficient buyers when you want to sell, and vice versa – is a rather elusive notion with many facets (Goodhart, 2008), but of paramount importance for the well-functioning of financial markets. Before diving further into the concept of liquidity, it is necessary to attempt to distinguish the different types of liquidity. For example, a distinction can be made between: i) the liquidity of an asset, ii) an asset's market liquidity, iii) a financial market's liquidity, and iv) the liquidity of a financial institution. An asset can be considered liquid if it can easily be converted into legal tender (i.e. cash), which by definition is fully liquid. However, there are some financial claims (e.g. demand deposits) which are virtually liquid – for as long as the credit institution is liquid – since they can be converted without cost (i.e. transaction cost) or delay (i.e. immediacy) into money during normal circumstances (Lybek and Sarr, 2002).⁽⁸⁴⁾

The concept of an asset's market liquidity is related to the ease with which large volumes of the asset can be disposed of quickly and at a reasonable price.⁽⁸⁵⁾ However, for a financial market, the liquidity depends on the substitutability among the various assets traded (in a particular market) and on how liquid each of these assets are. But if there are different issuers, as is the case in the corporate bond markets and equity markets, credit risk can prevent substitutability and result in significant fragmentation of the market. Finally, institutional liquidity refers to the easiness with which financial institutions can engage in financial transactions, aiming at a quick recovery of mismatches between assets and liabilities or settling their obligations.

This study focuses on the liquidity of a financial market, or rather of a financial centre. A liquid financial centre may exhibit five key characteristics: i) tightness, ii) immediacy, iii) depth, iv), breadth, and v) resilience. Tightness refers to low transaction costs, such as the difference between buy and sell prices, the bid-ask spreads, as well as implicit costs. Immediacy represents the speed with which orders can be executed and settled, and thus reflects, among other things, the efficiency of trading, clearing and settlement. Depth refers to the existence of abundant orders, either actual or easily uncovered, of potential buyers and sellers, both above and below the price at which a security trades. Breadth means that orders are both numerous and large in volume with minimal impact on prices. Resilience is a characteristic of markets in which new orders flow quickly to correct order imbalances, which tend to move prices away from what is warranted by fundamentals.

Based on these characteristics, different measures of liquidity can be applied. For example, there are: i) transaction cost measures that capture costs of trading financial assets and trading frictions in secondary markets (tightness) (Miller, 1965; Roll, 1984; Huang and Stoll, 1996; Burhop and Gelman, 2010; Marshall *et al.*, 2011; Cepoi, 2014),⁽⁸⁶⁾ ii) volume-based measures that distinguish liquid markets by the volume of transactions compared to the price variability (breadth and depth) (Martin, 1975; Hui and Heubel, 1984; Marsh and Rock, 1986; Blume *et al.*, 1994; Amihud, 2002); iii) equilibrium price-based measures that try to capture orderly movements towards equilibrium prices (resilience) (Bernstein, 1987; Hasbrouck and Schwartz, 1988; Hameed *et al.*, 2019); and iv) market-impact measures that attempt to differentiate between price movements due to liquidity or other factors (resilience and immediacy) (Melvin and Yin, 2000; Galati and Ho, 2001; Evans and Lyons, 2002).

(84) While the transformation of other claims into legal tender may involve brokers' commissions, settlement delays, etc.

(85) Assuming that there is an absence of new information which can alter the asset's fundamental price.

(86) Among the transaction costs measures, the bid-ask spread and its variants are the indicators of market liquidity that are most commonly used. The reason is that they convey insight on information sharing in the market. The intuition behind the use of the bid-ask spread lies in the fact that market prices depend on the side of the market that initiates the trade. Buyer-initiated trades are concluded at the ask price, while seller-initiated trade are concluded at the bid price. The difference between the best (lowest) ask price and the best (highest) bid price defines the bid-ask spread.

One of the biggest impacts on liquidity will arise from the derivatives market. After Brexit, UK CCPs will no longer fall under the EMIR provisions for EU-based CCPs. The vast majority of OTC derivative contracts (especially IRD) are cleared via UK CCPs, in light of the liquidity depth of the UK CCPs (not available in non-UK CCPs). Brexit would require either: i) a transfer of the book to less liquid onshore CCPs, or ii) existing positions to be terminated in application of the default mechanism provided by the CCP rulebook (including an auctioning process).⁽⁸⁷⁾ On the one hand, the challenging task of transferring existing portfolios from UK CCPs to EU-27 CCPs would not only entail significant market and operational risk, but above all liquidity risk. On the other hand, the loss of the EU passport for UK counterparties will mean that the continuation of the existing cleared and uncleared derivatives transactions would constitute licensable banking activities.⁽⁸⁸⁾

The large-scale migration/novation of legacy cleared contracts from a UK CCP to an EU-27 CCP will require not only the compression of outstanding contracts (in order to minimise the number of contracts prior to the migration), but also the offsetting of positions left after compression,⁽⁸⁹⁾ as well as the conclusion of a new deal (for each position left after the portfolio compression) to be cleared by an EU-27 CCP. However, such a sequence of actions will have unprecedented consequences for liquidity,⁽⁹⁰⁾ pricing (because terms of contracts to be cleared by EU-27 CCPs are different from UK CCPs),⁽⁹¹⁾ and cost/fees (the transfer of positions will almost certainly result in considerable additional cost and fees for all involved parties).

Clearing location policies have been considered in jurisdictions other than the EU and have either been abandoned as a policy option (e.g. in Canada and Australia) or drastically scaled down (e.g. Japan) (ISDA, 2017). For example, Japan requires certain trades, yen-denominated swaps, executed within its borders to be cleared at a local CCP that is subject to local supervision.⁽⁹²⁾ Such policies, however, adversely impact liquidity, as evidenced by the basis risk that arises from time to time at different CCPs clearing the same product (ISDA, 2019). What is more, clearing location policies force firms to split their netting sets, which can result in significant increases in capital and margin requirements and related costs.

An impact to liquidity of the EU-27 financial markets might also arise from the Share Trading Obligation (STO).⁽⁹³⁾ According to the STO rule, EU MiFID II firms are required to trade certain shares only on EU venues, systematic internalisers (SIs) or equivalent third-country trading venues. The obligation applies to all shares traded on venues in the UK or EU.⁽⁹⁴⁾ In particular, and according to ESMA, which regulates the scope of the STO in Europe, the trading obligation applies to the shares of all companies headquartered in the EU that are traded on a trading venue in the EU. This implies that if an EU stock is traded on an EU market, EU MiFID II counterparties must trade on that market or an equivalent one, and not elsewhere. Similarly, the UK will do the same for stocks traded in the UK (UK STO).

However, if an EU share is traded on a UK and an EU-27 venue, it could be subject to both STOs. Thus, the question that arises is: what will happen to EU shares traded in the UK, as there are a number of shares with EU-27 ISINs that have both a listing, as well as their main or only significant centre of market liquidity, on UK markets?⁽⁹⁵⁾ Such an overlapping will create many unintended consequences for the ability of market participants, in particular EU-27 firms and their clients, to manage their portfolios and risk positions and to achieve best execution (i.e. EU investors will not be able to access liquidity on EU shares listed in London).⁽⁹⁶⁾

(87) Also, exchange-traded derivatives (ETDs) traded via UK trading venues, upon Brexit and assuming lack of a transitional period, would become OTC instruments.

(88) Depending on the services that UK CCPs are providing to their members, additional licensing issues may arise (e.g. banking licence).

(89) For each position left after compression, there should be a position having the same features of the original position, with opposite sign, to be cleared at the relevant UK CCP, so as to fully offset the relevant outstanding position at that CCP.

(90) A potentially large and simultaneous close-out of positions at UK CCPs (and corresponding opening of positions at EU CCPs) would create a shortage of liquidity in EU CCPs. See the joint letter sent to Vice-President Dombrovskis by 13 trade associations on the "Temporary Equivalence and Recognition in relation to UK CCPs", available at: <https://www.isda.org/2019/11/12/joint-trade-associations-letter-on-ccp-recognition-and-equivalence/>.

(91) This is because of the much smaller liquidity pools generally offered and the less attractive conditions offered.

(92) Clearing mandates in jurisdictions with closed currency markets also create de facto CCP location policies.

(93) Article 23 of MiFIR.

(94) Except where trading is non-systematic, ad hoc, irregular and infrequent.

(95) See: <https://www.fca.org.uk/news/statements/fca-update-share-trading-obligations>.

(96) See LSEG's impact assessment on hard Brexit: <https://www.londonstockexchange.com/traders-and-brokers/rules-regulations/change-and-updates/lseplc-hard-brexite-impact-assessment.pdf>

Furthermore, under the Derivatives Trading Obligation (DTO)⁽⁹⁷⁾ EU firms are required to trade certain classes of OTC derivatives on EU or equivalent third-country trading venues. The DTO raises similar issues to the STO, including a clash between EU-27 and UK obligations, but with a few key differences. Unlike shares, derivatives can be traded on organised trading facilities (OTFs), which would expand the scope of venues and participants affected by the competing obligations (White & Case, 2019). Like the STO, while the EC has deemed some venues in the US and Singapore equivalent for DTO purposes, it has not done so – or is willing to do so – for any UK venue.

Thus, under Brexit, and unless the UK and EU find each other’s regulatory regime equivalent, EU firms will not be able to meet the EU’s DTO by using UK trading venues to trade in-scope derivatives, and vice versa. At present, all OTC derivatives subject to the EU DTO have their main pool of liquidity on a UK venue. Without action (i.e. equivalence agreement), EU firms may lose access to UK liquidity pools and liquidity would be fragmented, harming both markets.

Additionally, the impact of Brexit on foreign direct investment (FDI),⁽⁹⁸⁾ might also have an effect on liquidity, and particularly, of financial services. In 2017 the UK had an inward FDI stock of €1.51 trillion, 43% of which comes from EU-27 Member States.⁽⁹⁹⁾ The financial services industry accounts for the largest stock of inward FDI (28.8% or €434 billion) and constitutes 6.9% of the total economic output⁽¹⁰⁰⁾ (or €147 billion) and 10.9% (or €81 billion) of tax receipts (PwC, 2018b; Rhodes, 2019). After Brexit, higher trade costs – because of restrictions on ‘single passport’ privileges – would be likely to depress FDI.

Looking at the value of FDI in the UK’s financial services (i.e. stock of FDI invested in the UK), in 2018 EU-27 countries accounted for 19% of that (or € 91.3 billion), up from 15% in 2015. Spain was the single largest investor in the UK, followed by Luxembourg and the Netherlands (Table 8). Furthermore, investments made by UK financial services companies in EU-27 were worth €178.5 billion (or 43% of the total UK investments). Looking at individual countries, the Netherlands and Luxembourg accounted for just over two thirds of the outward FDI.

Table 8 UK financial services industry’s inward and outward foreign direct investment, end-2018

	Inward FDI in the UK			Outward FDI from the UK	
	€ billion	% of total		€ billion	% of total
Spain	28.4	31.1%	Netherlands	70.3	39.4%
Luxembourg	17.9	19.6%	Luxembourg	55.2	30.9%
Netherlands	16.1	17.6%	Ireland	18.3	10.3%
Germany	10.1	11.0%	France	9.9	5.5%
Ireland	5.9	6.5%	Spain	7.5	4.2%
France	5.7	6.2%	Germany	4.8	2.7%
Denmark	1.5	1.7%	Italy	4.7	2.7%
Rest of EU-27	5.8	6.3%	Rest of EU-27	7.7	4.3%
Total EU-27	91.3	100.0%	Total EU-27	178.5	100.0%

Source: Office for National Statistics.

While the UK is still part of the EU, the uncertainty over Brexit and their future relationship is harming UK’s attractiveness as a destination for inward investment. The factual conditions for trade and investment have not yet changed, but merely the ambiguity about future border and tariff arrangements between the UK and the EU has adversely affected inbound (FDI) flows (Serwicka and Tamberi, 2018). However, with regard to new investments made by UK firms in EU-27 countries, empirical evidence shows that the Brexit vote has led to a 12% increase in outward FDI (Breinlich *et al.*, 2019).

(97) Article 28 of MiFIR.

(98) See for example Dhingra *et al.* (2016), Mendez-Parra *et al.* (2016), Welfens and Baier (2018), Driffield and Karoglou (2019).

(99) Similar to the UK’s outward investment position, €1.48 trillion.

(100) Here, economic output is measured by Gross Value Added (GVA) which is similar to GDP but is used to measure the contribution of part of the economy, such as an industry or region.

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