



EUROPEAN CAPITAL MARKETS INSTITUTE

# ECMI Research Report

## Recent Developments in European Capital Markets – Key findings from the 2017 ECMI Statistical Package

by Robin Lechtenfeld and Apostolos Thomadakis

No. 12 / December 2017

The purpose of the ECMI Research Report series is to disseminate in-depth analyses of a wide range of key policy questions facing capital markets, drawing on state-of-the-art research methodologies and the latest literature.

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# Key Highlights

## Equity markets

- European market capitalisation was up by 1.4% in December 2016.
- Despite the decline in the number of listed companies by 0.8%, the average capitalisation per listed company increased by 2.2%.
- Value of share trading increased by 2.7% compared to 2015.
- The value of investment flows (which includes IPOs and raising capital by listed companies) was down 5.9% at end-2016.

## Debt securities

- Total outstanding amount of debt securities in Europe decreased by 2.1%, driven mainly by a decline of 5.8% in the issuance of debt by financial institutions.
- Outstanding volumes of covered bonds remained stable at €2.2 trillion, while issuance volumes declined by 11.3%, reaching €0.4 billion at end-2016.
- Denmark and Germany are the largest markets, both in terms of outstanding and new issuance volumes.
- The market is heavily focused on mortgages (86%), and to a lesser extent on public sector assets (14%).

## Exchange-traded derivatives markets

- Notional amount outstanding of exchange-traded derivatives grew by 6.3% and reached a 10-year high at €60.7 trillion.
- Daily average turnover ended the year 3.8% higher, driven by increases in turnover of interest rate futures and commodity options and futures.

## Over-the-counter derivatives markets

- Outstanding positions in OTC derivatives markets fell by 3% at €421.1 trillion at end-2016. Of that, €341.4 trillion (81.1%) was interest rate contracts and €63.6 trillion (15.1%) foreign exchange contracts.
- The gross market value of OTC derivatives rose to €12.9 trillion, due to a 36.2% increase in foreign exchange contracts.
- Interest rate contracts denominated in euros declined by 12.1%, and foreign exchange derivatives denominated in euros by 3.7%.
- The share of centrally cleared derivatives made significant inroads into all OTC derivatives markets, except foreign exchange.

## Mutual funds

- Investment fund net assets in Europe increased by 6.1% to €14.1 trillion, of which €8.2 trillion (61%) were UCITS.
- All categories of investment funds experienced an increase in net assets in 2016, with bond funds recording a 21.6% rise in net assets, followed by equity (11.2%) and money market funds (5.8%).
- Ireland saw the largest increase in net assets in 2016 (9.8%), while Luxemburg accounted for 27.6% of the European market.

# Recent Developments in European Capital Markets

## Key findings from the 2017 ECMI Statistical Package

*ECMI Research Report No. 12 / December 2017*

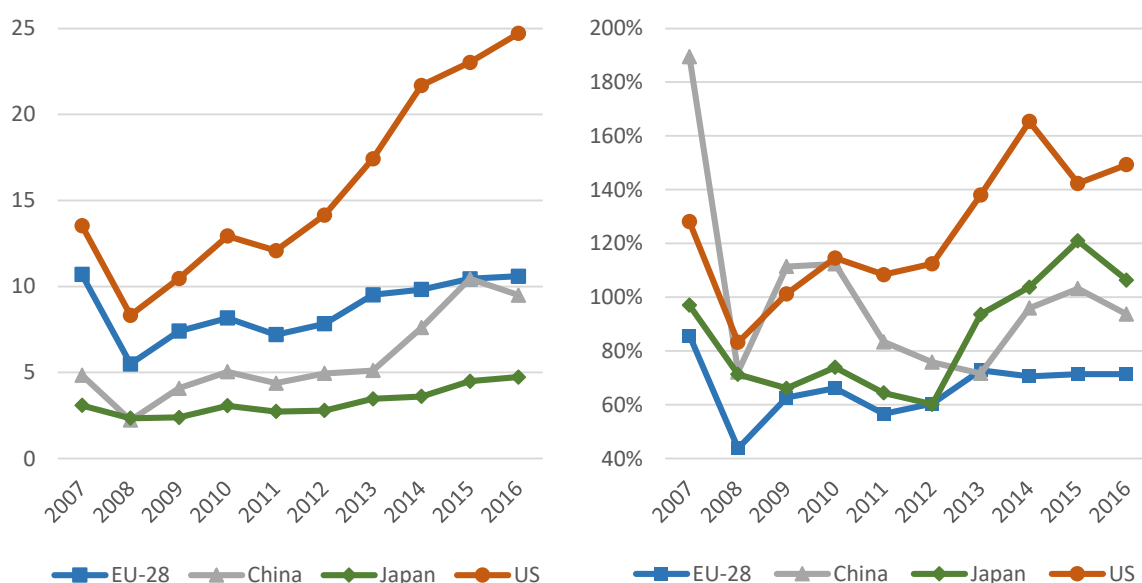
Robin Lechtenfeld and Apostolos Thomadakis\*

This paper presents the key findings of the 2017 ECMI Statistical Package,<sup>1</sup> a comprehensive, annually compiled database of developments in European and global capital markets (US, Japan, China, etc.). The Package aims to enable users to trace trends and illustrate the ongoing transformation of capital markets, including the structural changes brought about by competitive forces, innovation and regulation. This paper follows the same structure as applied in the ECMI Statistical Package, and consists of five main sections: equity markets, debt securities, exchange-traded derivatives, over-the-counter derivatives and asset management (mutual funds).

### 1. Equity markets

The combined market capitalisation of the four largest equity markets (EU-28, China, Japan and the US) increased by 2.3% from 2015 to 2016 (Figure 1, left-hand panel).<sup>2</sup>

*Figure 1. Domestic market capitalisation in € trillion (lhs) and % of GDP (rhs)*



Source: 2017 ECMI Statistical Package.

European markets grew by 1.4%, reaching their pre-crisis level of around €10.6 trillion and representing 71.4% of European GDP (Figure 1, right-hand panel). This was the fifth consecutive year since 2011 (€7.2

\* At the time of drafting this report, Robin Lechtenfeld was a Research Trainee at ECMI, and Apostolos Thomadakis is a Researcher at ECMI.

<sup>1</sup> For information on the 2017 ECMI Statistical Package and how to download the file, see [www.eurocapitalmarkets.org/statistical-packages](http://www.eurocapitalmarkets.org/statistical-packages).

<sup>2</sup> Following a slow start over the first two quarters – when plummeting oil prices and an economic slowdown in China provoked investor concern over a looming recession – equities rebounded during the third quarter and closed the year on solid ground.

trillion) in which capitalisation increased, recording a yearly average growth rate of approximately 8%. Nevertheless, capitalisation occurred slowly in the beginning of the year due to low economic growth (with GDP expanding by 0.3% in Q42015) and low inflation rate (which was failing to -0.2% YoY in February). Despite the UK's referendum vote on June 23 to leave the European Union, which put extra pressure on equity markets,<sup>3</sup> high growth and positive inflation<sup>4</sup> helped the market gain momentum and end the year in positive territory.

However, the gap between Europe and the US has been widening year after year since 2007. Over that period, European markets capitalisation decreased by 1%, while US equities rose by 83%. In 2016 the US market reached new highs and an all-time peak of €24.7 trillion. This was mainly due to the positive response of the market to the Federal Reserve Bank's decision to increase rates in December 2015 for the first time in nearly 10 years.<sup>5</sup>

Shifting the focus to the Asian equity markets, 2016 ended with opposing results for Japan and China. Maintaining 2015's momentum, the Japanese domestic market capitalisation expanded by 5.3%.<sup>6</sup> On the other hand, the capitalisation of Chinese equity markets fell by 9.1% on the back of weaker investor sentiment following a ramp-up in property prices as well as tightening liquidity.<sup>7</sup>

Looking closer at the data reveals different levels of fragmentation in the global equity markets. For example, Europe has the highest number of listed companies (7,353 in 2016) with an average market capitalisation per company of just over €1.4 billion (Figure 2). Meanwhile, the 5,204 listed companies in the US share an average capitalisation of €4.7 billion. These developments illustrate that: i) trading on equity markets is concentrated in a small number of companies (Valiante, 2016), and ii) the gap between Europe and the US is widening at a yearly average rate of 14%.

Moving into Asian markets, we observe that in both China and Japan the number of listed companies increased considerably, by 81% and 22%, respectively. This development, in addition to the increased market capitalisation, resulted in an average capitalisation per listed company of €1.9 billion in China and €1.3 billion in Japan.

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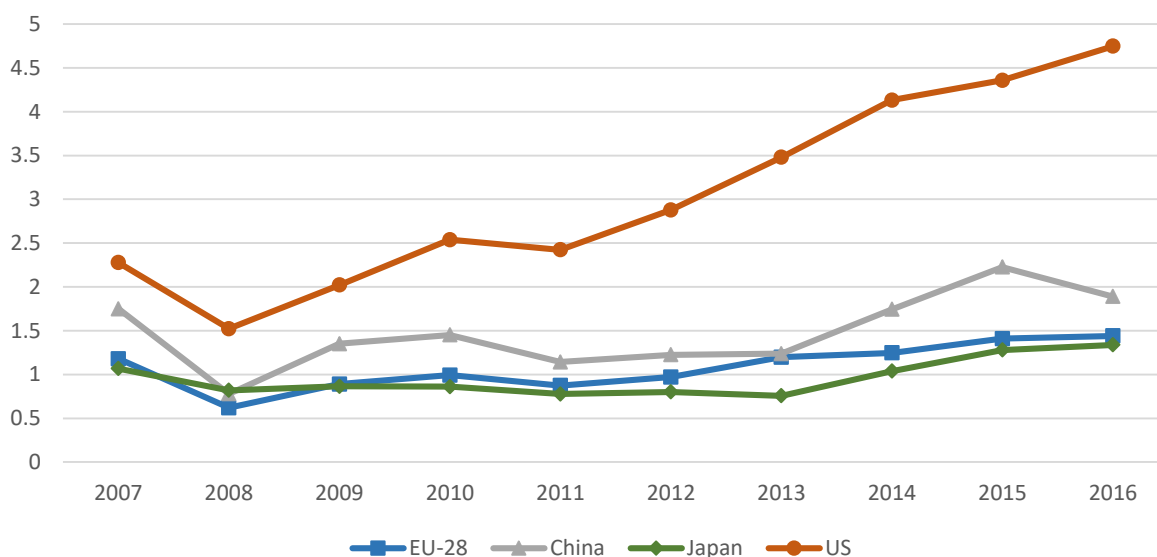
<sup>3</sup> A two-day downturn in eurozone equities as investors pondered the decision's effect on the European and global economies (timescale for leaving and unclear economic implications) was quickly restored and a few days later the equity market had rallied.

<sup>4</sup> Eurozone Q1 GDP growth was revised back up again to +0.6% QoQ, while annual inflation returned to positive territory at +0.1% by the end of June.

<sup>5</sup> Investors' expectations for a further increase in rates before the end of 2016, as well as the build-up to the presidential election and subsequent victory of Republican candidate Donald Trump, influenced markets over the period. Trump's plans to cut taxes, boost infrastructure spending and reduce regulation were seen as positive for equities growth.

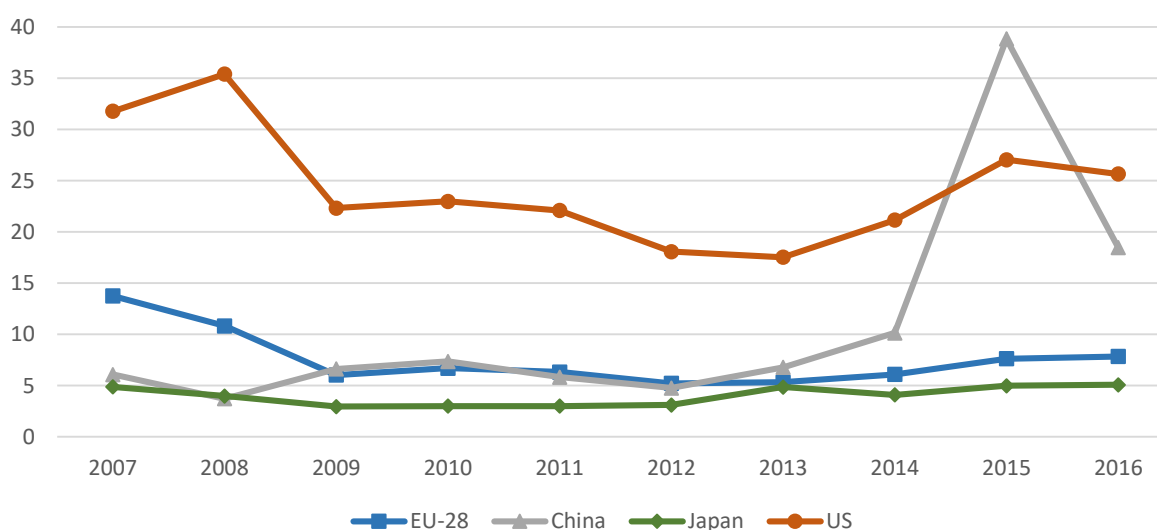
<sup>6</sup> Even though at the beginning of the year the Bank of Japan surprised investors with a move to a negative interest rate policy and a sharp appreciation in the yen, Japanese equities were supported by the government's announcement of a significant fiscal spending package and weakening of the yen in November and December.

<sup>7</sup> Capital outflows intensified, especially towards the end of the year, due to a greater depreciation of the Chinese yuan. Despite the efforts of the People's Bank of China (PBoC) to reverse the situation, Brexit-related worries and Trump's surprise victory resulted in equities losing value. In February 2016, PBoC cut the reserve requirement ratio (a proportion of deposits a bank must hold as reserves in cash) by 50 basis points in an effort to support growth.

*Figure 2. Average market capitalisation per listed company (€ billion)*

Source: 2017 ECMI Statistical Package.

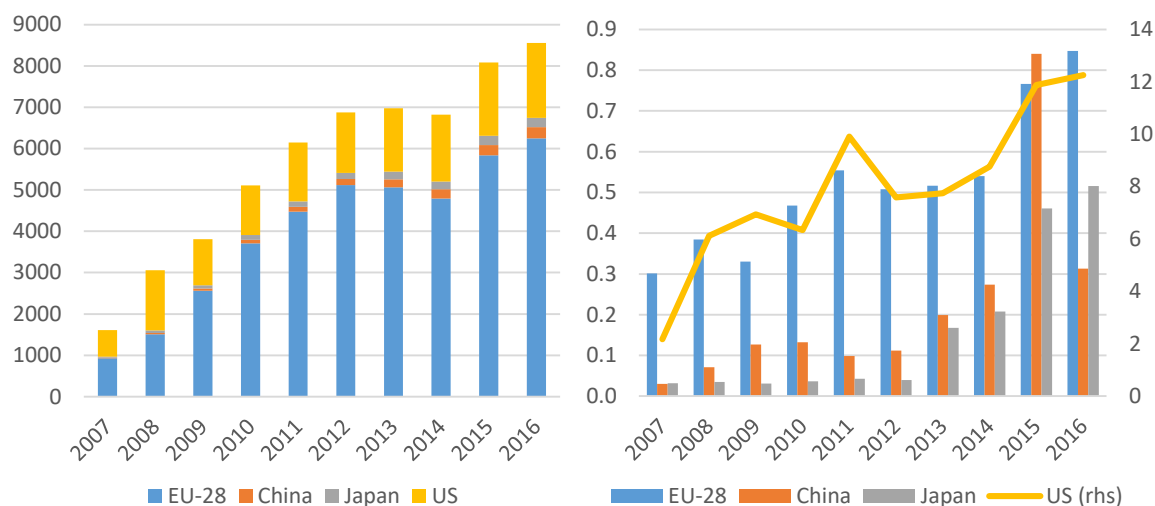
While market capitalisation is either well above (US and China) or close to (EU-28 and Japan) 2007 levels, the value of share trading still needs more time to adjust to pre-crisis levels (see Figure 3). The only exception is China, which showed a completely different trend and rose by 540% since 2007 to reach a historical peak of nearly €40 trillion in 2015. However, with the collapse of the Chinese stock market, which began around mid-2015 and ended in February 2016, the value of share trading slipped below this level. This is the primary driver of the global decline by 27% observed in 2016. In the US concerns over the likelihood of an interest rate increase and uncertainty over the future of trade policy under Trump's administration resulted in a modest slowdown, by 5%. Europe, however, maintained 2015's momentum and the value of share trading slightly increased by 5% to €7.8 trillion in 2016.

*Figure 3. Total value of share trading (€ trillion)*

Source: 2017 ECMI Statistical Package.

Zooming in on the exchange-traded fund (ETF) markets, in Europe the number of listed ETFs further increased since 2015 to more than 6,000 (Figure 4, left-hand panel), whereas the total value of ETF trading peaked at €850 billion (Figure 4, right-hand panel). Conversely, in the US the ETF market is much more concentrated. Both the number of listed ETFs and their trading value increased by 2% and 3%, respectively. Finally, and contrary to the booming value of ETFs in 2015, the Chinese market experienced a rollercoaster ride in 2016, resulting in a sharp decline by 63% to €313 billion.

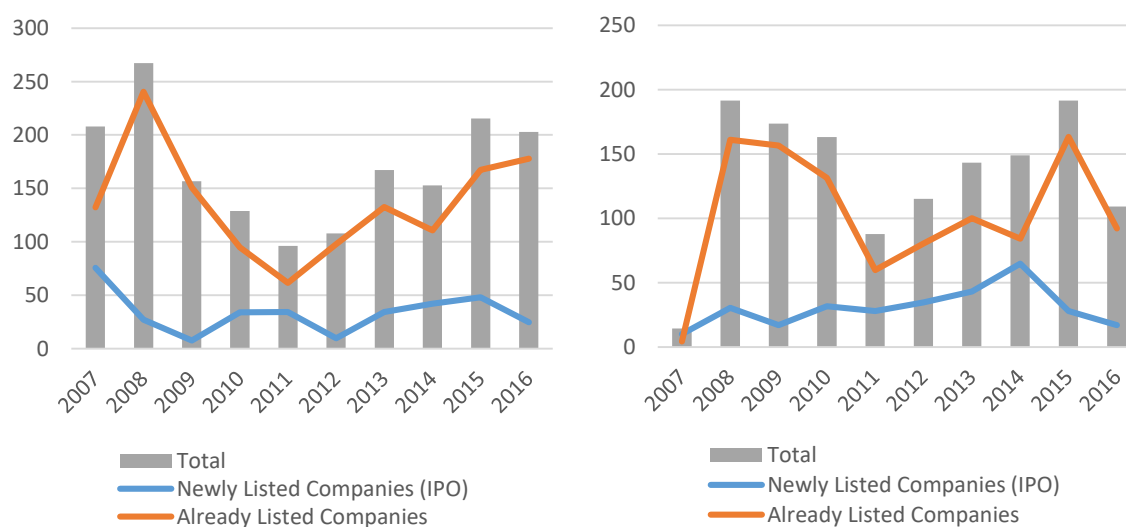
Figure 4. Number of listed ETFs (thousands) and value of ETF trading (€ trillion)



Source: 2017 ECMI Statistical Package.

Total investment flows through IPOs and non-IPOs were down by 36% and 14% respectively in 2016. All regions experienced a decline in investment flows, but this was particularly pronounced in the US (down 43%). The main driver of this trend was the presidential election, which caused uncertainty owing to the possibility of regime change and the consequential shift in policy. Europe, followed by Japan, experienced the largest percentage drop in investment flows from newly listed companies. The 46% drop took place against a backdrop of sluggish economic momentum, concerns over the banking system's health, and uncertainty over a post-Brexit Europe.

Figure 5. Investment flows in the EU (lhs) and the US (rhs) (€ billion)



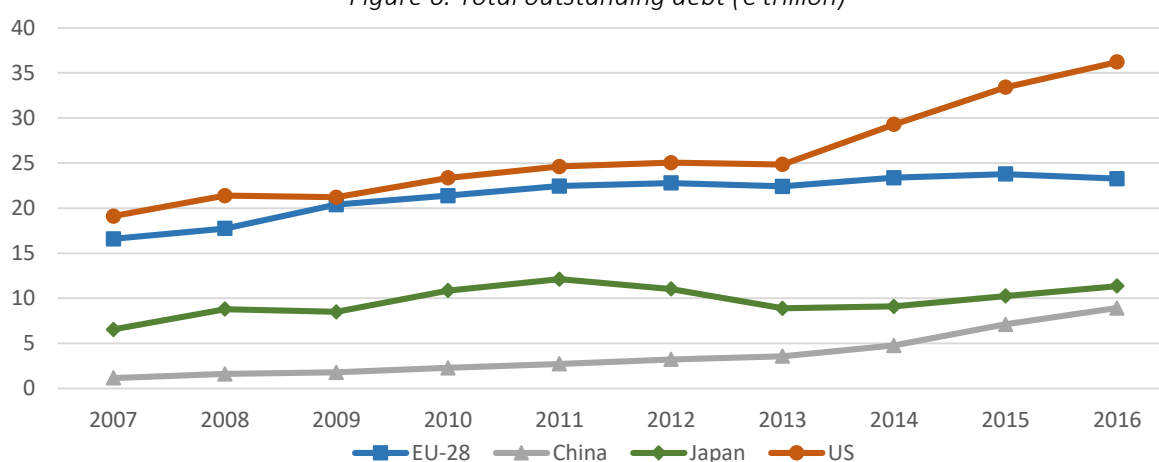
Source: 2017 ECMI Statistical Package.



## 2. Debt securities

The amount of outstanding debt securities has been constantly growing over the years, but the rate of increase is very heterogeneous across markets (Figure 6). For example, in China the market has been growing at an average yearly rate of 26% since 2007, in the US and Japan 8%, and in Europe just 3%. Looking at 2016, it was a very strong year for global debt capital markets with their activity totalling €86.4 trillion, a 4.3% increase compared to 2015, representing 127% of global GDP. However, trends differed between regions. In Europe, as the European Central Bank continued to purchase the continent's debt and keep yields low, the amount of outstanding debt securities decreased by €2.3 trillion. China, Japan and US, meanwhile, experienced an increase of their debt level by 25%, 11% and 8% respectively.

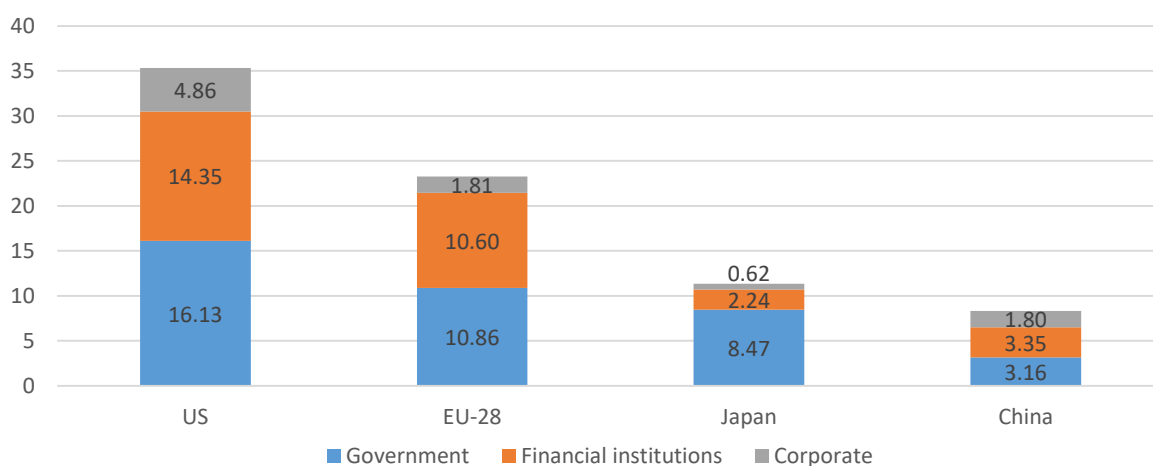
Figure 6. Total outstanding debt (€ trillion)



Source: 2017 ECMI Statistical Package.

Regarding debt securities issuers, governments and financial institutions are the largest providers and have taken up a large part of the financial system (Figure 7). On the other hand, corporate debt securities represent only a small fraction of the market. What is more, the contribution of each provider changed before and after the financial crisis (Figure 8). While financial sector debt was already rising before the crisis, government debt was falling. However, government debt has kept rising since the crisis and has led to a fast and protracted expansion as a percentage of GDP.

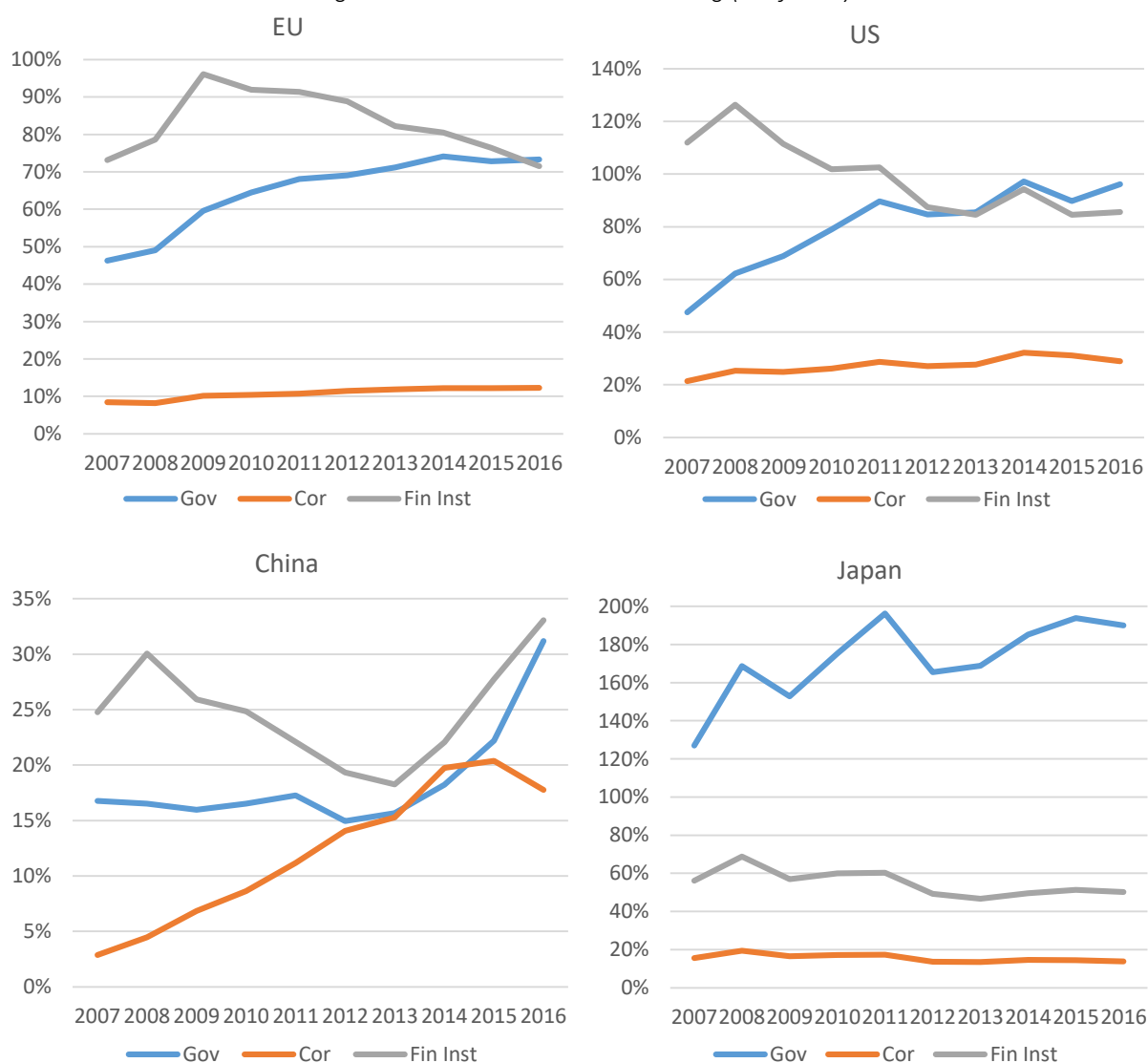
Figure 7. Total outstanding of debt securities markets by issuer, 2016 (€ trillion)



Source: 2017 ECMI Statistical Package.

Another interesting trend becomes evident when looking at debt issued by the corporate sector in advanced and emerging market economies. In advanced economies, although with some variation across European countries, corporate debt stabilised (e.g. in Europe and the US) and even started to decrease one or two years after the crisis (e.g. in Japan) as a percentage of GDP. In China, however, the debt ratio has been growing steadily from 2007 until 2015 at a yearly average rate of 29% (Musmeci and Thomadakis, 2017).

Figure 8. Debt securities outstanding (% of GDP)



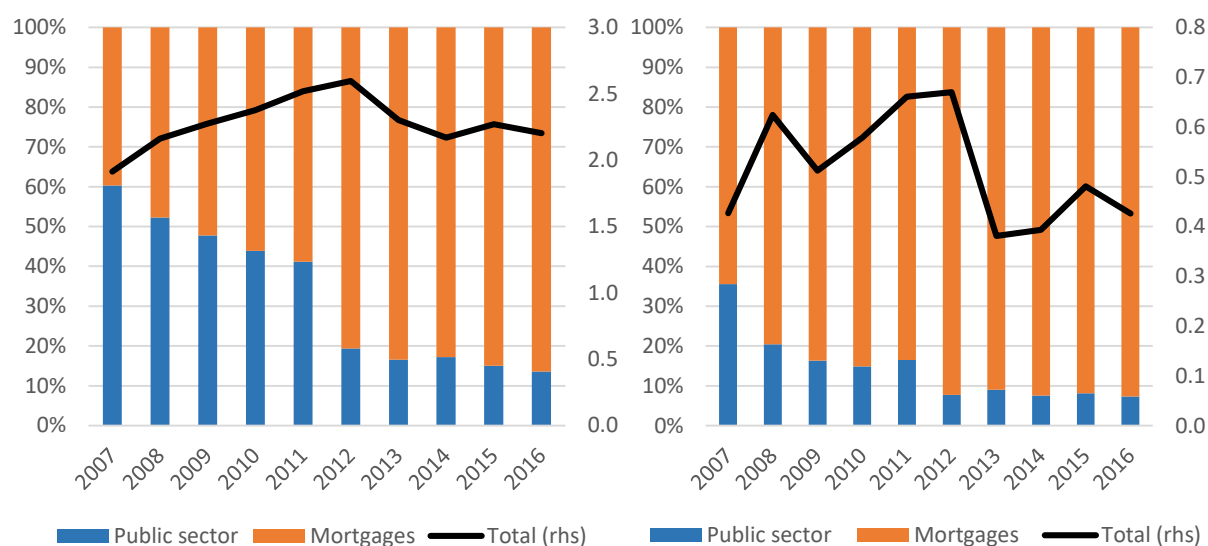
Source: 2017 ECMI Statistical Package.

From 2007 to 2012, the covered bond market experienced smooth and steady development, with an average annual growth rate of 6.3% (Figure 9, left-hand panel). The market first contracted in 2013, by 11.4%, and contracted another 6% in 2014. While in 2015 the market rebounded slightly, in 2016 it again declined slightly, resulting in an outstanding volume of covered bonds of €2.2 trillion. Denmark and Germany remain the largest markets in terms of outstanding volume with €386 trillion and €369 trillion respectively, followed by Spain (€259 trillion) and France (€242 trillion).

With regard to issuance, and despite the decline of the market in 2013 by 43% to €381 billion, an increasing trend is observed thereafter and up until 2015 (Figure 9, right-hand panel). However, in 2016

the issuance of covered bonds further declined to the 2007 level of €426 billion. Denmark by far generates the largest new issuance volumes (€128 billion), while other major issuers are Sweden (€52 billion), Germany (€45 billion) and Italy (€44 billion).

Figure 9. Volume of outstanding covered bonds and issuance of covered bonds, Europe (€ trillion)



Source: 2017 ECMI Statistical Package.

The Eurosystem's decision to start buying covered bonds under the third covered bond purchase programme (CBPP3) has been a key driver of the most recent primary supply and has spurred expansion of the covered bond issuer base.<sup>8</sup> In addition, the supply was supported by market volatility caused by various idiosyncratic or systemic risks in the region, indicating that covered bonds may act as a safer funding alternative in times of stress because the senior unsecured market may be closed or too expensive. Furthermore, macroeconomic conditions were also favourable for the supply of covered bonds, as these instruments have helped protect net interest income in a low yield environment, especially in peripheral jurisdictions (EBA, 2016).

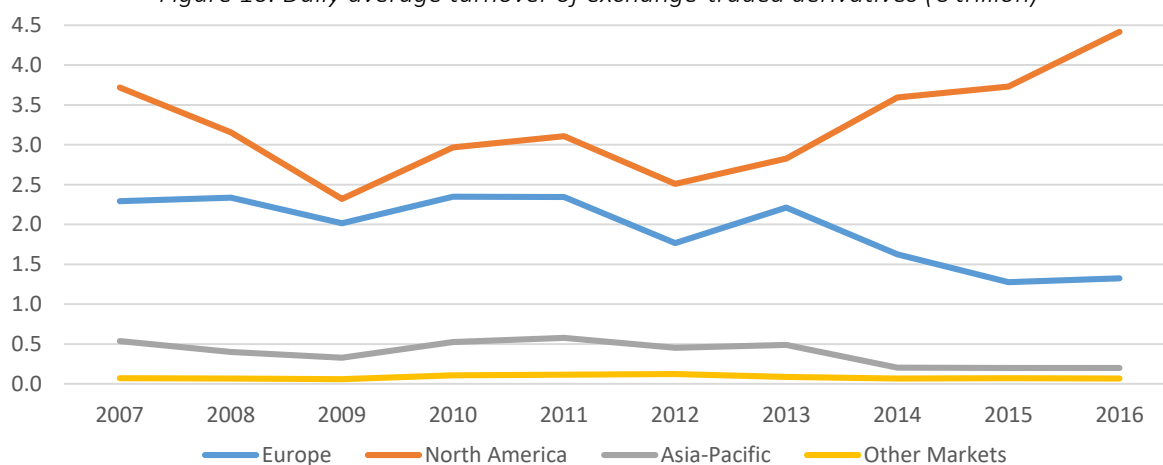
While traditionally, covered bonds have funded exposures to public sector entities and real estate finance (due to a combination of historical and regulatory factors), over the last decade there has been an increase in the share of mortgages. In particular, in 2016 mortgages represented 86% of cover pools of outstanding European covered bonds, compared to 40% in 2007. At the same time, there is a declining trend in public sector volumes from 60% in 2007 to just below 14% in 2016. The trend has been spurred by the global financial crisis, which has had a much more severe impact on the price and availability of other alternative funding sources for funding mortgage loans, such as residential mortgage-backed securities (RMBSs).

<sup>8</sup> Covered bonds are one of the main pillars of the Eurosystem's quantitative easing policy. The most recent Eurosystem's CBPP3 started in October 2014 and will continue at least until September 2018. The purchases under CBPP3 are conducted in both primary and secondary markets (the share of primary market purchases was at 33.73% as of 31 October 2017) ([www.ecb.europa.eu/mopo/implement/omt/html/cbpp3-ga.en.html](http://www.ecb.europa.eu/mopo/implement/omt/html/cbpp3-ga.en.html)).

### 3. Exchange-traded derivatives markets

The daily average turnover of exchange-traded derivatives (ETDs) was 14% higher at end-2016 compared to one year earlier, driven mainly by the North American market, which increased by 18% (Figure 10). Options represent around 77% of the ETD market and futures the remaining 23%, a ratio broadly mirrored across Europe and North America. However, in recent years there has been a divergence between European and North American markets, with the former declining and the latter growing. Since 2013 the daily average turnover in Europe has dropped by 40%, against a 56% increase in North America. Interest rate-related contracts constitute the largest bulk of turnover, representing 98% of the global ETD market in 2016.

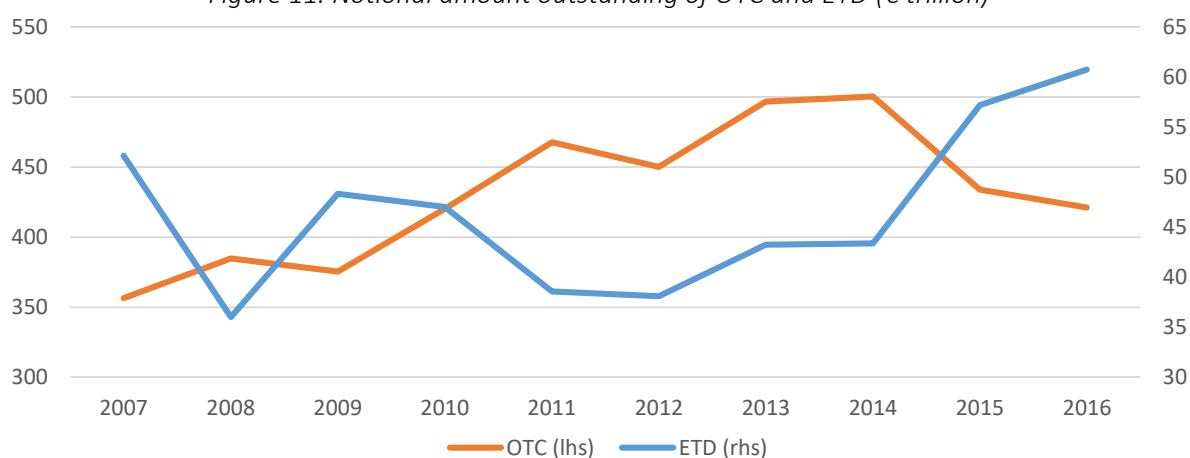
Figure 10. Daily average turnover of exchange-traded derivatives (€ trillion)



Source: 2017 ECMI Statistical Package.

Since 2014, trends in over-the-counter (OTC) derivatives and ETDs have been going in opposite directions. While the notional value of OTC derivatives decreased by 16%, the notional amount of ETDs increased by 40.1% since 2014 and by 64.5% since 2012 (Figure 11). Nonetheless, OTC derivatives continue to represent the largest share of derivatives markets with a notional value of €421.1 trillion compared to €60.7 trillion for ETDs in 2016.

Figure 11. Notional amount outstanding of OTC and ETD (€ trillion)



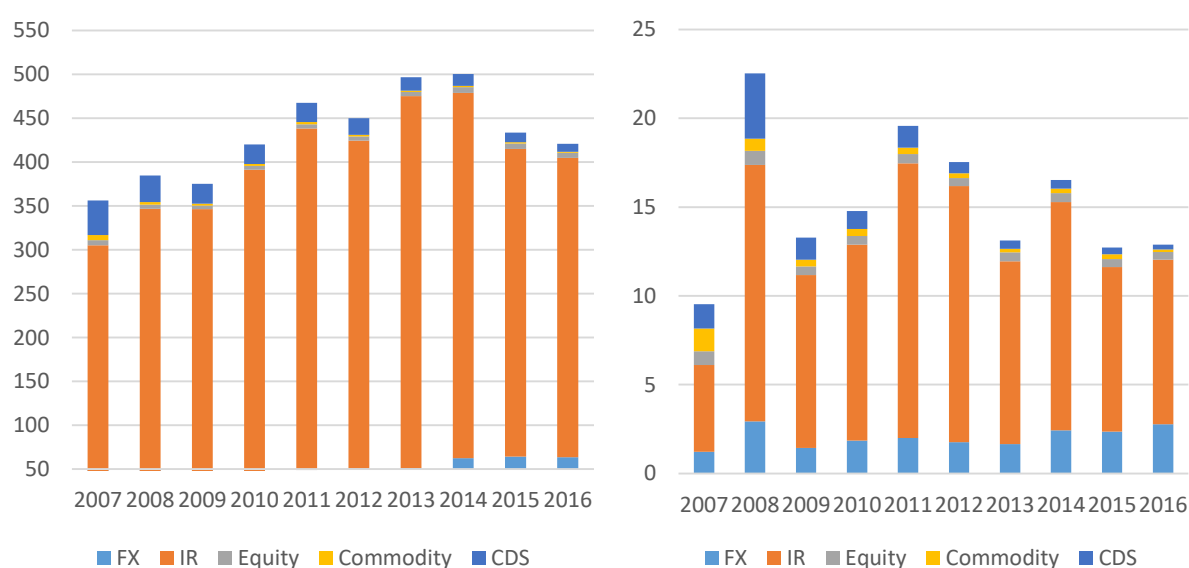
Note: Notional amount outstanding of OTC derivatives includes: foreign exchange, interest rate, equity-linked, commodity and credit default swaps contracts. Notional amount outstanding of ETDs includes interest rate and foreign exchange futures and options.

Source: 2017 ECMI Statistical Package.

## 4. Over-the-counter derivatives markets

Despite the uptick in the notional amount of outstanding contracts by 6.3% (€461 trillion) observed in the first half of 2016 (driven by growth in interest rate contracts, commodity contracts and to a lesser extent foreign exchange contracts), the market contracted by the end of the year to €421 trillion (Figure 12, left-hand panel). This is down by 3.1% compared to December 2015.<sup>9</sup> On the other hand, the gross market value of the outstanding OTC derivatives contracts – that is, the cost of replacing all these contracts at current market prices – closed the year at €12.9 trillion (Figure 12, right-hand panel).

Figure 12. Notional amount outstanding and gross market value of OTC derivatives (€ trillion)



Notes: Values correspond at year end. Unallocated derivatives are not included.

Source: 2017 ECMI Statistical Package.

### 4.1 Interest rate derivatives

The interest rate component of the global OTC derivatives market continues to represent the vast majority of OTC contracts. As of December 2016, interest rate contracts totaled €341 trillion and represented 81.1% of the global OTC market (80.8% in 2015). However, in terms of notional amount outstanding, OTC interest rate derivatives (IRD) declined by 2.6% compared to 2015. This is mainly due to a decrease in interest rate swaps (IRS) by 3.2% and options by 12%.

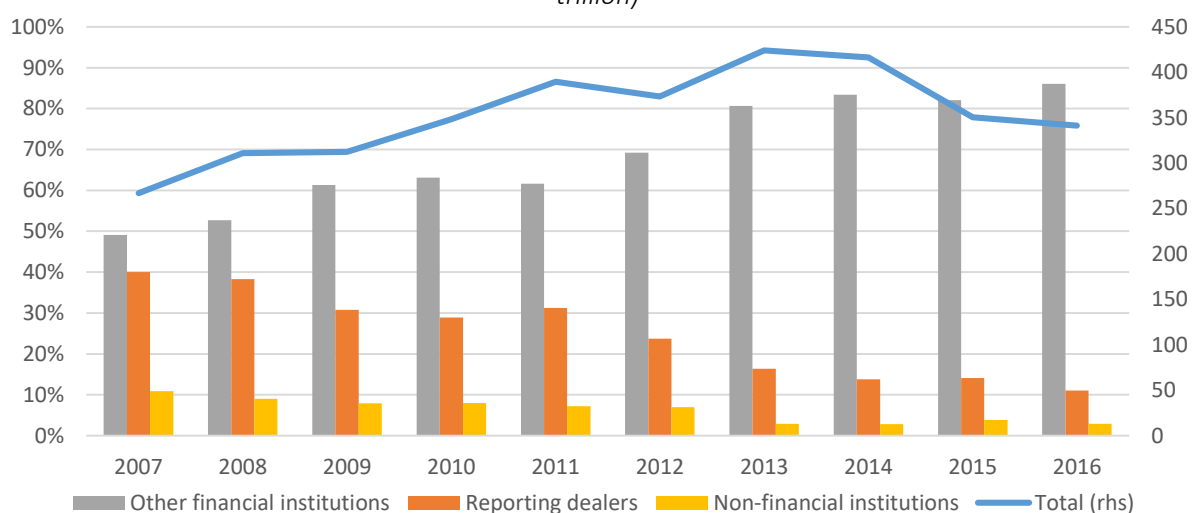
Interest rate swaps are the single largest segment in OTC derivatives markets. At the end of December 2016 they accounted for 60.6% of the notional amount of all outstanding OTC derivatives and 64% of the total gross market value. However, their importance has been declining since 2014, when they accounted for 70% of the gross market value of all OTC derivatives.<sup>10</sup>

<sup>9</sup> These figures refer to growing notional outstanding volumes, which represent the gross volume of all derivatives transactions that are concluded and not yet settled by the reporting date. Moreover, these notional outstanding figures are not adjusted for the effects of clearing and compression. For more information on clearing methodology, refer to BIS (2017).

<sup>10</sup> Trade compression to eliminate redundant contracts has been a major factor. Compression was aided by the shift towards CCPs, which in effect multilateralised the compression process.

Central clearing, which is a key element in authorities' agenda for reforming the OTC derivatives markets to reduce systemic risks, made further inroads in OTC derivatives markets and in particular IRD in 2016. While comprehensive data on central clearing are available only from end-June 2016, the share of positions with other financial institutions can approximate the pace of the shift in activity towards CCPs in recent years (Figure 13).<sup>11</sup> The share of IRD positions booked with financial institutions other than dealers stood at 86% in 2016, higher than the share observed at the end of 2015 (82%). Over the same period, the inter-dealer segment declined in importance from €107 trillion in 2007 to €38 trillion in 2016.

Figure 13. Notional amount outstanding of OTC interest rate derivatives, by sector of counterparty (€ trillion)



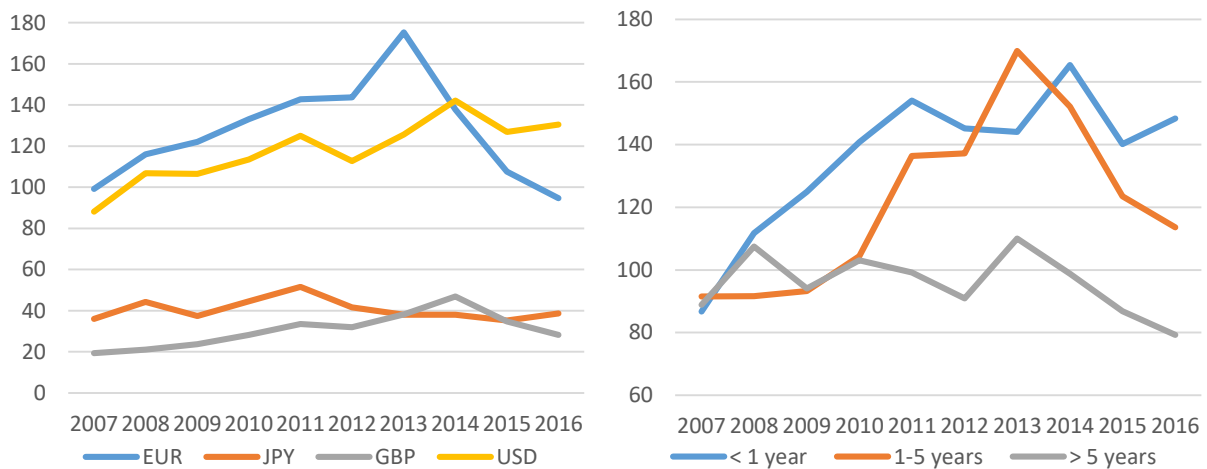
Source: 2017 ECMI Statistical Package.

While IRD contracts denominated in euros were the most actively traded until 2013, since then they were supplanted by US dollar-denominated contracts (Figure 14, left-hand side). After 2007 notional amount outstanding of US-denominated IRD increased by 30% to €126 trillion in 2013 and by a further 4% to €130 trillion in 2016. On the other hand, and despite the booming of euro interest rate swap notions from 2007 to 2013, the market contracted by 46% over the last three years and reached a pre-crisis level of €95 trillion.

The observed shift in currency segments is largely attributed to the increase in trading activity of short-term instruments and the decline of outstanding amount for longer maturities (Figure 14, right-hand panel). This is due to the divergent stance of monetary policies, given a heightened probability of policy rate increases in the United States and no anticipated change in the euro area due to stable and negative interest rates (Ehlers & Eren, 2016). For longer-maturity contracts, however, activity in the US dollar segment was essentially flat. Finally, the reduced demand for swaps by the government-sponsored enterprises (GSEs) in the US has been a key factor in the subdued activity observed in long-term swaps.

<sup>11</sup> For the first time, in 2016 BIS captured comprehensive data on positions with CCPs. Whereas in previous years details about financial counterparties were collected only for CDS, at end-June 2016 CCPs were separately identified for all types of OTC derivatives. Previously, CCPs were grouped indistinguishably with all financial institutions other than dealers. For consistency, the 2017 ECMI Statistical Package reports figures on reporting dealers, other financial institutions and non-financial institutions.

Figure 14. Notional amount outstanding of OTC interest rate derivatives, by currency and maturity (€ trillion)



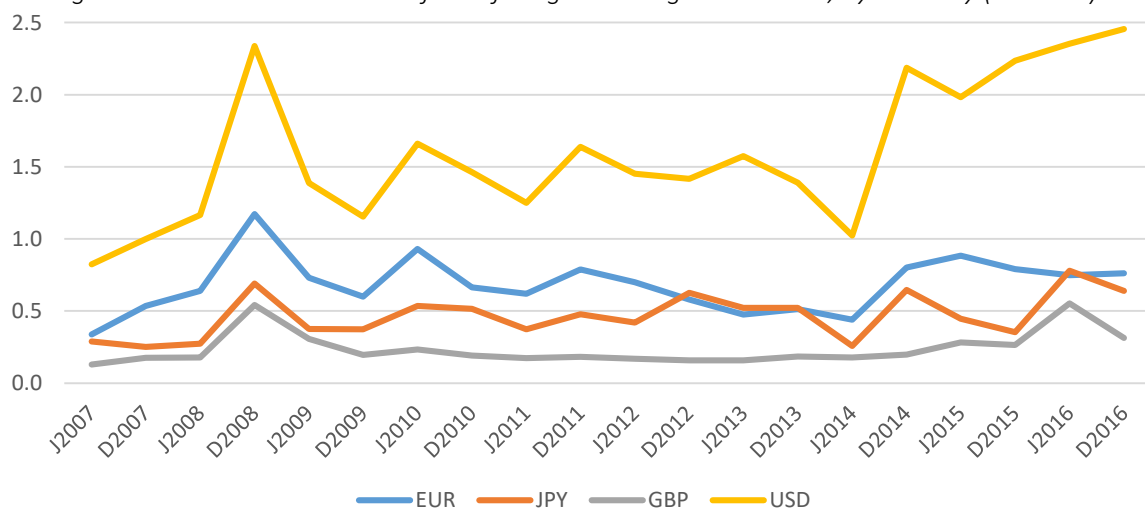
Source: 2017 ECMI Statistical Package.

#### 4.2 Foreign exchange derivatives

Foreign exchange (FX) derivatives make up the second largest segment of the global OTC derivatives market. As a share of all OTC derivatives, FX instruments rose from 10.3% in 2013 to 15.1% in 2016 when measured in notional amounts and from 12.6% to 21.5% when measured at gross market value.<sup>12</sup> In particular, the notional amount of global FX derivatives remained stable (marginally down by 1.1%) at €63.6 trillion in 2016, while the gross market value increased by 17.6% to €2.8 trillion.

Notwithstanding the upward trend, the gross market value of UK pound-denominated contracts halved by 43.3% (from €552.6 billion to €313.3 billion) in the second half of 2016 following the Brexit referendum (Figure 15). However, the US dollar remained the world's dominant vehicle currency, and represented 45% of the global notional outstanding, up slightly from 43.5% in December 2015.

Figure 15. Gross market value of OTC foreign exchange derivatives, by currency (€ trillion)



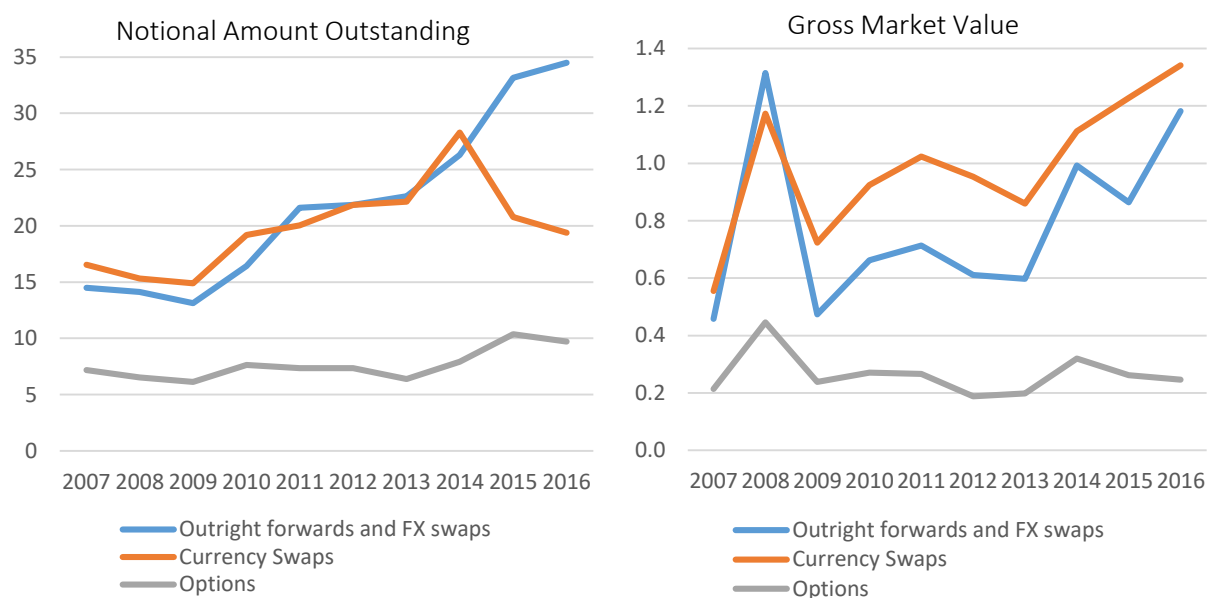
Source: 2017 ECMI Statistical Package.

<sup>12</sup> The gross market value of foreign exchange derivatives increased partly due to the sharp moves in the UK pound and Japanese yen, which increased the market value of contracts denominated in these instruments.

Activity across the main FX instruments categories, has changed unevenly. In particular, notional outstanding of outright forwards-FX swaps and currency swaps, the two largest instrument categories,<sup>13</sup> have evolved in opposite directions (Figure 16, left-hand panel). Notional amount of outright forwards and FX swaps increased by 31% over the last three years, and accounted for 54% of global FX notional in December 2016. This increase was based broadly across most currencies, with FX swaps denominated in Japanese yen increasing significantly, by 20.5%.<sup>14</sup> On the other hand, between end-2014 and end-2016 the notional outstanding of currency swaps contracts deteriorated by 31.5% to just below €20 trillion.

Looking at the gross market value, the cost of replacing FX contracts stood at €2.8 trillion, up from €2.3 trillion at the end of 2015 (Figure 16, right-hand panel). This development was driven by sharp moves in yen- and pound-related FX derivatives during the second half of 2016, and declining long-term yields, which have increased the value of outstanding contracts. Currency swaps, which represent 48% of the FX derivatives markets, hit a record €1.3 trillion in December 2016, up 9.2% from one year earlier.

Figure 16. OTC foreign exchange derivatives, by instrument (€ trillion)



Source: 2017 ECMI Statistical Package.

Unlike in the interest rate derivatives market, where inter-dealer contracts shifted towards other financial institutions (including CCPs), in the FX derivatives market inter-dealer positions continued to account for nearly as large a share of outstanding contracts as did positions with other financial institutions. To be more precise, the notional amount of outstanding FX contracts between reporting dealers totalled €28.1 trillion in 2016, while contracts with financial counterparties other than dealers stood at €27.7 trillion. The inter-dealer share has averaged around 43% since 2011, up from 38% between 2007 and 2010.

<sup>13</sup> In 2016, they accounted for 85% (91%) of the OTC FX derivatives market in terms of notional outstanding (gross market value).

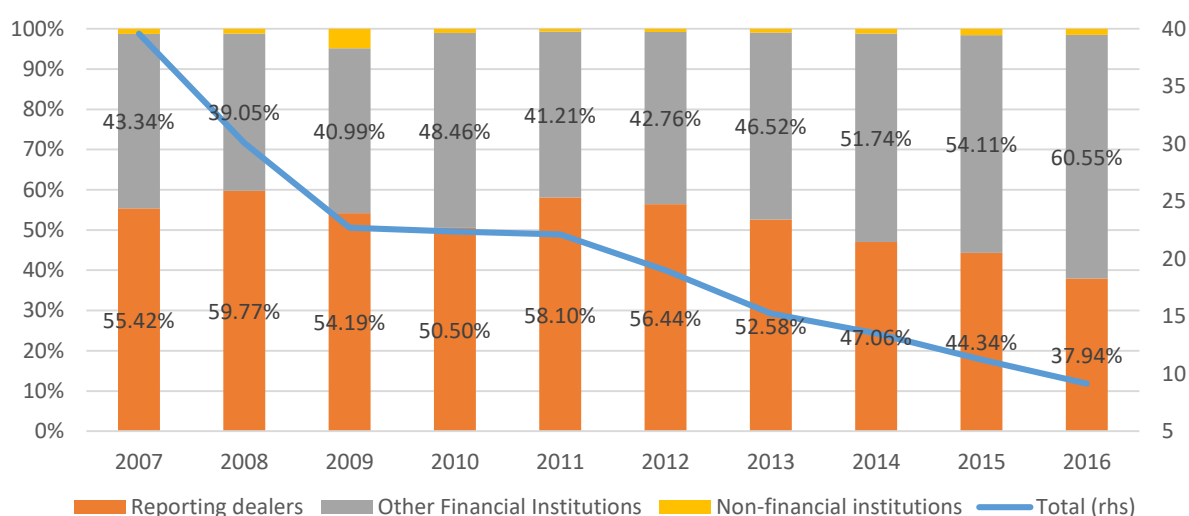
<sup>14</sup> These results are consistent with increased use of these instruments by Japanese investors to hedge their foreign currency exposures, resulting in part from ongoing purchases of foreign equities and bonds (Garner *et al.*, 2016).



### 4.3 Credit default swaps

Despite the fact that the credit derivatives market in 2007 was bigger than the FX derivatives market in notional amounts (€39.6 trillion to €38.2 trillion), it has declined steadily in size since then. The notional amount of outstanding credit derivatives fell to €9.1 trillion by end-2016, from €15.2 trillion at end-2013. As a share of all OTC derivatives, credit derivatives fell from 11% to 2% between 2007 and 2016 when measured in notional amounts, and from 14% to 2% when measured at gross market value. However, the share of outstanding CDS cleared through other financial institutions (including CCPs) grew from 54% in 2015 to 60.5% in 2016, while the uncleared segment (contracts between reporting dealers) fell from €4.9 trillion to €3.5 trillion (Figure 17).<sup>15</sup>

Figure 17. Notional amount outstanding of credit default swaps, by sector of counterparty (€ trillion)



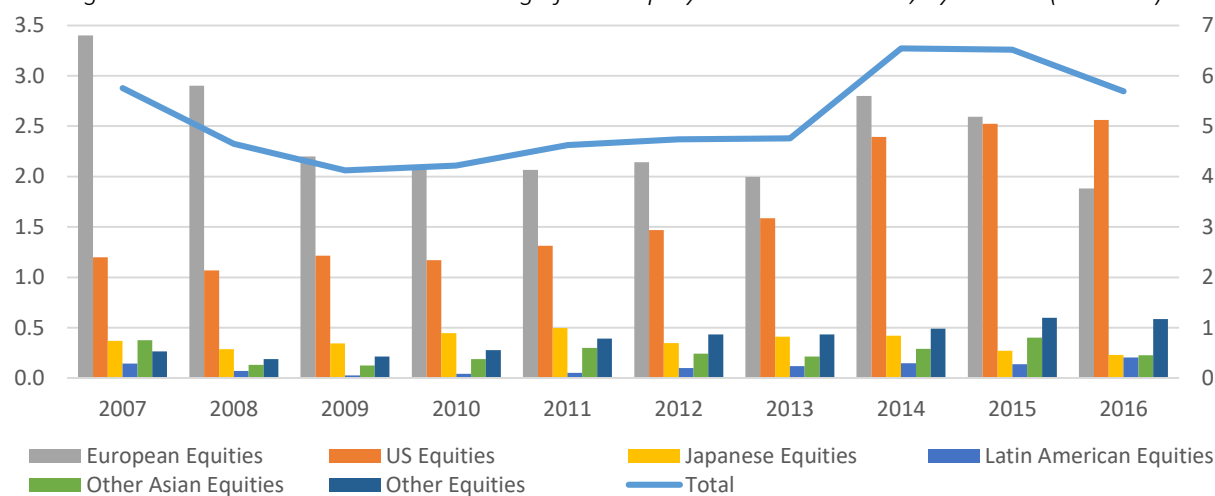
Source: 2017 ECMI Statistical Package.

### 4.4 Equity-linked and commodities derivatives

The two smallest segments of the global OTC market are derivatives linked to equities and commodities, which totalled €5.7 trillion and €1.2 trillion, respectively, at end-2016. Together, equity and commodity derivatives accounted for only 1.6% of notional amounts outstanding, but they accounted for a larger proportion of market value. At their peak in 2007, equity and commodity derivatives had collectively accounted for over 21.6% of the gross market value of all OTC derivatives, but this proportion fell to 4.6% by 2016.

<sup>15</sup> Higher margin requirements for non-centrally cleared derivatives are likely to have been an important factor contributing to this contraction (BIS, 2017).

Figure 18. Notional amount outstanding of OTC equity-linked derivatives, by market (€ trillion)



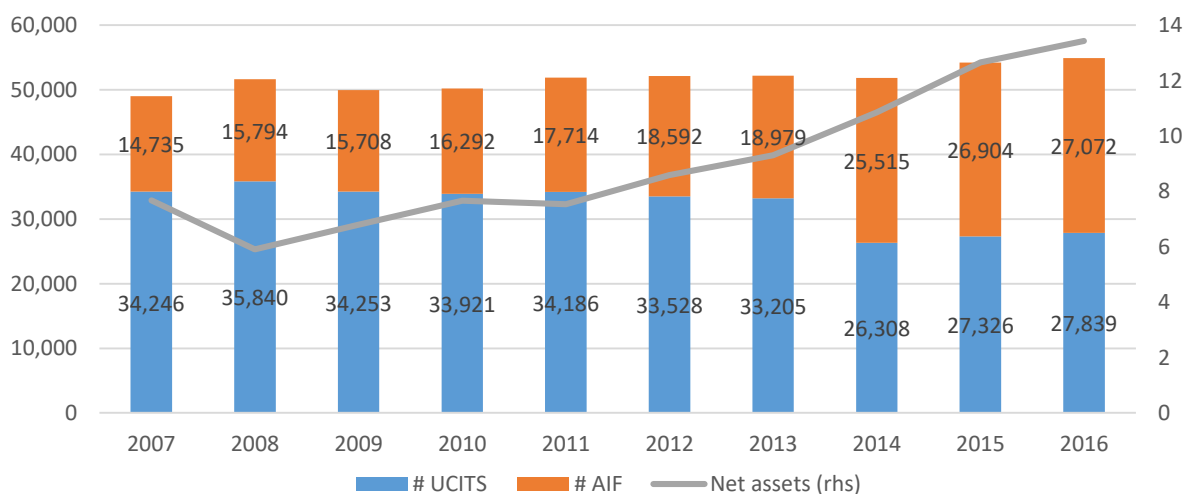
Source: 2017 ECMI Statistical Package.

When considering the composition of equity-linked contracts, a shift over the years becomes evident (Figure 18). From 2007 to 2016, contracts linked to US equities gradually increased, from €1.2 trillion to €2.6 trillion, representing 45% of global equity-linked OTC contracts. Derivatives linked to European equities experienced a significant decrease over the same period, dropping from €3.4 trillion to €1.9 trillion.

## 5. Mutual funds

Whilst the launch of the ECB's quantitative easing program and the low interest rate environment boosted the demand for investment funds (UCITS and AIF) in 2015 (up by 4.6% from 2014), investment funds did not experience a similar development in 2016 (Figure 19). On the contrary, the stock market plunge in early 2016, weak economic growth and the UK's vote to leave the European Union created much uncertainty about the future, which resulted in a minor increase in the number of funds by 1.2%. Similarly, assets under management reached €13.4 trillion in 2016, up from €12.6 trillion a year earlier. Undertakings for collective investment in transferable securities (UCITS) accounted for 60.9% of this total, with the remainder being alternative investment funds (AIF).

Figure 19. Number of investment funds and total net assets, EU-28 (€ trillion)



Source: 2017 ECMI Statistical Package.

The largest financial centres with more than €1 trillion of fund assets (Luxembourg, Ireland, Germany, France and UK) managed 81.3% of European investment fund assets at end-2016 (Table 1). The relatively high market share of the rest of Europe (18.7%) is largely attributable to other countries with large fund management, such as the Netherlands, Italy and Spain. When comparing assets to GDP, it can be seen that investment fund assets managed in Luxembourg represented 6,829.2% of GDP, compared to 24.11% in Spain and 17.8% in Italy.<sup>16</sup>

*Table 1. Investment fund assets (UCITS & AIF), by country of domiciliation (€ trillion)*

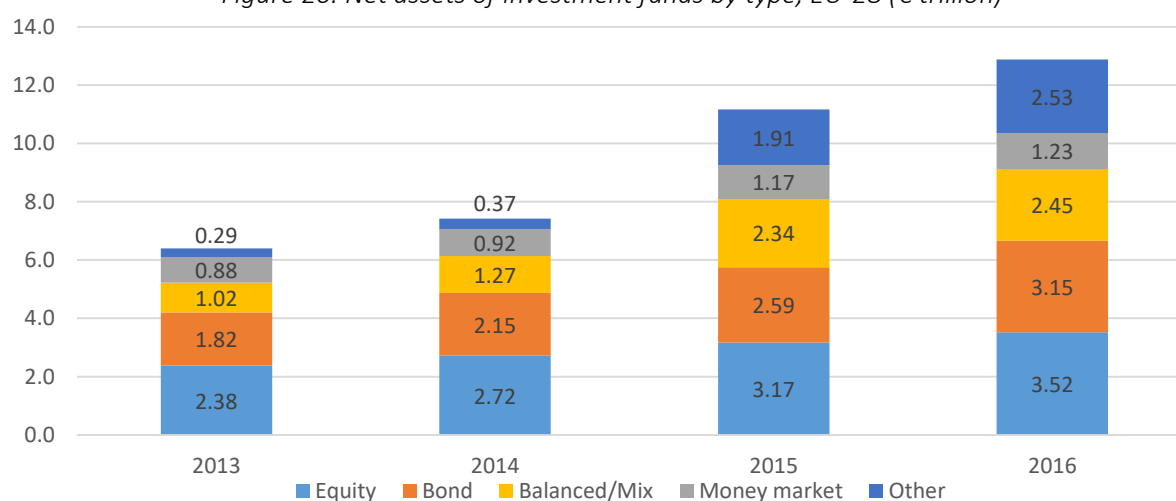
	# of Funds	Net Assets	% Δ in 2016 <sup>1</sup>	Market Share <sup>2</sup>	% GDP <sup>3</sup>
Luxembourg	14,211	3,701.08	5.56%	27.57%	6,829.2%
France	10,952	1,783.83	6%	13.29%	80.03%
Ireland	6,470	2,084.75	9.79%	15.53%	784.23%
Germany	6,011	1,885.94	9.06%	14.05%	60.17%
United Kingdom	2,938	1,465.65	-1.27%	10.92%	61.92
Spain	2,403	268.51	5.56%	2%	24.11%
Austria	2,031	173.79	3.3%	1.29%	49.74%
Netherlands	1,811	801.86	9.35%	5.97%	115%
Italy	1,309	297.7	5.73%	2.22%	17.8%
Denmark	949	275.97	6.74%	2.06%	99.69%

Notes: <sup>1</sup> End 2016 compared to end 2015. <sup>2</sup> Market share of EU-28. <sup>3</sup> As % of domestic GDP.

Source: 2017 ECMI Statistical Package.

Holdings of bond and equity assets remain asset managers' preferred asset classes (Figure 20). Equity funds represented 27.3% (€3.5 trillion) of total net assets at the end of 2016, while bond funds increased by 21.6% to €3.1 trillion from 2015 to 2016 (Musmeci and Thomadakis, 2017). Money market and cash equivalents, as well as balanced/mix assets, represented 19.1% and 9.6% of European assets respectively. The remainder of the portfolio was made up of other assets, such as real estate, hedge funds, structured products and private equity. Other alternatives such as infrastructure assets are also included in this segment.

*Figure 20. Net assets of investment funds by type, EU-28 (€ trillion)*



Source: 2017 ECMI Statistical Package.

<sup>16</sup> These ratios reflect the importance of these countries, the ability of their asset managers in attracting assets domiciled abroad, and the importance of pension funds located in these countries (EFAMA, 2017).

## 6. Conclusion

Market performance in 2016 was mixed. Domestic market capitalisation continued its modest and upward trend, approaching the 2007 level. Despite a small decline in the number of listed companies, the average capitalisation per company increased. However, one of the most startling statistics was the downward trend of IPOs and investment flows, which reflects global uncertainty triggered by events such as Brexit and the US election.

In 2016, as the European Central Bank continued to purchase the continent's debt and keep yields low, the amount of outstanding debt securities decreased mainly due to a decline in the issuance of debt by financial institutions. Furthermore, covered bonds continued to play a key role in European capital markets, contributing to the effective allocation of capital, economic development and recovery.

The size of the OTC derivatives market continued to contract in 2016 in terms of notional outstanding, while the gross market value remained stable at the 2015 level. Both foreign exchange and interest rate derivatives contracts increased their share in the global OTC market. US dollar-denominated instruments further increased their leading position, as euro-denominated instruments – historically the most actively traded segment – declined for a third year in a row.

Lastly, 2016 was another record year for the European investment funds, with both the number of investment funds and net assets rising to all-time highs. All categories of investment funds increased in net assets, with bond funds enjoying the largest rise on the back of falling interest rates. Among the major national markets, the largest increase in net assets in 2016 was in Ireland, while Luxembourg accounted for a bit more than a quarter of the European market.

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