

EUROPEAN CAPITAL MARKETS INSTITUTE

ECMI Research Report

Recent Developments in European Capital Markets – Key findings from the 2016 ECMI Statistical Package

by Roberto Musmeci and Apostolos Thomadakis

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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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Contents

1.	Equity markets					
2.	Debt securities					
3.	Exchange-traded derivatives (ETDs) markets					
4.	Over-the-counter cerivatives markets					
	4.1	Interest rate derivatives	9			
	4.2	Foreign exchange derivatives	.11			
	4.3	Credit default swaps	.12			
	4.4	Equity-linked and commodities derivatives	.12			
5.	Mutu	al Funds	.13			

List of Figures and Table

Figure 1. Domestic market capitalisation (€ trillion)2
Figure 2. Domestic market capitalisation (% of GDP)2
Figure 3. Total number of listed companies and average market capitalisation for 2015 (€ billion)3
Figure 4. Number of listed exchange-traded funds (ETFs) and value of ETFs trading (€ trillion)4
Figure 5. Investment flows in EU (LHS) and US (RHS) for 2015 (€ trillion)4
Figure 6. Total outstanding debt (% of GDP)5
Figure 7. Total outstanding debt per issuer for 2015 (% of aggregate and value in € trillion)5
Figure 8. Corporate debt (% of total debt per country)6
Figure 9. Government (LHS) and financial institutions (RHS) debt (% of total debt per country)6
Figure 10. OTC and ETD activity (notional amount outstanding in \in trillion and market share as % of
total)7
Figure 11. Exchange-traded futures and options, by location of exchange (notional principal, in \in
trillion)
Figure 12. Notional amount outstanding and gross market value of OTC derivatives (€ trillion)9
Figure 13. Notional amount outstanding of OTC interest rate derivatives, by currency (\in trillion) 10
Figure 14. Notional amount outstanding of OTC interest rRate derivatives, by maturity and by sector
of counterparty (€ trillion)10
Figure 15. Notional amount outstanding of OTC foreign exchange derivatives, by currency
and by sector of counterparty (€ trillion)11
Figure 16. OTC foreign exchange derivatives, by instrument (€ trillion)12
Figure 17. Notional amount outstanding of OTC equity-linked derivatives, by market (€ trillion) 13
Figure 18. Number and Total Net Assets of Investment Funds for EU2813
Figure 19. Total Net Assets of Investment Funds by Type for EU28 (trillions of euro)15

Table 1. Net assets in investment funds (UCITS & AIF) by country of domiciliation (% of GDP)).....14

Recent Developments in European Capital Markets Key findings from the 2016 ECMI Statistical Package

ECMI Research Report No. 11 / February 2017 Roberto Musmeci and Apostolos Thomadakis^{*}

The purpose of this paper is to present the key findings reported in the 2016 ECMI Statistical Package,¹ a comprehensive and up-to-date database compiled annually on the dynamics of European and global capital markets (covering the US, Japan, China and all other relevant markets). 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 analysis of the data collected in the 2016 ECMI Statistical Package suggests the existence of encouraging trends in the global equity markets. In Europe, supported by the launch of the European Capital Market Union by the European Commission and the beginning of the Asset Purchase Programme carried out by the ECB, equity markets have consolidated the positive trend started in 2011. In 2015, domestic capitalisation in the EU-28 markets has increased by 6.3% to the level of 2014 (Figure 1). Overall, after having contracted twice in 2008 and in 2011, the equity market in the EU28 has expanded by 45%, returning to the pre-crisis level. On the other side of the Atlantic, over the period 2011-15, the US equity market has recorded an outstanding performance, expanding by 90.5%. In 2015, the total market capitalisation of the companies listed in the US has increased by 6.2% to the level of 2014.

Shifting the focus to the Asian markets, the Chinese and Japanese equity markets have recorded outstanding performances in 2015. Although it is more exposed to market volatility, since 2011, the Japanese equity market has expanded by 64.3%, registering in 2015 an expansion of only 24.7% compared to the level of 2014. However, the most pronounced growth has been registered by the Chinese equity market. Between 2014 and 2015, indeed, the market capitalisation increased respectively by 48.8% and 37.3%. Overall, since 2011, the size of the Chinese equity market has doubled, peaking to ≤ 10.4 trillion and converging to the level of the EU 28 equity market.

In relative terms, the US equity market remains the largest market in the world. Indeed, between 2010 and 2015 the average market capitalisation was equal to 130.2% of the GDP (Figure 2). Over the same period, the Japanese and the Chinese equity market accounted on average for 86.2% and 91.0% of the national GDPs, respectively. On the contrary, over the period 2010-15, the EU28 equity markets represented only 65.4% of the total GDP. Interestingly, these figures clearly highlight the limited accessibility to the capital market in the EU28, and sheds some light on the size of the 'untapped capital market' which may eventually contribute to consolidate further the economic recovery in the EU28.

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¹ For information on the 2016 ECMI Statistical Package and how to download the file, see http://www.eurocapitalmarkets.org/statistical-packages.



Figure 1. Domestic market capitalisation (€ trillion)





Source: 2016 ECMI Statistical Package.

Source: 2016 ECMI Statistical Package.

Against this background, data also highlight very different levels of fragmentation across the equity markets. In 2015, 7,445 firms were listed across the different European stock exchanges (Figure 3, left-hand panel), with an average market capitalisation of ≤ 1.4 billion (Figure 3, right-hand panel). In comparison, 4,693 and 5,283 corporations operated respectively in the Chinese and the US equity markets, with an average market capitalisation of ≤ 2.2 and ≤ 4.4 billion, respectively. Leading from these numbers, it appears likely that regulatory provisions and the existence of different national markets might have an impact in reducing the average size of the European financial corporations. Finally, with more than 3,513 firms with an average market capitalisation of ≤ 1.3 billion, the Japanese equity market is confirmed as one of the world's most vibrant equity markets.





However, fragmentation is not only an issue for the primary equity market in the EU28, as it can also be observed in the Exchange Trade Fund (ETF) market. Since 2007, the number of the ETFs in the European market has dramatically increased – from less than 1,000 to more than 6,000 (Figure 4, left-hand panel) – whereas the total value of ETF trading peaked at ≤ 0.71 trillion (Figure 4, right-hand panel). Conversely, in US the ETF market is much more concentrated. In 2015 in the US, there were only 1,774 listed ETFs, but the total trading accounted for almost ≤ 11.9 trillion. Finally, the ETF market is not so well developed in China or in Japan, although the total value of ETF trading increased significantly in both countries in 2015.

Source: 2016 ECMI Statistical Package.



Figure 4. Number of listed ETFs (thousands) and value of ETFs trading in EU28, China, Japan and the US (€ trillion), 2007-15

Source: 2016 ECMI Statistical Package.

After having significantly slowed down in 2011 and in 2014, the European equity market became stronger again in 2015, as investment flows surged to \notin 232.3 trillion, compared to \notin 191.5 trillion in the US. Interestingly, data highlight very different patterns for already listed and newly listed companies in the EU and the US. Indeed, in the EU28, investments from newly listed companies in 2015 accounted for \notin 88.7 trillion, representing an increase by 48% over the investments coming from already listed companies shrank from \notin 111.4 trillion in 2014 to \notin 59.8 trillion in 2015. In the US, in 2015, already listed companies have outperformed newly listed companies recording an all-times high of \notin 166.6 trillion, compared to the \notin 28.5 trillion coming from newly listed companies (Figure 5, right-hand panel).



Figure 5. Investment flows in the EU (LHS) and the US (RHS) for 2015, 2007-15 (€ trillion)

Source: 2016 ECMI Statistical Package.

2. Debt securities

The total amount of outstanding of debt securities has steadily increased during 2015 and reached €23.8 trillion in Europe, €7.1 trillion in China, €10.3 trillion in Japan and €33.4 trillion in the US. As shown in Figure 6, the evolution of the aggregate level of debt-to-GDP ratio suggests the existence of different trends across the economies. Indeed, as the EU28 has entered a deleveraging phase, the level of debt to GDP has been gradually declining since 2011. Conversely, in China, whose data show an extremely low level of debt, has been experienced a remarkable increase in its debt level. Finally, in both Japan and the US, following a pronounced decline in 2011, the average level of debt has been increasing again since 2012.



Figure 6. Total outstanding debt in EU28, China, Japan and the US, 2017-15 (% of GDP)

Source: 2016 ECMI Statistical Package.

The differences across the debt security markets become more pronounced when we look at the composition of the debt. As the data summarised in Figure 7 suggest, the single components of the debt do not have the same weight in the total amount outstanding across the different markets.



Figure 7. Total outstanding debt per issuer, 2015 (% of aggregate and value in € trillion)

Source: 2016 ECMI Statistical Package.

6 | MUSMECI & THOMADAKIS

In 2015, government debt accounted for 74.5% of total Japanese debt, whereas in China it accounted for 30.9%. In contrast, government debt in EU28 and the US represented 45.1% and 43.7% of the total outstanding debt, respectively. With the exception of Japan, where it accounts for 19.6% of the total debt, the size of financial debt in EU28, China and the US is comparable to that of government debt with 47.3%, 39.4% and 41.1% of the total outstanding debt, respectively.

Turning the focus to corporate debt, the US market is the largest in terms of volume and it covers 15.3% of the total US outstanding debt. In Japan and the EU28, the corporate debt market in 2015 was confirmed to be fairly limited, as it represented only 5.9% and 7.6% of the total outstanding debt. Finally, taking into consideration the differences in terms of volume, the Chinese corporate bond market accounted for 29.6% of the total debt in 2015.



Figure 8. Corporate debt in EU28, China, Japan and the US, 2007-15 (% of total debt per country)

As clearly shown by Figure 8, corporate debt in China has experienced dramatic growth. In absolute terms, the total corporate debt increased from \notin 75 billion in 2007 to \notin 2.1 trillion in 2015. The performance of the Chinese equity market and the positive economic outlook suggest that corporate debt in China is set to increase further in the next few years. In the same vein, although at a very different pace, corporate debt has increased both in the EU28 and the US, whereas in Japan it has been constantly declining.

Source: 2016 ECMI Statistical Package.



Figure 9. Government (LHS) and financial institutions (RHS) debt in EU28, China, Japan and the US (% of total), 2007-15

Source: 2016 ECMI Statistical Package.

Since 2007, the share of government debt in total outstanding debt has gradually increased all over the period in EU28, Japan and the US (Figure 9, left-hand panel). In particular, government debt in the US sharply increased between 2007 and 2011, before stabilising at around 43% of the total level of debt. In contrast, due to the outstanding increase in corporate debt, the share of government debt in China has slightly declined, despite the constant increase in absolute terms.

Finally, since 2007, data suggest a clear trend in the market for debt securities issued by financial institutions (Figure 9, right-hand panel). Overall, the share of financial institutions' debt has gradually decreased in all four economies analysed. While in 2015 financial institutions' debt increased in absolute terms for China, Japan and the US by 9.2%, 6.2% and 9%, respectively, compared to 2014, the EU28 recorded a decrease of 3%.

3. Exchange-traded derivatives (ETDs) markets

The nominal value of outstanding OTC derivatives contracts declined from an all-time-high of \in 519 trillion in 2014 to \in 465.9 trillion at the end of 2015. At the same time, listed derivatives (i.e. ETD) reached a new historical peak in 2015, estimated at \in 68.2 trillion, up by 20.7% compared to 2014 and by 41.1% compared to 2012 (Figure 10, left-hand panel).² This change at derivatives market it is also observed when looking at the market share of OTC and ETDs and how it evolved since 2012 (Figure 10, right-hand panel).



Figure 10. OTC and ETD activity, 2007-15 (notional amount outstanding in € trillion and market share as % of total)

Notes: Values correspond to the total notional amount outstanding (sum of futures and options). *Source:* 2016 ECMI Statistical Package.

² This growth is largely attributed to interest rate derivatives, which remain the most actively traded asset class, followed by equity and currency derivatives, which also experienced growth in 2015 (up by 23.2%, 19.8% and 8%, respectively, over 2014 and by 57.8%, 79.85 and 31.2% over 2012).

The notional principal of ETDs in Europe in 2015 was 2.3 times smaller than in the US (Figure 11). Even though their share increased by 49.2% from 2014 (\in 11.4 trillion) to 2015 (\in 17 trillion), they accounted for only 43.7% of the total in the US. Moreover, since 2007 listed derivative markets in the US rose by 46.6%, while the corresponding European figure declined marginally by 6.3%.³



Figure 11. Exchange-traded futures and options, by location of exchange (notional principal, in € trillion)

Note: Values correspond to the total notional amount outstanding (sum of futures and options). *Source*: 2016 ECMI Statistical Package.

4. Over-the-counter cerivatives markets

The overall size of the over-the-counter (OTC) derivatives market contracted by 13.3% at the end 2015, following two years of consecutive growth (by 10.4% between 2012 and 2013 and by 0.7% between 2013 and 2014). The notional amount of outstanding OTC derivatives contracts fell 13.3% from \leq 500.4 trillion in 2014 to \leq 433.8 trillion in 2015 (Figure 12, left-hand panel). Looking back further, the market has increased 21.7% from \leq 356.3 trillion as of year-end 2007.

³ Among the key factors holding back Europe's exchange-traded derivatives markets compared to the US are the fragmentation across its derivatives exchanges (Eurex, Euronext, ICE Futures Europe, Borsa Italiana, Nasdaq, and Mercado Espanol de Futuros Finacieros), the small market size and the lack of liquidity from dealers and other traditional liquidity providers. Moreover regulations, e.g. EMIR and Basel III, have been put in place by regulators in the wake of the financial crisis.



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

Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

The gross market value of outstanding derivatives contracts, which shows the cost of replacing all outstanding contracts at market prices prevailing on the reporting date, moved downwards in 2015 and slumped by 23% compared to 2014 (Figure 12, right-hand panel). Since 2008, when the gross market value hit ≤ 22.5 trillion, it had fallen by 43.5% (≤ 12.7 trillion) by the end of 2015.

4.1 Interest rate derivatives

The interest rate segment continues to account for the vast majority of outstanding OTC derivatives. At end-December 2015, the notional amount of outstanding OTC interest rate derivatives contracts totalled €350.6 trillion, which represented 80.8% of the global OTC derivatives market. This is down from €416.3 trillion, or by 15.7% compared to the end of 2014.⁴ This decline is largely driven by a contraction in euro-denominated interest rate contracts (Figure 13). The notional value of euro contracts declined from €137.7 trillion to €107.6 trillion (or by 22%) between 2014 and 2015, and by 38.6% compared to 2013.⁵

⁴ All reported values correspond to the notional outstanding volume and are not adjusted for the effects of clearing and compression. This means that changes in outstanding notionals do not necessarily reflect changes in market activity or in the risk that is actually held.

⁵ The picture is similar for the notional value of interest rate contracts in all other currencies. US dollar contracts decreased from €142.1 trillion to €126.9 trillion, Japanese yen from €38 trillion to €35.2 trillion and pound sterling by 25.8% from €46.9 trillion to €34.8 trillion.



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

Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

The overall decline in notional amounts was not accompanied by a significant change in the maturity distribution of interest rate derivatives, which has been at the same level since 2011. As a share of all maturities outstanding, contracts with maturities of over five years rose from 23.7% to 24.7% between 2014 and 2015 and medium-term contracts decreased from 36.5% to 35.24%, while short-term contracts were roughly unchanged (see Figure 14, left-hand panel). On the other hand, the distribution of interest rate derivatives by counterparty points to a continued shift in activity towards financial institutions other than dealers. The notional amount of interest rate contracts between derivatives dealers fell by 14.1% from 2014 to 2015 and by 53.7% since 2007. However, the importance of other financial institutions has been increasing steadily since 2007 and rose by 164.6% by end 2014. Nevertheless, a small drop of 1.7% was observed at end-December 2015 (Figure 14, right-hand panel).



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

Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

4.2 Foreign exchange derivatives

The FX derivatives make up the second-largest segment of the global OTC derivatives market. The notional amount of outstanding FX contracts has continued to increase year-on-year since 2009, reaching a record high of €64.3 trillion at 2015. Contracts against the US dollar represented 87% of the notional amount outstanding at the end of 2015 (Figure 15). As a share of all OTC derivatives, FX instruments rose from 9.1% at year-end 2009 to 14.8% at year-end 2015 when measured at notional amounts and from 10.8% to 18.5% when measured at gross market value. However, the gross market value of foreign exchange derivatives decreased slightly by 2.9% in 2015, due to the depreciation of the euro against most other currencies.⁶



Figure 15. Notional amount outstanding of OTC foreign exchange derivatives, by currency and by sector of counterparty (€ trillions)

Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

Regarding the instrument composition of foreign exchange derivatives, data show that forwards and foreign exchange swaps jointly accounted for a bit more than half (51.6%) of the notional amount outstanding in 2015 (Figure 16, left-hand panel). The observed increase by 26.1% in 2015 compared to 2014, is mirrored by a 26.5% decrease in currency swaps. Conversely, looking at the gross market value (Figure 16, right-hand panel), currency swaps – which typically have a longer maturity than other foreign exchange derivatives and thus are more sensitive to changes in market prices – accounted for the largest proportion (52.1%).

In contrast to the interest rate derivatives market, in 2015 the foreign exchange derivatives market's contracts with reporting dealers (≤ 27.3) continued to account for nearly as much activity as contracts with other financial institutions (≤ 28.5). Turnover in forwards and forex swaps with reporting dealers increased by 11.7% to ≤ 11.3 trillion from 2014 to 2015, while those with other financial institutions increased by 6.3% to ≤ 16.9 trillion. However, inter-dealer activity accounts for a greater share of more complex contracts, such as currency swaps (54.1% of notional amounts) and options (45.7%).

⁶ For example, at year-end 2015 the US dollar appreciated against the euro by 11.4% compared to year-end 2014, while the Japanese yen by 11.1% and the pound sterling by 8.3% over the same period.





Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

4.3 Credit default swaps

Turning to the credit derivatives market, in 2007 it was as large as the FX derivatives market in notional amounts (\leq 39.5 trillion and \leq 38.2 trillion, respectively), but it has declined steadily in size since then. The notional amount of outstanding credit derivatives fell to \leq 11.2 trillion in 2015, down by 17% from 2014. As a share of all OTC derivatives, credit derivatives fell from 11.1% to 2.5% between 2007 and 2015 when measured in notional amounts, and from 14.4% to 3% when measured at gross market value.

The recent decline in overall CDS activity mainly reflected the contraction of the reporting dealer segment. The notional amount for contracts between reporting dealers fell from \in 6.4 trillion at end-2014 to \in 4.9 trillion at end-2015. In addition, notional amounts with banks and security firms decreased by 30% during 2015, from \in 1.1 trillion to \in 0.8 trillion.

4.4 Equity-linked and commodities derivatives

The notional amount of OTC derivatives linked to equities totalled \notin 6.5 trillion at the end of 2015, while the gross market value totalled \notin 0.4 trillion. The two largest geographical segments of the market move in opposite directions. Derivatives linked to European equities have been steadily declining from \notin 3.4 trillion in 2007 to \notin 2 trillion in 2013. However, they bounced back in 2014 (\notin 2.8 trillion), but continued their downward trajectory in 2015, when they shrunk by 3.3% to \notin 2.6 trillion. By contrast, derivatives linked to US equities have grown gradually over the past few years and doubled from \notin 1.2 trillion in 2007 to \notin 2.5 trillion in 2015 (Figure 17).



Figure 17. Notional amount outstanding of OTC equity-linked derivatives, by market (ϵ trillion)

Notes: Values correspond at year end. *Source*: 2016 ECMI Statistical Package.

The smallest segment of OTC derivatives consists of commodities, which totalled ≤ 1.2 trillion at end 2015. Commodity derivatives accounted for only 2.8% of notional amounts outstanding and 2.1% of market value in 2015. In particular, at their peak in 2007, commodity derivatives had accounted for over 13.5% of the gross market value of all OTC derivatives.

5. Mutual Funds

In 2015 the total number of European investment funds increased by 4.6% to 54,230, while the combined assets increased by 16.6% to ≤ 12.6 trillion (Figure 18). Undertakings for collective investment in transferable securities (UCITS) funds numbered 27,326 or 50.4% of the European investment fund market, while alternative investment funds (AIF) numbered 26,904, or 49.6% of the market. By the end of 2015, ≤ 7.7 trillion were invested in UCITS (61% of total European investment fund assets), with the remaining ≤ 5 trillion (39%) coming from AIF.



Figure 18. Number and total net assets of investment funds (\emph{e} trillion) for EU28

Source: 2016 ECMI Statistical Package.

The majority of domiciles experienced an increase in net assets in 2015 compared to 2014. The Czech Republic, Poland, Finland and Ireland saw fund assets rise by 27.4%, 20.8%, 14.5% and 14.12, respectively.⁷ Only two countries, Greece and Bulgaria, recorded falls in net assets by 4.9% and 1.9%, respectively. Interestingly, while in Spain and Belgium net UCITS assets grew by 33.3% and 30.7%, respectively, in 2015, net AIF assets reduced by 23.4% and 6.9% respectively.

	UCITS		AIF
Luxembourg	5654.8	Luxembourg	1073.3
France	674.1	Ireland	210.6
Sweden	59.0	Netherlands	103.0
United Kingdom	42.2	Malta	84.3
Denmark	40.5	Denmark	56.5
Finland	37.9	Germany	46.9
France	35.0	France	42.2
Malta	31.1	Austria	26.4
Austria	23.5	Hungary	16.2
Belgium	18.7	United Kingdom	15.3

Table 1. Net assets in investment funds (UCITS & AIF) by country of domiciliation (% of GDP)

Source: 2016 ECMI Statistical Package.

Net assets of European investment funds (both UCITS and AIF) increased 50.4% during 2015, ending the year at ≤ 11.2 trillion.⁸ In particular, net assets of equity funds increased by 16.3% during 2015 to ≤ 3.2 trillion (Figure 19). Nevertheless, while in 2014 equity markets accounted for 37% of the total fund industry, in 2015 they accounted for only 28%. This decrease is due to the fact that many funds (e.g. pension funds) moved away from equity markets in favour of stability and diversification. This is indeed observed in the increase of 84.8% that multi-asset funds registered in 2015, to stand at ≤ 2.3 trillion. Moreover, other funds⁹ also recorded considerable net asset gains of ≤ 1.9 trillion at end-2015.

⁷ The Netherlands recorded the largest increase (by 437.2%), but this is due to a recent review of the data provided to EFAMA for Dutch-domiciled funds, especially with regard to the inclusion of AIF, which are used by pension funds to manage their assets. This is a very large part of the Dutch investment fund industry which was previously excluded from the data provided to EFAMA.

⁸ This increase is mainly attributed to net assets of AIF which doubled over the last few years (from €2.6 trillion in 2012 to €5.0 trillion in 2015). Three main trends can be identified as the drivers of the alternative investment fund industry: i) the high levels of quantitative easing that reduce the expected returns from fixed-income products and increased the likelihood of funding gaps, ii) the rise of emerging markets due to a significant increase in trade and in global financial assets held by emerging nations and iii) the ageing of the population in OECD countries, which increases pension liabilities and funding gaps at pension funds.

⁹ These are funds for which no breakdown according to the underlying fund categories is available. For example, absolute and total return funds, convertibles, open- and closed-ended real estate funds, reits, guaranteed funds, capital protected funds, asset-backed securities, commodities, etc.



Figure 19. Total net assets of investment funds by type for EU28 (${\ensuremath{ \in }}$ trillion)

Source: 2016 ECMI Statistical Package.

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ECMI is an independent non-profit organization created to provide a forum in which market participants, policy-makers and academics alike can exchange ideas and opinions concerning the efficiency, stability, liquidity, integrity, fairness and competitiveness of European capital markets and discuss the latest market trends.

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