

Government Bond Data Report

European market data update

Q4: 2018



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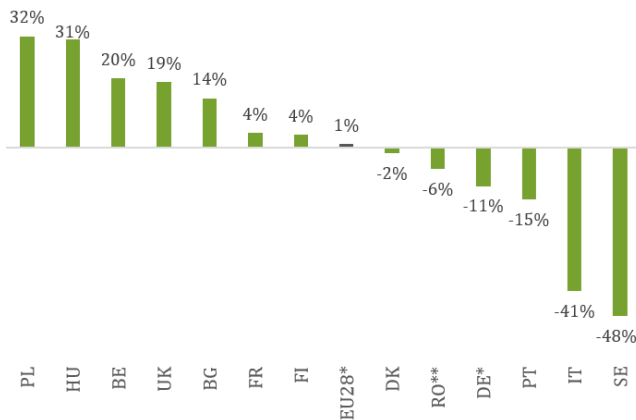
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Highlights and Market Environment

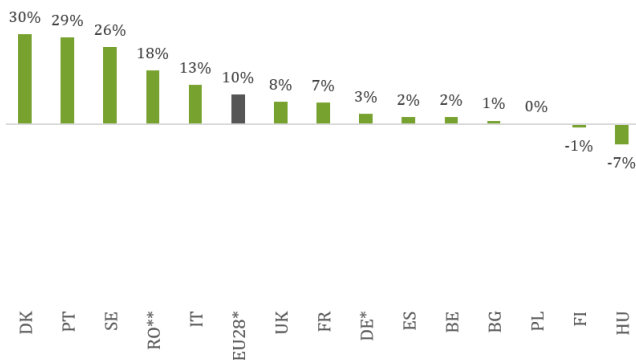
Annual changes in Government Bond average trading volumes

(4Q18 vs 4Q17) Selected European jurisdictions



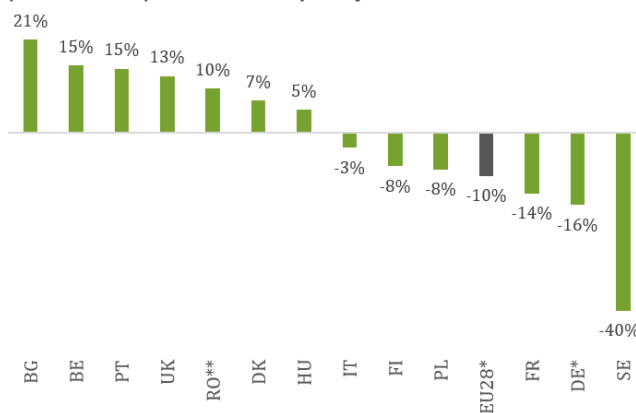
Quarterly change in Government Bond average trading volumes

(4Q18 vs 3Q18) Selected European jurisdictions



Annual aggregate change in Government Bond average trading volumes

(2018 vs 2017) Selected European jurisdictions



Source: AFME with information from European DMOs and other agency sources and Trax, a MarketAxess subsidiary. See section 5 for details on aggregation basis and sources. *Europe total and German turnover is sourced from Trax Facts as the quarterly variation of average daily volumes of government and sovereign bonds. **Romanian turnover volume calculated using outstanding volumes in Section 3.

This report provides a comprehensive data source with updated statistics of the Government bond¹ primary and secondary markets in Europe (EU28).

Among the main findings of this report are:

- **Average daily trading volumes** of European government bonds increased by 1% YoY during 4Q18, driven by a significant increase in trading in Poland (32% YoY), Belgium (20% YoY) and the UK (19% YoY). This was mostly offset by large reductions in trading in Sweden (-48% YoY), Italy (-41% YoY) and to a lesser extent Portugal (-15% YoY) and Germany (-11% YoY).

The lowest annual average trading volume since 2013 was observed in 2018, according to Trax. On average, EU trading volumes declined 10% in 2018 relative to 2017 (see chart bottom left).

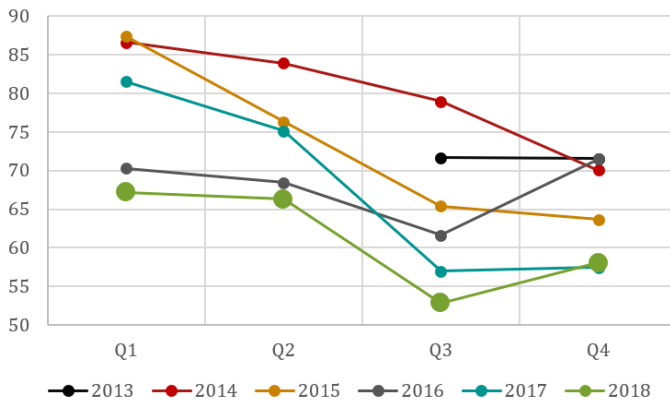
- **European Government bond and bills gross issuance** totalled €476.6 bn in 4Q18, a decrease of 17.2% from the volume issued in 3Q18 (€585.9 bn) and 17.5% below the volume issued in 4Q17 (€577.8 bn).
- **The average bid-cover ratio** (demand/amount allocated)² was 2.14 in 4Q18, showing no YoY change from 4Q17 however a decrease from 2.19 in 3Q18. The largest relative rise in bid-cover ratio was observed in Denmark, which increased 52% YoY and 41% QoQ to 2.66 in 4Q18 (from 1.89 in 3Q18 and 1.75 in 4Q17).
- During 4Q18 there were **3 long-term credit rating upgrades for EU countries** (following 8 in 1Q18, 3 in 2Q18 and 6 in 3Q18) and 1 downgrade, bringing the 2018 total to 20 upgrades and 1 downgrade. This shows substantial credit quality advancement of CEE and southern European countries, as all rating actions concern member states in these regions.

	2014	2015	2016	2017	2018
Gross Issuance (€ bn)	2718.4	2595.3	2553.8	2478.2	2308.1
Bonds (€bn)	1258.6	1209.7	1184.7	1228.7	1089.8
Bills (€bn)	1459.8	1385.6	1369.1	1249.6	1218.2
Outstandings (€ tn)	9.32	9.73	9.60	9.68	9.87
Bid-cover ratio	2.29	2.22	2.16	2.13	2.15
Average daily turnover (% YoY change)	-	-8.4%	-7.2%	-0.3%	-9.8%

¹ Fixed income securities issued by central governments. The report includes Bonds and Treasury Bills and excludes agencies and Central Bank origination.

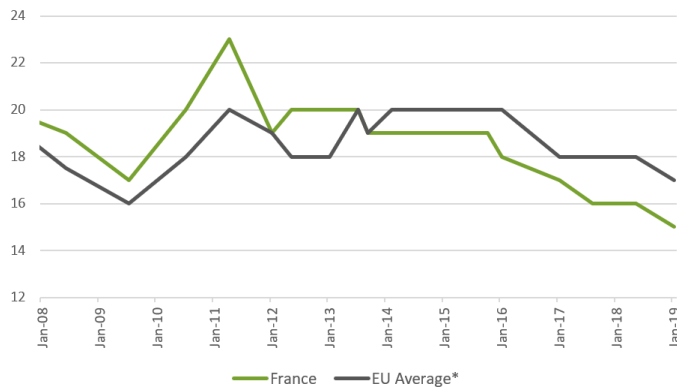
² Weighted average (by issuance volume) of bid-cover ratios in the United Kingdom, Spain, France, Italy, Germany, Belgium, Sweden, Netherlands, Denmark and Austria.

Seasonality of EU government bond trading (quarterly trading volumes, average daily, EUR bn)



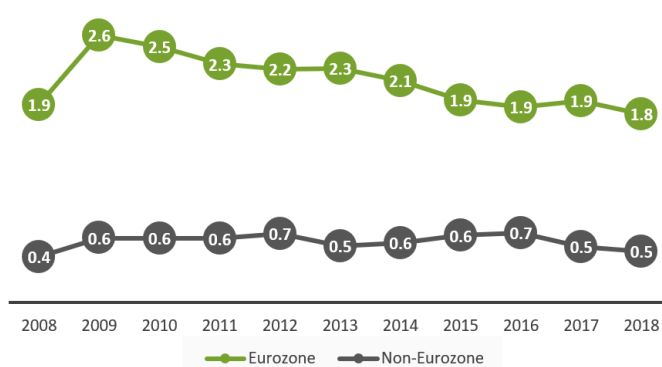
Source: Trax, a MarketAxess subsidiary

Total and average number of primary dealers in selected EU countries between 2013-2019



Source: AFME HRF Table and National Debt Management Offices. *Average is median of AT, BE, DE, DK, ES, FI, FR, GR, IE, IT, NL, PT, SE, SI and UK.

Eurozone and Non-Eurozone bonds and bills gross issuance (EUR tn)



Source: ECB and National Debt Management Offices

Highlights

2018 EU Government Bond trading volume lowest on record

Whilst trading activity picked up slightly in 4Q18, this was offset by 1Q18, 2Q18 and 3Q18 being the lowest on record for those quarters respectively (see chart on top left).

The 1% rise in government bond trading in Q4 2018 (vs Q4 2017) is of smaller magnitude than the annual rise in trading of corporate investment-grade and high yield bonds (10.4% YoY and 6% YoY respectively, according to Trax). Equity turnover (4% YoY, according to CBOE markets) and global FX trading (1.9% YoY, according to CLS) both experienced greater increases in trading volumes than the sovereign market.

Lowest average number of EU Primary Dealers since the financial crisis

Since 2016, 15 EU countries have seen a decline in the number of primary dealers (PDs)³. France, after losing 3 PDs in the last 3 years, now has 15 operating PDs, the lowest number since records began, in 2006 (see chart on middle left).

Of the 20 primary dealers that left EU sovereign markets in 2018, a quarter of them were in Portugal, which was reduced from 23 to 18 during 2018. Low secondary market turnover, as noted above, combined with low primary market issuance (see below) may be factors potentially contributing to PD's decisions to leave the market. For example, European banks' FICC (fixed income, commodity and currency) trading revenues have shown a decline of 7% YoY on average every year since 2012, with the decline from 2014 to 2018 being highly correlated with the decrease in government bond turnover observed during this period.⁴

Fiscal consolidation of Eurozone issuers

EU Sovereign issuance of bonds and bills in 2018 was the lowest volume since the financial crisis. (see chart on bottom left).

This reflects clear improvements in the fiscal prudence of governments across the EU over the last 10 years. This trend is even more marked for Eurozone countries which have reduced issuance volumes by €0.8 tn to €1.8 tn from the record €2.6 tn issued in 2009 (see graph bottom left).

³ BE, BG, CZ, DE, ES, FR, IE, IT, LT, LV, NL, PT, RO, SI, UK

⁴ AFME conducted testing using publicly available information on the following banks: HSBC, Barclays, UBS, Credit Suisse, Deutsche Bank, BNP Paribas and Société Générale.

Sovereign market sees greatest credit quality improvements across asset classes

In 2018 EU Sovereigns significantly outperformed both high yield and securitisation on improvements in credit quality as measured by upgrades:downgrades ratio (see box below).

This reflects the ongoing fiscal consolidation and reduction in macroeconomic imbalances (among other factors) of CEE and southern European economies in 2018.

EU upgrades:downgrades ratio

	2016	2017	2018
Securitisations	4.8	4.5	3.8
High Yield	0.7	1.3	0.9
Sovereigns	1.4	7.5	20.0

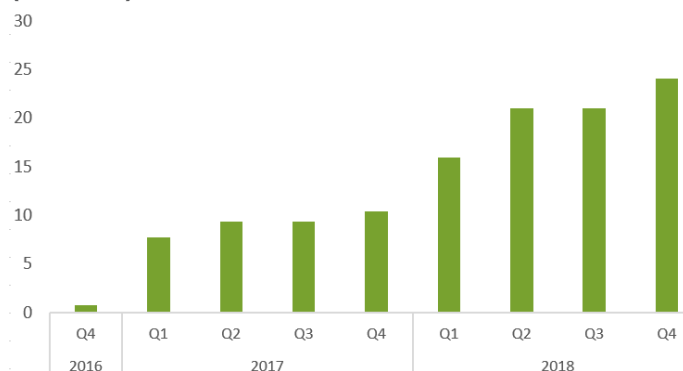
Upgrades:downgrades ratio defined as upgrades divided by downgrades.

Annual Issuance of Sovereign Green Bonds increased 40% in 2018

A €3 bn green bond issued via syndication in Ireland in 4Q18 brings the total issuance in 2018 to €13.6 bn, compared to €9.7 bn in 2017. Outstanding amounts of EU sovereign green bonds now total €24 bn (see chart on top left).

This marks the first green sovereign issuance in Ireland and means five member states have now issued green bonds (France, Belgium, Poland and Lithuania and Ireland).

Outstanding EU green government bonds (EUR bn)



Source: Thomson Reuters Eikon

Major upcoming regulatory, legislative and policy initiatives

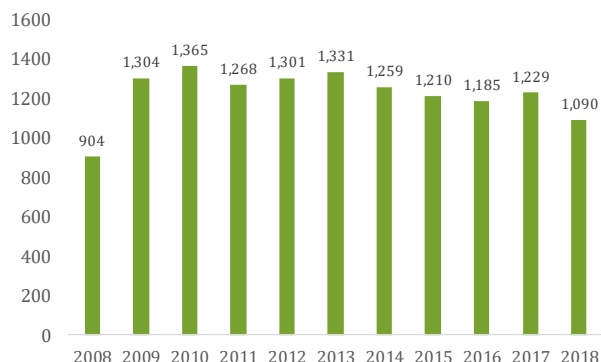
There are several regulatory initiatives currently being considered at the European and national level with expected impact on the government bond markets. Some of the key initiatives recently implemented or soon to be applied:

- Basel III
- CSDR
- Fundamental Review of the Trading Book (FRTB)
- Prospectus Regulation

AFME and its members are actively contributing on all of these and other initiatives.

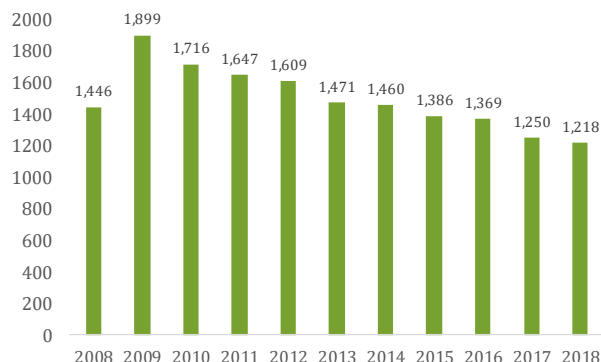
1. Issuance

1.1 EU Government Bond gross issuance (EUR bn)



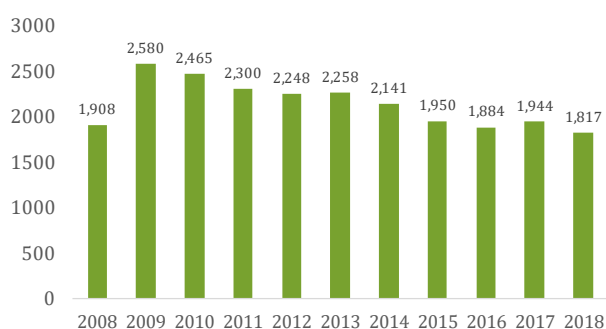
Source: ECB and National Debt Management Offices

1.2 EU Treasury Bills gross issuance (EUR bn)



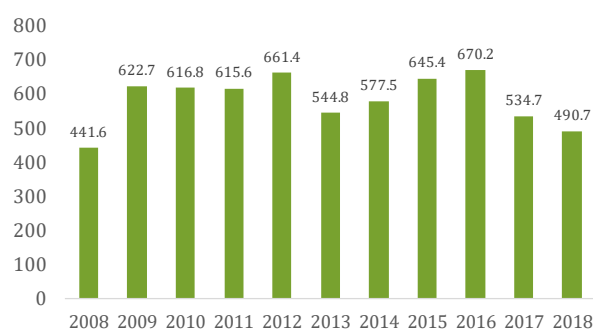
Source: ECB and National Debt Management Offices

1.3 Eurozone bonds and bills gross issuance (EUR bn)



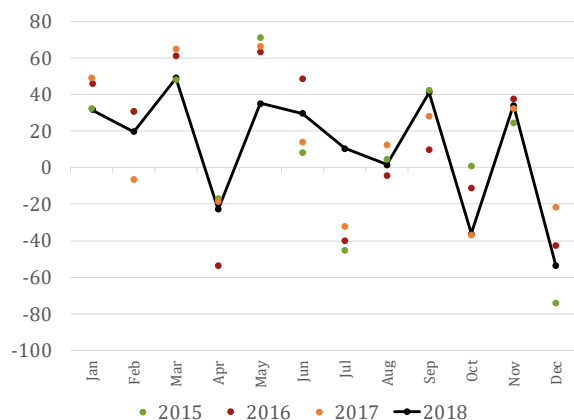
Source: ECB and National Debt Management Offices

1.4 Non-Eurozone bonds and bills gross issuance (EUR bn)



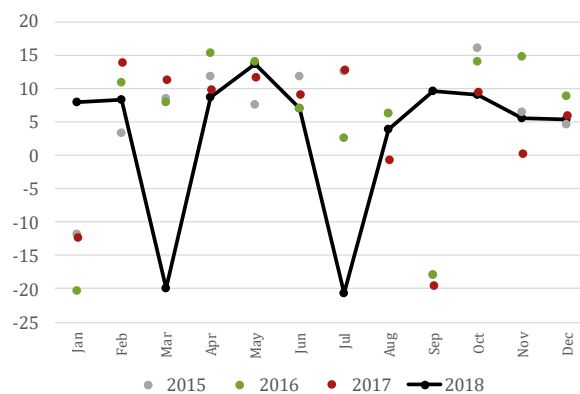
Source: ECB and National Debt Management Offices

1.5 Euro area net sovereign debt issuance (EUR bn)



Source: ECB

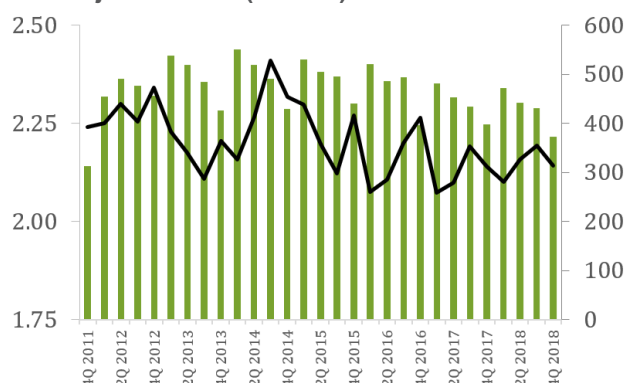
1.6 UK Gilts net issuance (GBP bn)



Source: UK Debt Management Office

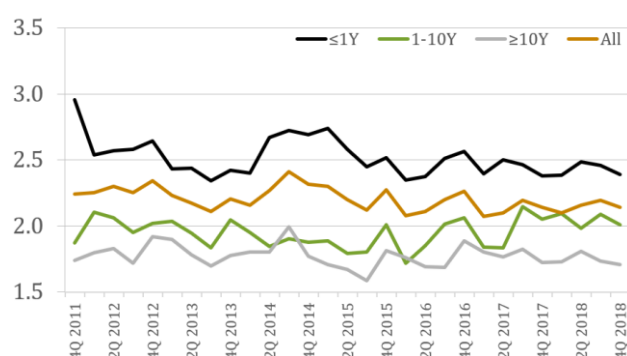
2. Recent auctions and primary dealers

2.1 Average bid-cover ratios and issued volumes in selected jurisdictions (EUR bn)



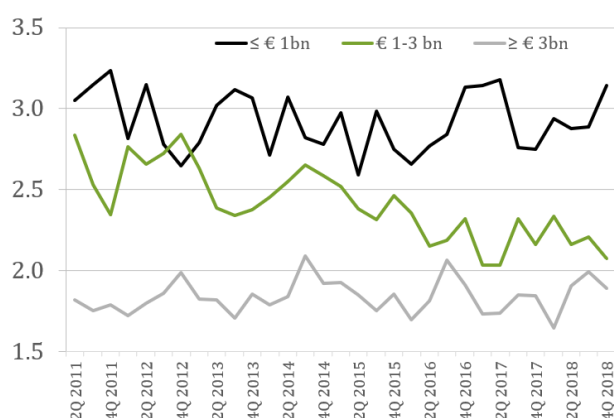
Source: Thomson Reuters Eikon. Weighted average of UK, DE, FR, ES, IT, BE, SE, NL, DK, and AT bonds and bills

2.2 Average bid-cover ratios by tenor (years) of issued instrument



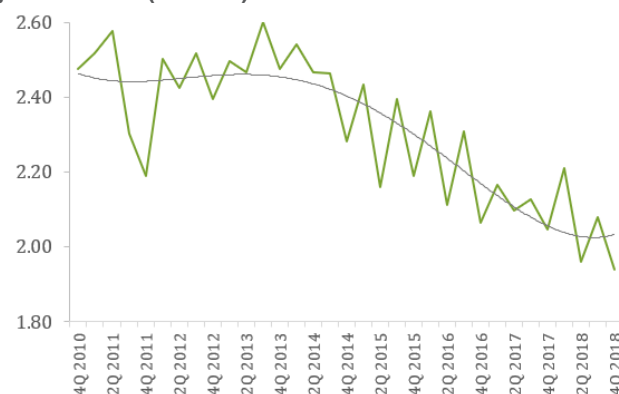
Source: Thomson Reuters Eikon. Weighted average of UK, DE, FR, ES, IT, BE, SE, NL, DK, and AT bonds and bills

2.3 Average bid-cover ratios by size of issued instruments



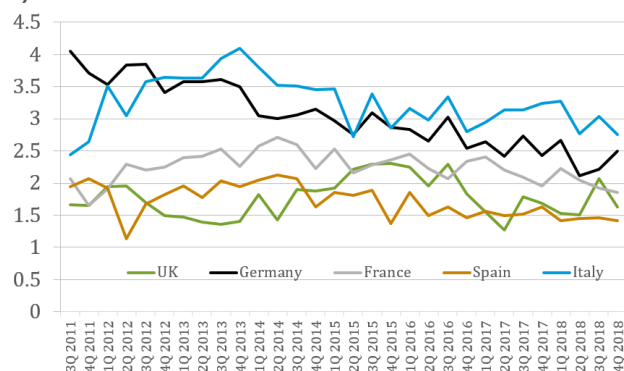
Source: Thomson Reuters Eikon. Weighted average of UK, DE, FR, ES, IT, BE, SE, NL, DK, and AT bonds and bills

2.4 Average auction size in selected European jurisdictions (EUR bn)



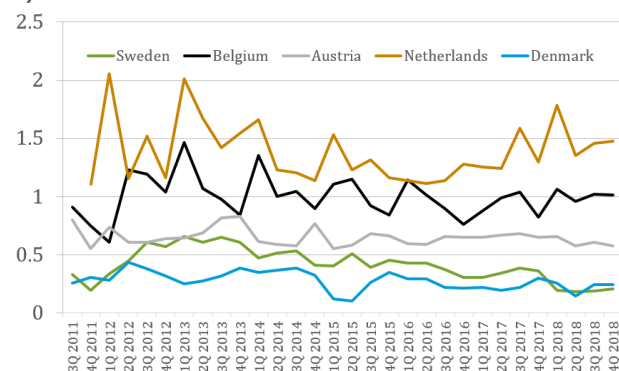
Source: Thomson Reuters Eikon. Weighted average of UK, DE, FR, ES, IT, BE, SE, NL, DK, and AT bonds and bills. Polynomial trendline in grey.

2.5 Average auction size in selected jurisdictions (EUR bn)



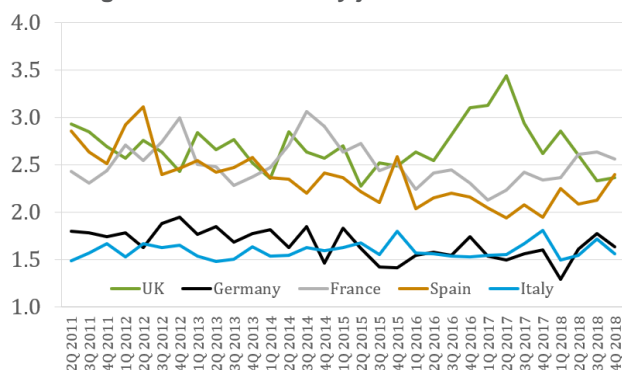
Source: Thomson Reuters Eikon

2.6 Average auction size in selected jurisdictions (EUR bn)



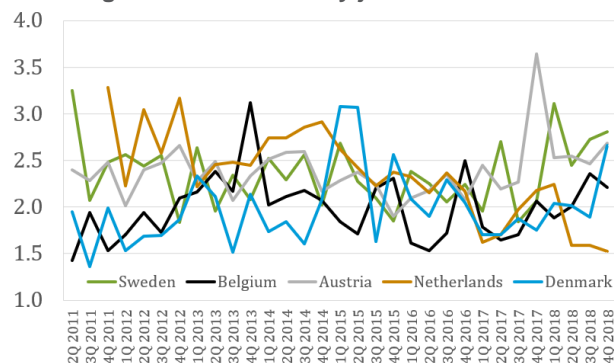
Source: Thomson Reuters Eikon

2.7 Average bid-cover ratios by jurisdictions



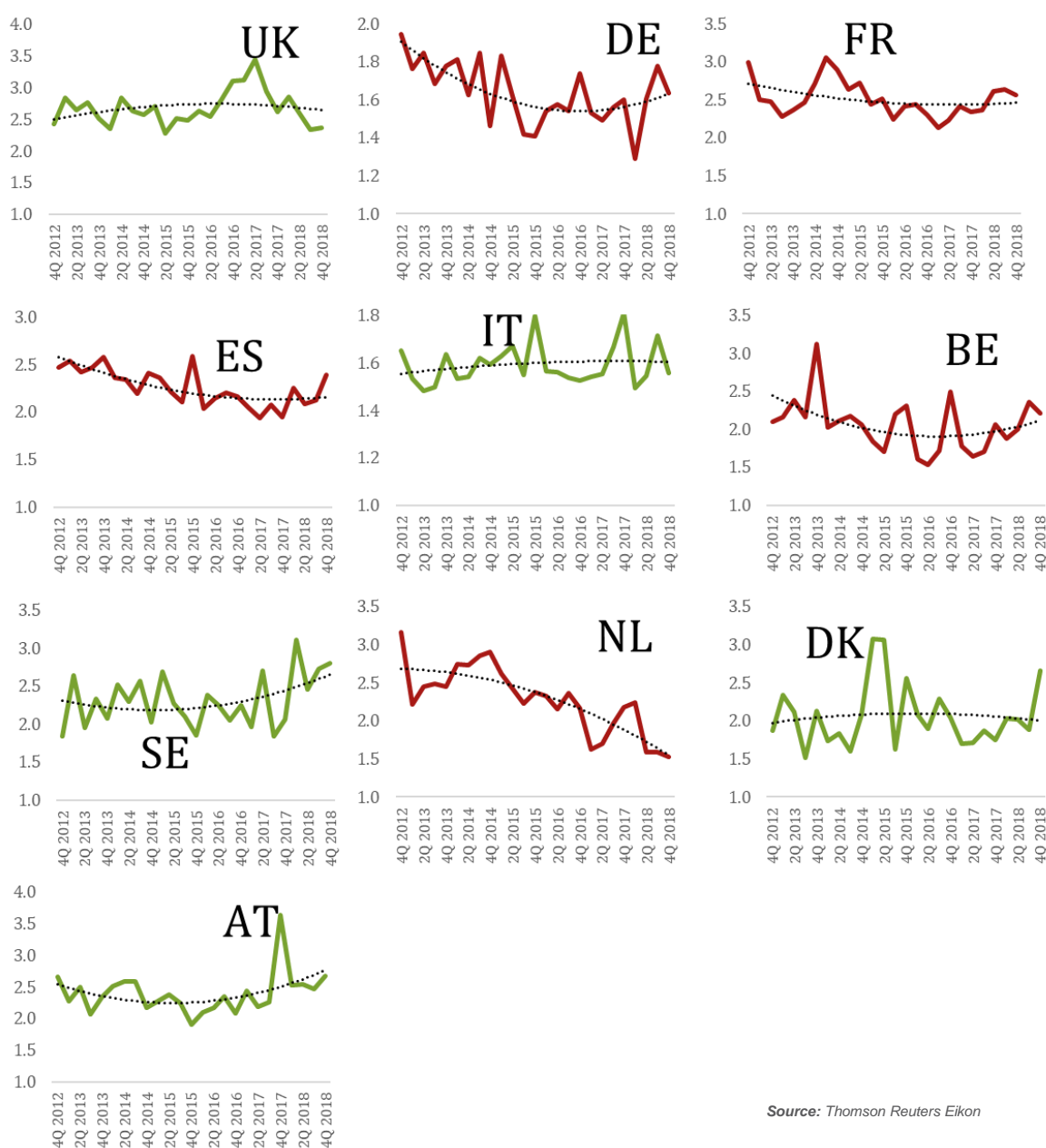
Source: Thomson Reuters Eikon

2.8 Average bid-cover ratios by jurisdictions



Source: Thomson Reuters Eikon

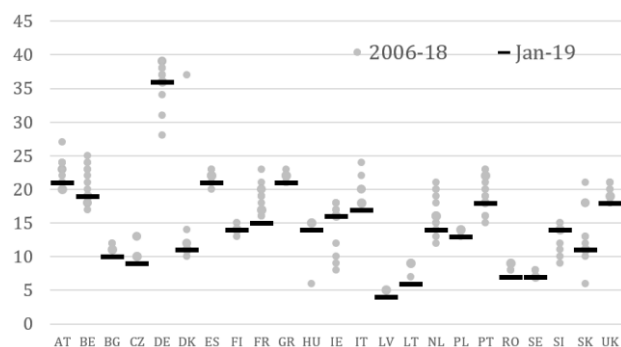
2.9 Average bid-cover ratios in selected jurisdictions: 2012-18⁵



Source: Thomson Reuters Eikon

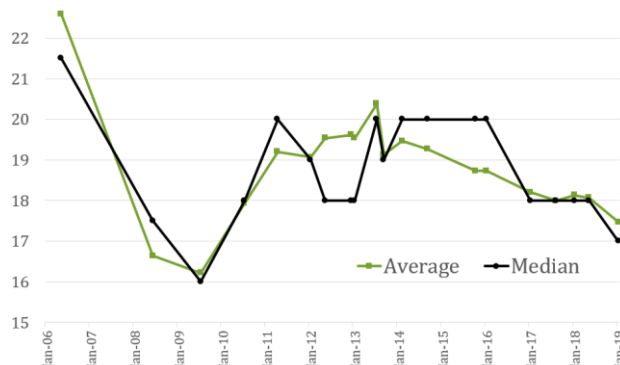
⁵ Chart colour indicates slope of trendline. Green indicates end value of trendline above starting value and red indicates end value of trendline below starting value.

2.10 Number of primary dealers relative to historic number



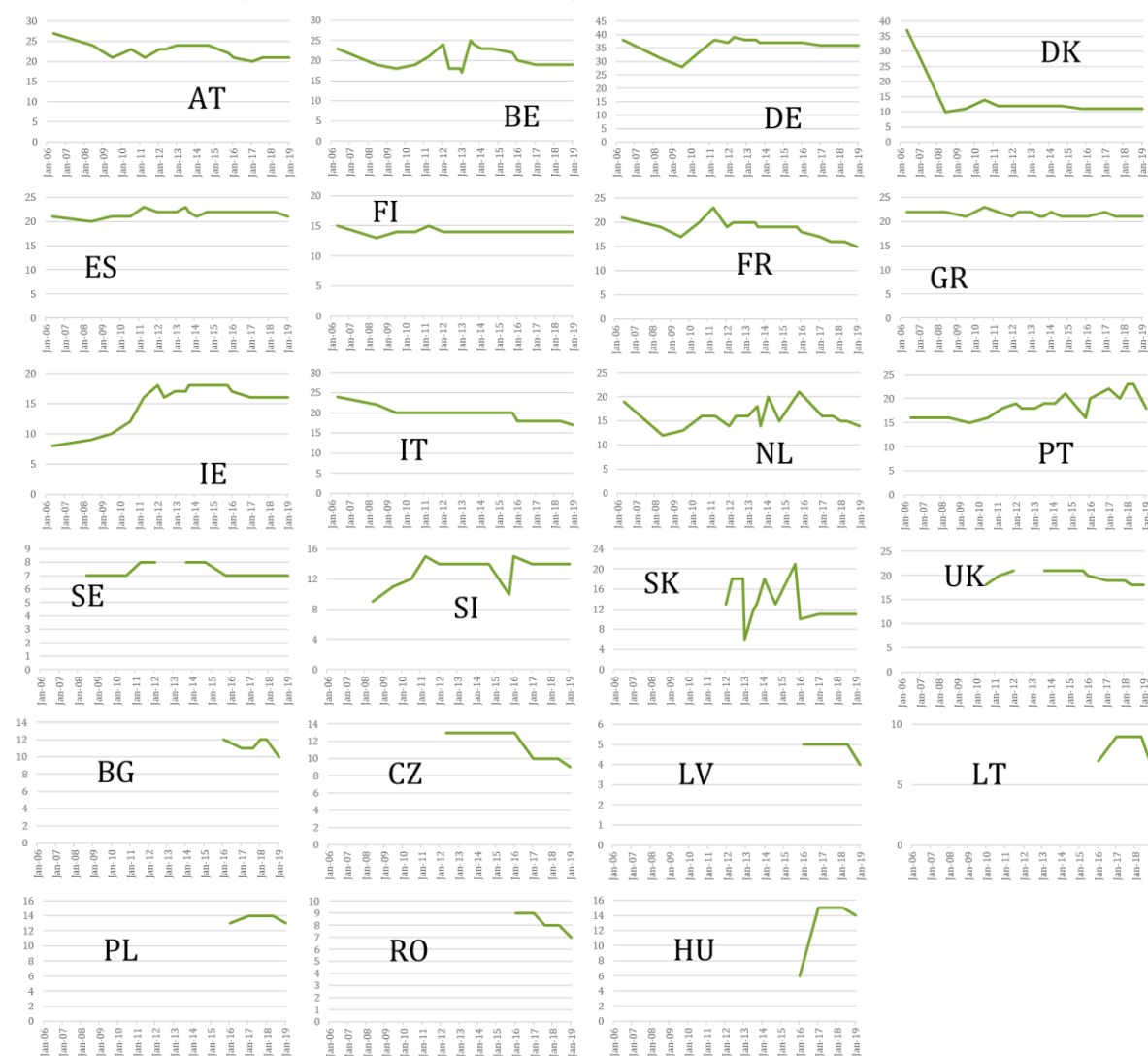
Source: AFME HRF Table and national DMOs

2.11 Average and median number of primary dealers in selected EU countries



Source: AFME HRF Table and national DMOs. Average and medians of AT, BE, DE, DK, ES, FI, FR, GR, IE, IT, NL, PT, SE, SI and UK

2.12 Number of primary dealers in Europe by country: 2006-19⁶

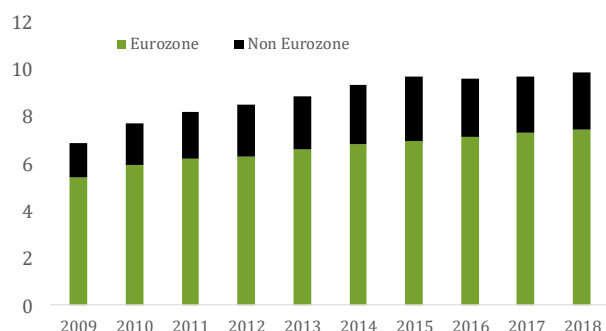


Source: AFME HRF Table and national DMOs

⁶ The gap in the lines for UK and Sweden indicates data not recorded in the relevant period.

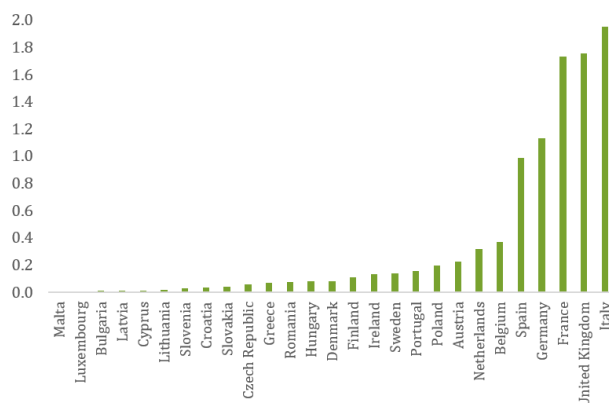
3. Outstanding

3.1 Outstanding debt securities issued by Central Governments (Nominal, EUR tn)



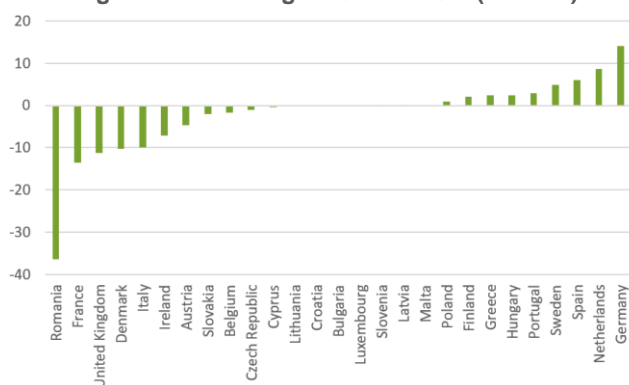
Source: ECB and Thomson Reuters Eikon

3.2 European government bonds outstanding by country (EUR tn)



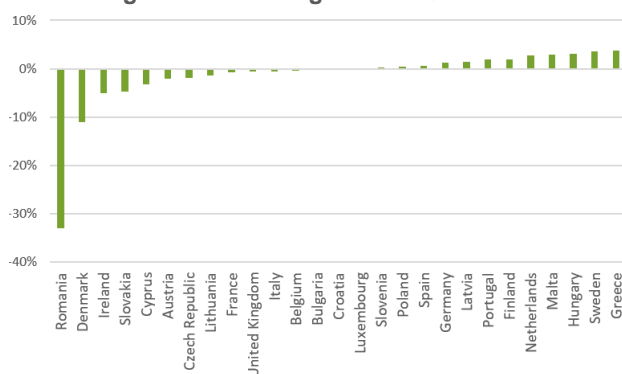
Source: Thomson Reuters Eikon

3.3 Change in outstandings 3Q18 to 4Q18 (EUR bn)



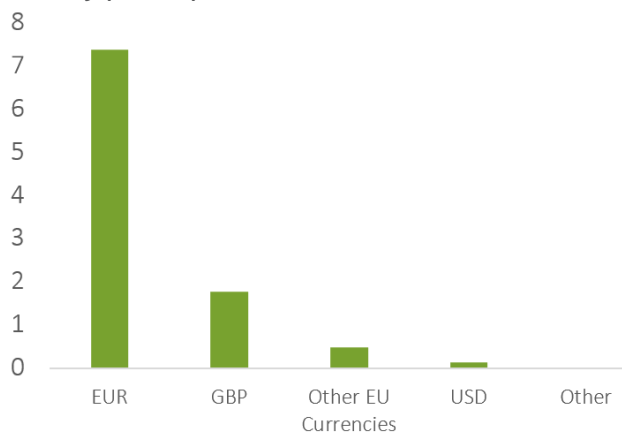
Source: Thomson Reuters Eikon

3.4 % Change in outstandings from 3Q18 to 4Q18



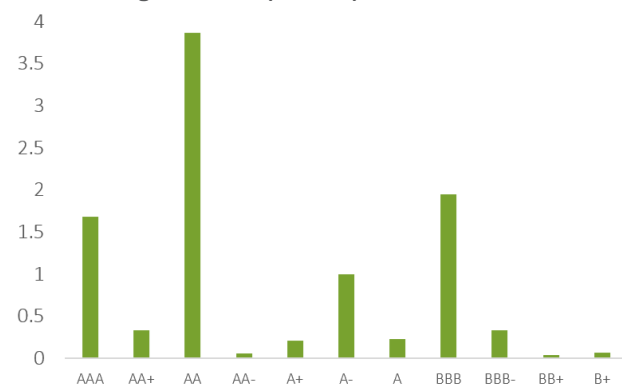
Source: Thomson Reuters Eikon and Standard and Poor's

3.5 European government bonds outstanding by currency (EUR tn)



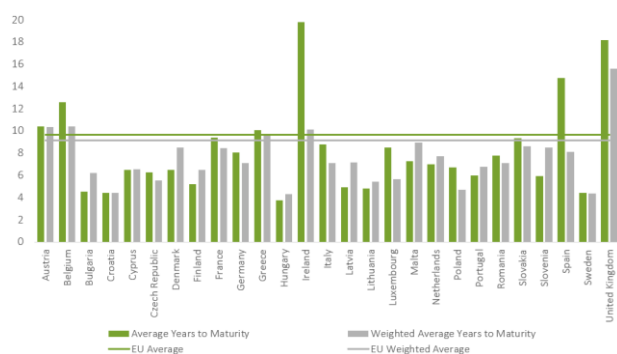
Source: Thomson Reuters Eikon

3.6 European government bonds outstanding by current rating of issuer (EUR tn)



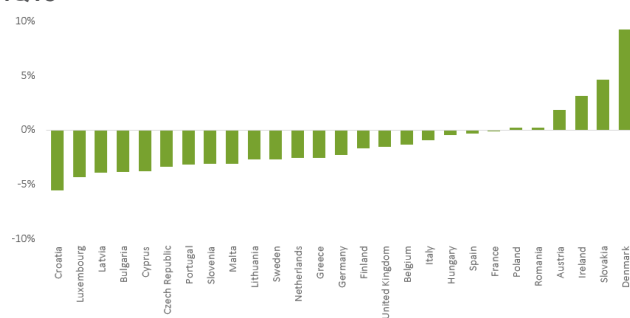
Source: Thomson Reuters Eikon and Standard and Poor's

3.7 Average years to maturity for outstanding government bonds in EU countries⁷



Source: Thomson Reuters Eikon

3.8 Quarterly change in weighted average years to maturity for outstanding government bonds 3Q18 to 4Q18⁸

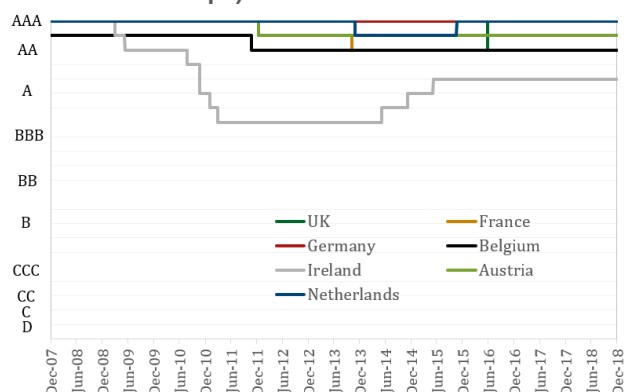


Source: Thomson Reuters Eikon

⁷ Weighted average by outstanding amount
⁸ Weighted average by outstanding amount

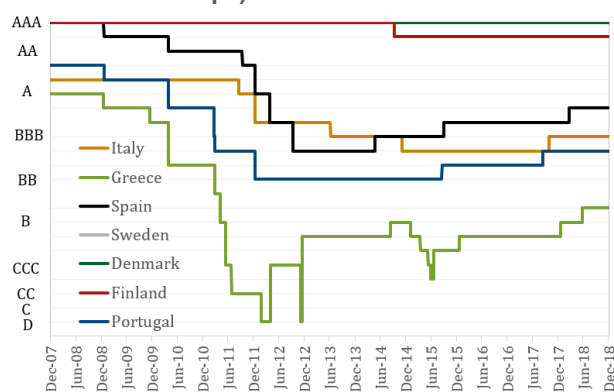
4. Credit quality

4.1 Long-term foreign currency credit rating (Central and Northern Europe)



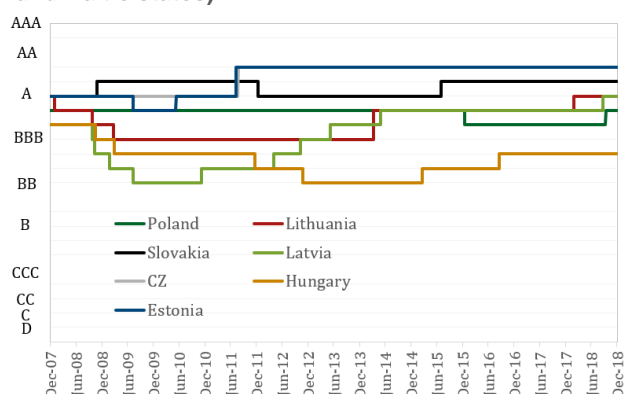
Source: Thomson Reuters Eikon with data of Standard and Poor's

4.2 Long-term foreign currency credit rating (Nordics and Southern Europe)



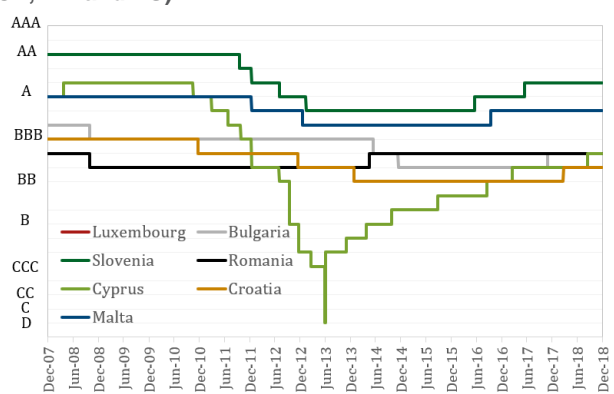
Source: Thomson Reuters Eikon with data of Standard and Poor's

4.3 Long-term foreign currency credit rating (Visegrad 4 and Baltic states)



Source: Thomson Reuters Eikon with data of Standard and Poor's

4.4 Long-term foreign currency credit rating (Balkans, CY, MT and LU)



Source: Thomson Reuters Eikon with data of Standard and Poor's

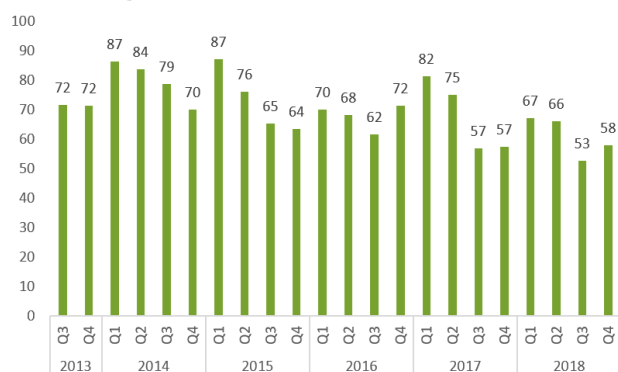
4.5 European rating actions on long-term foreign currency ratings (2018)

Issuer	Rating action	Date	Rated by	Rationale
Croatia	Upgrade to BB+ (stable) from BB	Jan-18	Fitch	Strengthening tourism revenues, a current account surplus, and stronger consumption and investment
Greece	Upgrade to B (positive) from B-	Jan-18	S&P	Steadily improving general government finances and its gradually recovering economic prospects
Spain	Upgrade to A- (stable) from BBB+	Jan-18	Fitch	Reduction in macro imbalances, strong econ. recovery, and limited econ. impact caused by Catalonia's declaration of independence
Greece	Upgrade to B (positive) from B-	Feb-18	Fitch	Improved outlook of debt sustainability underpinned by sustained GDP growth, reduced political risks
Greece	Upgrade to B3 (positive) from Caa2	Feb-18	Moody's	Material fiscal and institutional improvements under its current adjustment programme
Croatia	Upgrade to BB+ (stable) from BB	Mar-18	S&P	External position improving on external deleveraging, current account surpluses, increase in FX reserves. Improved fiscal picture
Lithuania	Upgrade to A (stable) from A-	Mar-18	S&P	Strong economic development over the past years, robust growth prospects in the near term
Spain	Upgrade to A- (positive) from BBB+	Mar-18	S&P	Continuously strong economic performance, accompanied by a solid current account surplus and ongoing budgetary consolidation
Cyprus	Upgrade to BB+ (positive) from BB	Apr-18	Fitch	Strong improvement in the performance of and outlook for its public finances supported by strong nominal GDP growth
Spain	Upgrade to Baa1 (stable) from Baa2	Apr-18	Moody's	Enhanced economic resiliency due to an increasingly balanced growth profile and improved banking sector fundamentals
Greece	Upgrade to B+ (positive) from B	Jun-18	S&P	Debt relief agreement decided by Eurogroup reduced sovereign debt servicing risks
Cyprus	Upgrade to Baa2 (stable) from Baa3	Jul-18	Moody's	Recovery of Cyprus's banking system and positive fundamental trend with respect to the government's balance sheet
Czech Republic	Upgrade to AA- (stable) from A+	Aug-18	Fitch	General fiscal prudence and government budget surpluses and strong external position
Estonia	Upgrade to AA- (stable) from A+	Aug-18	Fitch	Current account surplus and continued deleveraging in the private sector underpinning a strong net external creditor position
Greece	Upgrade to BB- (stable) from B	Aug-18	Fitch	Improving public finances and substantial improvement in Greece's relationships with its European creditors
Cyprus	Upgrade to BBB- (stable) from BB+	Sep-18	S&P	Solid growth, sharp reduction in NPLs, consolidation of public finances and restoration of the health of the banking sector
Latvia	Upgrade to A (stable) from A-	Sep-18	S&P	Reduction in non resident deposits shrinking external vulnerabilities, strong forecasted growth over medium term and low budget deficits
Italy	Downgrade to Baa3 (stable) from Baa2	Oct-18	Moody's	Weakening economic growth prospects due to deterioration of fiscal position and stalling of structural economic and fiscal reforms
Cyprus	Upgrade to BBB- (stable) from BB+	Oct-18	Fitch	Large fiscal surplus due to prudent fiscal policy, continuous growth and reduction in NPL stock
Poland	Upgrade to A- (stable) from BBB+	Oct-18	S&P	Fiscal prudence, diversity and competitiveness of the Polish economy and a stable outlook
Portugal	Upgrade to Baa3 (stable) from Baa1	Oct-18	Moody's	Improvements in reducing the Government debt, broadening of Portugal's growth drivers and structural improved external position

Source: Fitch, Moody's, S&P

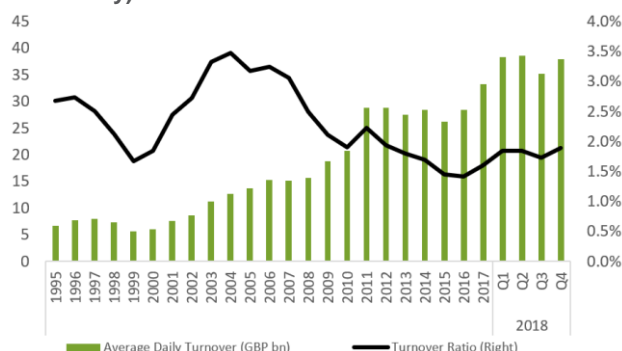
5. Secondary market trading volumes and turnover ratios⁹

5.1 EU28: Average daily trading volumes (Government and sovereign bonds, EURbn)¹⁰



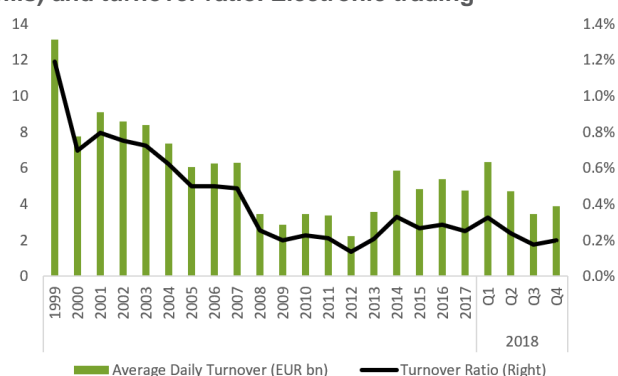
Source: Trax, a MarketAxess subsidiary

5.2 United Kingdom: Average daily trading volume (bonds only) and turnover ratio¹¹



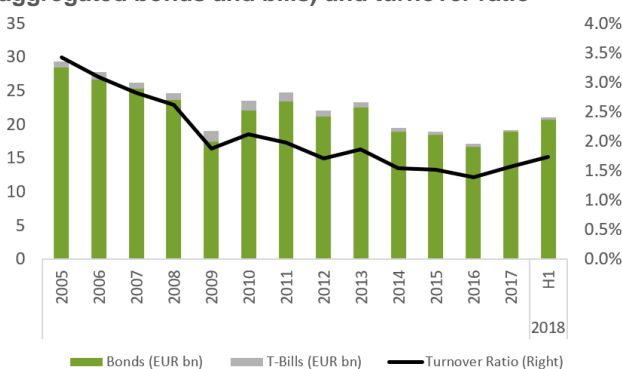
Source: UK Debt Management Office

5.3 Italy: Average daily trading volume (bonds and bills) and turnover ratio. Electronic trading¹²



Source: Italian Dipartimento del Tesoro

5.4 Germany: Average daily trading volume (aggregated bonds and bills) and turnover ratio¹³



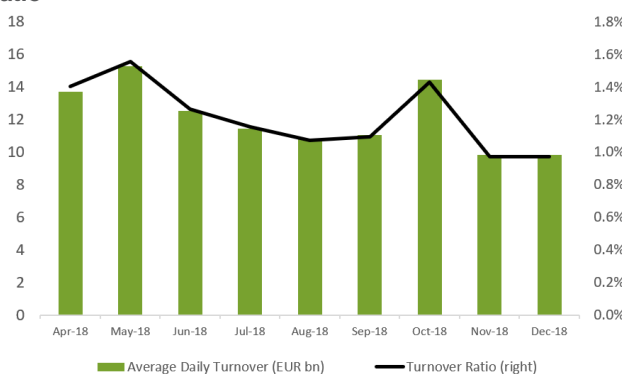
Source: Deutsche Finanzagentur and ECB

5.5. Portugal: Average daily trading volume and turnover ratio¹⁴



Source: Agência de Gestão da Tesouraria e da Dívida Pública – IGCP and ECB

5.6 Spain: Average daily trading volume and turnover ratio¹⁵



Source: Banco de España and Bolsas y Mercados Españoles

⁹ Turnover ratios are calculated as the average daily trading volume relative to total outstandings. Cash trading only (excludes repo and derivatives transactions). Given the differences in the aggregation basis across jurisdictions, the data is not fully comparable between countries.

¹⁰ Secondary Market Volumes (please note this is restricted to 2013-Q3 onwards as split not available prior to this date. Volumes are calculated by converting the individual traded securities to EUR using the prevailing exchange rate on the date of each trade. ADV calculated by dividing the total converted volume by the number of UK trading days for quarter. Government & Sovereign bond volumes for EU28 member states as per the AFME methodology.

¹¹ Turnover data reported to the DMO by the Gilt-edged Market Makers (primary dealers).

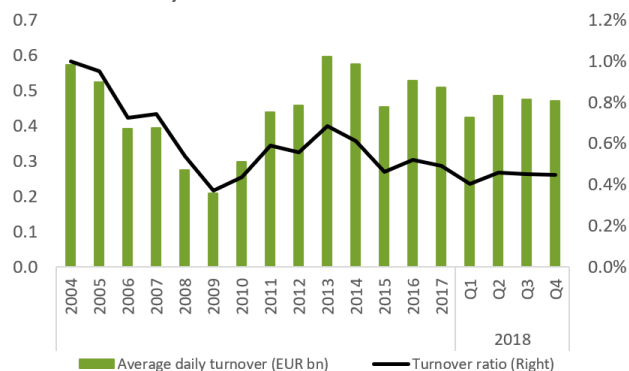
¹² Turnover on electronic interdealer regulated market.

¹³ Turnover of both electronic and OTC trading. The traded volume is aggregated for a representative part of the members of the Bund Issues Auction Group with trades with all counterparties. Bubills, Schaetze, Bobls, Bunds and inflation-linked securities. Capital and coupon strips as well as US-dollar bonds are excluded. Data not currently available for 3Q18.

¹⁴ Turnover of electronic and OTC trading reported on MTS-Portugal, BrokerTec and eSpeed.

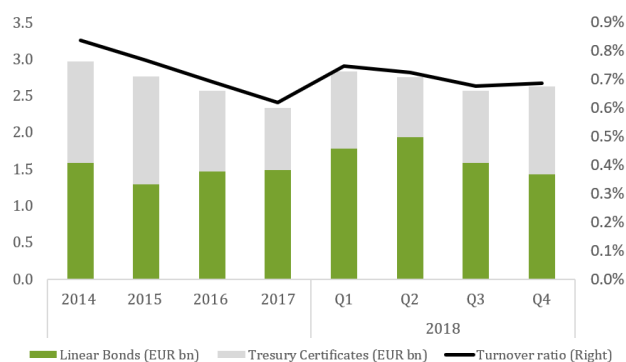
¹⁵ Turnover is total outright spot transactions. Includes Treasury Bills and non-stripped Government Bonds between account holders in the book-entry debt market. Due to data reconciliation activities of the Bank of Spain, data from April 2018 is from BME Market Data, a subsidiary of Bolsas y Mercados Españoles.

5.7 Finland: Average daily trading volume (aggregated bonds and bills) and turnover ratio¹⁶



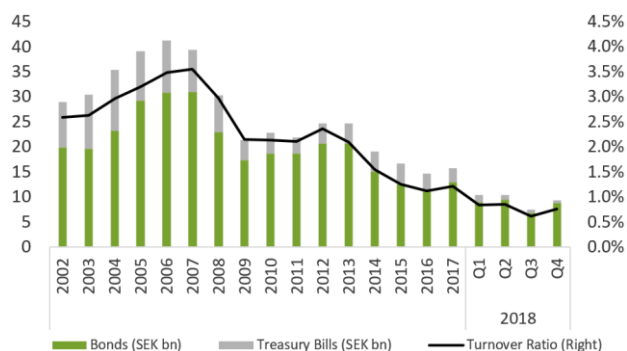
Source: Finland Valtiokonttori and ECB

5.8 Belgium: Average daily trading volume and turnover ratio¹⁷



Source: Belgian Debt Agency and ECB

5.9 Sweden: Average daily trading volume and turnover ratio¹⁸



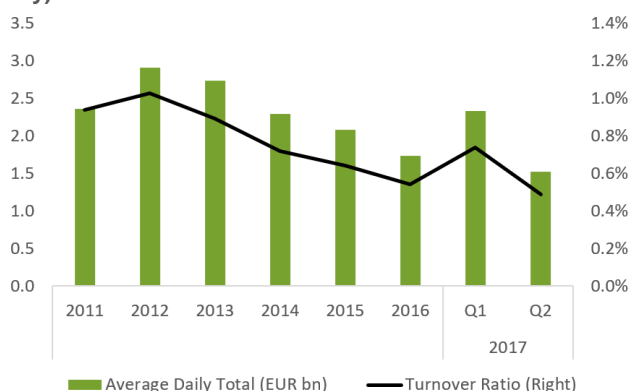
Source: Swedish National Debt Office (Riksgälden) and ECB

5.10 Ireland: Average daily trading volume (aggregated bonds and bills) and turnover ratio¹⁹



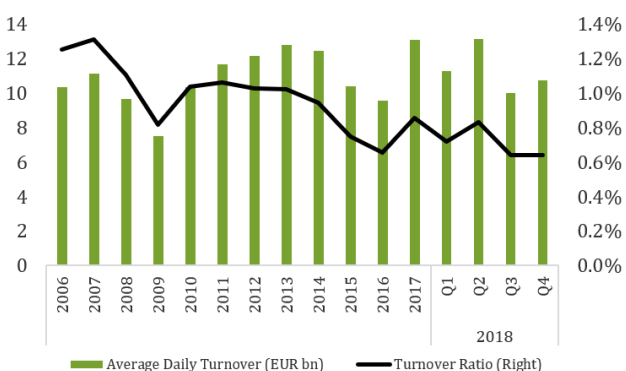
Source: Irish Stock Exchange and ECB

5.11 Netherlands: Average daily trading volume (bonds only) and turnover ratio²⁰



Source: Ministerie van Financiën

5.12 France: Average daily trading volume (bonds only) and turnover ratio²¹



Source: Agence France Trésor and ECB

¹⁶ Turnover of customer trades, MTS Finland and Euro MTS.

¹⁷ Turnover is total outright transactions.

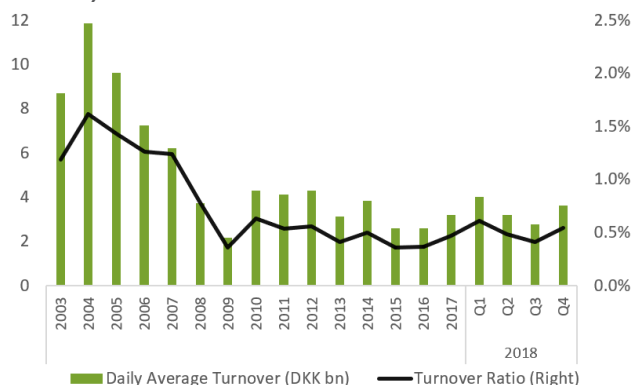
¹⁸ Turnover is total outright transactions.

¹⁹ Turnover on Irish Stock Exchange. Data for 4Q18 not available at time of publish.

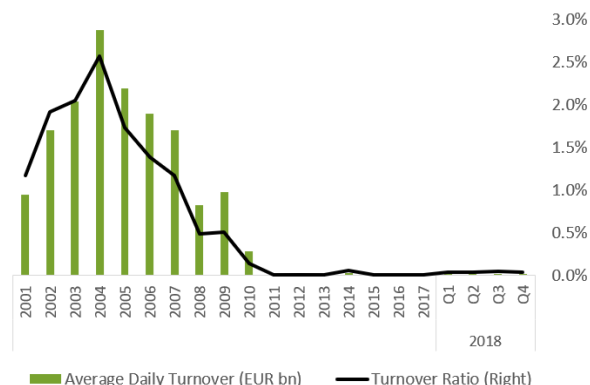
²⁰ Turnover is customer and interdealer trading. Total outright transactions, including electronic and OTC trading. Data only available up to 2Q17

²¹ Turnover of voice and electronic trading (not including PSPP transactions or trading without an SVT).

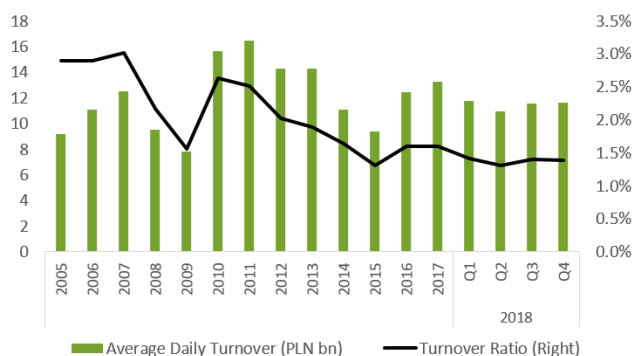
5.13 Denmark: Average daily trading volume (bonds and bills) and turnover ratio²²



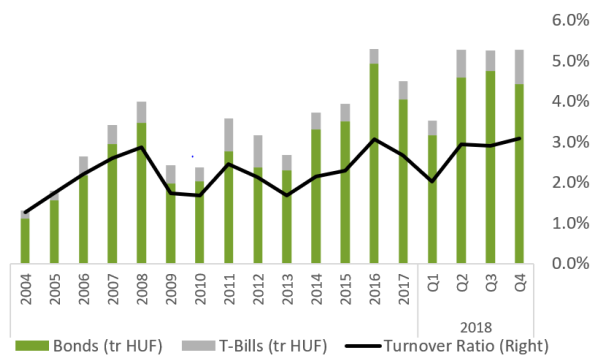
5.14 Greece: Average daily trading volume (bonds only) and turnover ratio²³



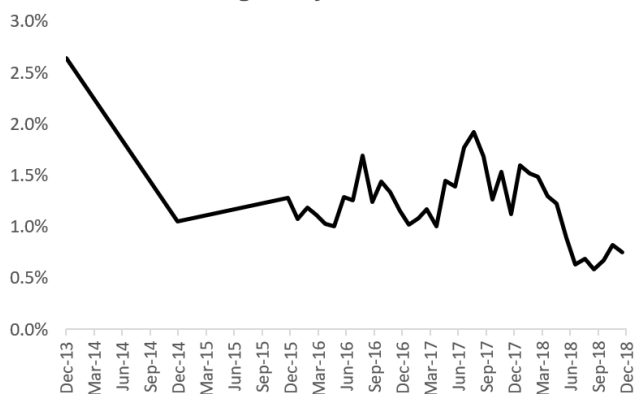
5.15 Poland: Average daily trading volume (bonds only) and turnover ratio²⁴



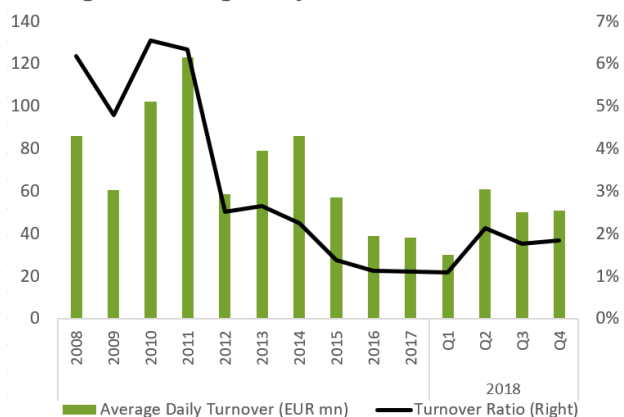
5.16 Hungary: Average daily trading volume and turnover ratio²⁵



5.17 Romania: Average daily turnover ratio²⁶



5.18 Bulgaria: Average daily turnover ratio²⁷



²² Turnover of MTS, TradeWeb, Bondvision and trades reported to Nasdaq OMX (including voice trading).

²³ Turnover on Electronic Secondary Securities Market (HDAT).

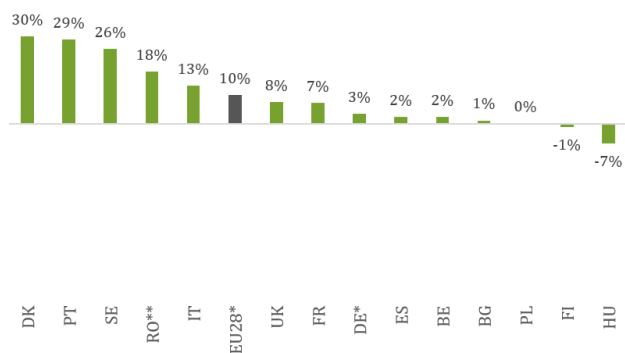
²⁴ Turnover is total outright transactions. Data from KDPW are presented according to the date of the settlement, while data from WSE are presented according to the date of conclusion of a transaction.

²⁵ Turnover on MTS Hungary and Keler OTC.

²⁶ Turnover ratio of the government securities issued on domestic market. Official values reported as average monthly turnover ratios, which have been converted assuming 20 business days per month. Turnover volume not available.

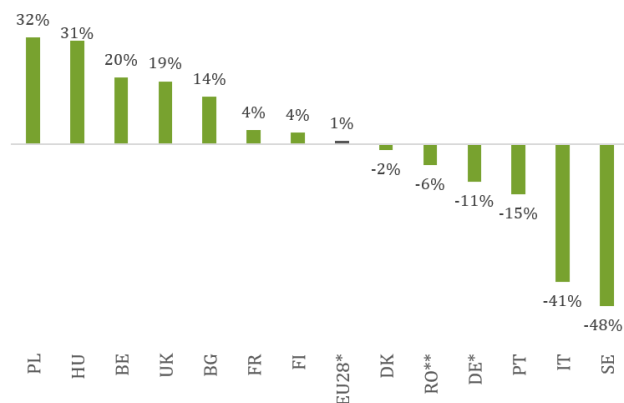
²⁷ Turnover ratio of the government securities issued on domestic market. Official values reported as average monthly turnover ratios, which have been converted assuming 20 business days per month.

5.19 Quarterly change in average daily turnover volumes of EU government bonds: 3Q18 to 4Q18



Source: AFME with information from European DMOs and other agency sources. See section 5 for details on aggregation basis and sources. *Europe total and Germany is sourced from Trax Facts as the quarterly variation of average daily volumes of government and sovereign bonds. **Romanian turnover volume calculated using outstanding volumes in Section 3.

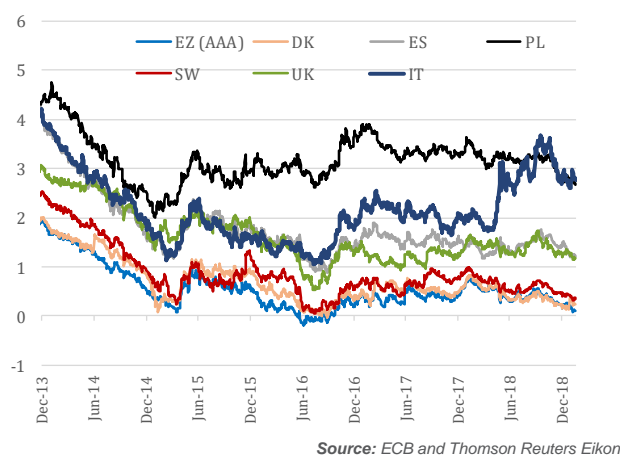
5.20 Annual change in average daily turnover volumes of EU government bonds: 4Q17 to 4Q18



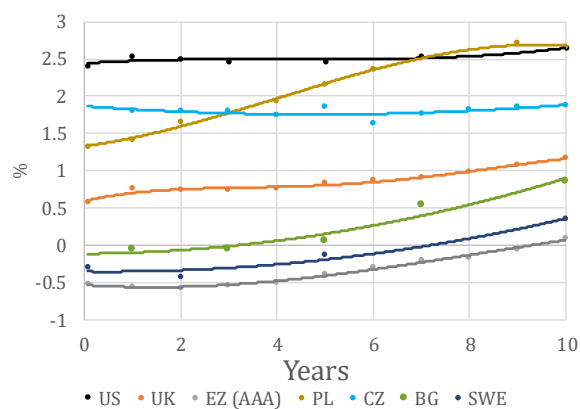
Source: AFME with information from European DMOs and other agency sources. See section 5 for details on aggregation basis and sources. *Europe total and Germany is sourced from Trax Facts as the quarterly variation of average daily volumes of government and sovereign bonds. **Romanian turnover volume calculated using outstanding volumes in Section 3.

6. Valuations

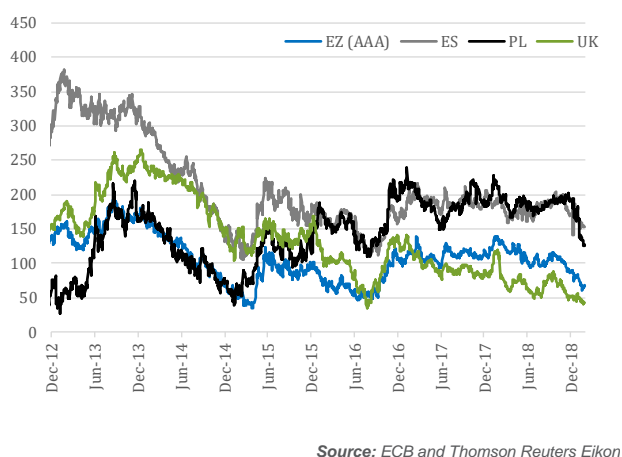
6.1 Selected European 10Y spot yields



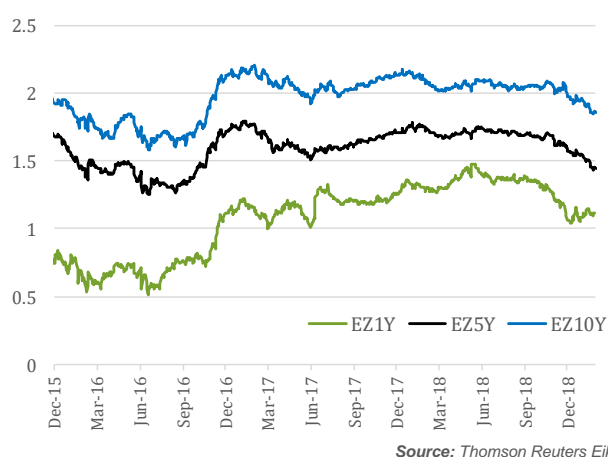
6.2 Sovereign spot yield curve of selected jurisdictions: 20 February 2018



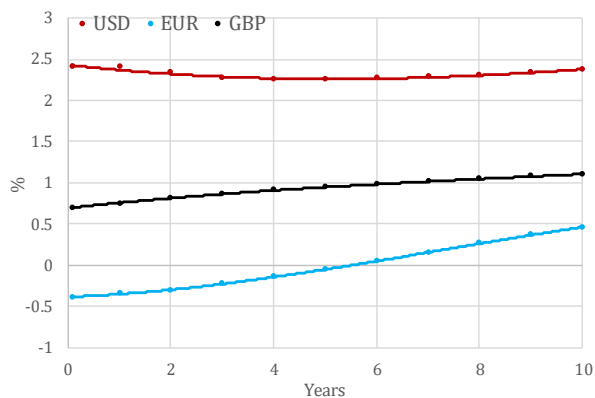
6.3 Slope: 1Y10Y spread (bps)



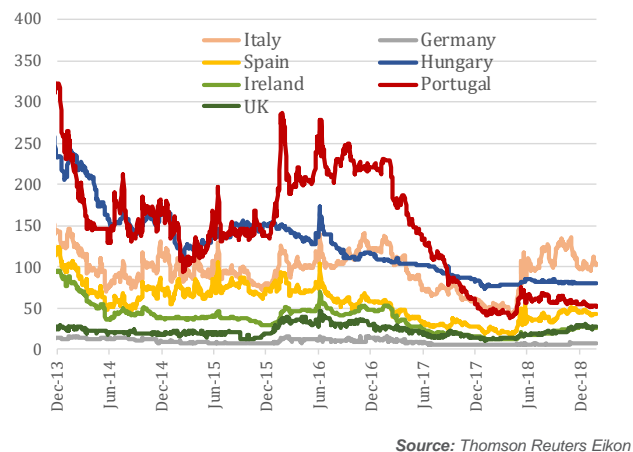
6.4 Market-implied inflation expectations (EuroZone)



6.5 Overnight index swap (OIS) yield curve: 20 February 2019



6.6 5Y Sovereign Credit Default Swap (CDS, bps)



Annex

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Methodologies

A summary of the methodologies adopted for this report is available at <https://www.afme.eu/en/reports/Statistics/Methodologies>

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