

4Q 2022 and 2022FY

Government Bond Data Report

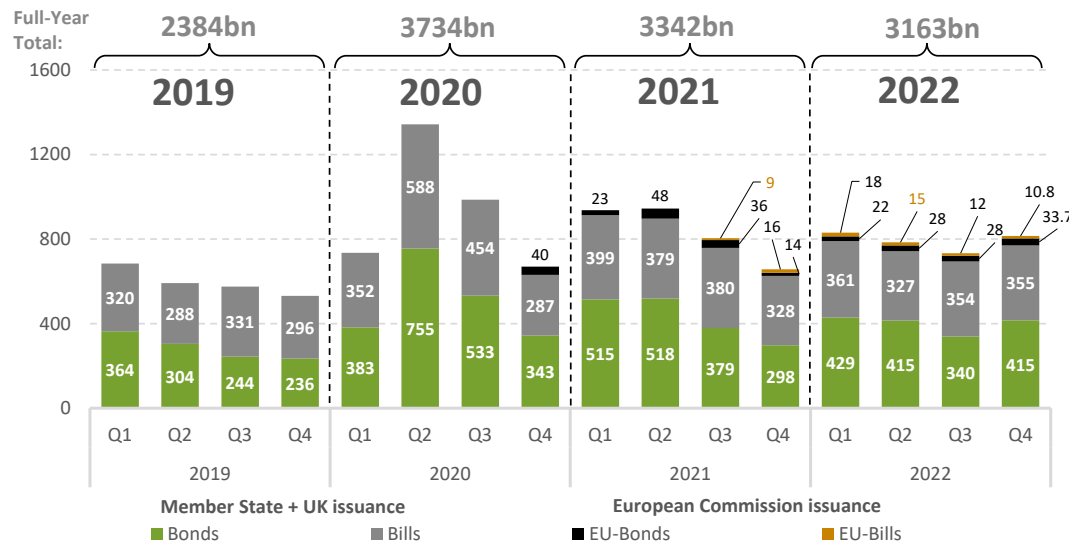
European market data update



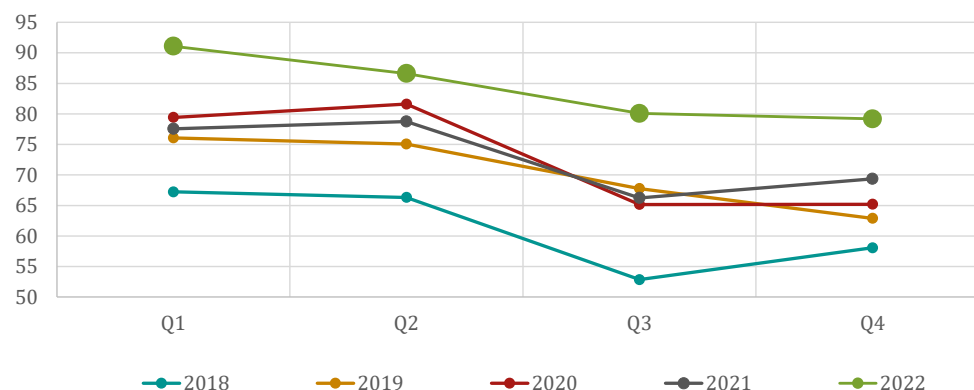
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Highlights and Market Environment

1. European (EU+UK) government bond and bill issuance (EUR bn, 2019-2022)



2. European Government bond average daily trading volumes



Source: ECB, National Debt Management Offices and UK Debt Management Office [chart 1]. TraX data from MarketAxess[chart 2]. *Total EU+UK bond and bill issuance and percentage changes may show minor variations to that shown in Chart.1 due to rounding.

EUR 814 bn bonds and bills issued in Q4 2022 as European quarterly issuance volumes increase 24% (YoY)

Total quarterly issuance in Europe (EU Member States, UK and EU Commission) was EUR 814 bn during Q4 2022, up 24% compared to Q4 2021 (YoY) and up 11% from Q3 2022 (QoQ).

EU Member States and the UK issued EUR 770 bn in bonds and bills during 4Q22¹, representing an increase of 11% (QoQ) and an increase of 19% (YoY) (see Chart 1).

The EU Commission issued an additional EUR 34 bn in EU-bonds and EUR 11 bn in EU-bills bringing the total full-year issuance (bonds+bills) to EUR 167 bn during 2022, up 14% compared to 2021. The EU Commission accounted for 5% of total European sovereign issuance in both 4Q22 and 2022 FY.

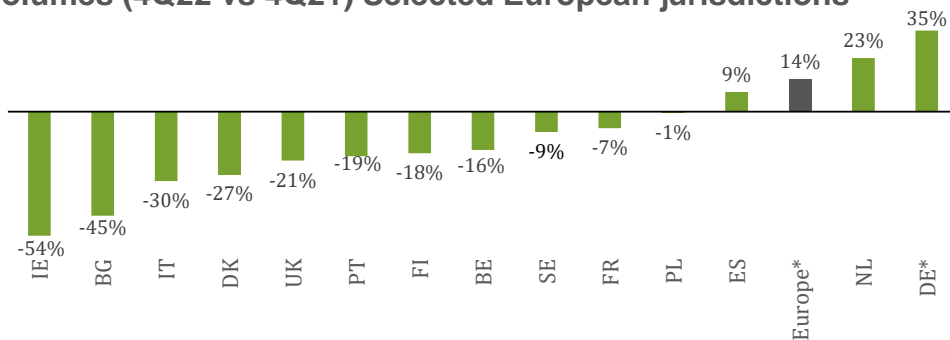
Highest average daily trading volume in European (EU+UK) government bonds during 2022

According to TraX data from MarketAxess, trading continued strong throughout Q4 2022, decreasing 1% (QoQ) but increasing 14% (YoY) and representing the highest fourth-quarter average daily trading volumes since 2014.

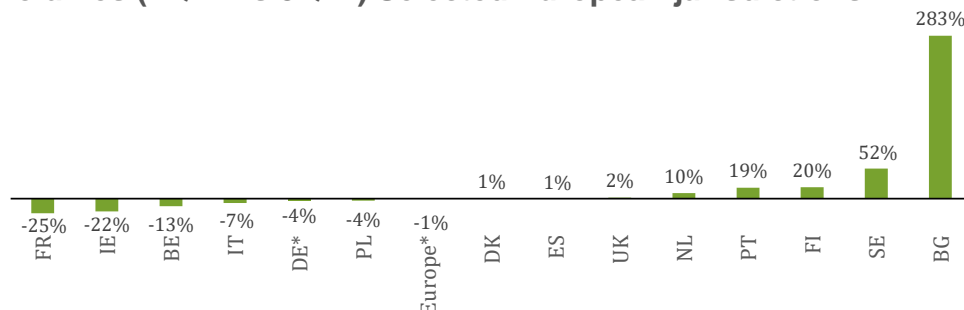
In 2022FY, average annual European trading volumes were up 15% compared to 2021FY, and up 19% compared to 2019 (pre-pandemic). Average daily trading volumes in 2022FY are the highest on record (since 2014) following consistently high trading volumes reported in all quarters of 2022 (see Chart 2)

Highlights and Market Environment

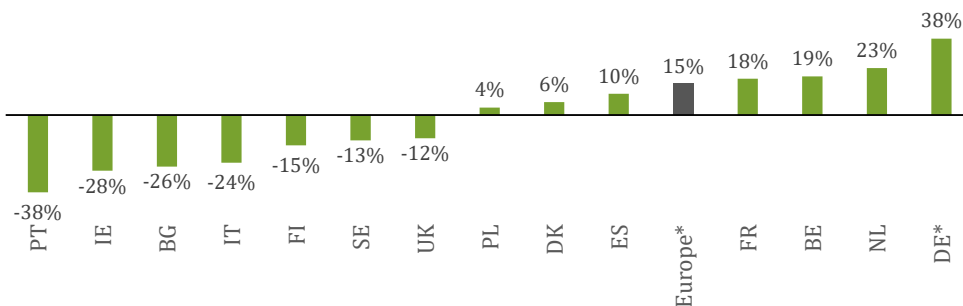
3. Annual changes in Government Bond average daily trading volumes (4Q22 vs 4Q21) Selected European jurisdictions



4. Quarterly changes in Government Bond average daily trading volumes (4Q22 vs 3Q22) Selected European jurisdictions



5. Annual aggregate changes in Government Bond average daily trading volumes (2022 vs 2021) Selected European jurisdictions



Source: AFME with information from European DMOs and other agency sources and TraX data from MarketAxess. *Europe (EU+UK) total and German turnover is sourced from TraX data from MarketAxess as the quarterly variation of average daily volumes of government and sovereign bonds.

European government bond trading increased 14% YoY and decreased 1% QoQ in 4Q22

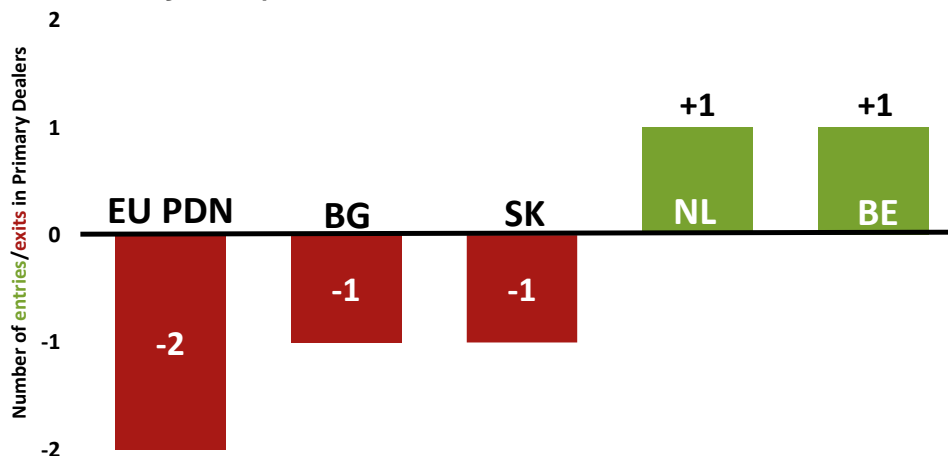
Average daily trading volumes of European government bonds increased by 14% YoY during 4Q22, driven by a significant increase in trading in Germany (35% YoY), the Netherlands (23% YoY) and Spain (9% YoY). There was a decrease in trading in Ireland (-54% YoY), Bulgaria (-45% YoY), Italy (-30% YoY), Denmark (-27% YoY) and the UK (-21% YoY) and Portugal (-19%) (see Chart 3).

In Bulgaria, government bond trading increased significantly during 4Q22, increasing 283% QoQ but falling 45% YoY. Bulgaria has experienced increased volatility in government bonds throughout 2021-2022 due to the increased frequency of parliamentary elections (see Chart 4).

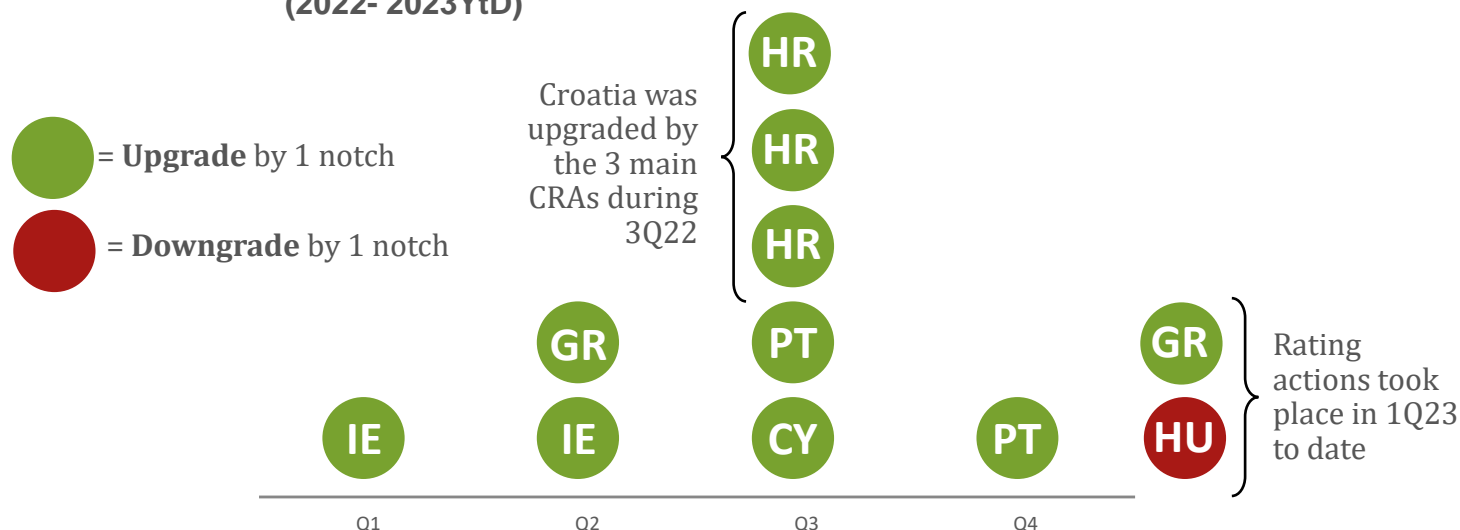
Annual aggregated European government bond trading (2022FY) increased by 15% compared to both 2021 and 2020 (see Chart 5).

Highlights and Market Environment

6. Number of Exits and Entries in European Primary Dealership (Jun 2022-January 2023)



7. European rating actions on long-term sovereign credit ratings (2022- 2023YtD)



Source: AFME HRF Table and National DMOs [chart 6]. Fitch, Moody's, S&P [chart 7].

Net loss of 2 primary dealers in Europe from September 2022 to January 2023

From September 2022 to the end of January 2023, there were 4 exits and 2 entries of banks to European Primary Dealer systems, affecting sovereign debt markets in 4 countries and the European Commission Primary Dealer Network (EU PDN) (see Chart 6).

This follows 4 exits and 6 entries of banks in European primary dealership between January 2022 to September 2022.

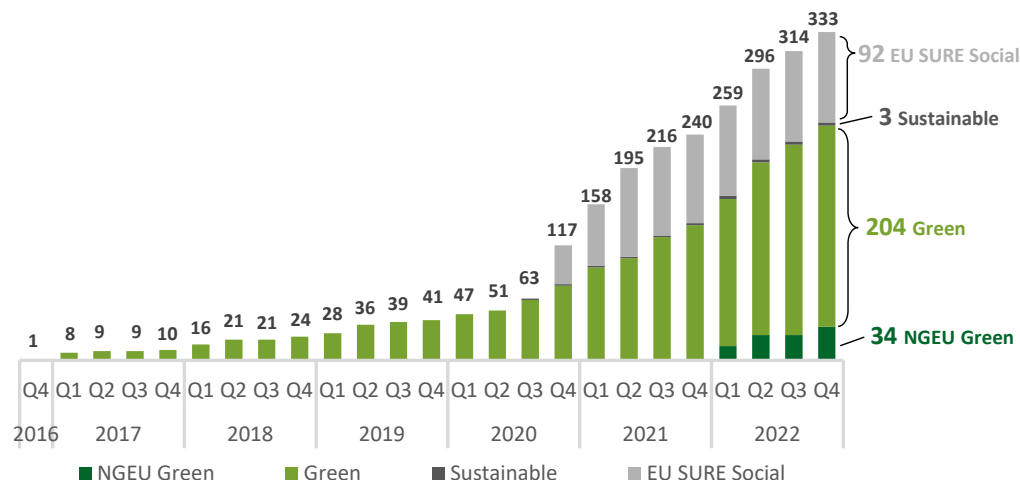
After the most recent exits, Bulgaria now has 8 primary dealers, the lowest number since January 2016 while Slovakia now has 10 primary dealers, the lowest since January 2013.

During 4Q22 there was 1 upgrade and no downgrades in long-term credit rating changes for European nations

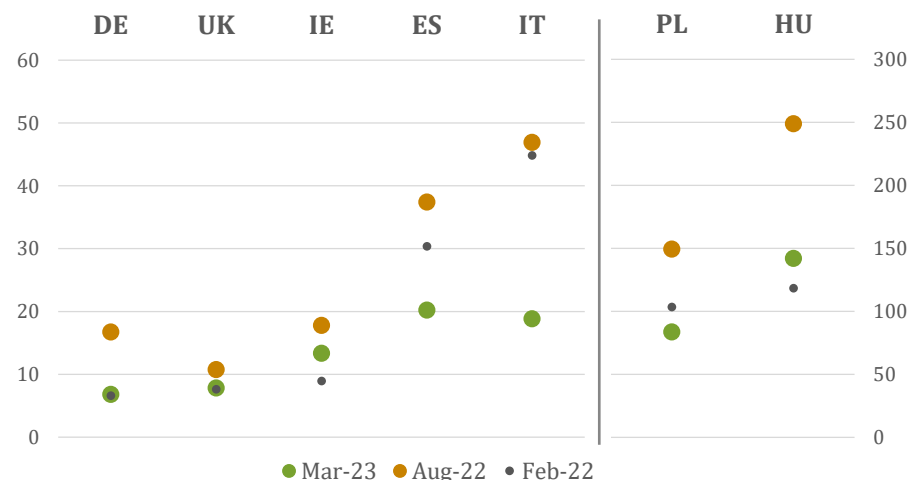
This follows 1 upgrade and no downgrades in 1Q22, 2 upgrades and no downgrades in 2Q22 and 5 upgrades and no downgrades in 3Q22, bringing the 2022 full-year total to 9 upgrades and no downgrades, compared to 7 upgrades and no downgrades in 2021.

Most recently during 1Q23, Greece has been upgraded by one notch and Hungary downgraded by one notch in credit rating.

8. European outstanding ESG sovereign bonds (EUR bn, 2016-2022)



9. Selected European 5Y CDS spot yields: DE, UK, IE, ES and IT (RHS axis); PL and HU (LHS axis) (bps, Feb-22, Aug-22 and Mar-23)



Source: Refinitiv Eikon and European Commission [chart 8]. Refinitiv Eikon [chart 9].

Outstanding amount of European government ESG bonds surpass EUR 333 bn in 2022 as 6 sovereigns and the European Commission issue during Q4 2022

Outstanding amount of ESG government bonds reached EUR 333 bn during 4Q22 (see chart 5), with green volumes driven by tap issuance in the UK (EUR 2.4 bn), Italy (EUR 2.0 bn), Spain (EUR 1.0 bn), Germany (EUR 1.0 bn) and additional green bond references issued in Hungary (EUR 1.4 bn).

In Austria, a green government bill (EUR 1.0bn) was issued during 4Q22, representing the first of its kind in the European sovereign space. Additionally, Austria plans to issue green commercial paper from 2023 as part of an overall programme to fund 20% of green expenditure via short term green debt. Austria's offering of shorter-term green instruments contrasts with most European sovereign ESG issuers, which opt to issue bonds with maturities longer than 10 years.

As of 2022, there were 15 sovereign issuers (inc. the UK) and the European Commission active in the European sovereign bond market with 13 remaining European sovereigns covered in this report yet to tap ESG markets for government debt funding. New entrants to the market in 2022 include Denmark, which issued their first green bond in 1Q22 and Austria, which followed with an inaugural green bond in 2Q22 (and most recently issuing a green bill in 4Q22).

5Y CDS fall during 2023 YtD (as of early March) after increased volatility during 2022FY

The 5Y credit default swap rate in DE, UK, IE, ES, IT, PL and HU have normalised from August 2022 to March 2023 and are now at levels comparable to, or below that of February 2022, with European CDS rates becoming more clustered and showing less dispersion among countries.

In Hungary, 5Y CDS rates have fallen by the largest magnitude, from Aug 2022 to early March 2023, decreasing 106.8bp during this period.

Major upcoming regulatory, legislative and policy initiatives

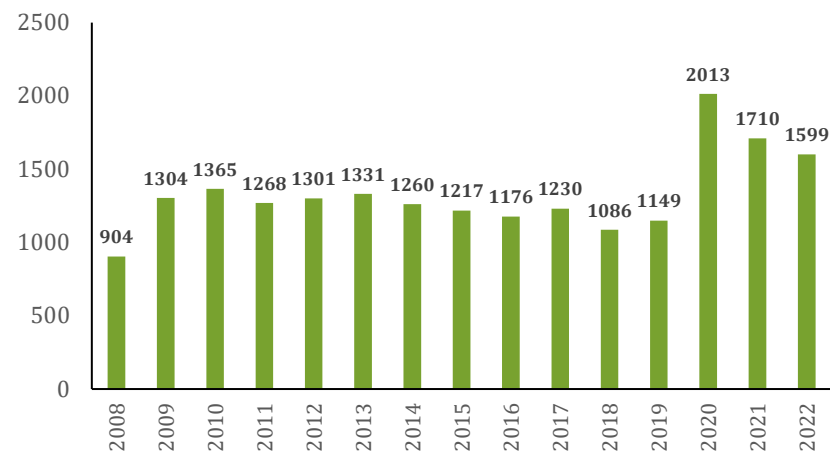
There are several regulatory initiatives currently being considered at the European and national level with expected impact on the government bond markets. Some of the key initiatives recently implemented or soon to be applied include:

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

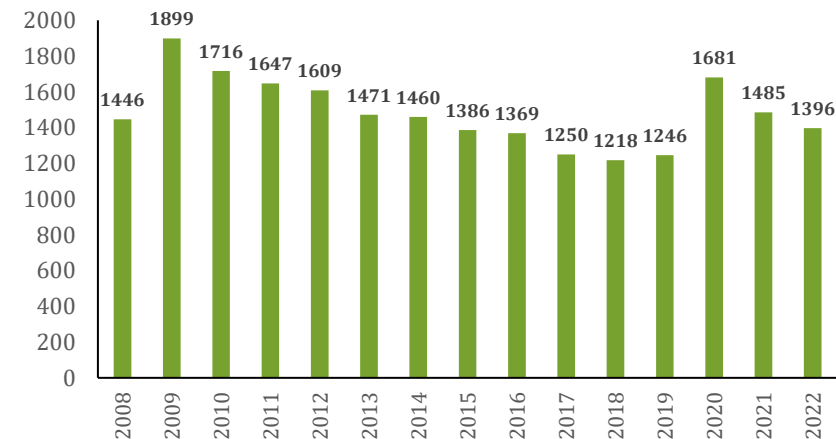
AFME and its members actively contribute on all of these and other initiatives.

Issuance

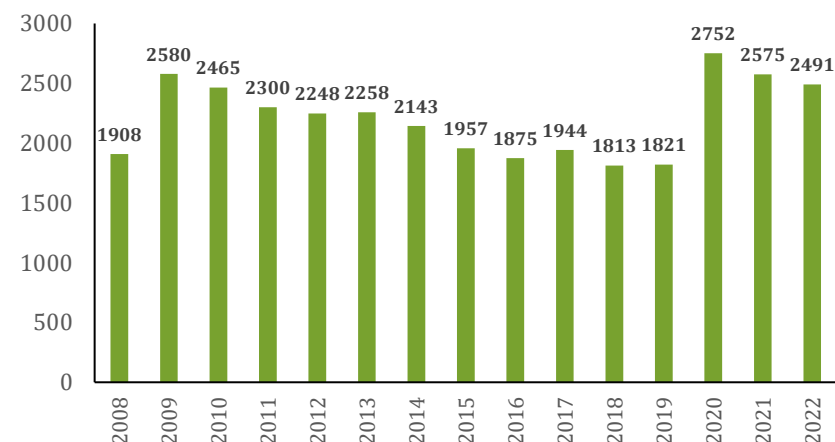
1.1 European (EU+UK) Government Bond gross issuance (FY, EUR bn)



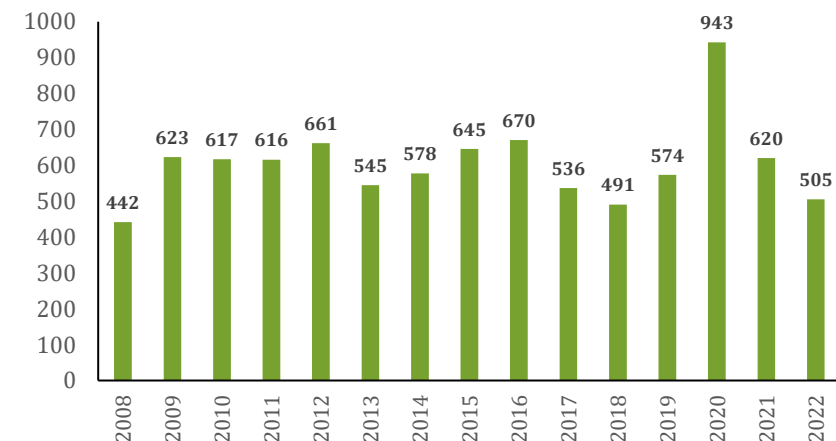
1.2 European (EU+UK) Treasury Bills gross issuance (FY, EUR bn)



1.3 Eurozone bonds and bills gross issuance (FY, EUR bn)

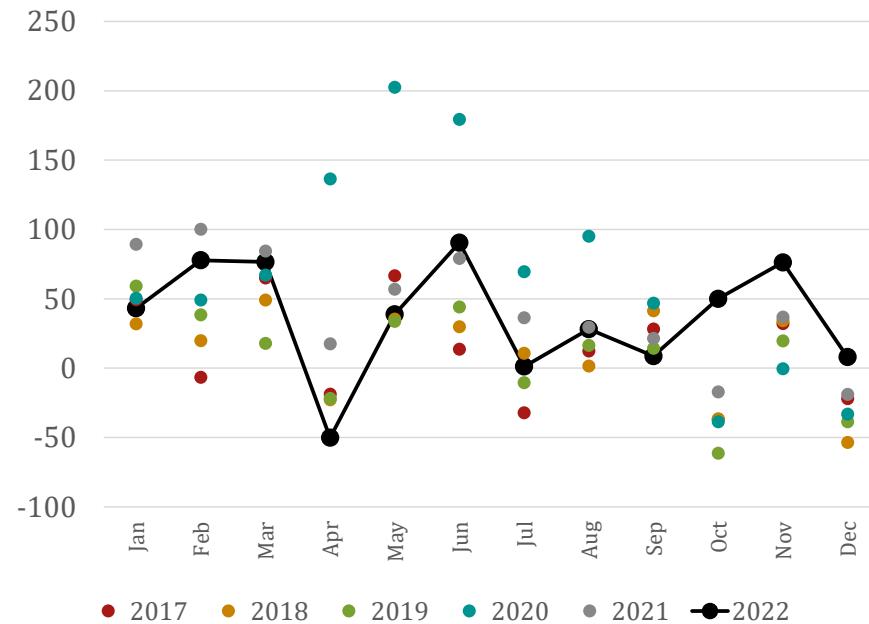


1.4 Non-Eurozone bonds and bills gross issuance (FY, EUR bn)

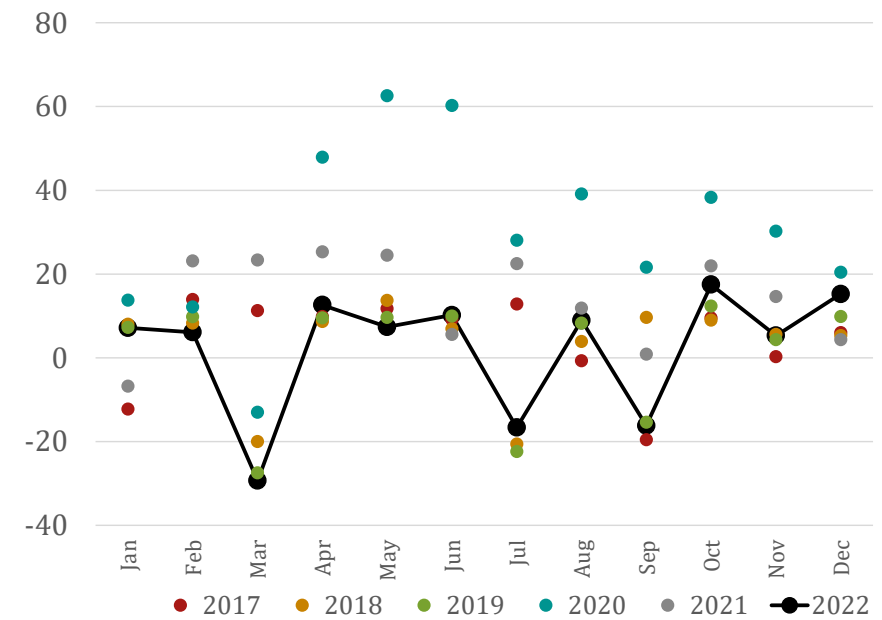


Source: ECB, National Debt Management Offices and UK Debt Management Office. Data on this page excludes EU Commission issuance (ie. NGEU, SURE) and includes debt issued from EU Member States and the UK only.

1.5 Euro area net sovereign debt issuance (EUR bn)



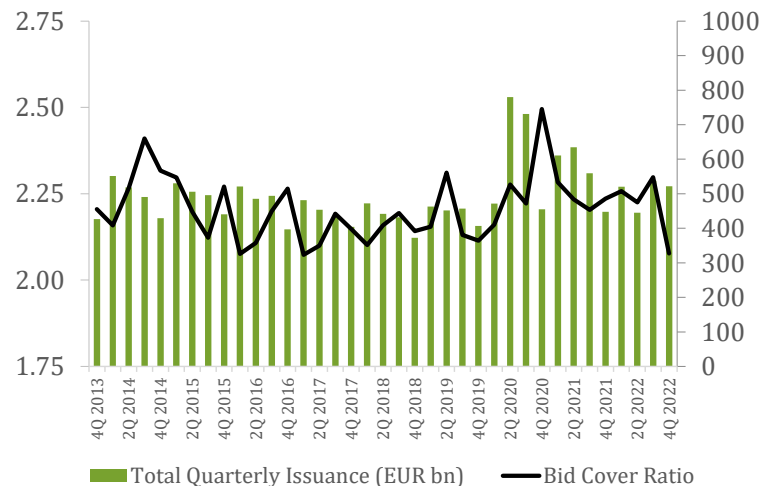
1.6 UK Gilts net issuance (GBP bn)



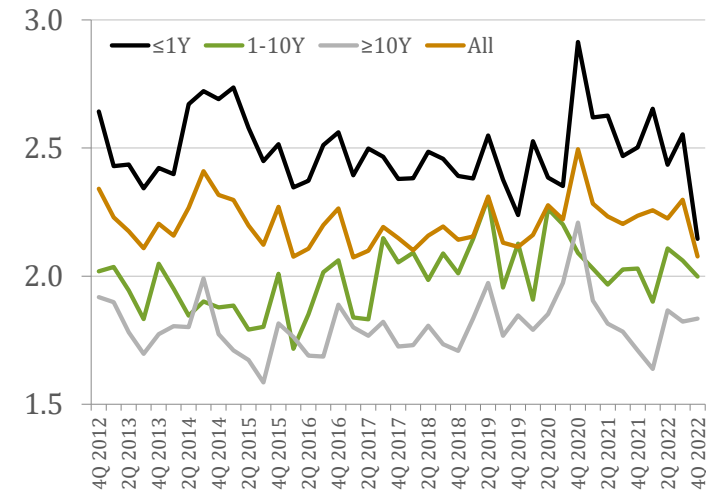
Source: ECB and UK Debt Management Office.

Recent Auctions and Primary Dealers

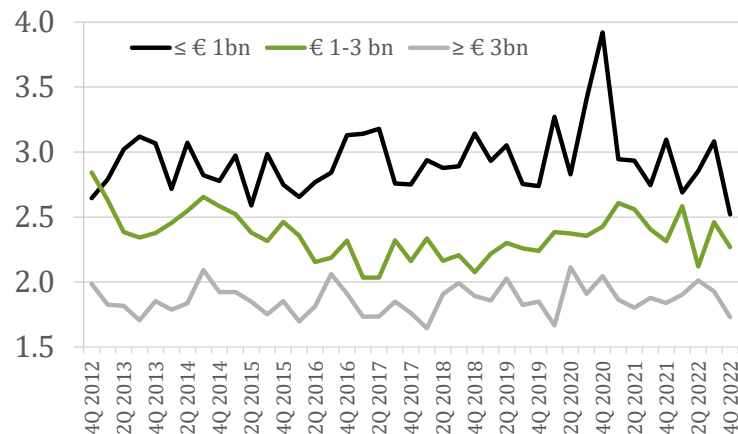
2.1 Average bid-cover ratios and issued volumes in selected jurisdictions (EUR bn)



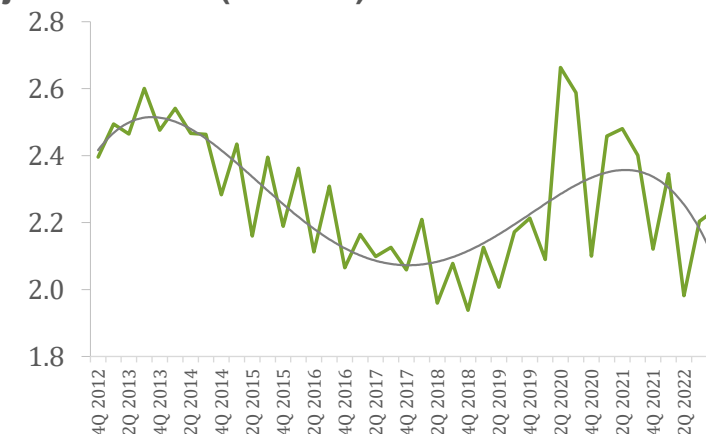
2.2 Average bid-cover ratios by tenor (years) of issued instrument



2.3 Average bid-cover ratios by size of issued instruments

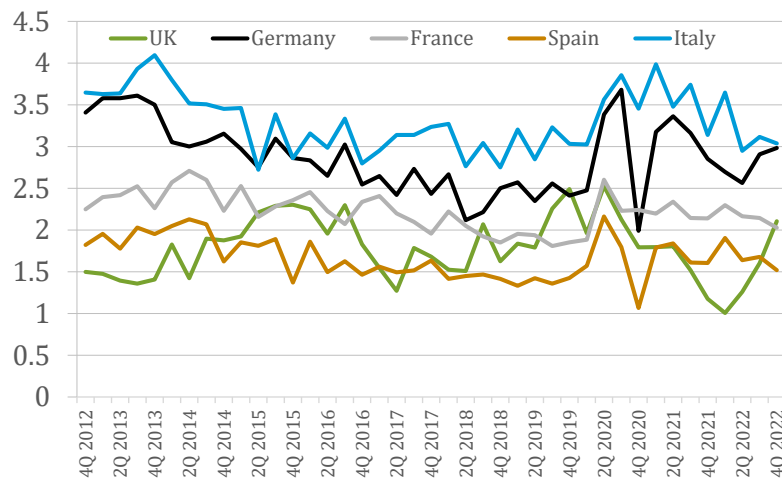


2.4 Average auction size in selected European jurisdictions (EUR bn)

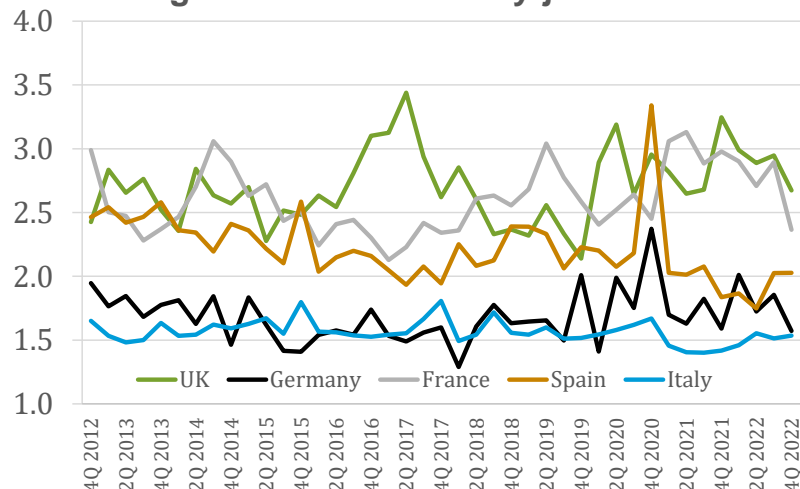


Source: Refinitiv Eikon. Weighted Average of UK, DE, FR, ES, IT, BE, SE, NL, DK and AT bonds and bills. In chart 2.4 polynomial trendline shown in grey.

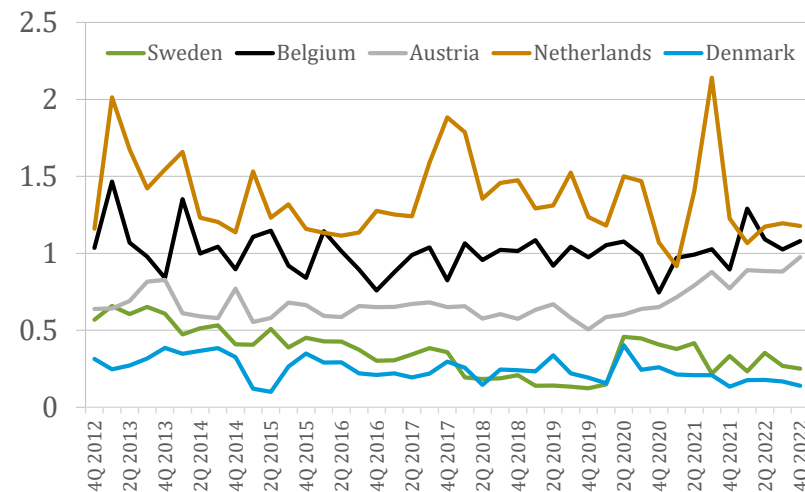
2.5 Average auction size in selected jurisdictions (EUR bn)



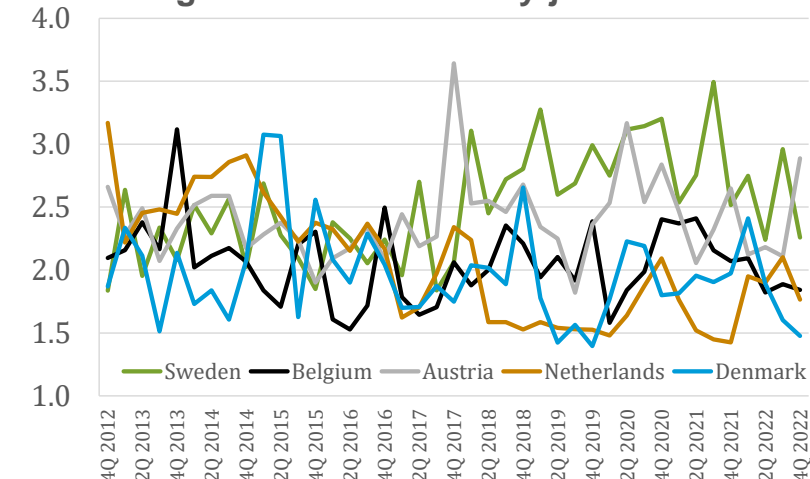
2.7 Average bid-cover ratios by jurisdictions



2.6 Average auction size in selected jurisdictions (EUR bn)

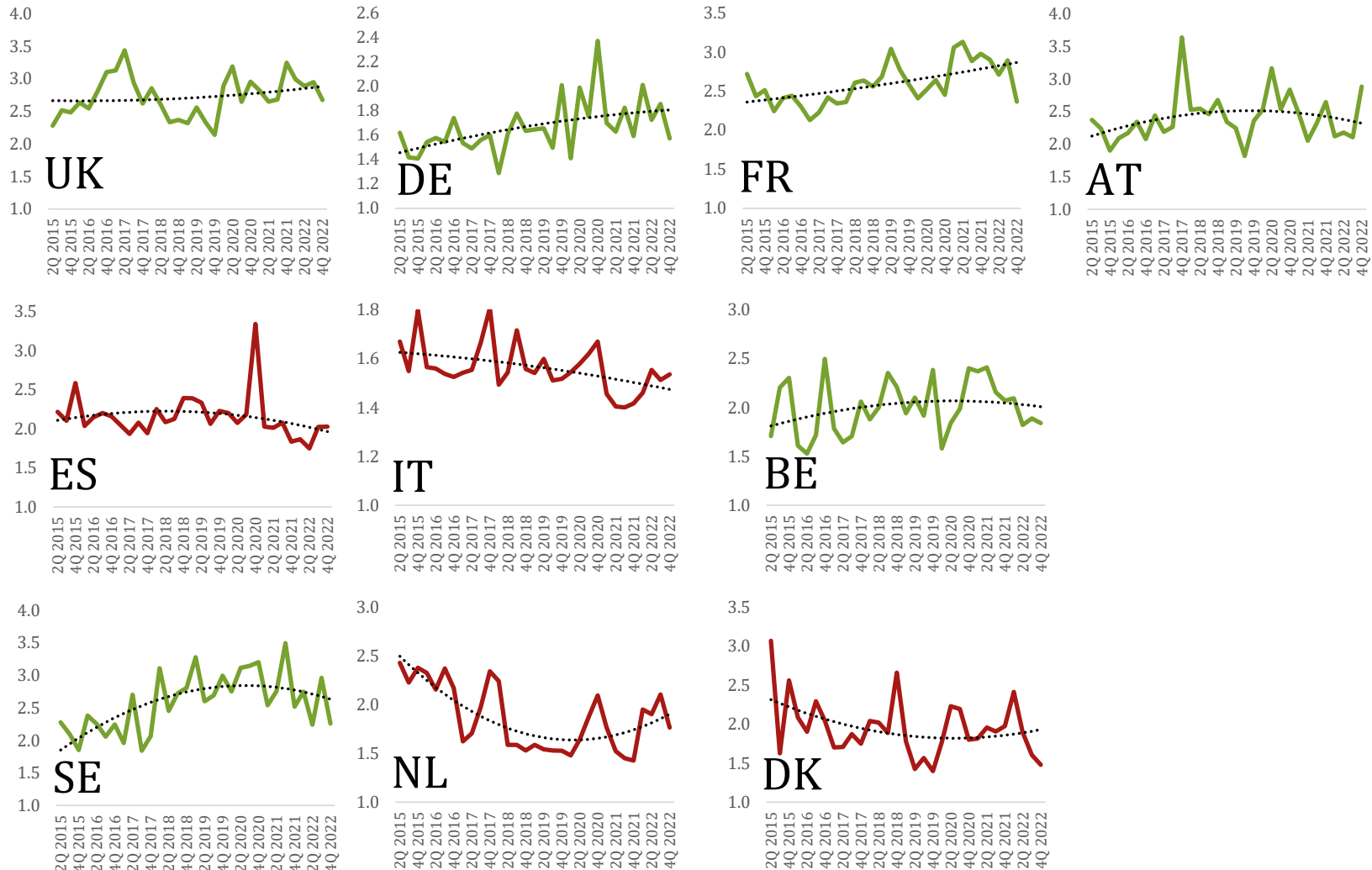


2.8 Average bid-cover ratios by jurisdictions



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

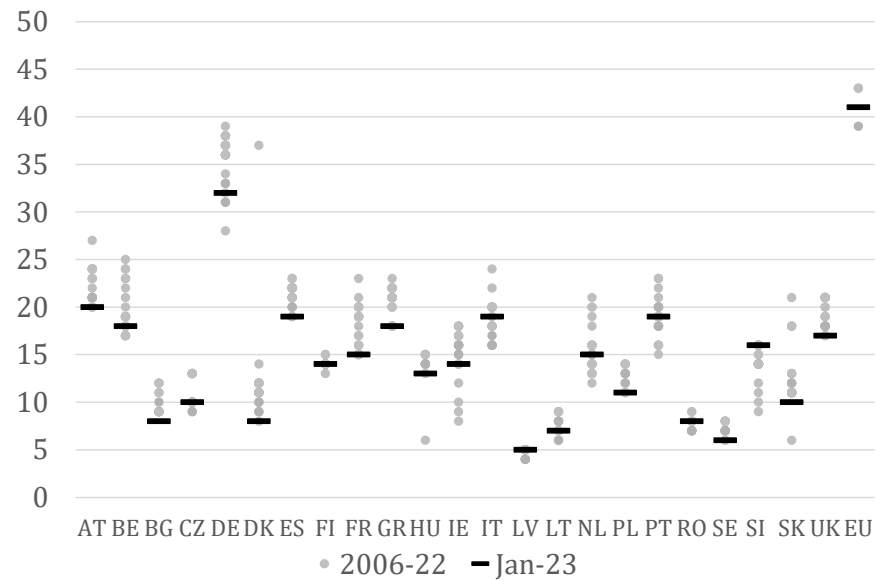
2.9 Average bid-cover ratios in selected jurisdictions: 2013-22



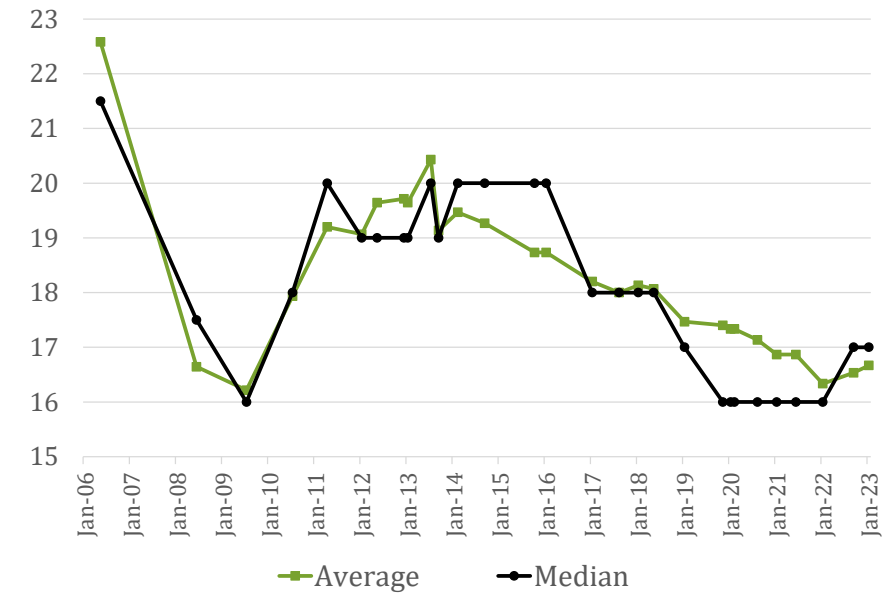
Source: Refinitiv Eikon. **Green** indicates end value of trendline above starting value, **red** indicates end value of trendline below starting value

Primary Dealers: European countries and EU

2.10 Number of primary dealers relative to historic number

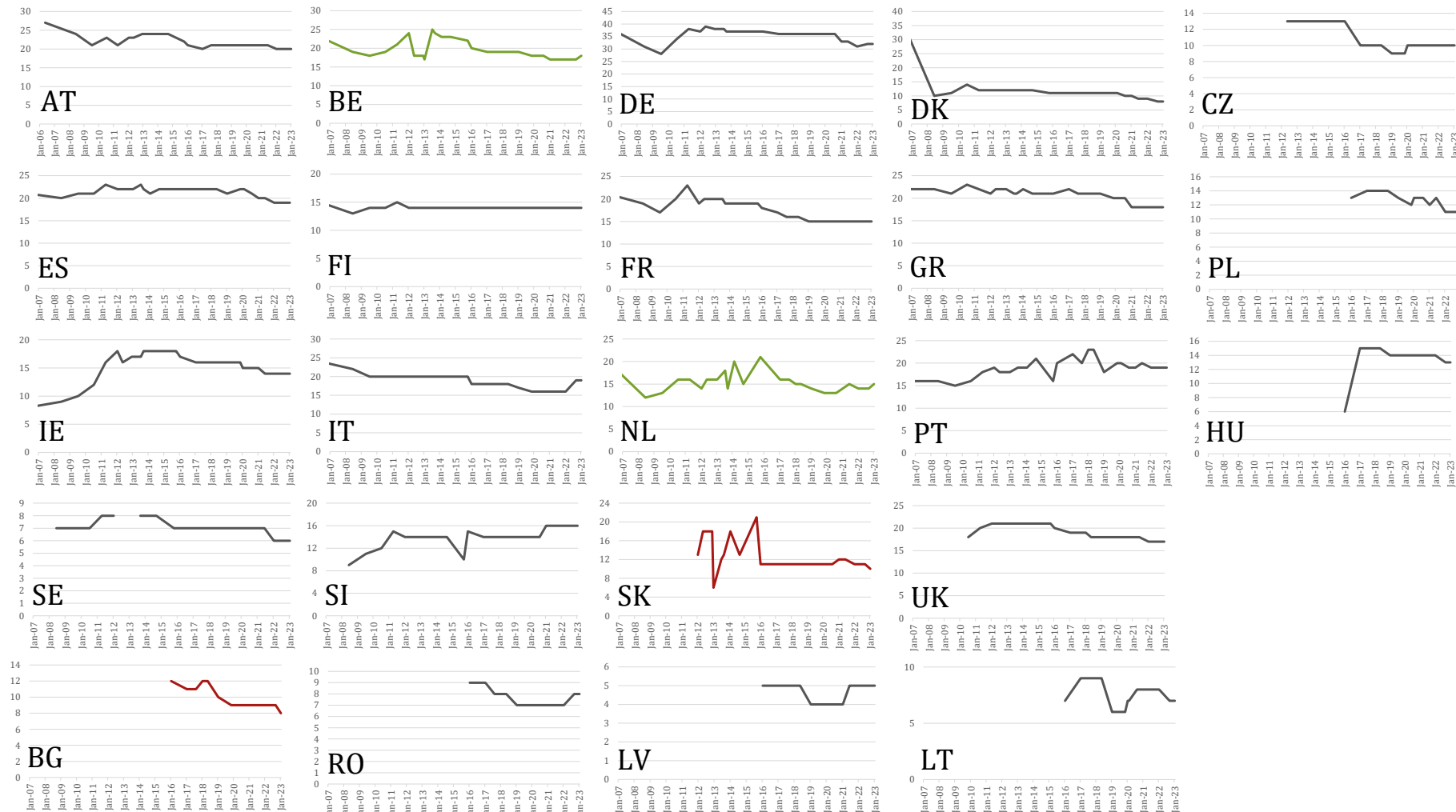


2.11 Average and median number of primary dealers in selected European countries



Source: AFME Primary Dealers Handbooks AFME HRF Table, national DMOs. Average and medians of AT, BE, DE, DK, ES, FI, FR, GR, IE, IT, NL, PT, SE, SI and UK. EU in Chart 2.10 refers to the EU Primary Dealer Network. Latest data as of January 2023.

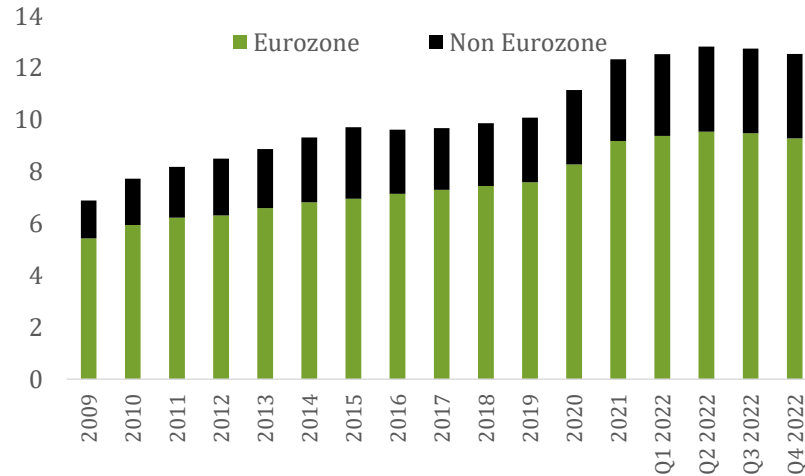
2.12 Number of primary dealers in Europe by country: 2006-22



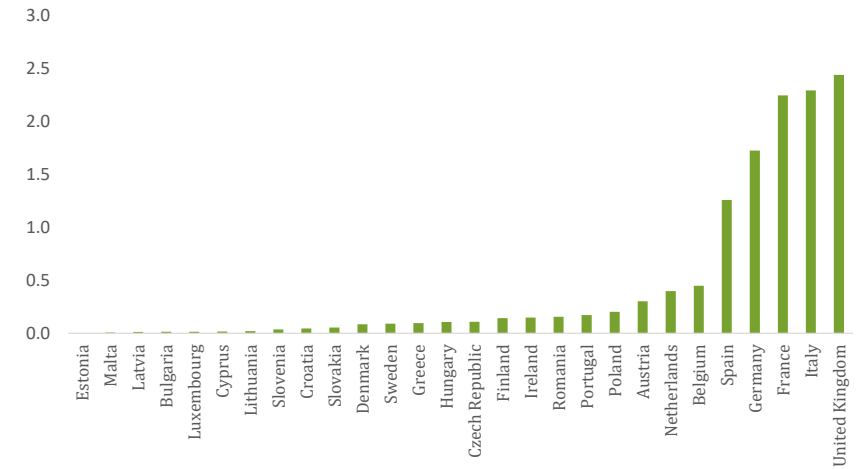
Source: AFME HRF Table and National DMOs. The gap in the line for Sweden indicates data was not recorded in the relevant period. **Chart colour indicates net change in PDs since June 2022.** **Green** indicates an increase: **red** indicates a decrease and **grey** indicates no change. Latest data as of January 2023.

Outstandings

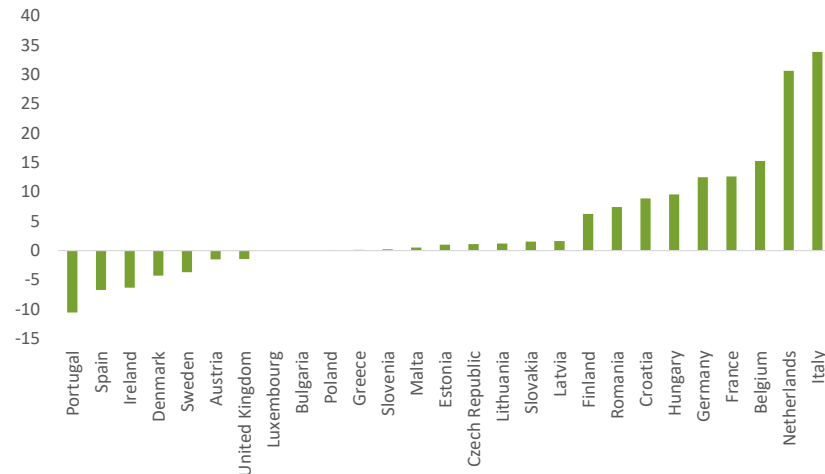
3.1 Outstanding debt securities issued by Central Governments (Nominal, EUR tn)



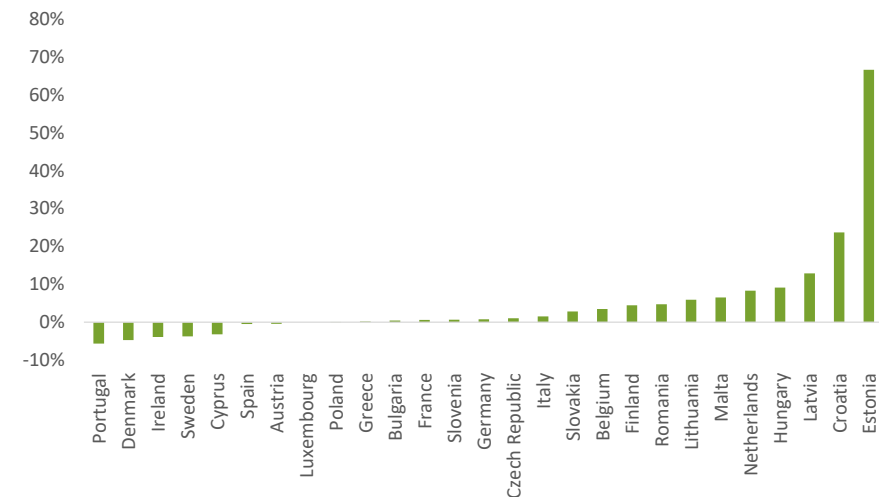
3.2 European government bonds outstanding by country (EUR tn)



3.3 Change in outstandings 3Q22 to 4Q22 (EUR bn)

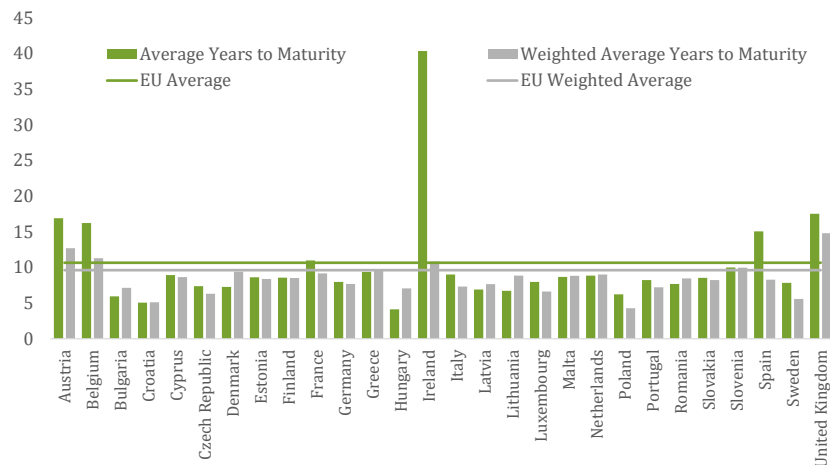


3.4 Change in outstandings from 3Q22 to 4Q22 (%)

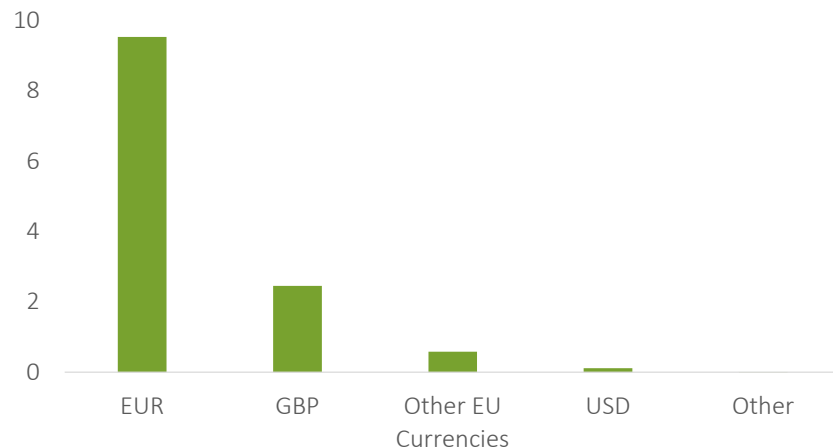


Source: ECB, Refinitiv Eikon and UK DMO.

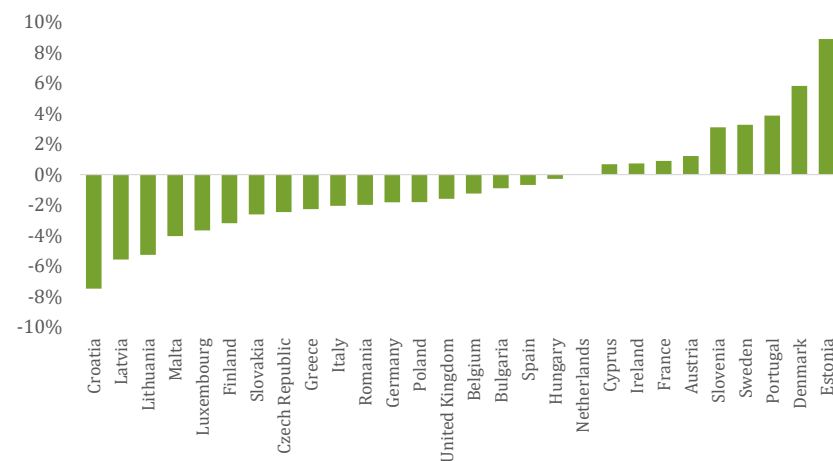
3.5 Average years to maturity for outstanding government bonds in European (EU+UK) countries



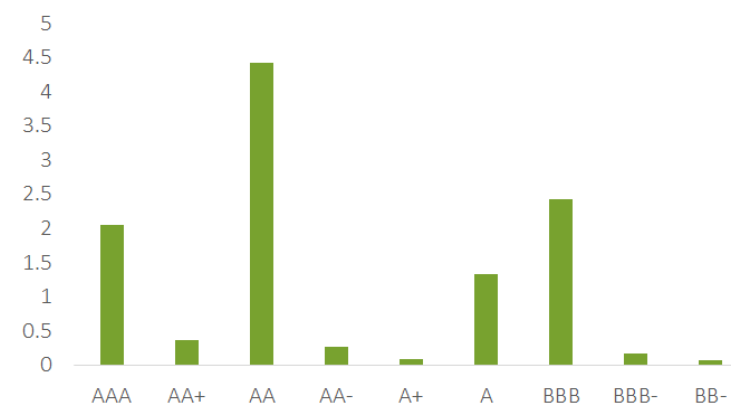
3.7 European government bonds outstanding by currency (EUR tn)



3.6 Quarterly change in weighted average years to maturity for outstanding government bonds 3Q22 to 4Q22



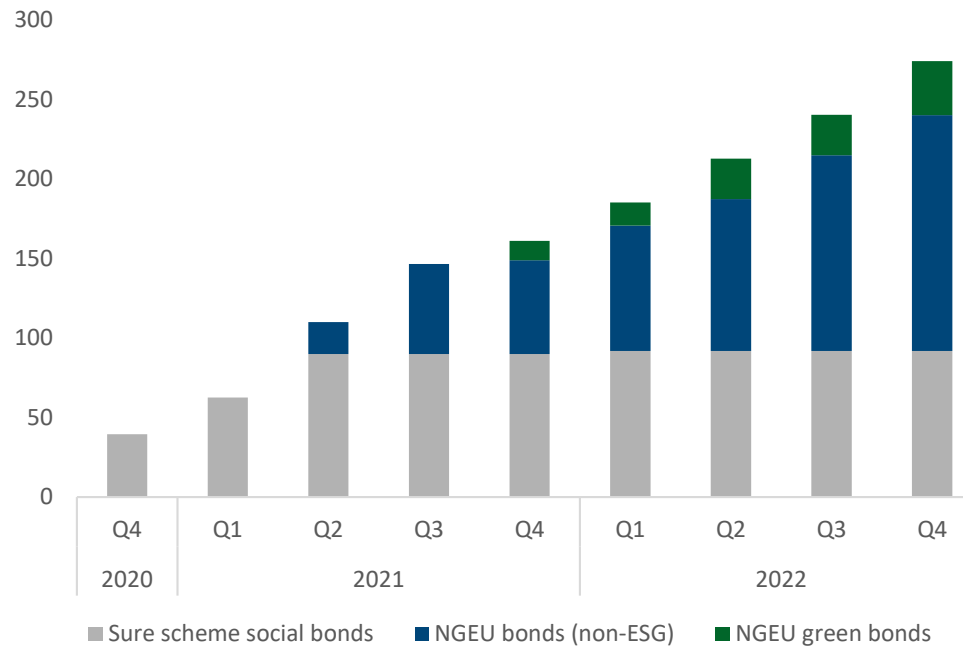
3.8 European government bonds outstanding by current rating of issuer (EUR tn)



Source: Refinitiv Eikon. For Charts 3.5 and 3.6 weighted average in by outstanding amount.

Outstandings: European Commission bonds

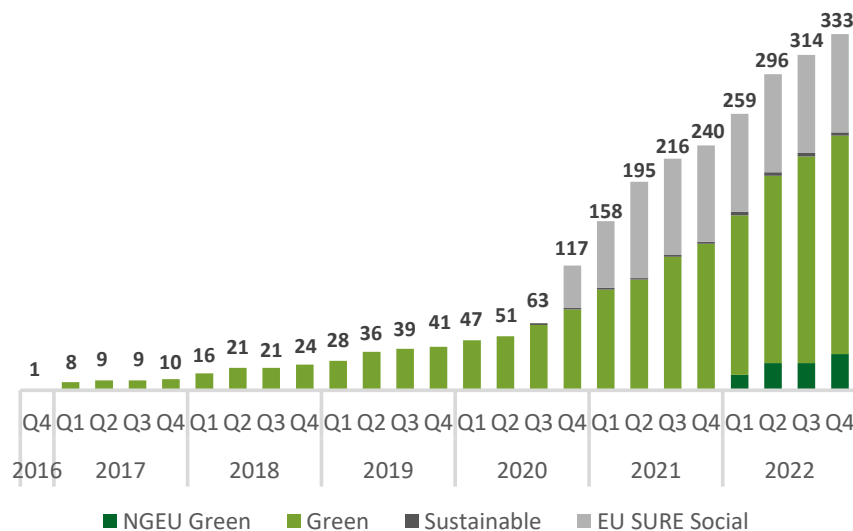
3.9 Outstanding bonds issued by the European Commission (EUR bn)



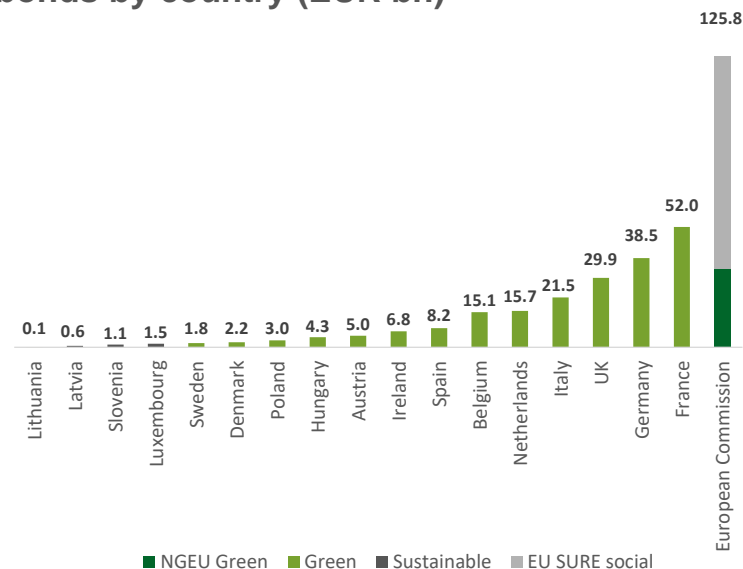
Source: European Commission. **NGEU** refers to bond issuance by the European Commission under the NextGenerationEU scheme.

Outstandings: ESG Bonds

3.9 European outstanding ESG (green, social and sustainable) bonds (EUR bn)



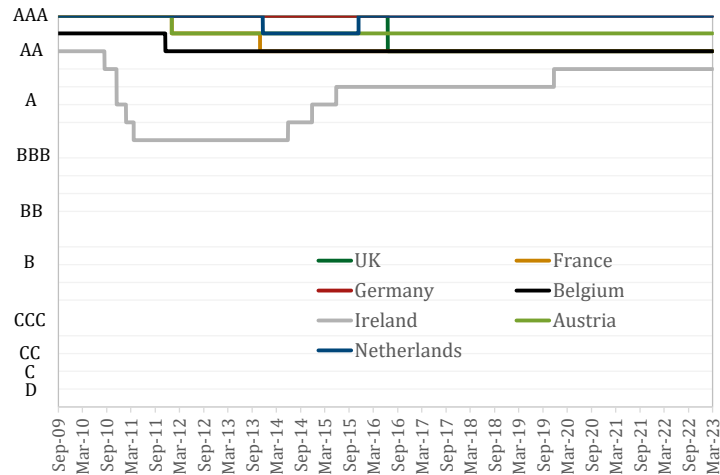
3.10 European outstanding ESG government bonds by country (EUR bn)



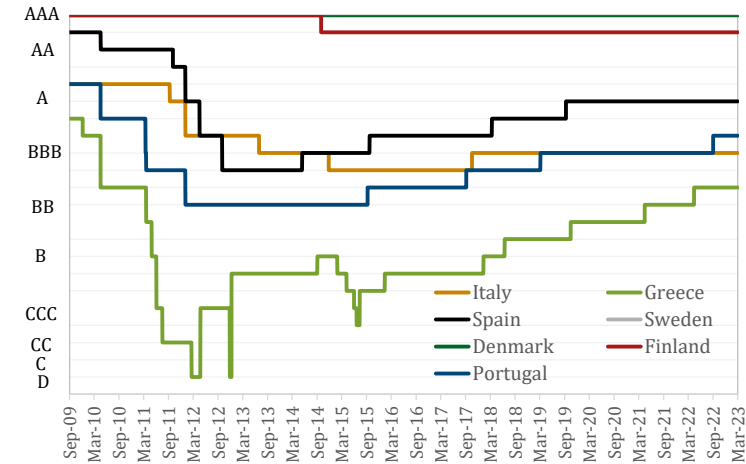
Source: Refinitiv Eikon, European Commission. All outstanding social bond volumes in Chart 3.9 are issued by the European Commission.

Credit Quality

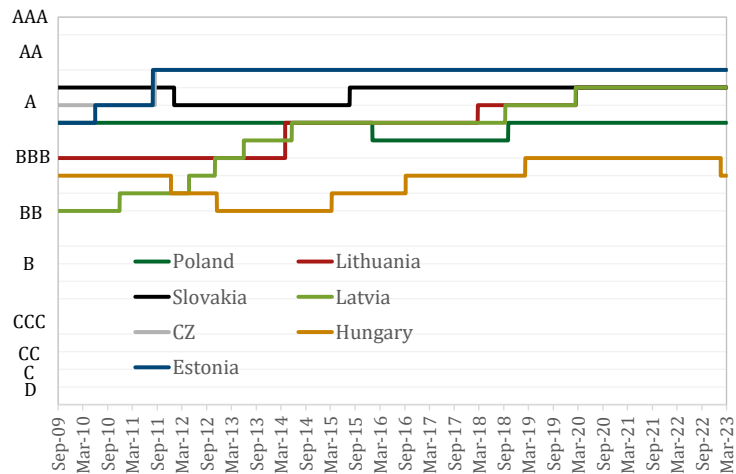
4.1 Long-term sovereign credit rating (Central and Northern Europe)



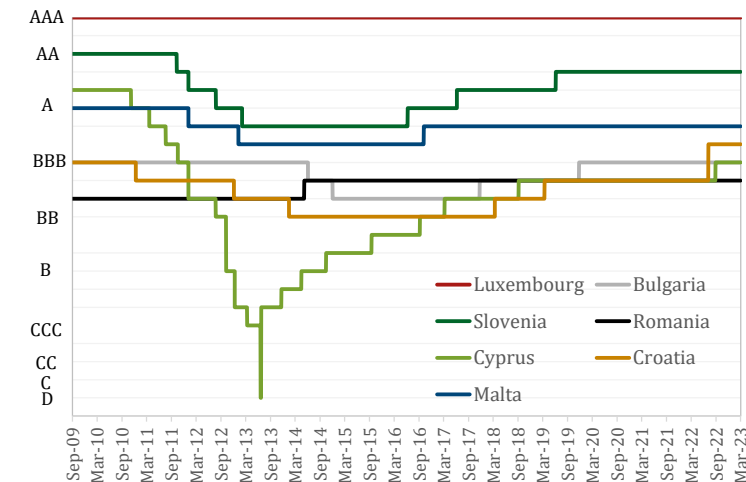
4.2 Long-term sovereign credit rating (Nordics and Southern Europe)



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



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



Source: Refinitiv Eikon

4.5 European rating actions on long-term sovereign credit ratings (2022 FY and 2023 YtD)

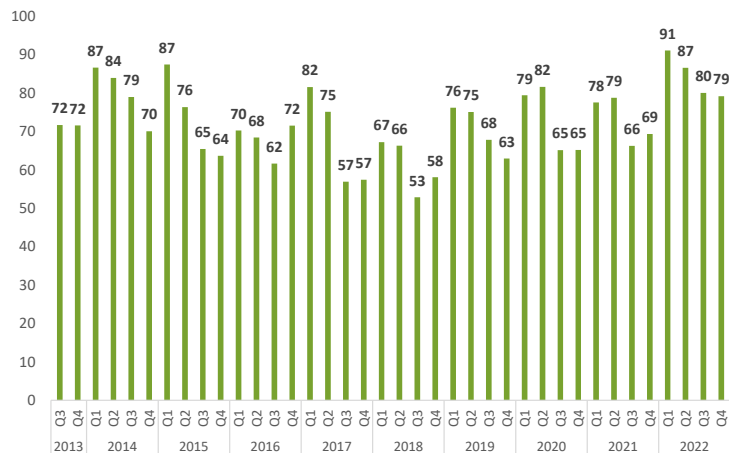
Ireland	Upgrade to AA- (stable) from A+	Jan-22	Fitch	Expected continued improved in Ireland's fiscal metrics, supported by strong revenue performance, driven by an expansion of the tax base, leading to a strong upward revision of Ireland's revenue forecast.	1Q22
Greece	Upgrade to BB+ (stable) from BB	Apr-22	S&P	Expected continuous improvement in Greece's policy effectiveness and presence of fiscal buffers that will allow the country to absorb the indirect impact of the war in Ukraine on its economy and public finances.	2Q22
Ireland	Upgrade to A1 (positive) from A2	May-22	Moody's	Increased economic resilience of Ireland: strong GDP growth, track record of growth and growth potential and a decline in Ireland's government debt.	
Croatia	Upgrade to BBB+ (stable) from BBB	Jul-22	Fitch	Approval to Croatia by Ecofin on 12 July to join the euro on 1 January 2023. Euro adoption is positive for the rating as it would provide the sovereign with reserve-currency status, reduced transaction costs and limit exchange rate-risk to corporates and households.	3Q22
Croatia	Upgrade to BBB+ (stable) from BBB-	Jul-22	S&P	Expected consistent economic growth over the coming two years, despite inflationary pressure and the economic consequences of the current Russia-Ukraine conflict. Expectation that the government remains committed to the reform program and receive significant EU financing, rebuilding the fiscal space lost in the aftermath of the pandemic.	
Croatia	Upgrade to Baa2 (stable) from Ba1	Jul-22	Moody's	Adoption of legal acts formalising Croatia's adoption of the euro by Ecofin on 12 July, with Croatia adopting the euro as its domestic currency from 1 January 2023, thereby eliminating any foreign currency risk for the government's largely euro-denominated debt burden and reducing the government liquidity risk.	
Portugal	Upgrade to BBB+ (stable) from BBB	Sep-22	S&P	Continued strong growth in Portugal despite higher energy costs and rising interest rates. The upgrade reflects the resilience of Portugal's economy, public finances, and largely foreign-owned financial sector to various external shocks.	
Cyprus	Upgrade to BBB (stable) from BBB-	Sep-22	S&P	Expected continued economic growth supported by the diversified structure of the Cypriot economy and resilience to heightened risks. Expected improvement of the government's fiscal position amid rising economic wealth levels and the ongoing recovery in the tourism sector	4Q22
Portugal	Upgrade to BBB+ from BBB	Oct-22	Fitch	Strong commitment to prudent fiscal policy, and despite significant external shocks, fiscal outturns have persistently outperformed both the 'BBB' rating category and European peers. Economic growth supported by a robust recovery in the tourist sector and falling unemployment supported by increased labour market participation.	
Greece	Upgrade to BB+ (stable) from BB	Jan-23	Fitch	Expected better deficit and debt outturns and projections in 2022-24, thanks to stronger nominal growth, budget over-execution and favourable debt-servicing structure, and an improvement in primary balance implied by the narrowing of the general government deficit.	1Q23
Hungary	Downgrade to BBB- (stable) from BBB	Jan-23	S&P	Persistently high inflation, exchange rate volatility and external pressures such as high energy prices, an uncertain economic outlook and rising interest costs against an already high stock of public debt posing challenges to the Hungarian government's consolidation plans.	QtD

Source: Fitch, Moody's, S&P

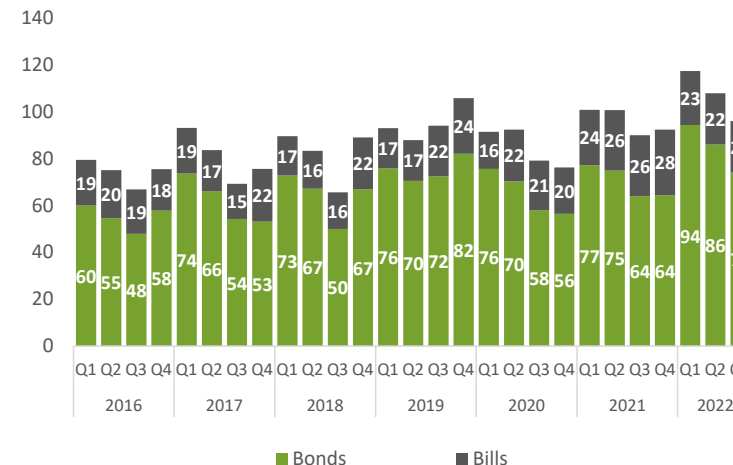
Secondary Market Trading Volumes and Turnover Ratios

Secondary Market Trading Volumes and Turnover Ratios

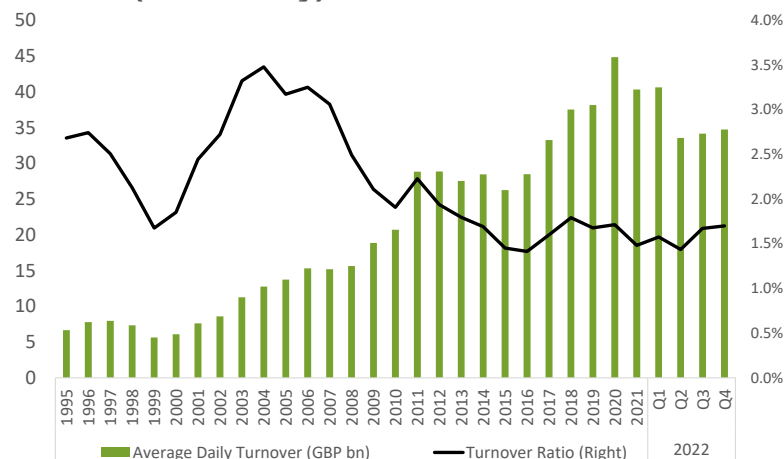
5.1 EU + UK: Average daily trading volumes (Government and sovereign bonds, EURbn)



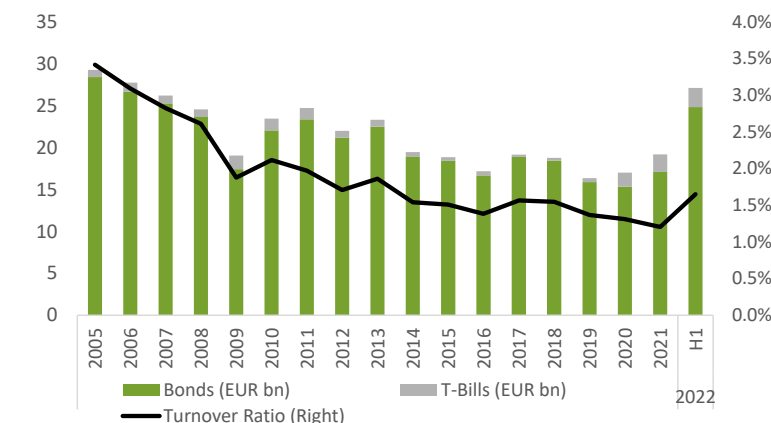
5.2 Eurozone: Average daily trading volume (bonds and bills, EURbn)



5.3 United Kingdom: Average daily trading volume (bonds only) and turnover ratio



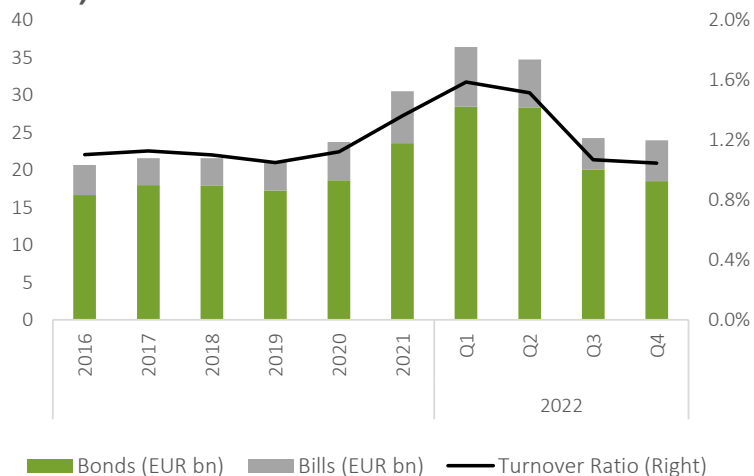
5.4 Germany: Average daily trading volume (aggregated bonds and bills) and turnover ratio



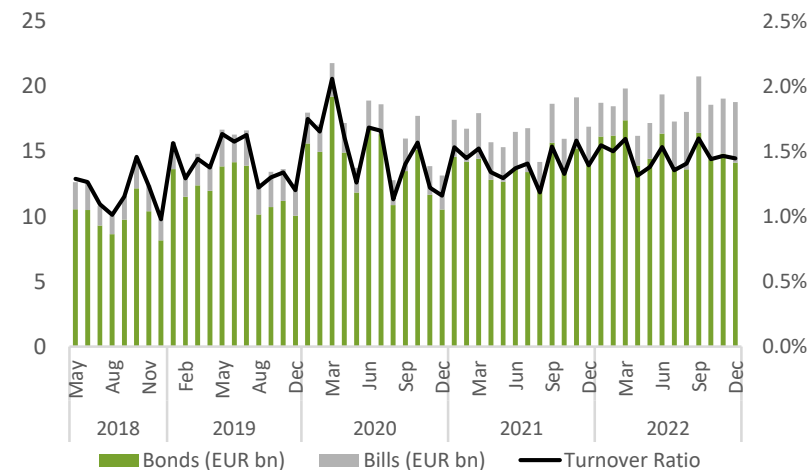
Source: TraX data from MarketAxess, EFC Sub-Committee on EDISM, UK Debt Management Office, Deutsche Finanzagentur, ECB. Individual country volumes do not sum to aggregated trading volume in Chart 5.1 EU+UK, given the differences in the aggregation basis across jurisdictions. The data is not fully comparable between countries. Full Methodology available on page 34 of this report.

Secondary Market Trading Volumes and Turnover Ratios

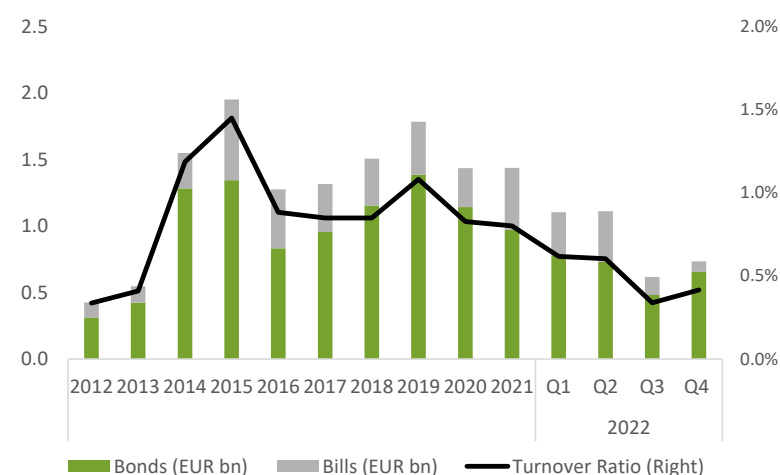
5.5 Italy: Average daily trading volume (bonds and bills) and turnover ratio



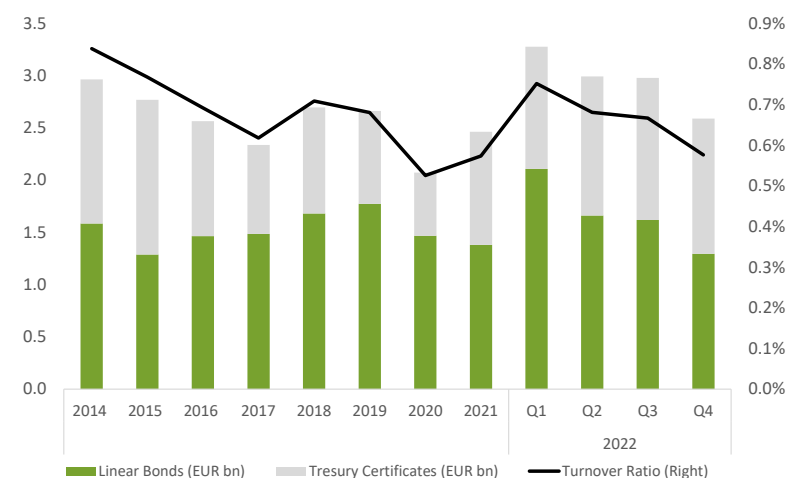
5.6 Spain: Average daily trading volume and turnover ratio



5.7 Portugal: Average daily trading volume and turnover ratio



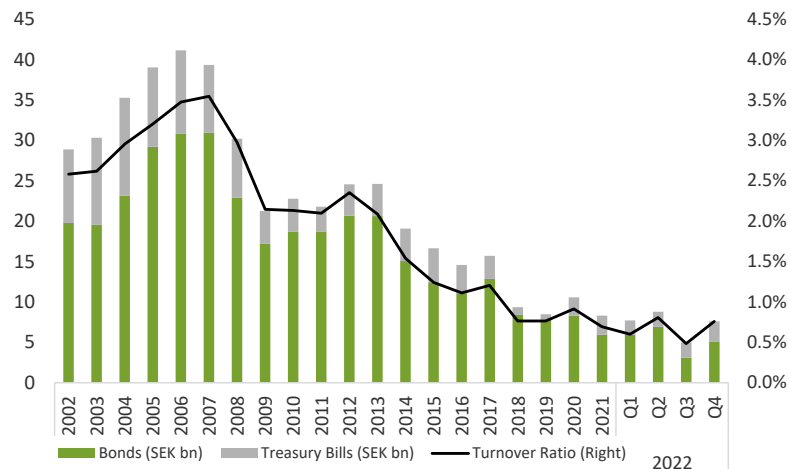
5.8 Belgium: Average daily trading volume and turnover ratio



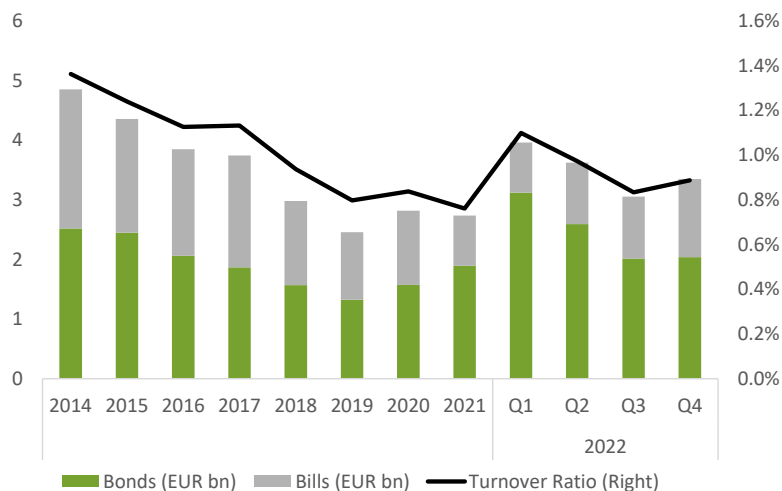
Source: ECB, Italian Dipartimento del Tesoro, BME Market Data and Tesoro Publico de Espana, Agência de Gestão da Tesouraria e da Dívida Pública (IGCP), ECB, Belgian Debt Agency. **Given the differences in the aggregation basis across jurisdictions, the data is not fully comparable between countries. Full Methodology available on page 34 of this report.**

Secondary Market Trading Volumes and Turnover Ratios

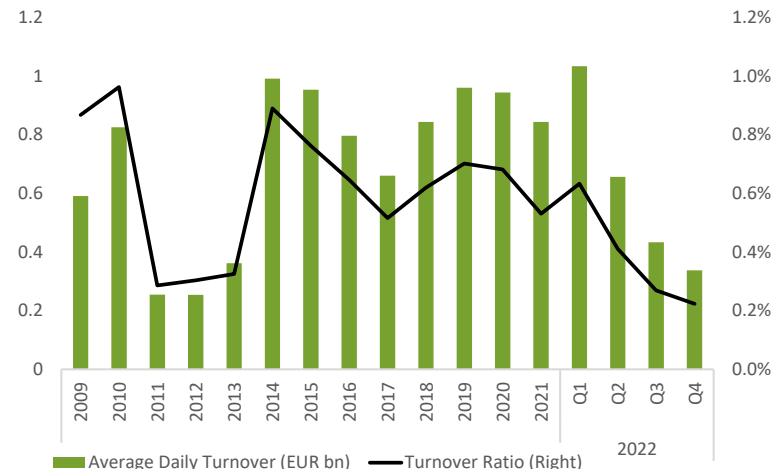
5.9 Sweden: Average daily trading volume and turnover ratio



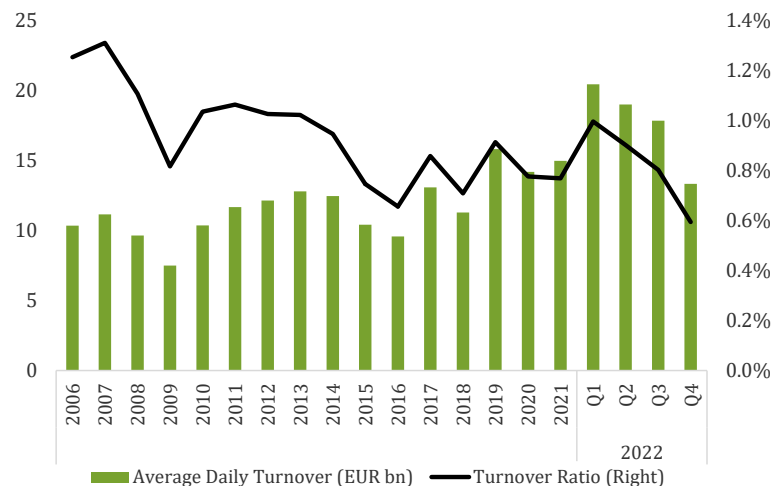
5.11 Netherlands: Average daily trading volume and turnover ratio



5.10 Ireland: Average daily trading volume (bonds only) and turnover ratio



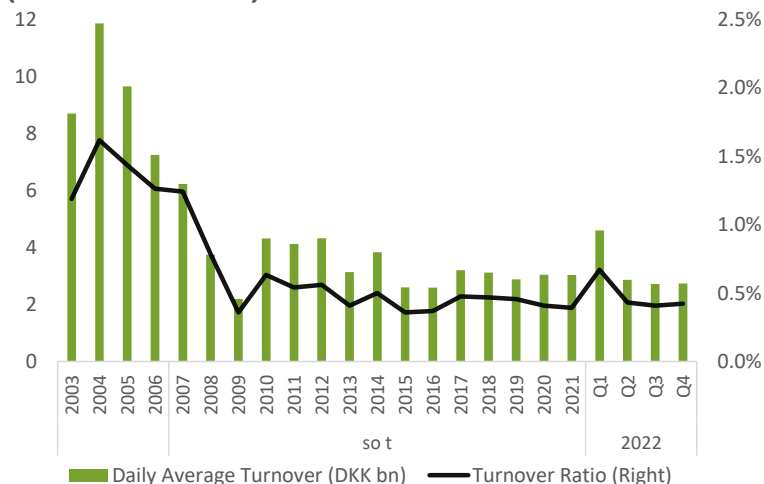
5.12 France: Average daily trading volume (bonds only) and turnover ratio



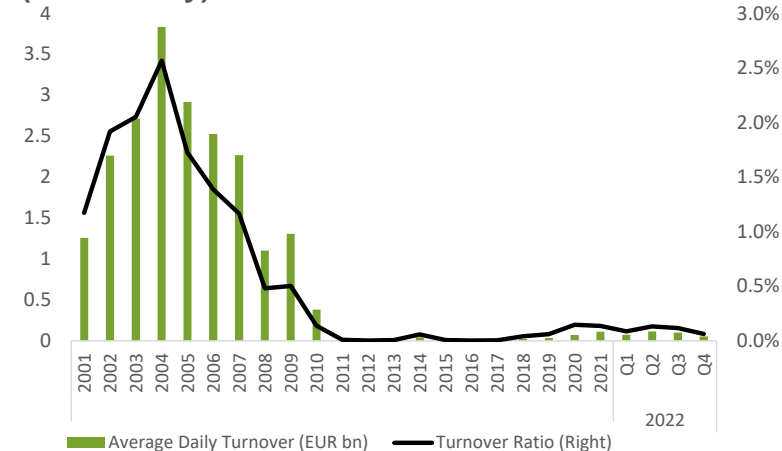
SOURCE: ECB, Swedish National Debt Office (Riksgalden), Irish Stock Exchange, Ministerie van Financiën, Agence France Tresor. **Given the differences in the aggregation basis across jurisdictions, the data is not fully comparable between countries. Full Methodology available on page 34 of this report.**

Secondary Market Trading Volumes and Turnover Ratios

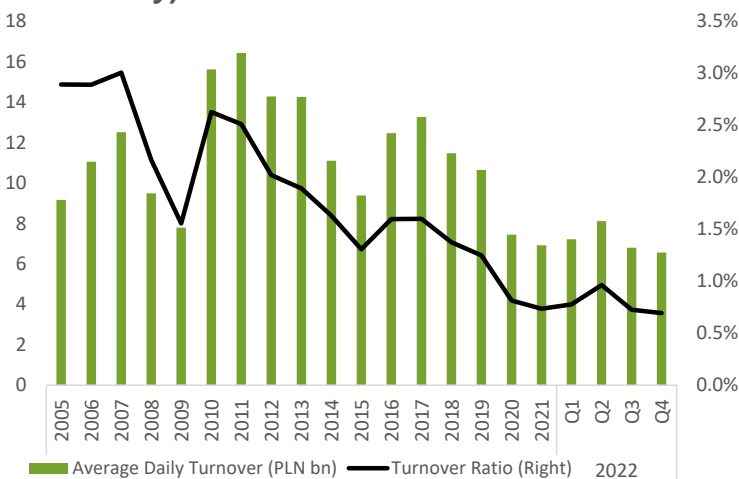
5.13 Denmark: Average daily trading volume (bonds and bills) and turnover ratio



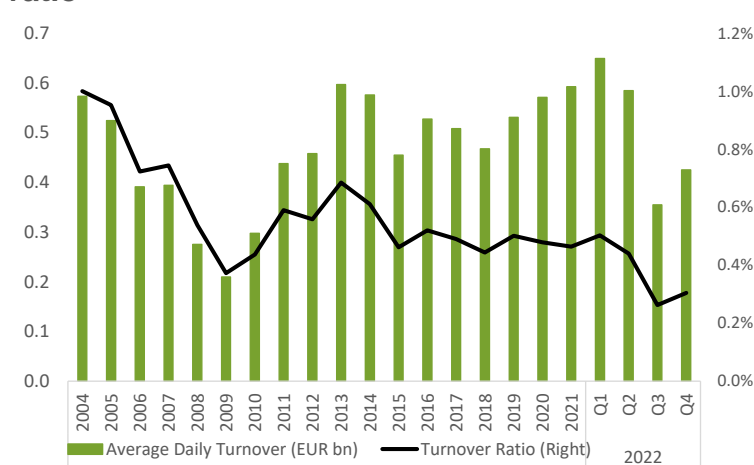
5.14 Greece: Average daily trading volume (bonds only) and turnover ratio



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



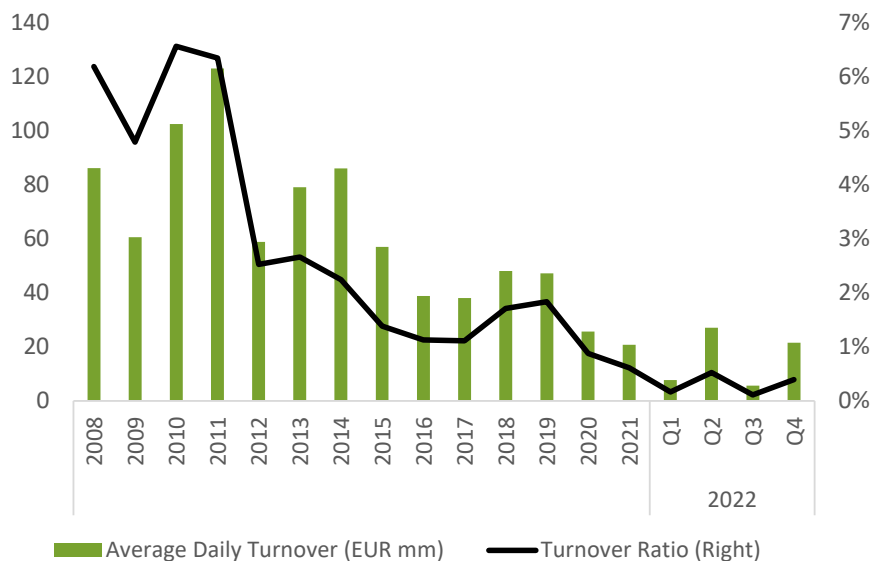
5.16 Finland: Average daily trading volume (aggregated bonds and bills) and turnover ratio



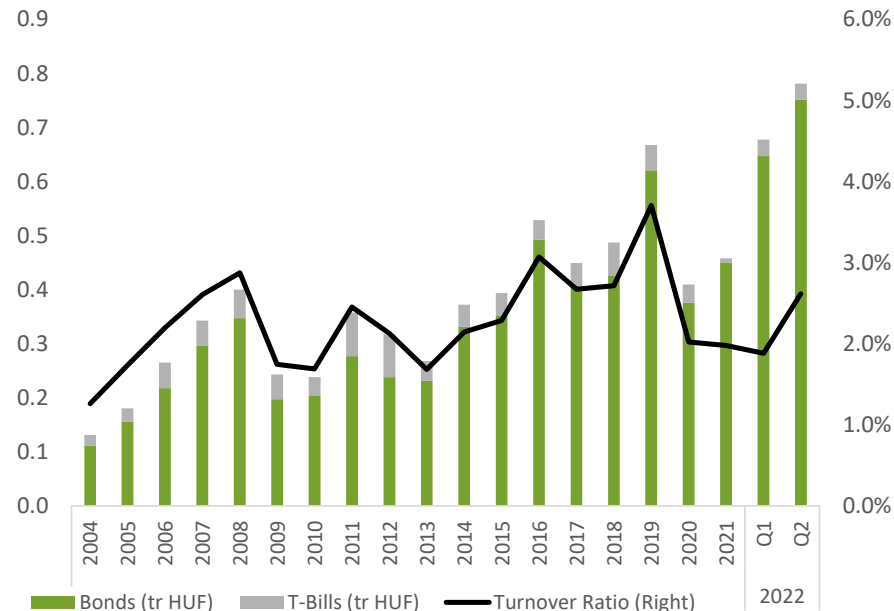
Source: Denmark's Nationalbank, Bank of Greece, ECB, National Depository for Securities (KDPW), WSE, Finland Valtiokonttori. **Given the differences in the aggregation basis across jurisdictions, the data is not fully comparable between countries. Full Methodology available on page 34 of this report.**

Secondary Market Trading Volumes and Turnover Ratios

5.17 Bulgaria: Average daily turnover volume and turnover ratio

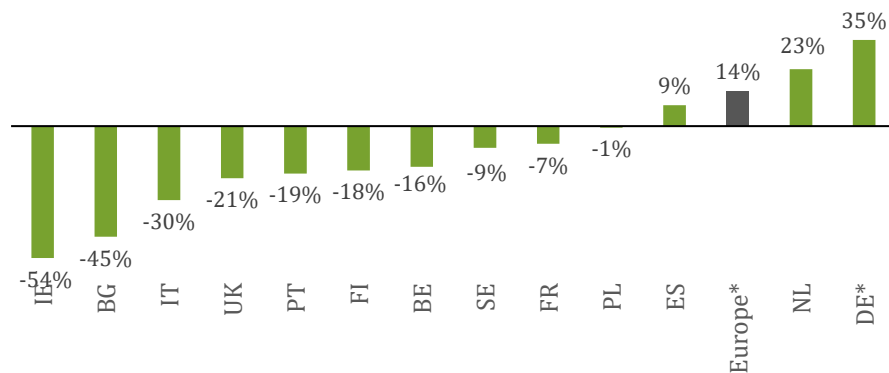


5.18 Hungary: Average daily turnover volume and turnover ratio

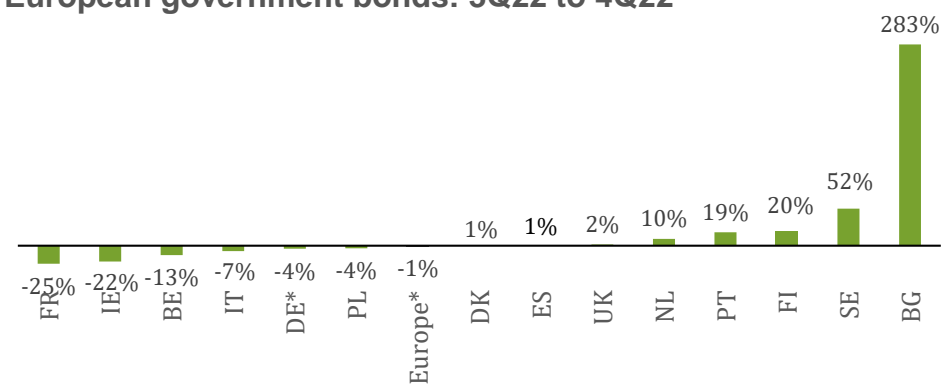


Source: ECB, AKK, Ministry of Finance of the Republic of Bulgaria, Ministerul Finantelor. **Given the differences in the aggregation basis across jurisdictions, the data is not fully comparable between countries. Full Methodology available on page 34 of this report.**

5.20 Annual change in average daily turnover volumes of European government bonds: 4Q21 to 4Q22



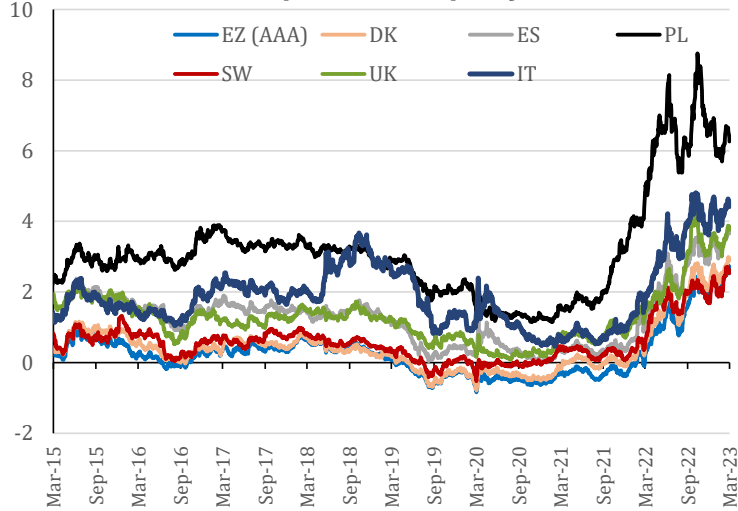
5.21 Quarterly change in average daily turnover volumes of European government bonds: 3Q22 to 4Q22



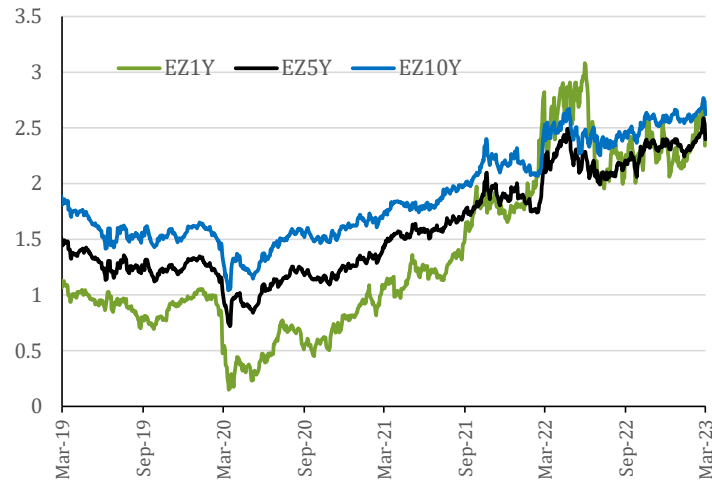
Source: AFME with information from European DMOs and other agency sources. See section 5 for details on aggregation basis and sources. *Europe (EU+UK) total and Germany is sourced from TraX data from MarketAxess, as the quarterly variation of average daily volumes of government and sovereign bonds.

Valuations

6.1 Selected European 10Y spot yields

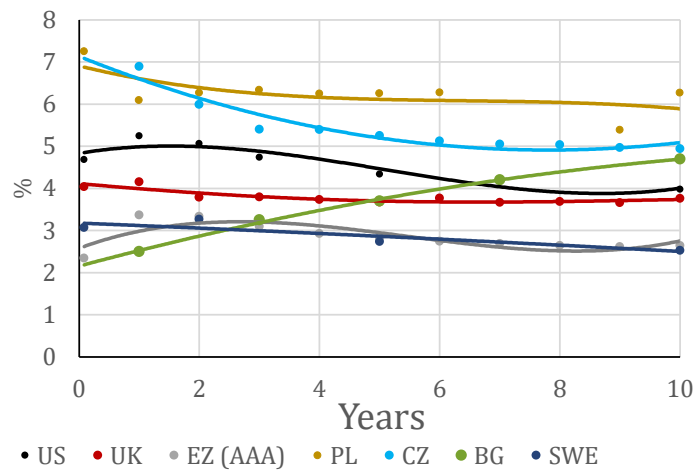


6.4 Market-implied inflation expectations (EuroZone)

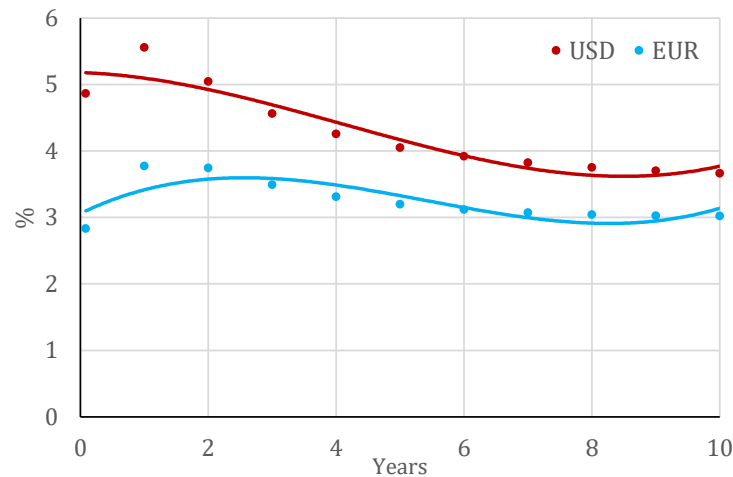


Source: ECB and Refinitiv Eikon.

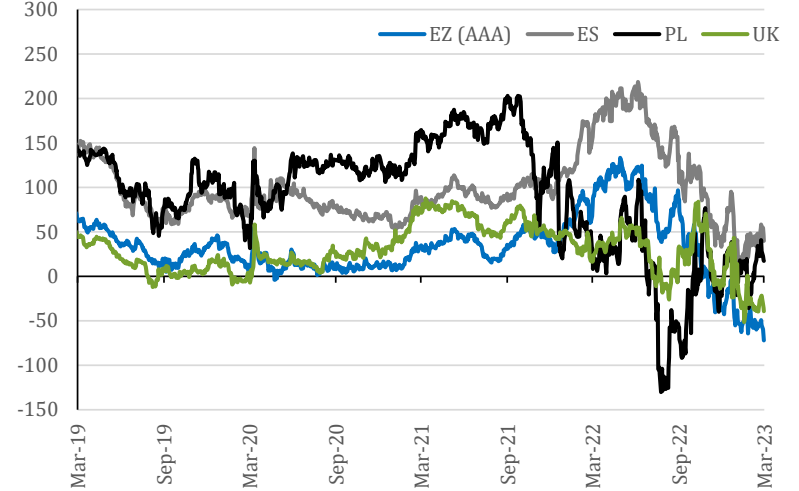
6.2 Sovereign spot yield curve of selected jurisdictions: 3 March 2022



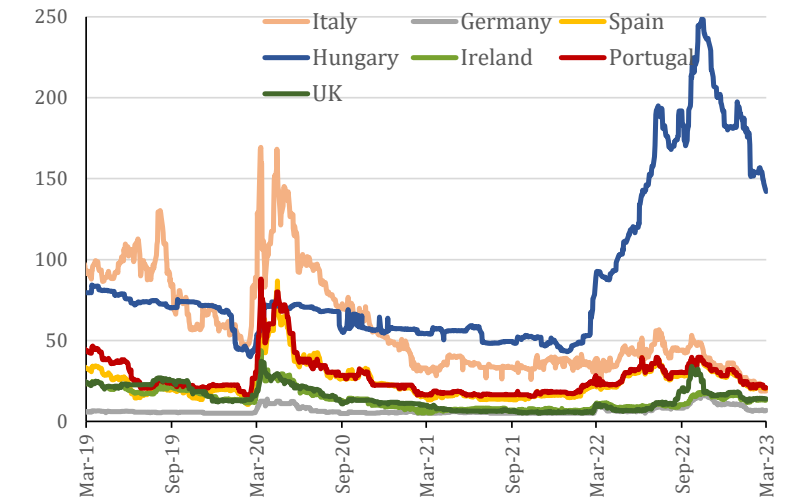
6.5 Overnight index swap (OIS) yield curve: 8 November 2022



6.3 Slope: 1Y10Y spread (bps)



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



Methodology for Secondary Market Trading Volumes and Turnover Ratios in this report

Turnover ratios are calculated as the average daily trading volume relative to total outstandings. Cash trading only (excludes repo and derivatives transactions)

5.1 EU + UK: 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. Data sourced from Trax. The aggregation of Trax data is agnostic of platform (meaning the trades can be conducted via BBG, TRAX or others) as it is sourced from dealers middle offices, rather than the actual trading venues. The data include s both dealer to dealer activity and dealer to client activity. Data does not consider transaction volume between clients and therefore relies on the degree of dealer intermediation.

5.2 Eurozone: Data is published by EFC Sub-Committee on ESDM, and is based on turnover data reported in the Euro Market Activity Report (EMAR), including turnover on a trade by trade basis traded by reporting dealers. A comprehensive list of reporting dealers can be found in the EMAR reports on the website of the Economic and Financial Committee's Sub Committee on EU Sovereign Debt Markets

5.3 United Kingdom: Turnover data reported to the DMO by the Gilt-edged Market Makers (primary dealers).

5.4 Italy: Turnover on all trading venues and OTC as per data provided to the Italian Dipartimento Del Tesoro by Primary Dealers through HRF ('single counted' volumes).

5.5 Germany: 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. Includes Bubills, Schaetze, Bobls, Bunds and inflation-linked securities. Capital and coupon strips as well as US-dollar bonds are excluded.

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

5.7 Spain: 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. Turnover is derived from settlement data from Iberclear.

5.8 Finland: Turnover of customer trades, MTS Finland and Euro MTS.

5.9 Belgium: Turnover is total outright transactions.

5.10 Sweden: Turnover is total outright transactions

5.11 Ireland: Turnover on Irish Stock Exchange.

5.12 Netherlands: Turnover is customer and interdealer trading. Total outright transactions, including electronic and OTC trading.

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

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

5.15 Greece: Turnover on Electronic Secondary Securities Market (HDAT).

5.16 Poland: 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.

5.17 Bulgaria: 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.

5.18 Hungary: Turnover on MTS Hungary and Keler OTC.

5.19 Romania: 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.

For a description of the methodology of this report please visit <https://www.afme.eu/reports/data/details/Summary-of-the-Methodologies>

Contacts

Research

Matt Johnston

Senior Analyst, Research
Matt.Johnston@afme.eu
+44 (0)20 3828 2702

Julio Suarez

Director, Research
Julio.Suarez@afme.eu
+32 (0)2 883 5550

Fixed Income

Victoria Webster

Managing Director, Fixed Income
Victoria.Webster@afme.eu
+44 (0)20 3828 2689

Rupert Warmington

Senior Fixed Income Advisor
Rupert.Warmington@afme.eu
+44 (0)20 3828 2701

Marta Dawydzik

Associate, Fixed Income
Marta.Dawydzik@afme.eu
+44 (0)20 3828 2741

London Office

39th Floor
25 Canada Square
London E14 5LQ
United Kingdom
+44 (0)20 3828 2700

Brussels Office

Rue de la Loi, 82
1040 Brussels
Belgium
+32 (0)2 788 3971

Frankfurt Office

Neue Mainzer Straße 75,
60311 Frankfurt am Main,
Germany
+49 69 153 258 963



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