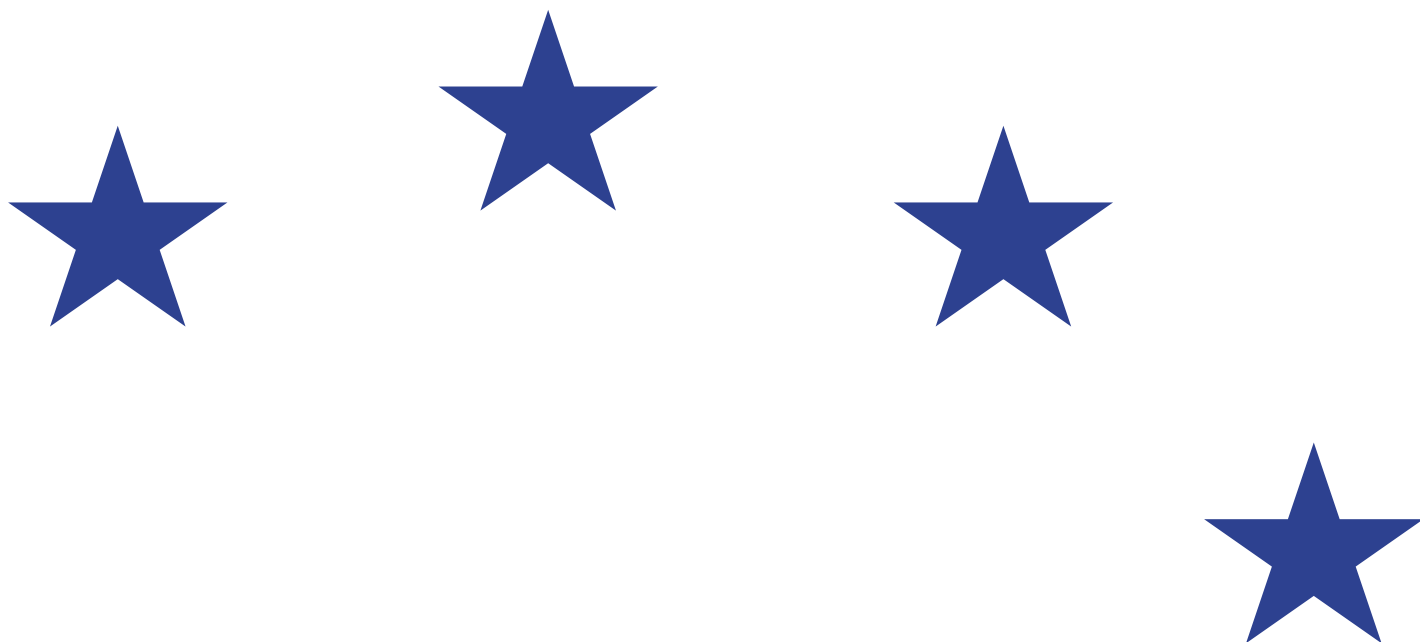


# EU Securities Markets

ESMA Annual Statistical Report

2021



17 December 2021

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# Executive summary

## Editorial note

**Brexit implications for EU securities market statistics:** *The UK was a central part of the European securities market, and remains an important third-country market after the country has left the EU. Starting with this edition of this ASR series, we show statistics of the European securities markets after Brexit, i.e. not containing UK data. The comparability with statistics we had published in earlier publications is, therefore, highly limited. In particular, the approach is likely to underestimate OTC trading for all instruments, since many European investment firms reported to UK reporting service providers in 2020, whose reports are not included when presenting the EEA30. As expected, the impact of taking out UK data on European securities market statistics is profound, as the simple example of the aggregate size of the market shows: the total traded volumes in the EEA30 in 2020 is EUR 9tn for equity markets, and EUR 18tn for bond markets, or around one-fifth of the respective EUR 27tn and EUR 101tn we reported for 2019 when presenting the EEA31, i.e. when the UK was still a member of the EU. Against this background we are particularly eager to show in this report in detail the various facets of EU securities trading in 2020 when the UK was not a member of the EU anymore, but still participated in the Single Financial Market. We, therefore, present this impact in three dedicated sub-chapters in each section of this report, and provide an additional table on essential statistics including UK data.*

## Market monitoring

**Securities markets:** In 2020 there were more than 130,000 equity and bond securities available for trading on EEA30 markets, composed of 80% bond and 20% equity instruments. Overall, by market segment, there were 296 EEA30 trading venues (TVs) and 172 systematic internalisers (SIs). The TVs comprised 127 regulated markets (RMs), 142 multilateral trading facilities (MTFs) and 27 organised trading facilities (OTFs). 40 new infrastructures (TVs and SIs) were authorised in 2020. The category of infrastructures that grew the most in 2020 were SIs, with 19 net new notifications. The top-three countries by number of infrastructures were home to 38% of the total number of EEA30 entities. The number of transactions on equity instruments remained sizeable compared to bond instruments in 2020 in the EEA30, with respectively 1.1bn, and 9.3mn transactions. Total trading volumes in the EEA30 amounted to EUR 8.8tn in equity markets and EUR 17.9tn in bond markets.

**Equity markets:** In 2020, 27,000 equity and equity-like instruments were available for trading in the EEA30. The largest EEA30 issuers were domiciled in Germany, France and the Netherlands, accounting for around half of total EEA30 market capitalisation. Overall, annual trading volumes in equity instruments amounted to EUR 8.8tn, with a peak of traded volumes in March due to the COVID-19 related market stress, +36% compared to the monthly average. By instrument, shares represented the major part of equity trading volumes (86%), while ETFs accounted for 12% – an increasing share even though the number of newly admitted ETFs was lower. In terms of market structure, on-exchange trading was mostly concentrated on RMs (70%), with activity on MTFs accounting for 11%, while off-exchange trading remained limited (11% on SIs, 10% OTC). The number of liquid equity instruments traded in the EEA30 as calculated for MiFID II purposes amounted to 2,416, with shares accounting for 60% of the total. Trading under pre-trade waivers remained high for ETFs in 2020 (39% of ETF volumes), and low for shares (3% of share volumes in the EEA30).

**Bond markets:** Over 106,000 bond instruments were available for trading in the EEA30 in 2020, with 62% of these instruments issued in the EEA30, totalling a nominal amount of EUR 21.9tn, with the largest amounts in Germany and France (each EUR 4.7tn). Bond trading volumes amounted to EUR 17.9tn in 2020, with 60% of volumes from sovereign and 29% from corporate bonds. The majority of trading was off-exchange, with SI and OTC trading accounting for 56% and 10% of EEA30 bond trading volumes in 2020. On-exchange, the bond market appears highly concentrated, with 93% of the traded volumes on-exchange on the first 5 infrastructures by volumes, and 95% in the first 4 trading countries. A slight increase in liquidity was observed in 2020, with the share of non-traded bonds during the year decreasing to 34% for corporate and 25% for sovereign bonds. Furthermore, EEA30 bond trading appears domestically anchored, since 49% of the volumes of EEA30 bonds occurred on a TV or an SI established in the same jurisdiction as the issuer. Liquid sovereign bonds, as calculated for

MiFID II purposes, represented the majority of sovereign volumes during the first 3 quarters of 2020 (75% of sovereign bonds volumes), but also of the overall bond trading volumes on average (43%).

## Topical analysis

**SME growth markets:** SME financing through market-based finance remains limited in the EEA30. To enhance access to capital markets for SMEs, MiFID II introduced the possibility for MTFs to register as Growth Markets (GMs), with 18 MTFs registered as such at the end of 2020. Around 9,500 SME shares were available for trading in 2020 in the EEA30, with a total market capitalisation of EUR 368bn and the largest EEA30 issuers domiciled in Sweden, France and Germany. Overall, the total EEA30 turnover volumes in SME shares amounted to EUR 231bn in 2020 or 3% of total equity volumes, with the largest volumes concentrated on RMs (62%), and on German and French venues. While SME GMs have been growing in terms of volumes traded in 2020, with monthly volumes tripling during the year, they only accounted for 11% of the SME shares traded volumes.

## Essential statistics 2020: EEA31, including the UK

*Editorial note: This summary table and the main indicators in the Report show statistics of the European securities markets do not contain UK data. The comparability with statistics we had published in earlier publications is, therefore, highly limited. We present the impact on the European markets through dedicated sub-sections in each section of this report, and provide two table of essential statistics. To facilitate comparisons, we present here the table of essential statistics for 2020 including all UK data reports, i.e. for EEA30 and UK trading venues and SIs, and another table of essential statistics with only EEA30 number on the next page. When considering issuer domicile, UK is considered non-EEA30.*

	Equity			Bond		
	All	Shares	ETFs	All	Corporate	Sovereign
<b>Size</b>						
Number of instruments	29,359	21,880	5,965	123,262	69,095	8,353
of which newly admitted	3,416	2,728	580	23,480	14,342	1,367
Total trading volume (EUR tn)	28.0	24.9	2.7	61.6	14.4	43.7
Total number of transactions (mn)	2,438.2	2,341.3	46.5	20.0	9.4	9.6
Total EEA30 market capitalisation (EUR tn)	13	13	n/a	21.8	11.3	7.1
Total UK market capitalisation (EUR tn)	2.5	2.5	n/a	4.3	2.1	2
<b>Trading activity</b>						
Entities with largest trading activity	MTFs	RMs	MTFs	SIs	SIs	SIs
On-exchange (% of total volumes)	56	55	67	41	45	41
RMs	28	29	24	2	1	3
MTFs	28	27	42	21	27	20
OTFs				18	18	19
Off-exchange (% of total volumes)	44	45	33	59	55	59
SIs	19	19	21	47	43	48
OTC	24	26	12	12	12	11
Fragmentation index (FI)		0.60	0.67		0.78	0.77
<b>Market infrastructures</b>						
Largest country in terms of trading	UK	UK	UK	UK	UK	UK
Number of market segments (segment MIC)	259	244	143	273	247	225
Number of market operators (operating MIC)	134	128	98	191	180	173
RMs (% of venues by segment MIC)	25	17	25	18	17	19
MTFs (% of venues by segment MIC)	42	51	42	32	30	26
OTFs (% of venues by segment MIC)				12	13	14
SIs (% of venues by segment MIC)	33	32	33	38	41	42
incl. total UK venues (segment MIC)	55	51	48	86	78	79
<b>International activity</b>						
Volumes traded in EEA31 by origin (EUR tn)						
EEA30 instruments	19.2	16.7	2.3	28.6	10.5	15.3
non-EEA30 instruments	8.9	8.2	0.3	33.1	3.8	28.3
of which UK instruments	4.3	4.1	2.1	9.7	0.7	8.9
EEA30 instruments available cross-border (%)	89	86	77	69	72	80
Cross-border EEA30 volumes (%)	62	56	92	79	78	82

Note: All values for the calendar year 2020. The fragmentation index (FI) is calculated as (1-HHi) and ranges from 0 (monopoly) to 1 (maximum fragmentation).

Source: FIRDS, FITRS, ESMA.

# Essential statistics 2020: EEA30, without UK

	Equity			Bond		
	All	Shares	ETFs	All	Corporate	Sovereign
<b>Size</b>						
Number of instruments	26,988	20,261	5,376	106,388	66,907	6,738
out of which newly admitted	3,223	2,636	483	20,669	12,125	1,178
out of which liquid	2416	1438	911	882	418	436
Total trading volumes (EUR tn)	8.8	7.6	1.1	17.9	5.2	10.7
Total number of transactions (mn)	1,129	1,079	32	9.3	3.8	4.9
Total EEA30 market capitalisation (EUR tn)	13	13	n/a	21.8	11.3	7.1
<b>Trading activity</b>						
Infrastructure type with largest trading activity	RMs	RMs	RMs	SIs	SIs	SIs
On-exchange (% of total volumes)	82	83	74	34	40	36
RMs	70	75	42	8	1	11
MTFs	11	8	31	18	20	19
OTFs				9	18	6
Off-exchange (% of total volumes)	18	17	26	66	60	64
SIs	9	7	22	56	47	59
OTC	10	10	4	10	14	6
Fragmentation index (FI)		0.55	0.56		0.72	0.70
<b>Market infrastructures</b>						
Largest country in terms of trading	DE	DE	NL	FR	FR	FR
Number of market segments (segment MIC)	204	195	97	187	169	146
Number of market operators (operating MIC)	99	94	67	126	120	114
RMs (% of number of venues by segment MIC)	31	30	34	26	24	28
MTFs (% of number of venues by segment MIC)	46	47	34	34	32	25
OTFs (% of number of venues by segment MIC)				5	6	7
SIs (% of number of venues by segment MIC)	23	23	32	34	38	40
<b>International activity</b>						
Largest EEA30 issuer (by volume)	DE	DE	IE	FR	FR	IT
Volumes traded in EEA30 by issuer origin (EUR tn)						
EEA30 instruments	7.9	6.9	1.1	12.4	4.6	6.1
non-EEA30 instruments	0.9	0.8	0.03	5.5	0.6	4.7
EEA30 Instruments available cross-border (%)	88	85	97	67	71	79
Cross-border EEA30 volumes (%)	23	13	87	51	47	53

Note: All values for the calendar year 2020. All data, unless otherwise noted, display the EEA30 (no UK data). The fragmentation index (FI) is calculated as  $(1-HHi)$  and ranges from 0 (monopoly) to 1 (maximum fragmentation).

Source: FIRDS, FITRS, ESMA.

# Market monitoring



# EU securities markets

## Summary

In 2020 there were more than 130,000 equity and bond securities available for trading on EEA30 markets, composed of 80% bond and 20% equity instruments. Overall, by market segment, there were 296 EEA30 trading venues (TVs) and 172 systematic internalisers (SIs). The TVs comprised 127 regulated markets (RMs), 142 multilateral trading facilities (MTFs) and 27 organised trading facilities (OTFs). 40 new infrastructures (TVs and SIs) were authorised in 2020. The category of infrastructures that grew the most in 2020 were SIs, with 19 net new notifications. The top-three countries by number of infrastructures were home to 38% of the total number of EEA30 entities. The number of transactions on equity instruments remained sizeable compared to bond instruments in 2020 in the EEA30, with respectively 1.1bn, and 9.3mn transactions. Total trading volumes in the EEA30 amounted to EUR 8.8tn in equity markets and EUR 17.9tn in bond markets.

## EEA31 securities markets in 2020

The publication of 2020 equity and bond statistics presented in this report fall after the formal withdrawal of the UK from the EU on 31 January 2020. Therefore, the indicators presented in this Annual Statistical Report are consequently based on data reports provided by the Member States of the EEA30<sup>1</sup> post-Brexit, i.e. not containing UK data, unless stated otherwise.<sup>2</sup>

The UK, remaining part of the EU Single Market through 2020 as part of the Transition Period foreseen in the Withdrawal Agreement, continued to submit data to MiFID II reporting system. This allows for a comparison of the most important figures with or without including the UK reports. Hence, at the beginning of every market monitoring a sub-section is presenting comparative figures between the EEA30 and EEA31 for 2020.<sup>3</sup> Furthermore, the share of lit trading for EEA30 and EEA31 equity markets, as well as traded volumes under waivers for equity instruments, are added to the equity section to allow for comparison.

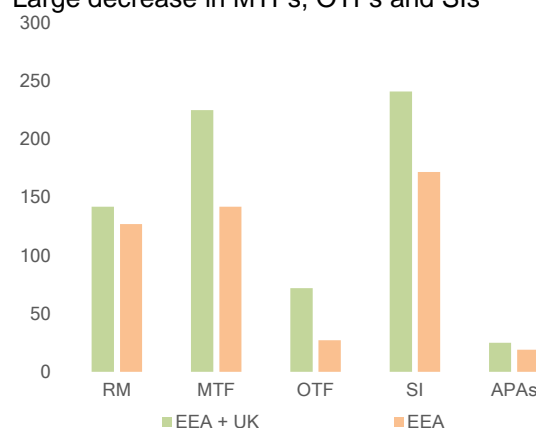
In 2020, there were 143 UK TVs and 69 UK SIs, representing 31% of the EEA31 number of infrastructures. Overall, UK infrastructures

comprised 45 OTFs (63% of the number of EEA31 OTFs), 83 MTFs (37% of the number of EEA31 MTFs), 15 RMs (11% of EEA31 RMs), and 69 SIs (29% of EEA31 SIs).

### ASR-MiFID.1

#### Number of trading facilities

#### Large decrease in MTFs, OTFs and SIs



Note: Number of trading facilities in 2020 by market type.  
Sources: ESMA registers.

In 2020, 40 new EEA30 TVs authorisation and SIs' notifications were granted, mostly during 3Q20. The new authorisations were mostly granted to Germany (9), Poland (5) and France (4). As a consequence of the end of the transition period in January 2021, 212 UK TV were

<sup>1</sup> Since this report falls after the withdrawal of the UK from the EU on 31 January 2020, the report presents the statistics from the European Economic Area. Therefore, UK data reports are not included in any of the charts presented, except when stated otherwise. When comparing the EEA30 market with and without UK, the acronyms adopted are EEA30 and EEA31. EEA30 consists of the 27 Member States of the European Union and the three countries of the European Free Trade Association, Iceland, Liechtenstein and Norway. EEA31 includes both EEA30 and the UK. In all the charts, when EEA is mentioned the perimeter is EEA30; when EEA + UK is presented the perimeter is EEA31.

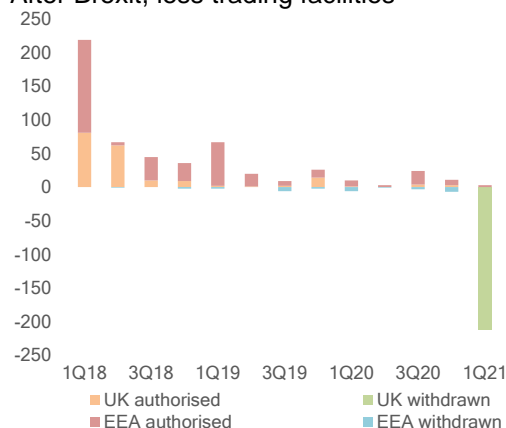
<sup>2</sup> For a more detailed comparison of numbers with and without the UK, the two tables of essential statistics allow for the comparison of the most important figures for EEA30 and EEA31 in 2020. It is also possible to compare the essential statistics table of this report with the essential statistics table of the previous EU securities markets Annual Statistical Report, since it was already presenting separately UK data.

<sup>3</sup> Furthermore, the share of lit trading, as well as traded volumes under waivers and deferrals for EEA30 and EEA31 equity markets, are added to the equity section to allow for comparison.

removed from the database in 1Q21 (ASR.MiFID.2).

#### ASR-MiFID.2

TVs and SIs authorisation and withdrawal  
After Brexit, less trading facilities



Note: Number of trading venues registered and withdrawn and SIs notifications in ESMA registers from 2018 to the second quarter of 2021.  
Sources: ESMA registers.

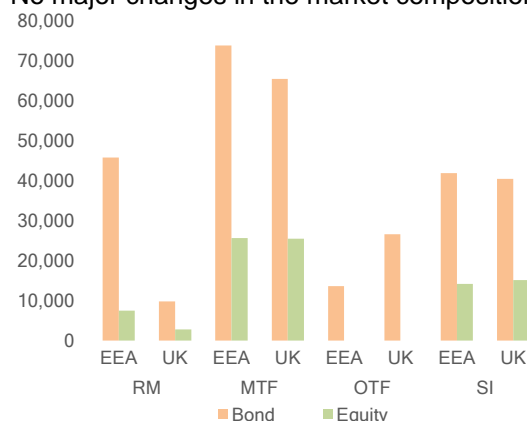
Regarding the number of instruments available for trading, the end of the transition period resulted only in a minor change. Comparing the distribution of bond and equity instruments by type for the EEA30 and EEA31, does not significantly change the overall composition (S.20). In this report UK instruments are now classified as non-EEA30 instruments, affecting mostly corporate bonds (13,500 UK instruments), sovereign bonds (1,000 UK instruments), and shares (1,500).

Regarding the number of instruments available for trading on each market, EEA30 infrastructures appears to be proposing more instruments in 2020 compared to UK infrastructures. MTFs proposed the largest number of instruments in both domiciles (73,000 bonds available on EEA30 MTFs and 65,000 on UK MTFs, and a similar number of 25,500 equity instruments each). More bonds were available for trading on EEA30 RMs (46,000 compared to 10,000 on UK RMs), but less on EEA30 OTFs (13,500 on EEA30 OTFs and 26,500 on UK OTFs). EEA30 and UK SIs presented similar figures for both equity (14,500) and bond instruments available for trading (40,500).

#### ASR-MiFID.3

Number of instruments by trading venue

No major changes in the market composition



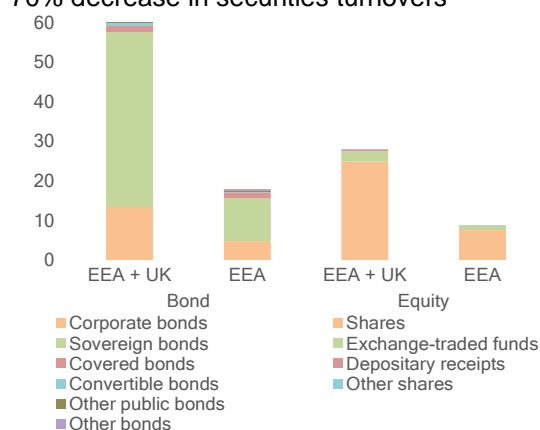
Note: Number of instruments available for trading in 2020 by market type, instrument type and trading venue domicile.  
Sources: FIRDS, FITRS, ESMA.

There is a **marked discrepancy in the overall volumes** when taking into account different perimeters (e.g. EEA30 vs. EEA31; see the equity and bond market sections for a more detailed presentation). Turnover volumes in EEA30 statistics<sup>4</sup> were 93% below the corresponding EEA31 figures for convertible bonds, 77% for depositary receipts, 75% for sovereign bonds, 69% for shares, and 62% below the EEA31 equivalent for corporate bonds.

#### ASR-MiFID.4

Annual trading volume by asset type

70% decrease in securities turnovers



Note: Annual trading volumes of EEA and EEA + UK in 2020 by asset type, in EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

<sup>4</sup> Without the volumes traded on UK TVs, UK SIs and reported by the 6 UK APAs.

## >130,000 securities, mainly traded on-exchange

Unless stated otherwise, the remainder of this chapter which analyses the securities market statistics does not contain UK data. In 2020, there were around 106,000<sup>5</sup> bond and 27,000 equity and equity-like instruments available for trading. Shares represented 75% (20,000) of **equity and equity-like instruments** available for trading, followed by exchange-traded funds (ETFs, 20%), depositary receipts (4%) and other equity-like instruments (1%) (S.5).<sup>6</sup> Equity instruments were mainly available for trading on multilateral trading facilities (MTFs, 25,500), with less instruments proposed on regulated markets (RMs, 7,500). Additionally, 14,000 instruments were traded by systematic internalisers (SIs) and 13,500 over-the-counter (OTC, S.7). Among **bond instruments**, corporate bonds were the main bond type, with 67,000 bonds available for trading (or 63% of the total). Sovereign bonds accounted for 6% of the bond instruments available (7,000), followed by covered bonds (5% or 5,00), other public bonds (4%), and convertible bonds (1%, S.6). Other bonds (21% or 22,500 bonds) accounted for the remaining stake. Similar to equity markets, the majority of bonds were available for trading on MTFs (74,000). Almost half of the total bonds were also available on RMs (46,000), SIs (42,000) and organised trading facilities (OTFs) (13,500). Additionally, 25,500 bonds were traded OTC (S.8).

The majority of EEA30 instruments that were available for trading can be qualified as **cross-border instruments**, meaning that they were available for trading on a TV (or traded on an SI) domiciled in the same country as the issuer of the security, and on at least one TV or SI in another country. The share of cross-border instruments amounted to 39% of equity and 42% of bond instruments (S.9, S.10). Only 1,400 EEA30 equities (5% of the total number of equity instruments) and 21,500 EEA30 bonds (20% of the total number of bond instruments) were issued and traded domestically on-exchange, i.e. in the same EEA30 country. Sovereign bonds and ETFs were the security types with the largest share of EEA30 instruments available for trading cross-border, since 58% of available sovereign

bonds and 57% of ETFs were available for trading cross-border in 2020.

In 2020, the total **number of transactions** in equity markets was 1.1bn, of which 96% originated from share trading (S.11). In contrast, the total number of transactions observed for bond instruments was only 9.3mn in 2020, of which 52% in sovereign bonds and 41% in corporate bonds (S.12).

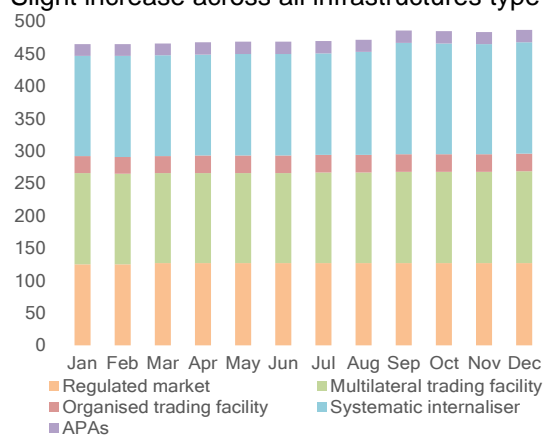
**Trading volumes** in the EEA30 amounted to EUR 8.8tn in equity markets and EUR 17.9tn in bond markets. Whereas most transactions in the EEA30 took place on exchange (96% of equity and 69% of bond total number of transactions respectively, S.11 and S.12), volumes on-exchange amounted to 81% of total equity volumes and to 34% for bonds volumes (S.13 and S.14).

## Slight increase of number of trading venues and SIs

ASR-MiFID.5

Number of trading venue by type in the EEA

Slight increase across all infrastructures type



Note: Number of EEA infrastructure in 2020 by type, Sources: ESMA registers.

At the end of 2020, the number of EEA30 trading venues (TVs) by segment MIC, i.e., RMs, MTFs and OTFs, reached 296, that is a slight increase compared to EEA30 for 2019 (+5%) (ASR-MiFID.5). The number of infrastructures that increased the most was SIs, with 19 net new notifications, reaching 172 SIs at the end of the year, followed by RMs (+2, reaching 127 venues), MTFs (+1) and OTFs (+1).

<sup>5</sup> Absolute figures in this report are conventionally rounded.

<sup>6</sup> Depositary receipts are financial instruments negotiable on a regulated market, and which represent ownership of the securities of a non-domiciled issuer. Other equity-like

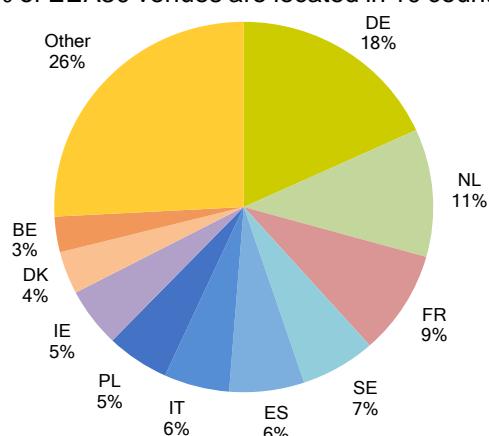
instruments include certificates, which are hybrid negotiable securities.

In 2020, a total of 40 market segments have been authorised<sup>7</sup>, whereas 17 authorisations have been either revoked or withdrawn. New TV authorisations mainly occurred in three months in 2020: January (+6), September (+16) and December (+7). September and December authorisations could be potentially linked to the end of the Brexit transition period.

#### ASR-MiFID.6

##### Share of trading venue by country

74% of EEA30 venues are located in 10 countries



Note: Share of EEA infrastructures in 2020 by country domicile.  
Sources: ESMA registers.

Germany is the country with most TVs and SIs (respectively 45 and 41), followed by the Netherlands (38 TVs and 10 SIs), France (26 TVs and 17 SIs) and Sweden (26 TVs and 4 SIs). Overall, the top three countries accounted for 38% of the total number of EEA30 infrastructures.

All EEA30 countries – except for Liechtenstein – have at least one RM or MTF. The top three countries in number of RMs in 2020 were Germany (20), Sweden (16) and Spain (12). MTFs were mostly domiciled in Germany (22), the Netherlands (21) and Italy (12). OTFs are the most concentrated trading venue type, with 78% of them located in France (11), the Netherlands (6) and Spain (4), being present overall in only 8 different Member States.<sup>8</sup> Finally, the main

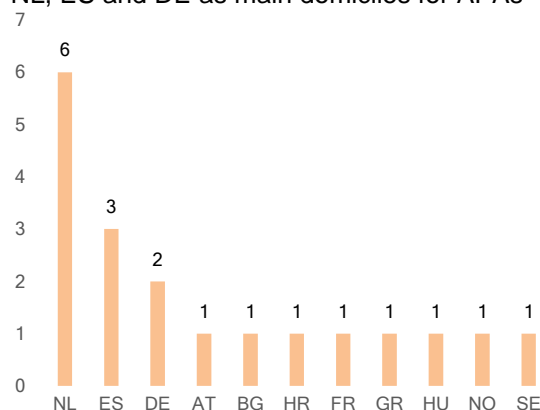
domiciles for SIs in the EEA30 were Germany (41), France (17) and Ireland (12).

In addition, there were 19 approved publication arrangements (APAs) in 2020 (vs. 6 domiciled in the UK), with 1 new authorisation during the year. Under MiFID II, an APA is defined as an authorised service provider designed to publish trade reports on behalf of investment firms.<sup>9</sup> To further implement the disclosure of OTC trades, MiFID II introduced APAs, approved reporting mechanism (ARMs) and consolidated tape providers (CTPs) as new categories of data reporting service providers (DRSPs).<sup>10</sup> Investment firms are required to timely disclose price, volume and execution time of their transactions executed OTC (either made on their own account or on behalf of a client) to an APA. Most APAs are domiciled in the Netherlands (6), followed by Spain (3), and Germany (2).

#### ASR-MiFID.7

##### Number of APAs by country

NL, ES and DE as main domiciles for APAs



Note: Number of EEA APAs in 2020 by country.  
Sources: ESMA registers.

From 1 January 2022, ESMA will be the direct supervisor of CTPs, and of APAs and ARMs of relevance for the internal markets, thereby obtaining access to transaction data and trade reports to fulfil this supervisory mandate.<sup>11</sup>

<sup>7</sup> 'Trading facilities' refers to RMs, MTFs, OTFs and SIs. The term 'authorisation' is here extended to SIs, even though SIs notify their operation. Trading facilities are identified through the segment MIC of the operator. This allows a precise identification of trading facilities by market types (RMs, MTFs, OTFs, SIs) in instances in which the same market operator runs both a RM and an MTF, for example.

<sup>8</sup> These statistics include trading facilities that can propose for trading other instruments different from equity and bonds. For example, out of the 27 OTFs registered in the EEA30 at the end of 2020, only 10 were actively trading bonds during the year.

<sup>9</sup> Article 20 of MIFIR provides the information on post-trade disclosure to investment firms.

<sup>10</sup> Article 4(54) of MiFID II defines an ARM as a person authorised under MiFID II to provide the service of reporting details of transactions to competent authorities or to ESMA on behalf of investment firms. Additionally, article 4(53) defines as CTP an authorised service provider to collect trade reports for financial instruments listed from RMs, MTFs, OTFs and APAs and consolidating them into a continuous electronic live data stream providing price and volume data per financial instrument.

<sup>11</sup> In addition, ESMA will become the regulatory recipient of reference and transparency data, as the current data collection is done by delegation of the national competent authorities.



## Scope of the report

The report relies on data on financial instruments within the scope of MiFID II, gathered by ESMA in cooperation with European national competent authorities (NCAs). Four databases are used to create the risk indicators presented in this report:

- The reference data for financial instruments, published by ESMA on its website through the **Financial Instruments Reference Data System** (FIRDS)
- Additional reference and quantitative data for the purpose of the calculation of transparency and liquidity thresholds published by ESMA through the **Financial Instruments Transparency System** (FITRS)
- For equity, further information about total trading volumes and trading volumes under exemption to pre-trade transparency are collected in the ESMA's **Double Volume Cap** (DVC) register. Transparency data are used to monitor the DVC, a mechanism intended to limit the volume executed in the dark.
- ESMA publishes a **register of all EEA30 TVs, SIs and APAs** (with information provided by NCAs) on its website, allowing to monitor EEA30 markets microstructure evolution.<sup>12</sup>

The **coverage of this report** is exclusively equity and bond instruments that are publicly available for trading on EEA30 TVs under MiFID II regulation, regardless of the type of trading (on- or off-exchange). This means that OTC transactions are considered only as long as the instruments is publicly available on at least one TV, whereas private equity and debt are excluded from the scope.

Markets and instruments data collected by ESMA at the EEA30 level<sup>13</sup> do not include quantitative data for which the Polish KNF<sup>14</sup> is the responsible authority. Moreover, this report does not include UK data, except when stated otherwise (see following sub-section). Since January 2021, ESMA does not receive data on UK instruments, investment firms or from reporting service providers.

The report relies on a set of **risk indicators** chosen based on their relevance for risk analysis and the quality of the data, as well as the results of proposals or improvements by NCAs, building on indicators presented in the last report.

ESMA collects data on a daily basis. In this report all figures and data presented are on a monthly basis and the **reporting period** is the calendar year 2020.

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### T.1

#### COVID-19 impact on EU securities markets

##### Important decline in March, but strong rebound since then

With the COVID-19 pandemic, financial markets have been hit by an external shock of unprecedented size. ESMA's TRV and Risk Dashboard provided extensive coverage of the COVID-19 related market impacts and risks.<sup>15</sup> A summary of the key facts related to securities markets is presented below.

#### Securities market developments

During the initial stage of the crisis (mid-February to end-March 2020), markets experienced one of the fastest declines in recent history, including volatility surges and liquidity contractions. Equity markets fell substantially during a short period of time, as high uncertainty amid stretched valuations led investors to liquidate their positions. The Stoxx 600 index recorded a peak-to-trough fall of -35.5%, and the VSTOXX reached an intraday high of 90% on 18 March, continuing to trade around still very elevated levels of around 50% until end-March.

On fixed-income markets, yields spiked, and spreads increased for corporates and most EEA30 sovereigns. The price decline occurred amid low liquidity in bond markets: the bid-ask spread on corporate bonds increased by almost 20% in March, partly reflecting forced sales from investors and signs of rapid credit risk repricing. (ASR-MiFID.8). In sovereign bond markets, following the announcement of the ECB emergency plan on March 18 (EUR 750bn Pandemic Emergency Purchase Program), euro area spreads began to stabilise at lower levels than the peaks reached mid-March.

Since end-March, European equity markets have rapidly recovered, supported by fiscal and monetary support, as well as by the pick-up in economic activity during the summer with the easing of containment measures, and liquidity improved as volatility declined. In this recovery, there have been signs of differentiation across countries and sectors, with performance differentials pointing to potential structural shifts. In November, positive news related to the development of coronavirus vaccines pushed

<sup>12</sup> For further description of the MiFID II/MiFIR reporting obligation, transparency requirements and on the details of the data collected, see ESMA, "[EU Securities markets. Annual Statistical Report, ESMA, 2020](#)".

<sup>13</sup> The EEA30 comprises the 27 countries of the EU plus Iceland, Lichtenstein, and Norway. Unless stated otherwise, all data presented in the report refers to the EEA30 level.

<sup>14</sup> As the Polish KNF does not participate in the delegation agreement with ESMA regarding the data collection, the report does not include data on instruments under its responsibility, i.e., for which they are the relevant competent authority.

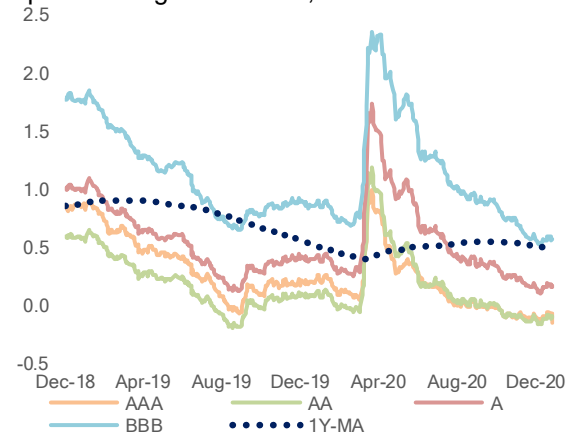
<sup>15</sup> See ESMA, "[Report on trends, risks and vulnerabilities no.2-2020](#)", "[Report on trends, risks and vulnerabilities no. 1-2021](#)", [Risk Dashboard No. 1 2020](#) and [Risk Dashboard No. 2 2020](#).

further the asset market valuations observed at the end of 2020, raising concerns about the sustainability of the market rebound. In 2H20, EU equity valuations increased by 10% ending the year only 7% below pre-crisis levels.

#### ASR-MiFID.8

##### EA corporate bond spreads

Spreads surged in March, moved down since



Note: : ICE BofAML EA corporate bond redemption yields by rating, in %. 1Y-MA=one-year moving average of all indices.  
Sources: Refinitiv Datastream, ESMA.

On sovereign bond markets, the extension of the PEPP in May (to EUR 1,350bn) and again in December (EUR 1,850bn), and the agreement of the EU recovery fund (EUR 750bn) in July contributed to confidence effects, resulting in lower sovereign yields in most EU countries in 2H20, and narrowing bid-ask spreads.

In the same manner, with an increase in prices in the secondary market, corporate bond spreads have recovered since April, particularly in higher grades which came back to pre-crisis levels in August. Amid continuous corporate bond issuance in 2H20, yields continued their decline across all rating categories to go below their pre-pandemic levels, indicating renewed search-for-yield behaviour.

In a context of continued accommodative monetary policies and fiscal support, concerns around the profitability of banks and insurers, as well as corporate and government elevated debt levels continue to weigh on the medium-term economic outlook.

#### Trading volumes and circuit breakers

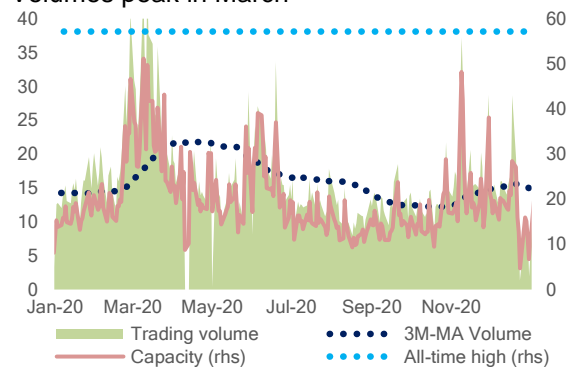
During the sell-off, EU trading volumes in equity and equity-like instruments sharply increased with volumes reaching historical highs (ASR-MiFID.9). Daily volumes reached a daily maximum of around EUR 45bn on 12 March, compared to a long-term average of EUR 16bn. As markets recovered, trading volumes declined again from April to levels that remain slightly above those observed before the crisis.

Trading venues have proved to be broadly resilient, despite the surge in trading activity, message traffic and market movements. Circuit breakers were widely and efficiently used, and trading capacity was tested by volumes reaching all-time highs, with few operational issues.

#### ASR-MiFID.9

##### Trading of equity and equity-like instruments

Volumes peak in March



Note: Daily and 3M-MA of trading volumes on 29 EEA30 trading venues for all constituents of the STOXX Europe Large/Mid/Small 200 and a large sample of ETFs tracking these indices or some of their subindices, in EUR bn. Capacity computed as the average across trading venues of the ratio of daily trading volume over maximum volume observed since 31/03/2016, in %.  
Sources: Morningstar Real-Time Data, ESMA.

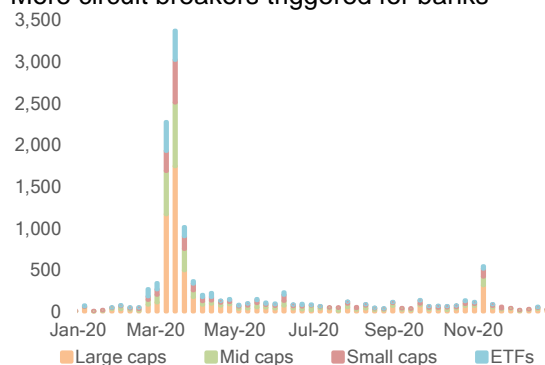
The weekly number of circuit breakers trigger events reached the maximum record of around 2,300 and 3,400 in the second and third week of March respectively (ASR-MiFID.10), with a higher number of trigger events for financials. This compares, for example, to previous peaks of daily circuit breaker triggers of around 1,500 around the Brexit referendum in the week of 20 June 2016.

The occurrences declined to lower levels afterwards, with an average of around 118 per week from April to September, compared to a long-term weekly average of around 150. Since June, the share of circuit breakers for financials declined to an average of 21% of the total in 2H20 (6 pts lower than its average in 1H20), while for healthcare it grew to 28% over the same period (5.5 pts higher).

#### ASR-MiFID.10

##### Circuit breakers by economic sector

More circuit breakers triggered for banks



Note: Number of daily circuit-breaker trigger events by type of financial instrument and by market cap registered on 29 EEA30 trading venues for all constituents of the STOXX Europe Large/Mid/Small 200 and a large sample of ETFs tracking these indices or some of their subindices. Results displayed as weekly aggregates.  
Sources: Morningstar Real-Time Data, ESMA.

#### Short selling

As investor sentiment and equity market performance turned negative, short selling activity increased from late February. In this context and to support transparency, ESMA on 16 March lowered the reporting threshold of net short positions on shares to 0.1%, decision which has been extended in June, and

again in September and December, for three months.<sup>16</sup> Six Member States (AT, BE, ES, FR, GR, IT) introduced short selling bans, all of which ended or were lifted mid-May as market conditions improved and short-selling activity slowly built up over the course of 2H20. However, as equity market performance became positive in early November, short-selling activity declined.

### Issuance

During the acute phase of the crisis, primary equity markets practically came to a standstill, with only 15 new Initial Public Offerings (IPOs) launched from January to April (EUR 1bn). In contrast, firms which were already public managed to raise capital through follow-on issuance.

Secondary equity offerings amounted to EUR 27bn in the same period, a 34% increase compared to a year ago, as firms raised cash for debt repayment, working capital or for M&As. However, from September 2020 onwards, IPOs and follow-on issuance increased above 2019 levels, amounting to EUR 9.5bn and EUR 50bn respectively in 2H20.

EU SMEs have been significantly affected by the COVID-19 driven economic downturn, with an increasing risk of facing financing gaps. Although it improved in 2020, access to capital markets for European SMEs continued to be limited, as bank loans and government policy support remained the main source of external financing (see Article 1, “SME access to EU equity secondary markets”).

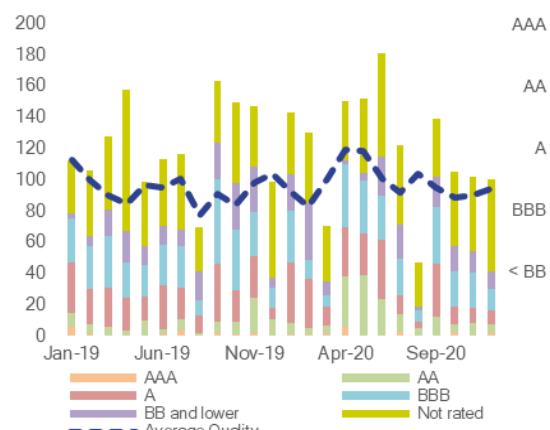
In corporate bond markets, issuance was very low in March for investment grade (IG) and high yield (HY)

issuers (ASR-MiFID.11). Bond issuance rebounded from early April onwards, first in the IG segment, followed in May by lower-rated issuers. Following this peak in 2Q20, corporate bond issuance declined in 2H20, totalling EUR 615bn, a 25% decline with respect to 1H20 (18% compared with 2H19), with issuance quality slightly deteriorating towards BBB-rated bonds.

### ASR-MiFID.11

#### Corporate bond issuance

#### Lower issuance in 2H20



<sup>16</sup> See the [initial statement](#) and the [June, September and December](#) renewal of ESMA decision.

# Equity markets

## Summary

In 2020, 27,000 equity and equity-like instruments were available for trading in the EEA30. The largest EEA30 issuers were domiciled in Germany, France and the Netherlands, accounting for around half of total EEA30 market capitalisation. Overall, annual trading volumes in equity instruments amounted to EUR 8.8tn, with a peak of traded volumes in March due to the COVID-19 related market stress, +36% compared to the monthly average. By instrument, shares represented the major part of equity trading volumes (86%), while ETFs accounted for 12% – an increasing share even though the number of newly admitted ETFs was lower. In terms of market structure, on-exchange trading was mostly concentrated on RMs (70%), with activity on MTFs accounting for 11%, while off-exchange trading remained limited (11% on SIs, 10% OTC). The number of liquid equity instruments traded in the EEA30 as calculated for MiFID II purposes amounted to 2,416, with shares accounting for 60% of the total. Trading under pre-trade waivers remained high for ETFs in 2020 (39% of ETF volumes), and low for shares (3% of share volumes in the EEA30).

## In 2020, UK still part of Single Market

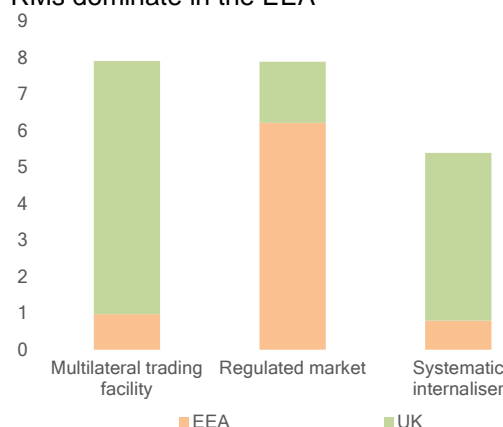
In 2020, UK trading remained an important part of overall EEA31<sup>17</sup> equity trading. UK trading venues (RMs and MTFs) recorded more than half (54% or EUR 8.6tn) of total on-exchange turnover volumes of EEA31 venues.<sup>18</sup>

In the UK, trading volumes in equity instruments were particularly concentrated on MTFs, while RMs were particularly active in the EEA30. In this respect, 80% of the on-exchange volumes on UK TVs took place on a MTFs (EUR 6.9tn on UK and EUR 975bn on EEA30 MTFs). Nevertheless, total turnover volumes of UK RMs amounted to EUR 1.7tn (ASR-MiFID.12).

Overall, equity instruments with legal entity in the EEA30<sup>19</sup> remained heavily traded in the UK in 2020, even though the share of trading on UK venues decreased towards the end of the year. The on-exchange trading volumes of EEA30 equity instruments in the UK was EUR 5.4tn in 2020, or 63% of their total annual trading volumes on-exchange. Out of these figures, 94% (EUR 5.2tn) of the UK volumes in EEA30 instruments took place on a UK MTF (vs. EUR 253bn on a UK RM). This confirms that the UK was a centre for investors trading on MTFs in 2020 (ASR-MiFID.13).

### ASR-MiFID.12

Annual trading volumes by market and TV domicile  
RMs dominate in the EEA



Note: Annual trading volumes in equity and equity like instruments by market type and trading venue domicile in 2020. EUR trillion.  
Sources: FIRDs, FITRS, ESMA.

The UK also represented the largest SI market of the EEA31, both in terms of number of entities and in terms of trading volumes. In this respect, total trading volumes on UK SIs in 2020 exceeded those on EEA30 SIs by more than 5 times (EUR 4.6tn on UK SIs and EUR 790bn on EEA30 SIs). Also, EEA30 equity instruments were more traded on UK SIs than on EEA30 SIs (EUR 2.4tn on UK SIs and EUR 626bn on EEA30 SIs).

<sup>17</sup> When comparing the EEA30 market with and without UK, the acronyms adopted are EEA30 and EEA31. EEA30 consists of the 27 Member States of the European Union and the three countries of the European Free Trade Association, Iceland, Liechtenstein and Norway. EEA31 includes both EEA30 and the UK. In all the charts, when EEA is mentioned the perimeter is EEA30; when EEA + UK is presented the perimeter is EEA31.

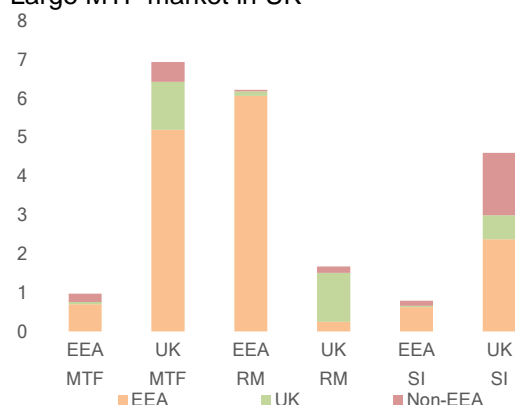
<sup>18</sup> For completeness, the section on transparency includes statistics for the distribution of turnover volumes by type of trading for EEA30 and EEA31, and the sub-section on waivers and deferrals also both with and without the inclusion of UK TVs.

<sup>19</sup> Equity instruments with an issuer having the legal entity in an EU Member State, or Iceland, Liechtenstein or Norway.



## ASR-MiFID.13

Annual trading volumes by issuer and TV domicile  
Large MTF market in UK



Note: Annual trading volumes of EEA, UK, and Non-EEA domiciled equity and equity like instruments on EEA vs. UK trading venues + SIs, in 2020. EUR trillion.

Sources: FIRDS, FITRS, ESMA.

At the end of 2020, the end of the Brexit transition period had no discernible impact on securities markets. However, the implementation of the EU **share trading obligation (STO)** in January changed the European trading landscape, especially for on-exchange trading.

The STO was introduced by MiFIR in order to move OTC share trading onto platforms providing market transparency. If not for infrequent or exceptional trades that do not contribute to the price discovery process, investment firms that undertake trading in shares have to ensure that trading takes place on a RM, MTF or SI, or a third-country TV assessed as equivalent.<sup>20</sup>

To mitigate potential adverse effects of a trading obligation without a third-country equivalence decision for UK venues by the European Commission, ESMA issued several public statements preparing for this possibility.<sup>21</sup> Also, in order to minimise uncertainty, ESMA already informed market participants in 2019 of its approach to the application of the STO in the absence of an equivalence decision and refined it in October 2020.

All EEA30 shares are within the scope of the STO, with an exception for EU investment firms trading EEA30 shares on UK trading venues in pounds sterling (GBP). All UK ISINs are outside the scope of the EU STO. This confirms that EEA30 shares, deemed to have their main pool of liquidity in the EEA30, will have to be traded on EEA30 or equivalent third-country venues, while allowing flexibility to the limited number of EEA30

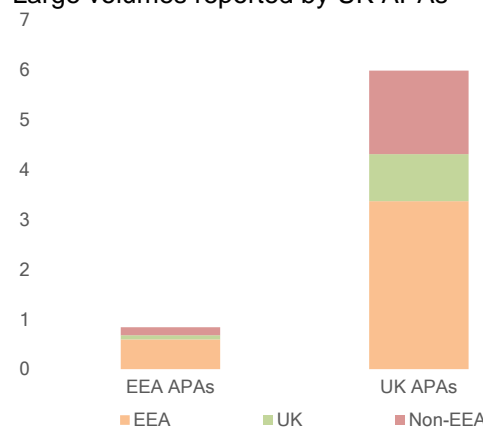
shares (fewer than 50) under the specific circumstances of trading on a UK trading venue in local currency. Shares with legal entity in the EEA30 remained heavily traded in the UK in 2020, even though the share of trading on UK venues decreased from 46% in 2019 to 43% in 2020.

In 2020, 56% of total OTC trading reported by UK APAs was in EEA30 shares. Overall, in 2020, the share of OTC trading reported by UK APAs accounted for 88% of the total OTC trading in the EEA30 and UK, since several EEA30 counterparties were reporting OTC trading to UK APAs (ASR-MiFID.14).

## ASR-MiFID.14

Annual pure OTC trading volumes by APA and issuer domicile

Large volumes reported by UK APAs



Note: Total annual pure OTC trading volumes reported by EEA and UK APAs, by issuer domicile in 2020. EUR trillion.

Sources: FIRDS, FITRS, ESMA.

The end of the Brexit transition period will change the OTC trading numbers, as well as the overall trading landscape in 2021, with a noteworthy increase of trading in the EEA30. A larger number of EEA30 counterparties will report OTC transactions to EEA30 APAs. However, other OTC trading activity in EEA30 equity instruments between non-EEA30 counterparties may still happen but will not be reported to EEA30 APAs – hence will not be observed by ESMA starting from January 2021.

## Instruments and issuers: DE, SE, FR largest issuers

Unless stated otherwise, the remainder of this chapter which analyses the securities market statistics does not contain UK data.<sup>22</sup> In 2020,

<sup>20</sup> Article 23 of Regulation (EU) No 600/2014.

<sup>21</sup> See ESMA (2020), '[Final position on share trading obligation](#)', and public statements in [March 2019](#) and [May 2019](#).

<sup>22</sup> When considering EEA30 statistics without the UK, trading volumes on UK TVs and SIs, as well as pure OTC trading reported by UK APAs, are not taken into account. This results in a lower share of MTF activity overall, as well as on lower proportion of pure OTC trading volumes.

there were 27,000 **equity and equity-like** instruments available for trading in the EEA30, including 3,223 instruments newly admitted on one or more trading venues in the EEA30 during the year. Of the total instruments available for trading in the EEA30, the number of newly admitted instruments in 2020 was 31% larger than those admitted in the EEA30 in the previous year, and a 44% larger than those admitted since the introduction of MiFID II. Each month there were more instruments admitted than terminated (270 against 172 on average), except for December in which the terminations reached a monthly peak of 1,265 instruments (S.23). This coincided with the end of the Brexit transition period, as 35% of the instruments terminated in December (430) were issued by a UK-domiciled entity.

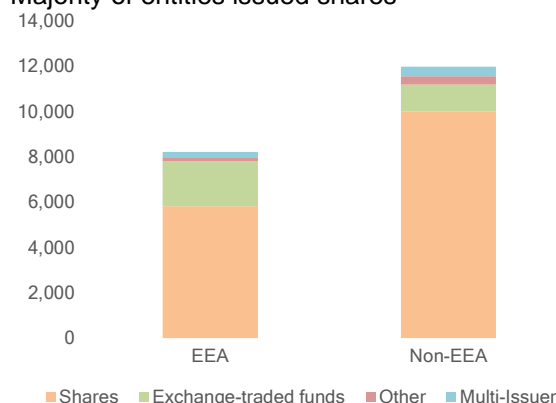
Overall, trading in equity instruments amounted to a total of EUR 8.8tn (EUR 7.9tn for EEA30 vs. EUR 0.9tn for non-EEA30 instruments) in annual turnover volumes out of 1.1 bn transactions (S.29 and S.30). Equity markets were characterised by **a large sell-off** from end-February to end-March due to the COVID-19 related market stress.<sup>23</sup> In this period, monthly trading volumes in equity and equity-like instruments sharply increased with volumes reaching daily historical highs. Total monthly volumes reached a maximum of EUR 1.3tn in March, compared with a monthly average of EUR 735bn (S.32). As markets recovered, trading volumes declined again from April onwards to levels slightly above those observed before the crisis.

Approximately 8,200 **EEA30-domiciled entities** issued 45% (12,000 equity instruments) of the total equity and equity like instruments available for trading in 2020 (vs. 12,000 non-EEA30 domiciled entities issuing 15,000 instruments). The majority of EEA30 issuers were domiciled in Germany (2,325 instruments issued by 958 firms), Sweden (1,541 instruments issued by 899 firms) and France (1,135 instruments by 861 firms) (S.22). Together, they accounted for 42% of total EEA30 equity instruments available for trading in 2020. Within the non-EEA30 domiciled entities, instruments issued by the United States (US) represented the majority (4,733 instruments or 32% of the non-EEA30 total), followed by the UK (2,824 or 20%).

#### ASR-MiFID.15

Number of EEA30 issuers by instrument type

Majority of entities issued shares



Note: Number of issuers (unique LEIs) of equity and equity-like instruments available for trading in 2020. Multi-issuer indicates entities that have issued more than one instrument type.  
Sources: FIRDS, FITRS, ESMA.

By instrument type, around 70% of firms have issued shares only, while the remaining issued either ETFs, depositary receipts or other equity-like instruments (24% and 2% respectively). There was also a small number of issuers (269 or 4% of the total EEA30) that have issued a combination of shares and other equity-like instruments (ASR-MiFID.15). Among the 3,200 ETF issuers, 17% issued more than one instrument of this type. Within this group, the average number of individual instruments released per issuer amounted to 4.

## Shares: Large volumes in EEA30 shares

In 2020, shares continued to represent the main type of equity instrument exchanged in the EEA30, accounting for 75% (or >20,000 instruments) of equity and equity-like instruments available for trading, and for 1 bn transactions worth EUR 7.6tn in annual trading volumes, or 96% of transactions and 86% of volumes of all equity instruments in the EEA30.

Out of the overall number of shares available for trading, EEA30-domiciled stocks accounted for the minority of shares available for trading in 2020 (8,384 vs. 11,877 non-EEA30 shares), with around 2,000 shares originated from German issuers and 900 from French firms. This is mostly due to the large number of US and UK shares available for trading (respectively 3,500 US shares or 18% of the total and 2,225 UK shares or 11%). Although the majority of instruments available for trading were issued by non-EEA30

<sup>23</sup> See Box T.1 for further details on market developments during the crisis.

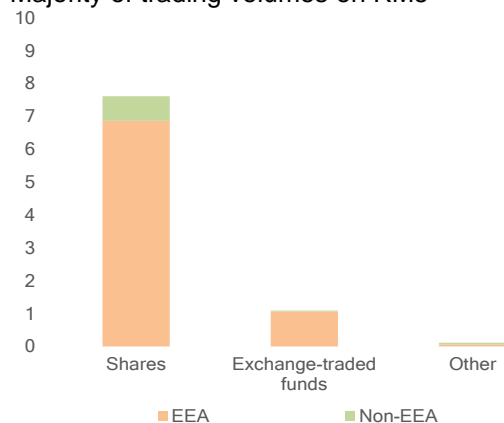
domiciled entities, 90% of shares total annual trading volumes in 2020 were in EEA30 stocks, amounting to slightly less than EUR 7tn (ASR-MiFID.16).

Across sectors, the financial and technological sectors dominated the share trading landscape, with respectively EUR 1.1tn and EUR 1tn in annual trading volumes (14% and 13% respectively). The largest trading activity during the COVID-19 related market stress was observed in consumer non-cyclical goods and real estate shares, which recorded the largest change in monthly volumes in March (+80bps and +75bps respectively). Towards the end of the year, trading volumes went back to their monthly average levels for all sectors.

#### ASR-MiFID.16

Annual equity trading volumes by instrument type and issuer domicile

Majority of trading volumes on RMs



Note: Annual trading volumes of equity and equity-like instruments in 2020, by instrument type and issuer domicile. EUR trillions.  
Sources: FIRDS, FITRS, ESMA.

The end of the year also saw a large jump in non-EEA30 equity trading, since the volumes of non-EEA30 equity instruments exceeded their yearly monthly average of EUR 70bn, by 11% in November (EUR 78bn), and by 30% in December (EUR 98bn) (S.51). This was mostly driven by large trading volumes in US and UK shares. The increase in trading volumes in US shares in December (EUR 43bn vs. their yearly average of EUR 26bn) coincided with the uncertainty around the US presidential elections. Trading in UK shares also jumped in November and December (EUR 29bn in both months, +17% compared to their yearly average volumes), coinciding with the end of the transition period (see dedicated sub-section).

The total **market capitalisation** of EEA30-domiciled issuers amounted to EUR 12.6tn, with around half from Germany (EUR 4.3tn) and France-based issuers (EUR 2.6tn), followed by the Netherlands (EUR 1.1tn) and Sweden (EUR 1tn) (S.43). US-domiciled companies represented around three-fifths (or EUR 29.3tn) of total market capitalisation of non-EEA30 firms issuing shares available for trading in 2020.

Trading volumes remained highly concentrated in shares of larger companies in 2020: 91% of EEA30 share trading volumes were concentrated within **large and very large issuers'** stocks in 2020, with annual trading volumes totalling EUR 2.4tn for large and EUR 3.8tn for very large companies (S.46).<sup>24</sup> EEA30 small and medium enterprises (SMEs), i.e. companies with market capitalisation below EUR 200mn, had 4,500 shares available for trading (60% of the total number of EEA30 shares available), against 1,900 for large and very large firms (S.45).

## ETFs: Reduction in new admissions

Newly admitted **exchange-traded funds (ETFs)** on EEA30 venues were 40% less than those available for trading that were admitted in 2019 and 2018, with 483 new instruments admitted to trading (15% of the new admissions in equity and equity-like instruments in 2020). Overall, the total number of ETF available for trading in 2020 was at around 5,400 instruments.

Out of the 3,146 ETFs domiciled in the EEA30 (60% of the total), around 75% of the ETFs available on EEA30 venues were domiciled in Ireland (1,342) or Luxembourg (984), which continued to be the largest issuance countries for ETFs (S.28). Equity ETFs are the most frequent type of EEA30-domiciled ETFs, accounting for 57% of the total (1,798 instruments). There were also 660 EEA30 bond ETFs and 542 other ETFs available for trading. Half of non-EEA30 ETFs were US-domiciled (1,154), while almost one fourth were UK ETFs (511). Equity ETFs also represented the majority of non-EEA30 domiciled ETFs (1,458) followed by bond ETFs (428).

In 2020, the share of total trading volumes in ETFs continued to grow compared to 2019 for the EEA30, amounting to EUR 1.1tn out of 32mn transactions (or 12% of total equity trading and

<sup>24</sup> Market capitalisation classification is defined as follows: "Small and medium"=EUR 0 to 200mn, "Medium-large"=EUR 200mn to 2bn, "Large"=EUR 2bn to 20bn, "Very large"= more than EUR 20bn. The classification of

small and medium businesses is based on the definition provided in Article 4 (13) of MiFID II.

3% of transactions, compared to 10% of equity volumes in the EEA30 in 2019) (S.29 and S.30). In line with the number of instruments available for trading, turnover volumes were concentrated within ETFs domiciled in Ireland (EUR 422bn) and Luxembourg (EUR 393bn).

As for equities, ETF monthly turnover volumes peaked during the Covid-19 related market stress in March and April 2020, with the monthly volumes reaching EUR 177bn in March before declining to a monthly average of EUR 91bn for the rest of the year. By underlying asset, total annual volumes in equity ETFs stood at EUR 733bn (67% of ETF trading), followed by bond ETFs (EUR 221bn) and other ETFs (EUR 53bn).

Finally, in 2020, there were around 1,200 **depository receipts** available for trading on EEA30 platforms, for a total of EUR 110bn in trading volumes. The largest EEA30 issuer of depository receipts was Germany (141), which accounted for 50% of the total EEA30 depository receipts. However, a vast majority of depository receipts offered by EEA30 venues were domiciled in non-EEA30 countries (mostly Cayman Islands and UK), amounting to 18% of the instruments and 22% of the volumes.

## Trading: Fragmented ETF trading

Compared to the previous year for EEA31, secondary market **trading frequency** was higher both for shares and ETFs in 2020. About 93% of the shares available for trading were traded at least once a year in 2020, and 68% traded at least once a month (compared to 90% and 64% in 2019). On the other hand, 85% of the ETFs available for trading in the EEA30 were traded at least once a year, and 58% at least once a month in 2020 (S.33).

The monthly average trade size showed a declining path after the February peak (EUR 10,250) for all instrument types, reaching a minimum of EUR 6,100 in August.<sup>25</sup> ETFs continued to be the instrument type traded in largest sizes, with more than five times the average trade size of shares (EUR 34,000 vs. EUR 7,060) (S.31). The values for the median trade size pointed to the same direction

(EUR 8,715 for ETFs vs. EUR 2,804 for shares). Each category of ETFs continued to reflect the liquidity and trade size of the underlying assets, with bond ETFs being exchanged with greater volumes out of fewer transactions (average trade size of EUR 70,000), followed by commodity ETFs (EUR 50,000) and equity ETFs (EUR 30,000).

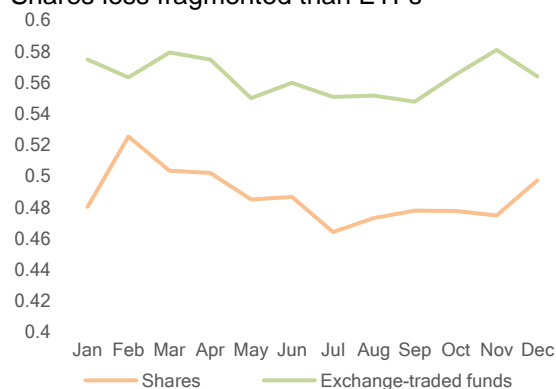
ETF trading was more fragmented across TVs than shares: On average, trading volumes for each ETF were distributed across 9 segment MICs, compared to 7 segment MICs for each individual share in 2020. This is in line with the concentration of ETFs' issuer countries that do not offer a liquid secondary market for ETF trading, and the increasing popularity and volumes traded of these instruments in the EEA30.

In order to enhance the analysis of trading distribution across EEA30 TVs and SIs, indicators on trading fragmentation have been further developed in this report. The monthly **fragmentation indicator (FI)** by instrument type, the inverse of the Herfindahl–Hirschman Index (HHI), points towards a larger concentration of trading for shares.

ASR-MiFID.17

Market fragmentation

Shares less fragmented than ETFs



Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by instrument type. Index calculated as  $(1-HHI)$  and ranging from 0 (monopoly) to 1 (maximum fragmentation). Sources: FIRDS, FITRS, ESMA.

The fragmentation indicator at instrument level is computed as the inverse of the Herfindahl–Hirschman Index ( $1-HHI_{i,t}$ ). For each and every instrument in the database, the  $HHI_{i,t}$  index is calculated as the sum of the squared share of trading volume on segment MIC  $j$  for the instrument  $i$ .<sup>26</sup> The FI ranges from 0 (if the whole

<sup>25</sup> Average trade size is computed as the ratio between trading volumes and total number of transactions.

<sup>26</sup> The Herfindahl–Hirschman index is a measure developed and used in industrial economics to assess the extent of

concentration/competition and is usually computed on the basis of the sum of the squares of market share(s) of the  $i$  firms within an industry. The formula writes as follows:



trading of instrument  $i$  is concentrated on only one trading venue) and 1 (if trading is equally distributed among all the platforms). Finally, the aggregated fragmentation indicator is the result of the weighted average of the fragmentation scores for each and every instrument by type (ASR-MiFID.17).

Overall, the FI confirms that ETF trading is slightly more fragmented than shares in the EEA30, with a yearly FI average of 0.56 for ETFs and 0.54 for shares in 2020. The COVID-19 related market stress had an effect on trading fragmentation in the EEA30, as the FI indicators follow a declining path after March, especially for shares, with an average FI ranging between a maximum of 0.53 in February to a minimum of 0.45 in July. For ETFs, the FI ranged between a maximum of 0.6 in November and a minimum of 0.56 in May.

However, by splitting the FI across share market capitalisation buckets, large and very large shares appear to be more fragmented than ETFs on average (0.73 for large and 0.64 for very large shares vs. 0.56 for ETFs). Moreover, as market capitalisation becomes smaller, trading concentration in shares increases, with the average FI for SME issuers' shares declining to 0.42 (S.44). This is because SME shares are mostly available for trading on MTFs, or exclusively on domestic markets.

## Venues: Concentration of trading on-exchange

In 2020, **on-exchange** turnover volumes in the EEA30 on equity instruments amounted to EUR 7.2tn or 82% of total equity volumes.<sup>27</sup>

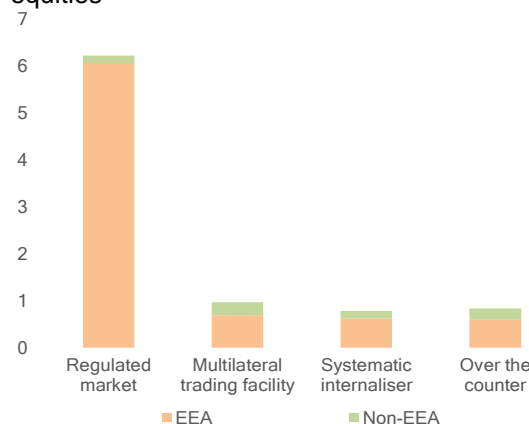
**RMs** represented the main infrastructure for on-exchange trading in the EEA30, with slightly less than 1 bn transactions worth EUR 6.2tn, i.e., 84% of the total equity transactions and 70% of the total EEA30 trading volumes in 2020 (or 87% of the transactions and 86% of volumes on-exchange). The majority of trading volumes in EEA30 instruments occurred on RMs (EUR 6.1tn or 69% of EEA30 volumes). Overall, 98% of the RMs total volumes originated from the exchange of EEA30 equity instruments (ASR-MiFID.18). A very small number of non-EEA30 instruments was available for trading on RMs (666), with

annual volumes amounting to EUR 155bn (only 2% of the overall RM trading).

### ASR-MiFID.18

Annual trading volumes by market type and issuer domicile

Volumes concentrated on RMs with EEA30 equities



Note: Annual trading volumes of equity and equity-like instruments in 2020, by issuer domicile, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

**MTFs** proposed the largest number of equity instruments (25,500 vs 7,500 proposed by RMs), and the share of MTF trading in 2020 remained broadly unchanged compared to 2019, with EUR 973bn and 138mn transactions in 2020, i.e. 11% and 12% of equity volumes and transactions (S.38).

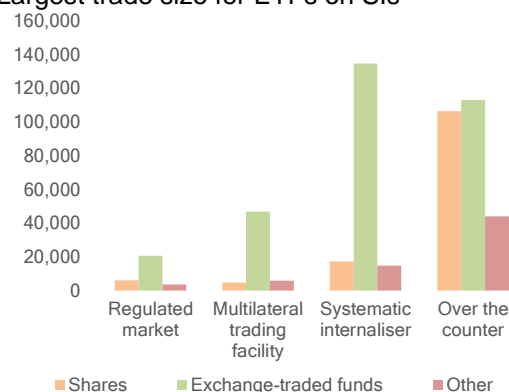
The highest concentration of trading on RMs was observed for shares, for which 85% of the transactions and 92% of the volumes (920mn transactions worth EUR 5.7tn) occurred on RMs. On the contrary, ETF trading was distributed across venue types, with 42% (EUR 464bn) of the volumes occurring on RMs and 30% (EUR 343bn) on MTFs (S.37). Volumes on MTFs were more evenly distributed across issuer domiciles (EUR 700bn for EEA30 and EUR 273bn for non-EEA30 instruments).

Since their introduction with MiFID II, investment firms or electronic liquidity providers authorised to operate as **SIs** continue to be a widely used alternative platform to exchange securities, with total annual trading activity representing 9% of total equity trading (EUR 790bn out of 33mn transactions) (S.36 and S.37).

$HHI_{i,j} = \sum_1^N s_{i,j}^2$  For a practical example of the calculation methodology, please see [Fidessa Group plc](#). However, differently from ESMA, Fidessa Group plc compute the fragmentation index as  $1/HHI$ .

<sup>27</sup> In 2020 UK venues were still part of the Single Market and therefore subject to the Share Trading Obligation (see first sub-section of the equity section). Thus, taking out UK figures does not reflect the venues that needed to comply with the Share Trading Obligation in 2020.

## ASR-MiFID.19

Average trade size by instrument and market type  
Largest trade size for ETFs on SIs

Note: Average trade size of equity and equity-like instruments in 2020 by instrument and market type, EUR. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

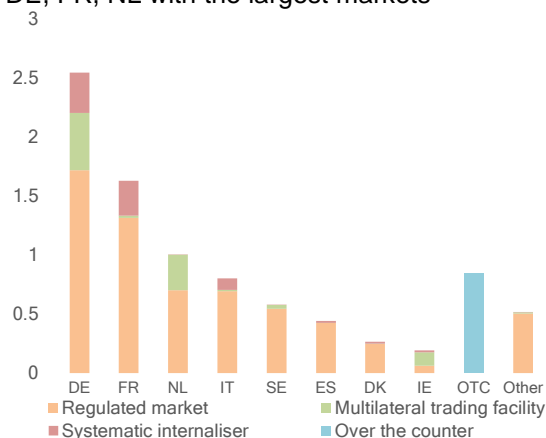
The overall **equity average trade size** on MTFs and RMs was broadly similar, with that on MTFs being 8% larger than that on RMs (EUR 7,000 on MTFs vs EUR 6,500 on RMs). Shares were traded in smaller amounts on MTFs (EUR 5,000) than on RMs (EUR 6,000), while the average trade size of ETFs on MTFs was twice as large as that on RMs (EUR 47,000 vs. EUR 21,000). In contrast, the average size per transaction for all equity instruments on SIs amounted to EUR 24,000, i.e. four times more than on-exchange. This discrepancy is mostly driven by the large size of trades in ETFs (EUR 135,000 vs. EUR 17,000 for shares) (ASR-MiFID.19).

On a monthly basis, March was the month that recorded the largest activity on EEA30 trading venues and SIs (S.42). Monthly volumes on TVs in March (EUR 907bn on RMs and EUR 120bn on MTFs) surpassed their yearly average by 70%, while those on SIs (EUR 110bn) by 80%. On the contrary, pure OTC trading was higher in February (117% above its yearly average and 110% in March), fluctuating between a maximum of 27% of overall equity trading volumes in February and a minimum of 16% in November.

By infrastructure domicile, 59% of 2020 **trading volumes on TVs and SIs were concentrated** in three Member States. Germany observed the largest turnover with EUR 2.5tn (EUR 2.2tn on-exchange and EUR 339bn on SIs), followed by France with EUR 1.6tn (EUR 1.3tn on-exchange EUR 294bn on SIs) and the Netherlands with slightly more than EUR 1tn (mostly on-exchange with only EUR 3bn on SIs). Other important EEA30-Member States by trading volumes are Italy (EUR 800bn or 9%) and Sweden (EUR 580bn or 6%) (ASR-MiFID.20). Each of the above-mentioned Member State had a TV ranked

in the top five EEA30 venues by annual trading volumes.

## ASR-MiFID.20

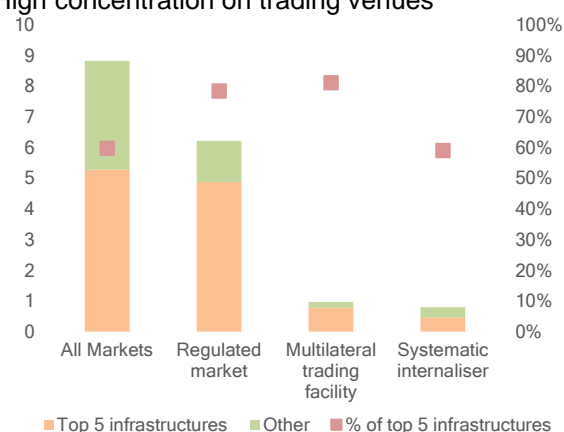
Annual trading volumes by TV domicile  
DE, FR, NL with the largest markets

Note: Annual trading volumes in equity and equity-like instruments in 2020 by market type and entity domicile, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

Trading volumes of equity instruments remained highly concentrated among a few markets: the largest five EEA30 infrastructures registered EUR 5.3tn in turnover volumes, i.e. 60% of total volumes on TVs and SIs. For both RMs and MTFs, the top-five venues in terms of trading volumes accounted for 80% of total annual trading volumes of each market type (respectively EUR 4.9tn for the top five RMs and EUR 789bn for the top five MTFs). SI trading is slightly more distributed, with the top five SIs accounting for 60% of total volumes (EUR 467bn) (ASR-MiFID.21).

## ASR-MiFID.21

Concentration of the top 5 infrastructures  
High concentration on trading venues

Note: Equity trading volumes in top 5 operating MICs by market type, in EUR trillion (lhs) and share of the total, in % (rhs).

Sources: FIRDS, FITRS, ESMA.

The fragmentation indicator (FI) at MIC level reflects the high degree of trading concentration. Fragmentation at trading venue level is again calculated as  $1-HHI_{it}$  where  $HHI_{it}$  is computed as the sum of the squared market share of each and

every MIC by market type.<sup>28</sup> This FI confirms that SIs are the most fragmented markets, followed by RMs and MTFs (S.55).

MTFs saw a large increase in fragmentation in the second half of 2020, jumping from a minimum of 0.78 in June to a maximum of 0.85 in December. Concerning SIs, a slight decline in the FI since March was observed. On the other hand, the FI trend for RMs follows a very regular and stable path throughout the year (at around 0.86). The FI calculated at entity level shows that trading is most fragmented occurred in Ireland (0.62), Germany (0.57), Bulgaria (0.55), Cyprus (0.47) and the Netherlands (0.45) (S.41).<sup>29</sup>

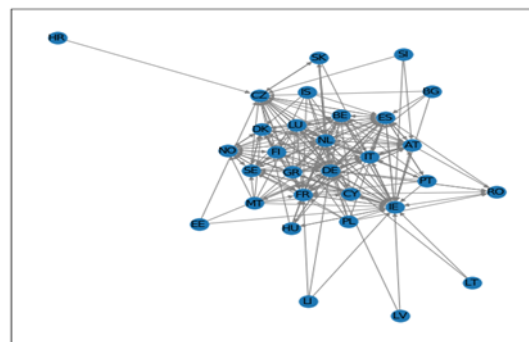
## Cross-border trading: Mainly DE, FR, NL

EEA30 equity instruments were trading mostly in the same country as the issuer of the security in 2020, underlining an important home bias, especially for shares. Overall, 77% of EEA30 trading volumes takes place domestically exclusively, with 96% of domestic equity volumes being in shares, and ETFs accounting only for 3%.<sup>30</sup> Less than a quarter of EEA30 equity trading volumes took place cross-border in 2020, i.e. on TVs in Member States different from the issuer domicile (23% or EUR 1.7tn, S.56).

EEA30 ETFs are mostly traded cross-border, with 77% of total ETF trading volumes cross-border (EUR 850bn). This is in line with the fact that the main ETF issuers are Ireland and Luxembourg, whereas ETF trading mostly takes places on EEA30 platforms outside these Member States, particularly in Netherlands (EUR 320bn) and in France (EUR 290bn). On the contrary, total volumes for EEA30 shares traded cross-border amounted to EUR 816bn (48% of total cross-border trading and 9% of total equity trading).

### ASR-MiFID.22

Cross-border share trading network  
Concentration in DE, FR and NL



Note: Force-directed network of cross-border trading volumes in EEA shares, by TV and issuer domicile. The connections (grey lines) represent cross-border trading volumes. The node at the origin of each grey line represents the issuer domicile, while the node at the end stands for the TV domicile. The more the connections, (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instrument of foreign issuers traded on this trading venue domicile.

Sources: FIRDS, FITRS, ESMA

Within EEA30 shares traded cross-border, the **trading network** across the EEA30 shows the centrality of Germany, France, and Netherlands (ASR-MiFID.22).<sup>31</sup> Based on trading volumes of foreign issuers, the density around these countries is determined by multiple factors described in the previous sections. First of all, these countries are the domiciles of the largest equity markets, which attract issuers from all over the continent. Second, they offer a wide variety of platforms in which equity instruments can be proposed for exchange. In this respect, there were 47 segment MICs in Germany, and 19 both in France and in Netherlands in 2020.

On top of this, there were further peripheral clusters within the network. One of them was Norway, a centre of exchange for issuers from Nordic countries. Czech Republic was also a large hub for instruments domiciled in Eastern European countries. Finally, there were TVs, such as those in Bulgaria and Romania, in which equity trading was mostly domestic with few instruments being traded in foreign countries.

<sup>28</sup> Or by trading venue domicile if looking at fragmentation by country.

<sup>29</sup> The HHI at venue level is calculated as the sum of the squared market share of each segment MIC by domicile. The formula writes as follows  $HHI_{i,j} = \sum_1^N s_{i,j}^2$ , where s is the market share of MIC i in country j. The HHI by country is calculated across all market types (RMs, MTFs, SIs).

<sup>30</sup> Cross-border trading volumes refer to equity and equity like instruments traded both on the TV domiciled in the same country as the issuer domicile and on TV domiciled in a country different than the issuer domicile.

<sup>31</sup> ASR-MiFID.22 displays a force-directed network chart. It shows the directionality of trading volumes from issuer domicile to trading venue domicile (represented with the blue dots). By displaying the number of connections as the size of nodes, the visualization also shows that there are a few nodes with lots of connections that keep the central component tied together. The more the connections (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instrument of foreign issuers traded on this trading venue domicile.

## Transparency: less than 2,500 liquid shares in 2020

The MiFID II/MiFIR framework aims at favouring a larger proportion of trading into **lit markets**, where the pre-trade and post-trade information on prices and counterparties can be timely observed by all market participants.

### T.2

#### OTC trading and addressable liquidity How to approach OTC trading

Since the application of MiFID II/MiFIR, important discussions emerged linked to different interpretations of the concept of non-price forming transactions, non-addressable liquidity and technical trades and to the inconsistent reporting of such transactions.

Overall, there are four co-existing concepts which are commonly used, including in the MiFIR framework, to characterise liquidity:

- Non-price forming transactions: they do not reflect a price determined through the genuine interaction of buying and selling trading interests, hence they do not contribute to the price discovery process or to the price formation;
- Transactions subject to conditions other than the current market price: these are executed at a price which is determined by factors other than the current market valuation;
- Non-addressable liquidity trades: transactions that are not directly accessible to other parties, i.e. transactions where another investment firm could not have been a party to the transaction;
- Technical trades: transactions executed for purely technical reasons.

In general, the discussions have been leveraging on the share of trading activity executed on lit markets against that on SIs or OTC. There are different views across market participants as to whether or not the share of reported equity volumes traded OTC is too high or inflated by the inappropriate inclusion of non-price forming transactions.<sup>32</sup>

These inconsistencies originate first of all from the different interpretations of the concept of non-price forming transactions, non-addressable liquidity and technical trades, and secondly from the inconsistent reporting of such transactions. ESMA does not currently receive information on non-price forming transactions and/or non-addressable liquidity from market participants.

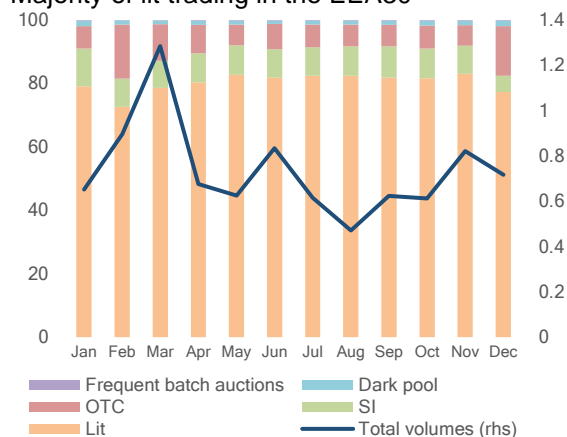
ESMA recently launched a consultation paper to address these topics<sup>33</sup>, with the aim of developing a more consistent framework on non-price forming

transactions and allowing for a better understanding of the equity trading landscape.<sup>34</sup>

The first half of 2020 was characterised by high volatility in equity markets, resulting in high trading volumes in March. Following the peak of activity, equity trading volumes stabilised before declining in August across all trading types, reaching lower levels than before the COVID-19 crisis.

### ASR-MiFID.23

#### Annual equity trading volumes by trading type Majority of lit trading in the EEA30



Note: Type of equity trading in the EEA as percentage of total volumes in 2020, in % (lhs). Total equity trading volumes on rhs, in EUR tn.  
Sources: FIRDS, FITRS, ESMA.

After a slight contraction at the beginning of the year, volumes on EEA30 lit markets (RMs and MTFs), stabilised at around 80% of total equity trading on average each month. Trading on EEA30 **dark pools** was limited in 2020, accounting for EUR 118bn or less than 1.5% of total equity trading. Off-exchange, the share of SI trading was stable at around EUR 65bn per month (or 9%) throughout the year. Pure OTC trading was highest in February (17%) and December (15%), being stable around 8% for the rest of the year (ASR-MiFID.23). Significant changes in the relative composition of EEA30 equity trading will be visible in 2021 after the end of the Brexit transition period, both in terms of market structure and data reporting. The comparability with statistics published in earlier publications is, therefore, highly limited.

For the sake of comparison for 2020, looking at EEA31 presents a different trading landscape. In this respect, the share of turnover volumes on

<sup>32</sup> See [Primary and secondary equity markets in the EU](#), Oxa, November 2020; [FESE calls for greater transparency in a now overly complex European market infrastructure](#), FESE, June 2021; [The landscape for European equity trading and liquidity](#), AFME, May 2021.

<sup>33</sup> See ESMA (2021) [Consultation Paper: On the review of RTS 1 \(equity transparency\) and RTS 2 \(non-equity transparency\)](#).

<sup>34</sup> In particular, the CP proposes amendments to the lists of non-price forming transactions present in Commission Delegated Regulation (EU) 2017/587 and Commission Delegated Regulation (EU) 2017/583.



EEA31 lit markets accounted for approximately 46% of total trading in 2020 (or EUR 1tn per month on average). The amount of trading on dark pools was much larger when including UK infrastructures, standing at 9% of total EEA31 trading volumes. Analogously, pure OTC trading amounted to 25% of the total (S.69).

The introduction of the MiFID II/MiFIR framework extended post-trade transparency obligations to all equity instruments and required approved publication arrangements (APAs) to publish the details of trades on SIs or **OTC**.<sup>35</sup> In 2020, there were 13,500 instruments that were also available for trading OTC, accounting for annual trading volumes of EUR 841bn out of 8mn transactions. OTC trading represents 10% of total equity volumes in the EEA30, but only 1% of the total transactions meaning that on average, OTC transactions were executed in larger amounts than on venues. In line with the trend observed in the previous year including the UK, the average trade size for equity instruments traded OTC was EUR 103,000. This exceeds by 16 times the average trade size on MTFs, by 15 that on RMs, and by 4 that on SIs (S.39).

In line with other market types, ETFs traded OTC continued to exceed the average trade size of shares by 10% (EUR 106,500 for shares and 113,000 for ETFs). Moreover, ETFs tended to be traded in larger amounts on SIs rather than OTC, with each transaction on SIs being worth EUR 134,000 on average (vs. EUR 113,000 OTC). On the contrary, the average trade size of shares exchanged OTC exceeds that on SIs by 6 times (EUR 106,500 OTC vs. EUR 17,500 on SIs). The mean trade size values point to the same direction, and, in terms of magnitude, they are 2 to 3 times smaller than the average for all instrument and market types.

The number of **equity instruments considered liquid** per the annual ESMA transparency calculations stood at 2,416 equity and equity-like instruments traded in the EEA30 in 2020 (S.59).<sup>36</sup> Out of these, 1,986 were issued by an entity domiciled in the EEA30 (82%), led by Ireland (449), Germany (258) and France (215). The remaining 430 instruments have a non-EEA30

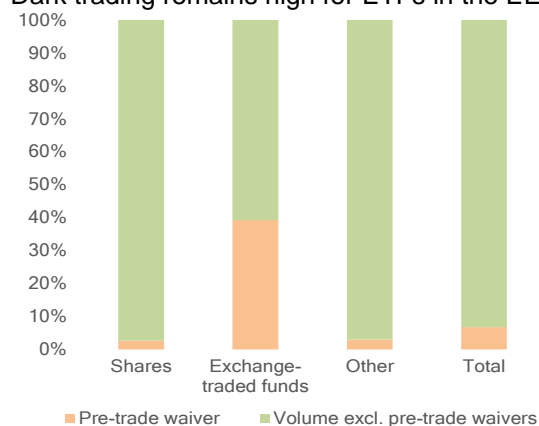
issuer. By instrument type, shares continued to account for the vast majority of liquid instruments in 2020 (60% or 1,438 instruments). Splitting liquid shares by sector of activity, consumer goods (283), industrial (216) and technological (199) were the most represented sectors, accounting for 49% of the total liquid shares.

## Waivers: Dark trading remains high for ETFs

ASR-MiFID.24

Waiver trading activity per instrument type

Dark trading remains high for ETFs in the EEA



Note: Percentage of trading volume under the pre-trade waiver on-venue in 2020  
Sources: FIRDS, FITRS, ESMA

MiFIR allows NCAs to waive the obligation to disclose pre-trade information<sup>37</sup> for market operators and investment firms operating a TV when certain conditions are fulfilled.<sup>38</sup>

In 2020, around 7% of total on-exchange turnover on EEA30 TVs, was not subject to real-time pre-trade transparency (+1ppt compared to EEA30 in 2019). The amount of total on-exchange turnover under the pre-trade waivers was, as in previous years, particularly high for ETFs (39% of ETFs on-exchange volumes), whereas the use of waivers remained more limited for shares (3%) and other equity-like instruments (ASR-MiFID.24).

However, looking at EEA30 statistics without the UK underestimates dark trading in 2020. When

<sup>35</sup> See MiFID II Article 20.

<sup>36</sup> See [results of the annual transparency calculations for equity and equity-like instruments](#), March 2021. The calculations on the ESMA website include data submitted by the UK, hence not comparable with the numbers presented in this report.

<sup>37</sup> i.e., current bid and offer prices as well as the depth of trading interests at those prices depending on the type of trading systems. The waivers introduced by MiFID

allowed for the creation of dark pools. MiFIR permitted National Competent Authorities to grant four types of waivers, which are exhaustively described in the article on transparency calculations in the [2020 EU securities markets annual statistical report](#).

<sup>38</sup> The statistics presented in this section do not include order management facility waivers (OMF), as the information on the use of such waivers is not available in ESMA system.

including UK data, the percentage of dark trading on EEA31 TVs was 32% in 2020.

However, to limit the volumes traded under a waiver, the Double Volume Cap Mechanism (DVC) limits trading under the reference price waiver and the negotiated trade waiver in liquid instruments, when there is a concentration of trading under those waivers on a single TV (suspension at TV level), or if trading under those waivers reaches an important volume threshold overall (suspension at EEA31 level).<sup>39</sup> These limits intend to preserve the quality of the price determination process on lit venues. The DVC mechanism entails a suspension of trading under waivers for a period of 6 months for those instruments in breach of the DVC thresholds, applied by NCAs.<sup>40</sup>

The number of these suspensions declined steadily in 2020, with the total number of instruments banned from trading under waivers passing from 421 in January to 205 in December.<sup>41</sup> This sharp decline was driven by a continuous drop in the number of shares being suspended at EEA31 level (-60% between January and December).

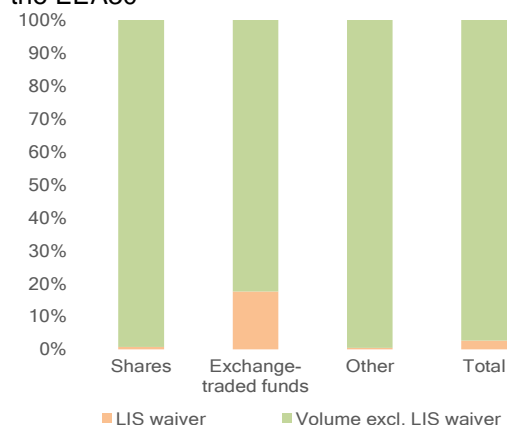
On average, 80% of the instruments in breach of the DVC thresholds were suspended at EEA31 level. Shares accounted for most of the EEA31-level suspensions, whereas around half of the TV-level suspensions concerned ETFs. Outstanding TV level suspensions were focused on a very limited number of TVs in 2020 (16). The top 5 EEA31 TVs in terms of outstanding TV level suspensions accounted on average, for between 83% and 95% of the instruments temporarily banned from trading under waivers at individual TV level.

In addition to pre-trade transparency waivers, MiFIR also allows NCAs to authorise the deferred publication of post-trade information for certain transactions.<sup>42</sup> In 2020, 3% of total on-exchange equity trading volume on EEA30 TVs was not subject to real-time publication (-1ppt compared to 2019) and significant differences across instrument type continued to persist (ASR-MiFID.25). In particular, ETFs continued to benefit more from a deferred publication (18% of total trading volume in ETFs).

Similarly to pre-trade transparency, the percentage of turnover not subject to real-time publication increases when including UK data, amounting to 12% in 2020.

#### ASR-MiFID.25

LIS trading activity under deferral per instrument type  
Little overall post-trade transparency deferrals in the EEA30



Note: Percentage of trading volume under the large-in-scale waiver on-venue in 2020  
Sources: FIRDS, FITRS, ESMA

<sup>39</sup> This is particularly the case of instruments whose percentage of trading under those waivers on a single TV is higher than 4% of their total volumes across all EEA31 TVs over the previous twelve months, and whose percentage of trading under those waivers across all TVs is higher than 8% of their total volumes across all EEA31 TVs over the previous twelve months.

<sup>40</sup> See [Art. 5 MiFIR](#).

<sup>41</sup> ESMA Double Volume Cap calculations in 2020 still include UK data. In order to align with the specifications in the text, EU level suspensions are labelled as EEA31 in this section. With the end of the Brexit transition period, EU-level suspensions stopped being applied in the UK from 1st January 2021 onwards.

<sup>42</sup> For equity and equity-like instruments this applies to transactions that are large in scale (LIS) compared with the normal market size for that instrument.

# Bond markets

## Summary

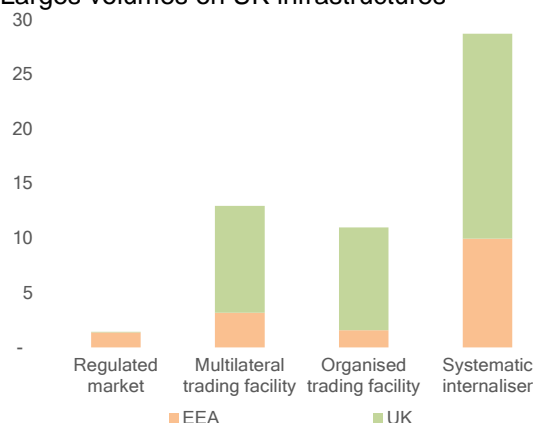
Over 106,000 bond instruments were available for trading in the EEA30 in 2020, with 62% of these instruments issued in the EEA30, totalling a nominal amount of EUR 21.9tn, with the largest amounts in Germany and France (each EUR 4.7tn). Bond trading volumes amounted to EUR 17.9tn in 2020, with 60% of volumes from sovereign and 29% from corporate bonds. The majority of trading was off-exchange, with SI and OTC trading accounting for 56% and 10% of EEA30 bond trading volumes in 2020. On-exchange, the bond market appears highly concentrated, with 93% of the traded volumes on-exchange on the first 5 infrastructures by volumes, and 95% in the first 4 trading countries. A slight increase in liquidity was observed in 2020, with the share of non-traded bonds during the year decreasing to 34% for corporate and 25% for sovereign bonds. Furthermore, EEA30 bond trading appears domestically anchored, since 49% of the volumes of EEA30 bonds occurred on a TV or an SI established in the same jurisdiction as the issuer. Liquid sovereign bonds, as calculated for MiFID II purposes, represented the majority of sovereign volumes during the first 3 quarters of 2020 (75% of sovereign bonds volumes), but also of the overall bond trading volumes on average (43%).

## Important share of bond trading on UK venues

When considering EEA30 statistics without the UK, trading volumes on UK TVs and SIs, as well as pure OTC trading reported by UK APAs are not taken into account, resulting in a lower proportion of pure OTC bond trading volumes. In 2020, UK trading remained an important part of overall EEA31<sup>43</sup> bond trading during the year.

ASR-MiFID.26

Trading volumes on EEA30 and UK infrastructures  
Larges volumes on UK infrastructures



Note: Annual trading volumes in bond instruments by market type and trading venue or infrastructure domicile in 2020, EUR trillion.  
Sources: FIRDs, FITRS, ESMA.

UK trading venues (RMs, MTFs and OTFs) recorded more than three quarters of total on-

exchange turnover volumes on EEA31 venues (76% or EUR 19.2tn). On-exchange bond trading in the UK was concentrated on OTFs and MTFs, with 86% of EEA31 OTF trading and 76% of MTF trading on UK venues in 2020 (EUR 9.4tn and EUR 9.8tn respectively). RM trading in the UK remained only marginal, with EUR 58bn or 4% of EEA31 RM trading. Bond trading was also particularly active on UK SIs, with volumes amounting to EUR 18.8tn or 65% of EEA31 SI trading (ASR-MiFID.26).

Narrowing the perimeter to EEA30 instruments, meaning bonds with legal entity in the EEA30<sup>44</sup>, confirms that these bonds were heavily traded in the UK in 2020, even if their volumes declined at the end of the year. Overall, the share of EEA30 instruments traded on UK TVs or SIs was 58% of the total volumes in bonds in the EEA31, with differences by market type (ASR-MiFID.27).

UK OTFs were the market type with the highest volumes of EEA30 bonds, amounting to EUR 3.6tn traded volumes or 70% of the overall EEA30 volumes traded on OTFs in 2020 (EEA30 OTFs and UK OTFs), followed by UK MTFs (EUR 1.6tn and 67% of EEA30 volumes on MTFs), while EEA30 bonds trading on UK RMs remained marginal.

Regarding UK SIs, on top of trading EUR 5.6tn of EEA30 instruments (or 52% of EEA30 SI trading), they appeared as an attractive centre for foreign

<sup>43</sup> When comparing the EEA30 market with and without UK, the acronyms adopted are EEA30 and EEA31. EEA30 consists of the 27 Member States of the European Union and the three countries of the European Free Trade Association, Iceland, Liechtenstein and Norway. EEA31 includes both EEA30 and the UK. In all the charts, when

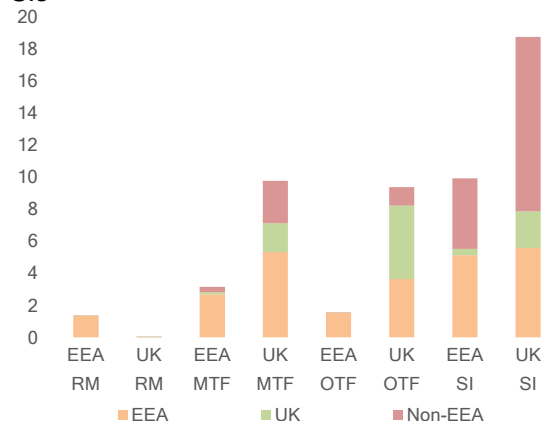
EEA is mentioned the perimeter is EEA30; when EEA + UK is presented the perimeter is EEA31.

<sup>44</sup> Bond instruments with an International Securities Identification Number (ISIN) starting with a country code corresponding to an EU Member State, or Iceland, Liechtenstein or Norway.

bonds trading, with more than twice the volumes of non-EEA30 bonds traded on UK SIs (EUR 10.9tn compared to EUR 4.4tn on EEA30 SIs).

#### ASR-MiFID.27

Trading volumes by issuer domicile, in EEA30 and UK EEA30 instruments mainly traded on UK MTFs, SIs



Note: Annual trading volumes of EEA, UK, and non-EEA domiciled bond instruments in 2020 on EEA and UK trading venues and SIs, EUR trillion. Sources: FIRDS, FITRS, ESMA.

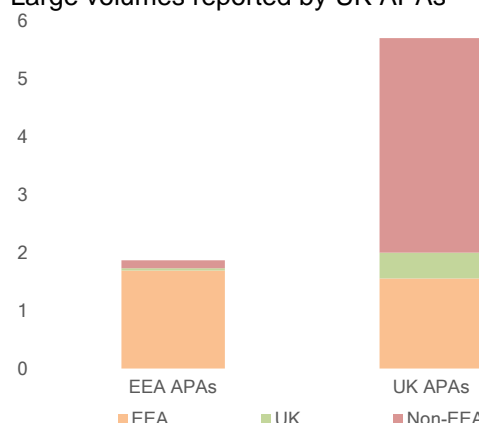
Regarding bond trading, the major impact of taking out UK figures in this report can be seen in OTC volumes. By taking out all trading volumes reported by UK TVs, SIs and APAs, the 2020 figures are significantly underestimated (ASR.MiFID.28). In 2020, EUR 1.5tn or 27% of total bond trading OTC reported by UK APAs was in EEA30 shares (64% in non-EEA30 shares) since several EEA30 counterparties were reporting OTC trading to UK APAs. Overall, in 2020, the share of OTC trading reported by UK APAs accounted for 75% of the total OTC trading in the EEA30 and the UK.

The end of the transition period will impact the observed OTC trading numbers, as well as the overall bond trading landscape. While an increase in bond trading in the EEA30 is expected, due to the relocation of UK venues in the EEA30 but also to EU investment firms reporting transactions via EU APAs, there is no constraint for bond trading similar to the share trading obligation. Hence, on-exchange but also off-exchange trading can continue to take place in the UK or outside the EEA30 without restrictions.

#### ASR-MiFID.28

Annual pure OTC trading volumes by APA and issuer domicile

Large volumes reported by UK APAs



Note: Total annual pure OTC trading volumes in bonds reported by EEA and UK APAs by issuer domicile, in 2020, EUR trillion. Sources: FIRDS, FITRS, ESMA.

## Instruments: Mainly corporate bonds

Unless stated otherwise, the remainder of this chapter which analyses the securities market statistics does not contain UK data. In 2020, 106,000 bond instruments were available for trading in the EEA30, with more than 86,000 available for trading each month during 2020 on average. **New bond admissions** remained high in 2020, with 20,669 new admissions during the year, in line with the 19,300 yearly admissions observed since the entry into force of MiFID II in 2018<sup>45</sup> (S.71). If the number of admissions remained stable during the year (+1,722 monthly average), the number of terminations increased in December, with 4,800 instruments terminated compared to a monthly average of -1,200, in preparation to the end of the Brexit transition period (see dedicated section). Overall, the number of bonds available for trading was a positive net total of +6,065 bond instruments admitted in 2020, mostly corporate (71%) and other bonds (21%) (S.74).

Most of the bonds available for trading in 2020 were issued by EEA30-domiciled issuers (66,000 bonds or 62% of available instruments) (ASR-MiFID.29), with the largest issuers domiciled in Germany (25%), France (14%) and the Netherlands (13%) (S.75). Since MiFID II, the share of EEA30 bond instruments is remaining stable at 60% of the total number of bonds available for trading (S.104). In 2020, non-EEA30

<sup>45</sup> Before MiFID I, only 270 bond instruments were admitted to trading on a yearly basis, and 6,300 in the period between MiFID I and MiFID II. This difference can also be

explained by a narrower approach on the concept of admission to trading prior to MiFID I and MiFID II.

bonds available for trading in the EEA30 were mostly issued in the US (41%), the UK (19%) and Switzerland (7%) (S.105). The majority of the US and UK bond instruments were corporate bonds (86% and 61% respectively).

#### ASR-MiFID.29

Number of instruments available for trading by domicile  
Majority of instrument issued by EEA30 entities



Note: Number of bonds available for trading in 2020 by issuer domicile (thousands).  
Sources: FIRDS, FITRS, ESMA.

Among the 106,000 bonds available for trading on EEA30 venues in 2020, 67,000 were corporate bonds (63%), 7,000 sovereign bonds (6%), 5,000 covered bonds (5%) and 28,000 other bonds (26%).

The majority of corporate bonds available for trading were issued in the EEA30 (57% or 38,000 instruments) (ASR-MiFID.29). The biggest issuers were Germany (8,000 corporate bonds) and France (7,000), accounting respectively for 21% and 18% of EEA30 corporate bonds. Non-EEA30 corporate bonds were mostly issued in the US (14,000 instruments) and UK (4,500), accounting together for 66% of non-EEA30 corporate bonds available.

Similarly, just over half of the sovereign bond instruments available for trading in the EEA30 were issued by EEA30 countries (3,500 bonds or 51% of available instruments), with the highest number of bonds issued in Austria (620 sovereign bonds), Germany (600), and Italy (520). Non-EEA30 sovereign bonds available for trading were mostly issued by the US (650 sovereign bonds) and Japan (350).

Among the 28,000 bonds classified as other bonds, there were 4,000 other public bonds and 1,000 convertible bonds. Most of these other

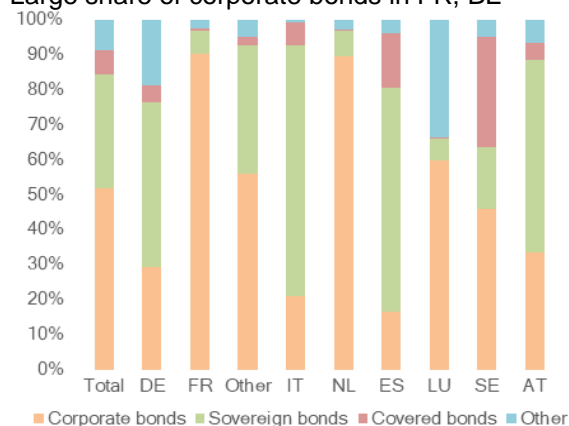
bonds were issued in the EEA30 (73%). The remaining 22,500 instruments classified as “other bonds” have no further characterisation. This number decreased since 2019 when 61,200 “other bonds” were observed in the EEA31, thanks to an improvement of the classification of bond instruments. The new approach used the majority of bond types reported by venues during the year<sup>46</sup>, which allowed the reclassification of around 13,000 instruments, although the majority remained under the “other” bond type. Ultimately, most of the analyses presented in this section do not comment the “other bond” category, since it remains difficult to characterise these instruments as a group. Continuing to improve the instrument classification remains crucial, to enhance our analysis of the characteristics of the bond instruments.

Finally, the number of **covered bonds** available for trading was 4,500, in vast majority issued in the EEA30 (90%). Germany and Luxembourg are the largest issuers of covered bonds (1,100 and 300 respectively). Non-EEA30 covered bonds are marginal, with only 500 instruments and EUR 6.4bn trading volumes (0.5% of covered bonds trading volumes).

## EEA30 issuance: High share of corporate bonds

#### ASR-MiFID.30

Nominal amount outstanding by issuer domicile  
Large share of corporate bonds in FR, BE



Note: Share of bond nominal amount outstanding, by issuer domicile and bond type in the EEA, in % of bond type in 2020.  
Sources: FIRDS, FITRS, ESMA

Compared to the large number of instruments available, the total **number of issuers** appears

<sup>46</sup> This approach means that for each instrument, all the bond types reported by all the venues are compared, and the type with the majority of occurrences is chosen as the adjusted bond type. The two most frequent disagreements observed in bond types were for corporate and other bonds in 2020, allowing for a reclassification of

some other bonds into corporate bonds. Furthermore, all the instruments that were reported as “other bonds” but had a CFI code belonging to money market instruments were taken out.



small, with 4,410 individual issuers domiciled in the EEA30 and 5,120 non-EEA30 issuers in 2020 (S.73). This is due to the limited numbers of sovereign (92) and corporate issuers (7,352), and in line with the overall characteristics of bond instruments that allow issuers to emit regularly new debt instruments in an ad-hoc and flexible manner.

When looking at **nominal amounts in the EEA30**, i.e. the amount that will be repaid to bondholders at maturity, the distribution of importance by instruments changes (ASR-MiFID.30). First, sovereign bonds, which amounted to 5% of bond instruments available for trading in 2020, make up 33% of the EEA30 nominal amounts with EUR 7.1tn. The largest nominal amounts in sovereign bonds are observed in Italy (EUR 1.8tn or 72% of domestic nominal amount), Spain (EUR 1.1tn or 64%) and Germany (EUR 2.2tn or 47%).

The share of nominal amount of EEA30 corporate bonds is slightly lower than their share in the number of available bonds issued in the EEA30, with EUR 11.4tn amounting to 52% of EEA30 nominal amounts. Highest nominal amounts were observed in France (EUR 4.2tn or 90% of domestic nominal amount), the Netherlands (EUR 1.9tn or 89%) and Luxembourg (EUR 930bn or 60%).

The nominal amount of EEA30 covered bonds amounted to EUR 1.5tn in 2020 (7% of EEA30 amounts), mostly present in Denmark (EUR 485bn, 69% of domestic nominal amounts), Spain (EUR 260bn, 15%) and Sweden (EUR 231bn, 31%).

Overall, the largest nominal bond amounts in the EEA30 were observed in Germany (EUR 4.7tn) and France (EUR 4.7tn), accounting together for 43% of the EUR 21.9tn total of EEA30 nominal amounts (S.92).

## Trading: Large trading volumes in sovereigns

In 2020, the overall **bond turnover trading volumes** amounted to EUR 17.9tn. Similarly to 2019, sovereign bonds were the most traded bond instruments in 2020, with sovereign volumes amounting to 60% of total yearly volumes. Annual trading volumes of sovereigns amounted to EUR 10.7tn in 2020, through 4.9mn transactions (52% of bond transactions), while corporate bonds trading reached EUR 5.2tn or 29% of overall bond volumes, through 3.8mn

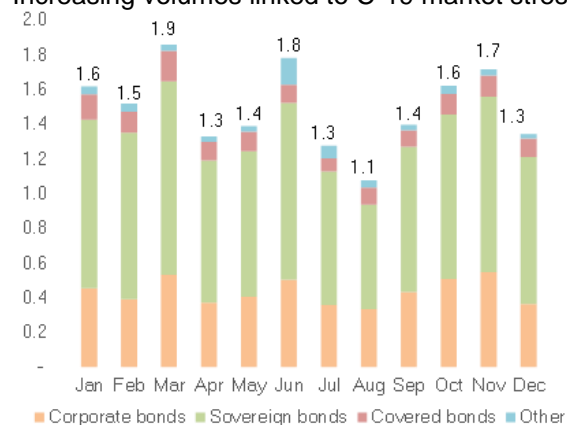
transactions (41% of bond transactions). While representing 43% of corporate bonds available for trading, non-EEA30 corporate bonds trading remained marginal in 2020, amounting to EUR 640bn or only 12% of corporate bonds' volumes. Finally, covered bonds activity increased in 2020, with 316,000 transactions and annual trading volumes of EUR 1.4tn, amounting to 8% of bond trading volumes in 2020 (S.78).

**Monthly trading activity** of bond instruments fluctuated in line with the evolution of the COVID-19 related market stress. The first peak in March 2020 coincided with the first wave of the pandemic (EUR 1.8tn traded volumes, +24% to the monthly average), the second peak in June to the increase in EA yields before the first expansion of the ECB bond-buying program (the Pandemic Emergency Purchase Program); and the third peak to the second wave of the pandemic in November. Sovereign bond volumes oscillated between EUR 601bn in August to and EUR 1.1tn in March, and corporate bonds between EUR 333bn in August to EUR 531bn in March (ASR-MiFID.31). The pickup in corporate bonds trading volumes is in line with the low level of corporate issuance in March, and rising issuance levels observed in April for IG bonds, followed by HY in May and June (see box T.1 for the analysis of COVID-19 related impact on bond markets and issuance).

### ASR-MiFID.31

#### Monthly trading volume by instrument type

#### Increasing volumes linked to C-19 market stress



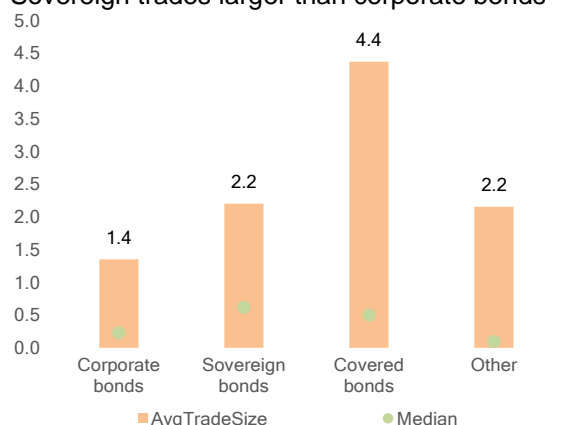
Note: Monthly trading volumes of bonds in 2020 by bond type. EUR trillion. "Other" includes convertible bonds and other public bonds. Sources: FIRDS, FITRS, ESMA

Bond market transactions continue to be less frequent and of larger size than other instruments in the EEA30. The **average trade size** in 2020 was EUR 4.4mn for covered bonds, EUR 2.2mn for sovereign bonds, and EUR 1.4mn for corporate bonds (ASR-MiFID.32), compared to EUR 7,060 for shares.

## ASR-MiFID.32

## Average trade size by instrument type

## Sovereign trades larger than corporate bonds



Note: Average trade size and median transaction size of bonds in 2020 by bond type, EUR million. "Other" includes convertible bonds and other public bonds.

Sources: FIRDS, FITRS, ESMA.

The lower median trade sizes for all three types of instruments confirm the heterogeneity of trading practises by market type (see Venue subsection). Average trade sizes remained mostly stable throughout the year, only slightly diminishing for sovereign bonds in March and April (EUR 1.7mn in both months).<sup>47</sup>

## Liquidity: Rising

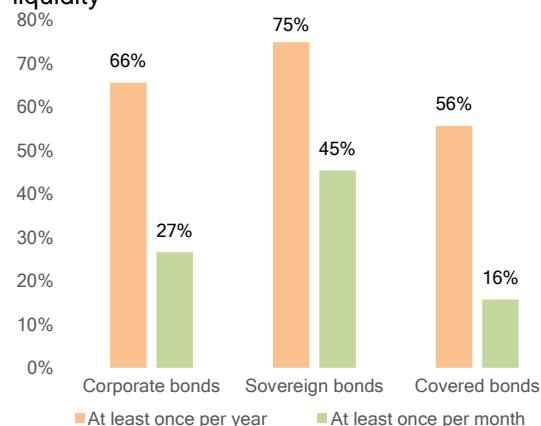
The discrepancy between the number of instruments available for trading and traded during the year confirms the **low secondary market liquidity** of an important part of the bond market, even if it increased in 2020 compared to the previous year. The share of instruments not traded in 2020 was 44% for covered bonds, 34% for corporate bonds and 25% for sovereign bonds (a decrease compared to respectively 61%, 37%, and 29% in the EEA31 in 2019). Over the year, only 27% of corporate bonds available for trading were traded at least once a month, and only 16% of the covered bonds available. (ASR-MiFID.33).

Furthermore, the high proportion of non-traded instruments remained stable throughout the year, with a slight decrease for sovereign and corporate bonds in March, in line with the increase in trading volumes (-5ppts and -3ppts for sovereign and corporates respectively in March 2020 – S.82).

## ASR-MiFID.33

## Secondary market liquidity by instrument type

## Covered and corporate bonds show lower liquidity



Note: Share of bonds traded at least once per month and once per year in 2020 by instrument type, as % of bond type.

Sources: FIRDS, FITRS, ESMA.

The traded volumes by **bond original maturity**<sup>48</sup> indicates that the EEA30 fixed-income market liquidity tends to be elevated for bonds with a maturity of around ten years. Three quarters of corporate bonds available for trading had a maturity of less than twelve years (49,500 instruments or 74% of corporate bonds available), and they account for 56% of the corporate trading volumes (S.94). Sovereign bonds instruments available for trading have slightly longer maturities, with 39% of bonds with a maturity of more than twelve years (including 16% of sovereign bonds with an original maturity of 28 years or more). However, traded volumes are similarly concentrated on bonds with a maturity of less than twelve years (71% of sovereign bond volumes) (S.95).

Sovereign bonds instruments were offered by a larger number of TV and SIs than corporate bonds: on average, sovereign bonds were available for trading across 9 segment MICs, compared to 5 segment MICs for each corporate bond in 2020 (4 for covered bonds).

<sup>47</sup> Average trade size is computed as the ratio between trading volumes and total number of transactions.

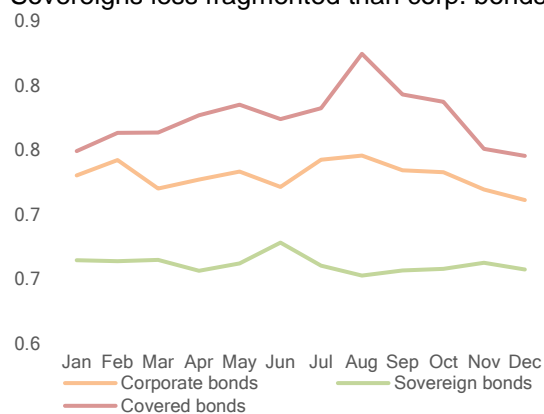
<sup>48</sup> In this report, we look at maturity of bonds at inception present a more precise picture of the lifecycle of bonds, especially regarding secondary market liquidity. Original maturity is calculated as the difference between the

maturity date and minimum start trading date (the minimum starting date is used as a proxy for the issuance date, since the latter is not available).

## ASR-MiFID.34

## Bond market fragmentation

## Sovereigns less fragmented than corp. bonds



Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by instrument type. Index calculated as  $(1 - HHI)$  and ranging from 0 (monopoly) to 1 (maximum fragmentation). Sources: FIRDS, FITRS, ESMA.

However, the monthly **fragmentation indicator (FI)** by instrument type, the inverse of the Herfindahl–Hirschman Index (HHI), points towards a larger concentration of trading for sovereign than corporate bonds (ASR-MiFID.34). This line of indicators allows for an enhanced understanding of the trading distribution across EEA30 TVs and SIs. For each instrument, the  $HHI_{i,t}$  index is calculated as the sum of the squared share of trading volume on segment MIC  $j$  for the instrument  $i$ . Being the inverse of the  $HHI_{i,t}$ , the FI ranges from 0 (if the whole trading of instrument  $i$  is concentrated on only one trading venue) and 1 (if trading is equally distributed among all the platforms).<sup>49</sup>

The fragmentation indicator indicates that covered and corporate bonds are more fragmented than sovereign bonds, with a yearly FI average of 0.73 for corporate and 0.66 for sovereign bonds in 2020 (0.77 for covered). The COVID-19 related market stress only had a marginal effect on trading fragmentation in the EEA30, with a slight decline of the corporate bonds FI in March. Covered bonds FI is more elevated than other bond types, and increased during 3Q20, in line with the lower traded volumes in covered bonds observed during this period.

## Trading: Off-exchange prevails

The share of monthly trading volumes **off-exchange** fluctuated between 61% (in October)

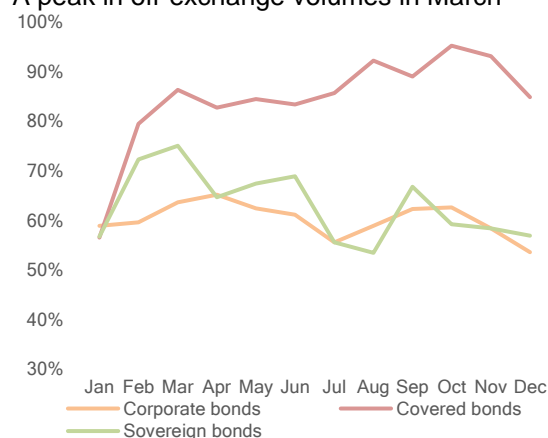
and a peak during the height of the COVID-19 stress in March at 72% of total trading volumes in the EEA30 (S.84). Overall, the total bond volumes traded OTC and through SIs amounted to EUR 11.8tn or 66% of 2020 turnover volumes, compared to 76% in 2019 in the EEA31. This decrease, coming from the decline of the share of OTC volumes (EUR 1.9tn or 10% of EEA30 traded volumes in 2020 and EUR 50.4tn or 50% of bond traded volumes in the EEA31 in 2019), is linked to the change of perimeter in this report (see dedicated sub-section).

**SI trading** represented 56% of total bond trading in the EEA30 in the 2020 (EUR 9.9tn), with 2.3mn transactions or 25% of the bond transactions in the year. The number of SI infrastructures trading bonds in the EEA30 is 64, and they are mostly domiciled in Germany (22), France (8), and Denmark (7). However, the highest turnover volumes on SIs were observed in France (EUR 6.3tn or 64% of EEA30 SI turnover), and to a lesser extent, in Germany (EUR 1.6tn or 16% of turnovers). Furthermore, SIs appears to be the favoured infrastructure for non-EEA30 bond trading in 2020, with a turnover of EUR 4.8tn, amounting to 88% of the overall volumes of non-EEA30 bonds.

## ASR-MiFID.35

## Off-exchange traded volumes

## A peak in off-exchange volumes in March



Note: Monthly share of bonds traded off exchange (including through systematic internalisers) in 2020 as % of bond type. Sources: FIRDS, FITRS, ESMA.

Sovereign bonds are mostly traded off-exchange (65% of their traded volumes), with the majority of volumes traded on SIs (EUR 6.4tn, 59%). In the same manner, 58% of corporate bond trading volumes were off-exchange, mostly traded on SIs (EUR 2.1tn or 44% of their volumes). OTC volumes amounted to EUR 684bn for corporate

<sup>49</sup> The formula writes as follows:  $HHI_{i,j} = \sum_1^N s_{i,j}^2$ . The fragmentation index at instrument level is computed as  $1 - HHI_{i,j}$ . Finally, the aggregated fragmentation indicator

is the result of the weighted average of the fragmentation scores for each and every instrument by type.



bonds and to EUR 624bn for sovereign bonds in 2020, or respectively 14% and 6% of their total trading volumes. In comparison, OTC volumes amounted to 67% of corporate and 46% of sovereign traded volumes for the EEA31 in 2019. Covered bonds were the type of bonds most traded off-exchange, with 52% of their traded volumes on SIs and 36% OTC in 2020.

**Off-exchange** trading volumes were higher in the first quarter of the year for sovereign bonds, reaching a peak in March (EUR 338bn), and declining afterwards (ASR-MiFID.35). A similar increase was observed for covered bonds (EUR 97bn in March), even though off-exchange share reached 93% of the covered bond traded volumes in October 2020.

Finally, the important discrepancy between trading characteristics can be seen through the **distribution of transaction sizes** by market type (S.88, S.89). The median transaction sizes were the lowest on RMs in 2020, especially for corporate bonds (EUR 8,600 for corporate and EUR 42,000 for sovereign bonds) and on MTFs (EUR 145,500 for corporate and EUR 185,000 for sovereign bonds). However, very high average trade sizes were observed on OTFs, especially for sovereign bonds, with a median of EUR 6.9mn and EUR 750,00 for sovereign and corporate bonds respectively, and elevated transactions sizes at the 75<sup>th</sup> percentile.

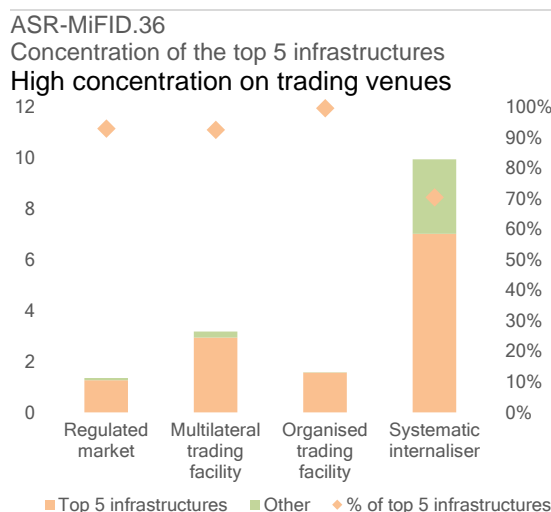
The distribution of off-exchange transaction sizes showed no important differences between SI and OTC trading for corporate bonds. The median transaction sizes were respectively EUR 286,00 and EUR 181,000 on SI and OTC in 2020, with transactions sizes close to EUR 1mn at the 75<sup>th</sup> percentile. Sovereign bond trading was more importantly distributed on SIs, with a median transaction of EUR 1,2mn and EUR 4.6mn at the 75<sup>th</sup> percentile, while the OTC median transaction was EUR 552,000 and EUR 2.0mn at the 75<sup>th</sup> percentile.

## Venues: Concentration of EEA30 volumes

**MTFs** are the largest market type in terms of bond turnover, with EUR 3.2tn or 18% of bond traded volumes (22% for EEA30 instruments) (S.86). MTF trading volumes are larger for corporate bonds (20% of corporate annual volumes) and sovereign (19%) than for covered bonds (5%). There are 63 MTFs trading bonds in the EEA30, notably in Germany (13) and Italy (9).

**OTFs** were the second type of venue in the EEA30, with EUR 1.6tn or 9% of bond traded volumes. With only 10 OTFs in the EEA30, this type of trading venue is favoured for corporate bond trading, amounting to 69% of OTFs volumes. The majority of OTFs are domiciled in France (6) and Spain (2). The share of volumes on OTFs made up 18% of corporate bonds traded volumes, but only 6% of sovereign bonds volumes.

Finally, **RMs** trading volumes amounted to EUR 1.3tn or 8% of bond traded volumes in the EEA30. 86% of these volumes were sovereign bonds, since RMs represented only 1% of the corporate but 11% of sovereign bond traded volumes. Out of the 49 RMs domiciled in the EEA30, Germany was the member state with the highest number of RMs (11), followed by Spain (5).



Note: Top 5 infrastructures annual trading volumes of bonds in 2020, EUR trillion and share of the total volumes (%).  
Sources: FIRDS, FITRS, ESMA.

On-exchange bond trading is characterised by a **high level of concentration**, with the first 5 TVs amounting to a high share of the volumes observed on each market type. For both RMs and MTFs, the first 5 venues in terms of volumes concentrated 93% of bond volumes in 2020, and close to 100% for OTFs (ASR-MiFID.36).

Furthermore, on-exchange volumes are also concentrated in a few countries, with the first 4 trading countries representing EUR 5.8tn or 95% of on-exchange volumes. The Netherlands and Italy are the main place for trading on venues, with respectively 34 and 31% of on-exchange trading, followed by France (19%) and Spain (11%) (S.96).

The fragmentation indicator (FI) calculated at infrastructure level (TV and SI)<sup>50</sup> reflects this high degree of trading concentration. Bond trading is more concentrated on-exchange, with a lower fragmentation indicator, meaning a higher concentration level, observed for RMs and OTFs (respectively 0.56 and 0.64 on average in 2020), compared to MTFs (0.74). For the three venue types and especially for RMs, a decrease in the FI is observed at the end of the year, i.e. an increase in the concentration level. SIs appears to be the most fragmented infrastructures for bond trading in 2020, with a fragmentation indicator of 0.85 on average, and a slight increase in 4Q20 (S.98).

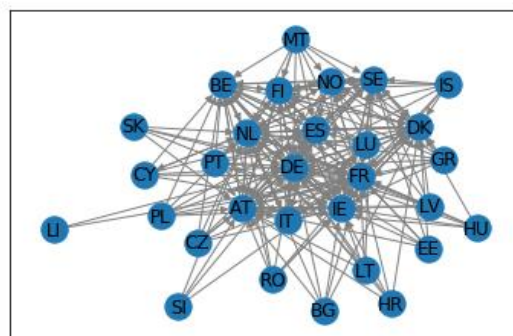
Furthermore, the FI calculated at entity level also shows that trading is most fragmented in the countries that concentrate the higher number of TVs, such as Spain (0.80), Germany (0.79), Denmark (0.77), France (0.75) and Italy (0.70) (S.90).

## Cross-border trading: Domestically anchored

The EEA30 fixed-income market appears to be domestically anchored, with 49% of the EEA30 bonds trading volumes occurring on a TV or an SI of the same nationality of the bond issuer (S.99). Cross-border trading, i.e. on a TV or an SI in a Member State different from the issuer domicile<sup>51</sup>, totalled EUR 5.5tn in 2020 for EEA30 instruments (51%), mostly for sovereign bonds (53% of the trading volumes on-exchange or on SIs for the EEA30 sovereign bonds). EEA30 corporate bonds trading on-exchange or on SIs was in majority domestic, with 53% of these volumes exchanged domestically.

### ASR-MiFID.37

Cross-border corporate bond trading network  
Concentration in DE, ES, and IT



Note: Force-directed network of cross-border trading volumes in EEA corporate bonds, by TV and issuer domicile. The connections (grey lines) represent cross-border trading volumes. The node at the origin of each grey line represents the issuer domicile, while the node at the end stands for the TV domicile. The more the connections (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instruments of foreign issuers traded on this TV domicile.

Sources: FIRDS, FITRS, ESMA.

Within EEA30 bonds traded cross-border, the **trading networks** for corporate and sovereign bonds across the EEA30 shows the centrality of Germany, Spain, France and the Netherlands.<sup>52</sup> Both corporate and sovereign bond trading of foreign issuers appeared to be concentrated in a few countries at the centre of the network, with peripheral countries trading their domestic bonds in those venues (ASR-MiFID.37).

## Liquid bonds: Mostly sovereigns

In 2020, between 310 and 181 corporate and between 272 and 354 sovereign bonds traded in the EEA30 were considered liquid as defined in MiFID II rules and according to ESMA quarterly liquidity assessment<sup>53</sup>, a slight increase compared to 2019 when the total number of liquid bonds fluctuated between 519 and 595 instruments per quarter for the EEA31.<sup>54</sup> Liquid sovereign bonds represented the majority of sovereign bond trading volumes (75% of

<sup>50</sup> In this case the FI is calculated with the HHI as the sum of the squared market share of each and every MIC by market type, or by trading venue domicile if looking at fragmentation by country.

<sup>51</sup> Cross-border trading volumes refer to a bond instrument traded both on the TV domiciled in the same country as the issuer domicile and on TV domiciled in a country different than the issuer domicile.

<sup>52</sup> ASR-MiFID.37 displays a force-directed network chart. It shows the directionality of trading volumes from issuer domicile to trading venue domicile (represented with the blue dots). By displaying the number of connections as the size of nodes, the visualization also shows that there are a few nodes with lots of connections that keep the central component tied together. The more the connections (i.e. a higher number of grey lines going to

the node), the larger the trading volumes in instrument of foreign issuers traded on this TV domicile.

<sup>53</sup> ESMA's liquidity assessment for bonds is based on a quarterly assessment of quantitative liquidity criteria, which includes the daily average trading activity (trades and notional amount) and the percentage of days traded per quarter. See [Latest published bond liquidity assessment](#). The calculations on the ESMA website include data submitted by the UK, hence not comparable with the numbers presented in this report.

<sup>54</sup> Bond calculations are presented here until 3Q20 since the quarterly liquidity determination calculation was not presented on 1 February 2021 for 4Q20, due to concerns about potential disruptions of IT systems after the end of the transition period. For 4Q20 following the end of the transition period. See [ESMA's statement](#) for further information.

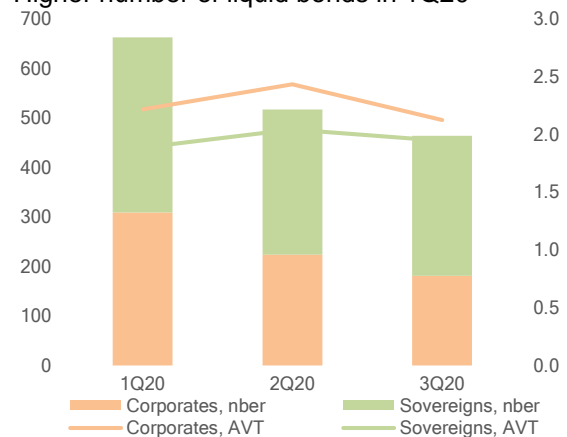
sovereign bonds trading volumes on average during the first 3 quarters of the year), but also of the overall bond trading volumes (43% on average). Overall, liquid bonds represent an important share of bond traded volumes, 58% during the first 3 quarters, with a slight decrease in 3Q20.

The average trade sizes of liquid bonds are slightly lower than illiquid bonds (ASR-MiFID.38), and larger for corporates (EUR 2.1mn) than sovereign bonds (EUR 1.9mn). A comprehensive analysis of the use of waivers by equity and non-equity instruments is presented in the annual report on waivers and deferrals.<sup>55</sup>

#### ASR-MiFID.38

Number of liquid bonds and average trade size by type

Higher number of liquid bonds in 1Q20



Note: Number of corporate and sovereign liquid bonds (lhs), and average trade sizes of corporate and sovereign liquid bond, in EUR mn (rhs).

Sources: FIRDS, FITRS, ESMA.

<sup>55</sup> See ESMA (2021), Annual Report on the application of waivers and deferrals, December.

# Topical analysis

# SME access to EU equity secondary markets

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## Summary

SME financing through market-based finance remains limited in the EEA30. To enhance access to capital markets for SMEs, MiFID II introduced the possibility for MTFs to register as Growth Markets (GMs), with 18 MTFs registered as such at the end of 2020. Around 9,500 SME shares were available for trading in 2020 in the EEA30, with a total market capitalisation of EUR 368bn and the largest EEA30 issuers domiciled in Sweden, France and Germany. Overall, the total EEA30 turnover volumes in SME shares amounted to EUR 231bn in 2020 or 3% of total volumes in shares, with the largest volumes concentrated on RMs (62%), and on German and French venues. If SME GMs have been growing in terms of volumes traded in 2020, with monthly volumes tripling during the year, they only accounted for 11% of the SME shares traded volumes.

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## The EU SME landscape

Equity secondary markets offer a valid alternative avenue for **small and medium enterprises (SMEs)** willing to raise funds through capital markets. Although, there are several benefits from accessing public markets, the share of SME financing through capital markets in the EU is still limited. There are several benefits for SMEs to go public on equity markets. First, it widens the potential investor base, making the cost of equity capital significantly lower than other means of finance. Secondly, on the reputational side, it increases visibility for the company, making it more attractive to investors, clients, and employees. Finally, once an initial public offering is launched, it is easier to raise capital through secondary offerings (follow-on issuance).

Although equity markets appear a feasible form of market-based finance to raise funds, several challenges impede SMEs from accessing capital markets both from the issuers and investors perspective. Particularly, on the issuer side, SMEs face very high admission costs and strict listing requirements to register in the main equity markets across the EU. From an investor perspective, investment decisions are more complicated since there is less available information on smaller businesses. Moreover, SME shares tend to be less liquid than the shares of larger companies.<sup>56</sup> In close cooperation with the European Commission (EC), ESMA has been

working towards an enhanced access to capital markets for SMEs.

This article explores the regulatory background and the key characteristics of SMEs available for trading in the EEA30, without UK reports.

## Regulatory background

One of the key goals of the Capital Markets Union (CMU) agenda foresees increased access to diversified sources of finance by smaller businesses in the EEA30. With respect to market-based finance, Article 33 of MiFID II introduces a new category of MTFs labelled as 'SME growth markets (GM)' (also commonly known as 'alternative markets'), with the goal of improving access to capital markets for small and medium-sized enterprises.

MTFs or MTF segments can be registered as an SME GM, provided that at least 50% of the issuers with shares available for trading on the relevant exchange have a market capitalisation of less than EUR 200mn. The criteria to be used by MTFs to identify companies that qualify as SMEs for the purpose of the SME GM label and to and register/deregister as an SME GM are included in Articles 77-79 of CDR (EU) 2017/565. The full definition of SMEs will be covered in the next section of this article.

Although the SME GMs regime in the EEA30 has been relatively successful so far, SMEs need further incentives to access capital markets. In

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<sup>56</sup> For more detail, see Wehinger, Gert & Nassr, Iota. (2015). Opportunities and limitations of public equity markets for SMEs. OECD Journal: Financial Market Trends and SME

financing and equity markets, World Federation of Exchanges (2017).

this context, ESMA has published in April 2021 the final report on the functioning of the regime for SME Growth Markets under MiFID II/MiFIR<sup>57</sup>, which contains recommendations and possible amendments to the MiFID II framework which are needed to improve the attractiveness of the SME GM regime. The report includes several suggestions, e.g. recommendations to help promote the concentration of liquidity on SME GMs, to improve standardisation and access to information for investors and suggestions on how to develop homogeneous admission requirements.

## Criteria for identification of SMEs

### Definition of SMEs

There are different economic definitions and legal boundaries for SMEs. In the mainstream classification, SMEs are firms that employ less than a certain number of employees (for example in the EU < 250, in North America < 500). Other metrics rely on the total annual turnover and total annual balance sheet. In the EU, according to the EC, an SME is an enterprise that employs less than 250 persons and has an annual turnover not exceeding EUR 50mn, or an annual balance sheet total not exceeding EUR 43mn.<sup>58</sup>

Market capitalisation is another criterion used to determine the size of a company. However, there exist heterogeneous requirements for small and medium capitalised firms across the families of equity indices in the EU. For example, the largest company that constitutes the CAC Small index in France has a market capitalisation of EUR 4.3bn, but the market capitalisation of the largest component of the SDAX (Germany) amounts to EUR 15bn.

To allow their identification through MiFID II data, ESMA classifies SMEs on the basis of Article 77 of CDR 2017/565 (MiFID II, Art. 4), which defines an SME issuer as an issuer whose shares have been admitted to trading for less than three years with a market capitalisation below EUR 200mn.<sup>59</sup>

In MiFID II data, the market capitalization is collected from the Relevant Competent Authority (RCA) or calculated by FITRS for every ISIN available for trading on EEA30 platforms, i.e. calculated at the single share level. The use of instrument-level market capitalisation for the classification of SMEs is likely to lead to mis-categorisation issues, as it does not represent the actual size of the company issuing that share. For example, there are instances where a large company (with a market capitalisation above EUR 200mn) issues a share at low price for small outstanding amounts (hence the market capitalisation linked to the ISIN will be below EUR 200mn). This can result in issuers classified as SMEs, while their size exceeds the threshold of EUR 200mn.

To overcome this issue, it is essential to stick to the basic definition of market capitalization, i.e. the total market value in EUR of a company's outstanding stock of shares, calculated as the product between the total number of a company's outstanding shares and the market price of one share. In this respect, in order to retrieve the actual size of an issuer, it is necessary to aggregate the ISIN market capitalisation by issuer or LEI.

Another issue for the classification of SMEs relates to some instruments reported in FIRDS that were still using the LEI of the trading venue (TV) instead of the issuer LEI. This may cause either a misclassification of the size of the company or a wrong categorisation of the country of issuance for non-EEA30 shares. This has however a limited impact for the analysis in this article. Nevertheless, all ISINs with a TV LEI are excluded from the sample in 2020: they accounted for 0.77% of total share market capitalisation, and for 0.07% of total trading volumes in shares in 2020.

This article classifies share issuers as follows:

- Small: market capitalisation below EUR 20mn;
- Medium: market capitalisation between EUR 20mn and EUR 200mn;

<sup>57</sup> For more detailed information on specific provisions creating tailored requirements and incentives for SME issuers trading on SME GMs (MAR, Prospectus Regulation, CSDR) see: [MiFID II review report on the functioning of the regime for SME Growth Markets](#)

<sup>58</sup> See Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises

<sup>59</sup> Further, Article 77 specifies that, for issuers that have no equity instruments traded on any trading venue to qualify as SME issuers, the nominal value of debt issuances over the previous calendar year, on all trading venues across the Union, shall not exceed EUR 50mn.



- Large: market capitalisation above EUR 200mn.

### Identification of GMs

Following the entry into force of MiFID II, ESMA publishes a register of all EEA30 RMs, MTFs and SIs on its website.<sup>60</sup> Among the 141 active MTFs, 18 were authorised to operate as SME GMs at the end of 2020. These market segments are detected through the segment MIC code of the MTF, and are labelled according to their status in the database itself (as GM if the MTF is as such, while as non-GM otherwise).<sup>61</sup>

## SMEs account for 3% of trading in shares

The classification of SMEs through MiFID II data enables to construct statistics that highlight the development and trends of SME shares available for trading both in the EEA30 as a whole, and on SME GMs.

### Characteristics of SME shares available for trading

In 2020, access to EEA30 equity secondary market has improved with respect to the previous years for SMEs, but it remained limited compared to the overall trading landscape. There were 1,500 new SME shares admitted to trading for the first time on EEA30 trading platforms in 2020.

In 2020, 4,650 SME shares were available for trading on EEA30 TVs and SIs from around 3,900 EEA30 SMEs, and 4,860 shares from 4,540 non-EEA30 SME issuers.<sup>62</sup> The total market capitalisation of these companies amounted to EUR 146bn for EEA30 and to EUR 223bn for non-EEA30 issuers. Around 37% (3,100) of SMEs are concentrated within a market capitalisation range of EUR 1mn to EUR 10mn, highlighting a significant presence of small businesses attempting to use the capital markets as an alternative mean to raise funds.

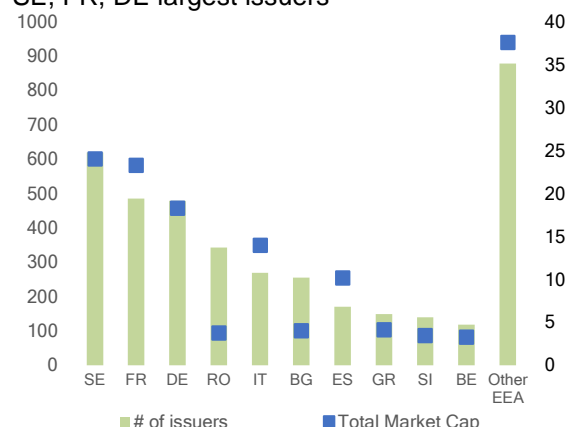
The SME shares available for trading in 2020 were evenly split across sectors, with a slight dominance of consumer (17% of instruments) and basic materials shares (14%). However, the industrial sector dominated the SME trading

landscape in terms of turnover volumes (EUR 73bn or 34% of SME trading volumes), followed by the basic materials (EUR 66bn) and the healthcare sector (EUR 22bn).

Focusing on EEA30 enterprises exclusively, the largest number of issuers was domiciled in Sweden, with 620 issuers for a total market capitalisation of EUR 24bn. SME shares were also largely issued from companies domiciled in France and Germany with 485 and 478 issuers respectively (with a total market capitalisation of EUR 23bn and EUR 18bn).

#### ASR-MiFID.39

Number of issuers and market cap by EEA30 domicile SE, FR, DE largest issuers



Note: Number of EEA SME issuers and total market capitalisation (rhs, in bn) by entity domicile in 2020.  
Sources: FIRDS, FITRS, ESMA.

In general, the key challenge for publicly traded SME stocks is secondary market liquidity, hampering the ability of early-stage investors to realise their investment through normal exit.<sup>63</sup> This is confirmed by low trading occurrences on secondary markets: only 51% of the small shares available for trading were traded at least once a month in 2020 (vs. 70% for medium), while 85% of the small shares were traded at least once in 2020 (vs. 93% for medium).

### Trading in SME shares

Although their shares account for only about 2% (or EUR 210bn) of total trading volumes of equity instruments in 2020, trading in SME shares has seen slight improvements, with doubling volumes since the entry into force of the directive. Furthermore, SME trading is skewed towards EEA30 instruments, with EEA30 SME shares

<sup>60</sup> See the Securities Markets section in this report for further details.

<sup>61</sup> Alternatively, if the full MTF registers as an SME GM the operating MIC can be used. Both an MTF and an MTF segments can register as SME GMs.

<sup>62</sup> Issuers are identified through LEI code, while shares available for trading through the ISIN code of the instrument.

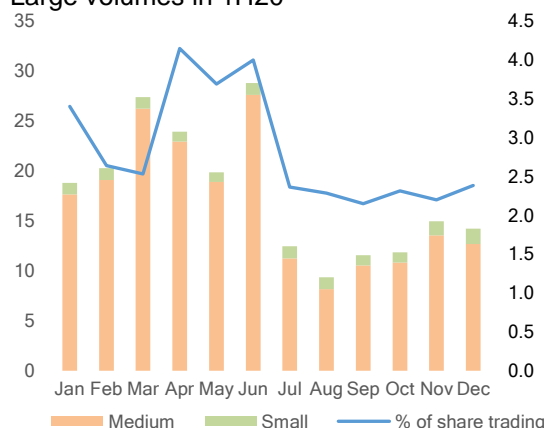
<sup>63</sup> See Wehinger, Gert & Nassr, Iota. (2015). Opportunities and limitations of public equity markets for SMEs. OECD Journal: Financial Market Trends.

amounting to EUR 198bn or 92% of SME volumes in 2020, compared to EUR 16bn for non-EEA30 SME shares.

In line with the overall equity trend, SME trading volumes also spiked during the most acute phase of the COVID-19 pandemic. Trading volumes peaked in March (EUR 27bn) and June (EUR 18bn), while remaining above average in the months in between. More than 90% of trading volumes are concentrated around the exchange of medium-sized companies' stocks, which in theory, should offer more stability than smaller shares to investors.

#### ASR-MiFID.40

Monthly trading volumes in SME shares  
Large volumes in 1H20



Note: Monthly trading volumes of SME shares domiciled in the EEA in 2020, EUR bn (lhs) and % of total trading in shares (rhs).  
Sources: FIRDS, FITRS, ESMA.

Almost all SME shares were available for trading on MTFs (9,000) compared to only 1,980 also available on RMs. Nevertheless, RMs represented the main venue for trading in this type of shares (volumes of EUR 133bn or 62% of the total), while trading volumes on MTFs accounted for only 23% of the total. Around 3,000 SME shares were also traded OTC, but they only accounted for slightly less than 5% of total trading volumes (EUR 10bn).

The average trade size for SME shares was very low (EUR 1,200 for small and EUR 3,300 for medium shares), pointing towards limited trading in such instruments. By market type, SME shares were traded on average in larger amounts OTC (EUR 40,500) than on-exchange, with particularly low average trade sizes (EUR 1,700 on MTFs and EUR 3,800 on RMs).

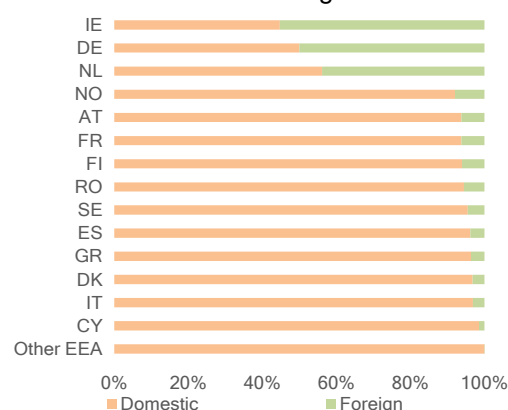
The largest secondary market for EEA30 SME shares in terms of market capitalisation was Germany. In 2020, 5,206 SMEs (issuing 5,500 shares) were listed on German TVs and SIs, with

a market capitalisation above EUR 220bn. Ireland is the second most important market by total market capitalisation (almost EUR 50bn from 7,500 shares), followed by France (EUR 11bn from 1,340 shares). Trading activity is also highest in Germany, with EUR 137bn in total SME trading volumes in 2020 (64% of trading), followed by France and Sweden with almost EUR 20bn traded volumes on their respective infrastructures.

There is a strong **home bias** observable across Member States for trading EEA30 SME shares. In order to measure the amount of 'at-home' trading, we define 'Domestic' trading volumes as the volumes of SMEs share trading where the TV and the issuer domiciles are the same.

#### ASR-MiFID.41

Share of domestic trading in SME shares  
Prevalence of domestic trading



Note: Share of domestic and foreign trading in SME shares on EEA trading venues. 'Domestic' accounts for trading in SME shares domiciled in the same country as the trading venue, 'Foreign' otherwise.  
Sources: FIRDS, FITRS, ESMA.

Based on this definition, the amount of foreign trading in SME shares is only marginal. It averages to 2% in almost all Member States, except for Germany and Netherlands, which represent the largest EEA30 equity markets, and Ireland which is a hub for both for SME trading and for foreign investors.<sup>64</sup> An interesting case is Sweden, where the home bias seems to be very strong (95% of domestic trading) considered the size of its SME markets both in terms of number of issuers and amount transactions executed on Swedish TVs.

This tendency to trade SME shares on domestic markets also corroborate the low fragmentation of SME shares (0.42) presented earlier in this report.

<sup>64</sup> See network chart in equity markets section.



## Trading on GMs

Focusing on alternative markets, a total of 1,102 SMEs had shares available for trading on GMs, issuing 1,638 shares. Out of these, 710 were admitted to trading for the first time in 2020 in one or more MICs enjoying this status. The majority of these instruments was newly admitted on the two new MTFs GMs domiciled in Sweden (503) and Spain (105), that were authorised in the second half of 2020.

Notably, not all companies listed on GMs are necessarily SMEs, and not all SMEs (based on our definition of market capitalisation) are listed on alternative markets. In this respect, SME issuers accounted for 33% of the total market capitalisation of shares available for trading on all GMs in the EEA30 (EUR 39bn out of a total of EUR 118bn).<sup>65</sup>

When considering the distribution of SME market capitalisation by GM domicile, Sweden tops the other Member States with a total of EUR 16bn (vs. EUR 9bn in France, and EUR 5bn in Spain and Italy respectively). However, this amount is small if compared to the total market capitalisation on alternative markets in Sweden (EUR 57bn). On the contrary, among the largest markets, Italy and Denmark appeared to offer a prevalence of SME shares, as the market capitalisation of smaller businesses represented respectively 63% and 84% of the total in such alternative markets.

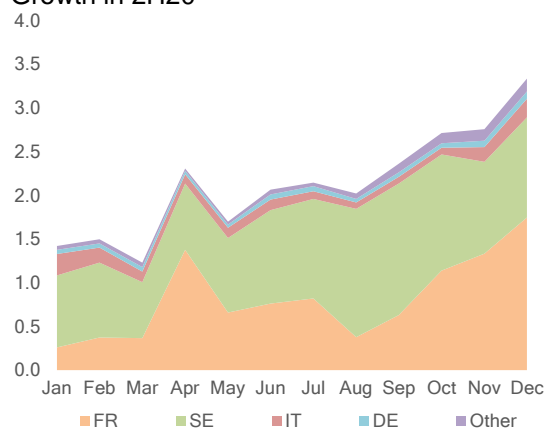
Total trading volumes on these venues amounted to a total EUR 25bn in 2020, accounting for slightly less than 40% of total SME trading on MTFs and 12% of total trading in SMEs.<sup>66</sup>

Trading activity on GMs has seen exceptional growth since the beginning of 2019 and throughout 2020 (from EUR 1.4bn in January to EUR 3.3bn in December), driven both by the increased number of platforms and the larger number of SME instruments available for trading on these segments.

ASR-MiFID.42

Monthly SME volumes on SME GMs

Growth in 2H20



Note: Monthly trading volumes of SME shares on SME Growth Markets, in EUR billion.  
Sources: FIRDs, FITRS, ESMA.

In 2020, consistently with the overall market in SMEs, the largest SME GMs were domiciled in Sweden and France, with annual trading volumes of EUR 12.6bn and EUR 9.8bn respectively. On top of these, Italy is another relevant GM in the EEA30, with almost EUR 2bn in total turnover volumes.

## Conclusion

The intention of this article is to put forward the methodology used for the identification of SMEs and SME GMs and to shed light on the characteristics of SMEs available for trading in the EEA30. These statistics bring out some important features of the SME trading landscape in the EEA30, relevant to understand the improvements and gaps in SME access to equity markets. Compared to total trading in shares, the size of SME secondary markets is still limited at 3% but has improved since the beginning of 2018. Despite its growth, there was still some heterogeneity across countries, with Germany, Sweden and France dominating both in terms of trading volumes and market capitalisation.

On top of this, GMs have seen an important growth over 2020 and could represent a feasible avenue for SMEs willing to raise funds through equity markets. Nevertheless, they still account for less than 15% of total SME trading.

In order to comprehensively assess whether access to EEA30 trading platforms, especially

<sup>65</sup> This amount (EUR 118bn) is the result of the sum of the market capitalisation of large, medium and small sized companies available for trading on GMs in 2020.

<sup>66</sup> MTFs or MTF segments can be registered as an SME growth market, provided that at least 50% of the issuers with shares available for trading on the relevant exchange

have a market capitalisation of less than EUR 200mn. The full set of conditions to be met is included in MiFID II Art. 33.

GMs, is to some extent beneficial to SMEs, a possible extension of this analysis can consist in examining some key performance indicators of such companies using external sources.

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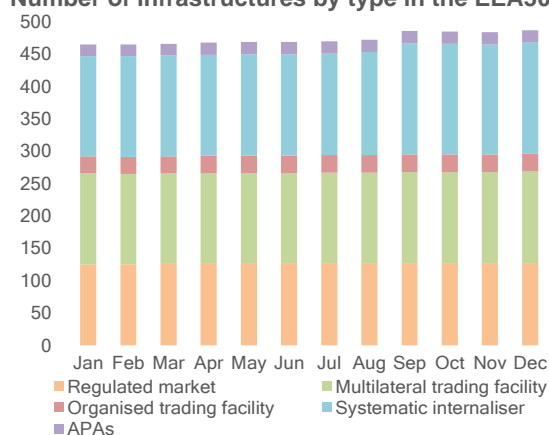
# Statistics

# Securities markets

## Securities markets overview<sup>67</sup>

### ASR-MiFID-S.1

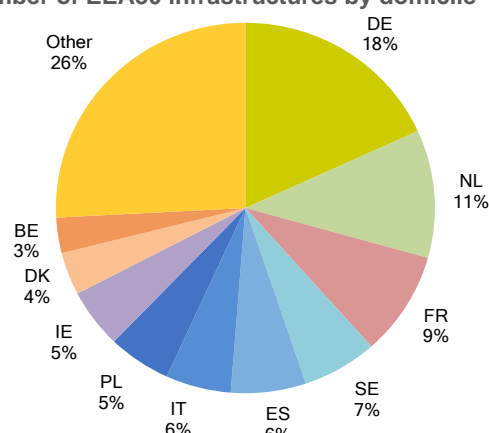
#### Number of infrastructures by type in the EEA30



Note: Number of EEA infrastructure in 2020 by type.  
Sources: ESMA registers.

### ASR-MiFID-S.2

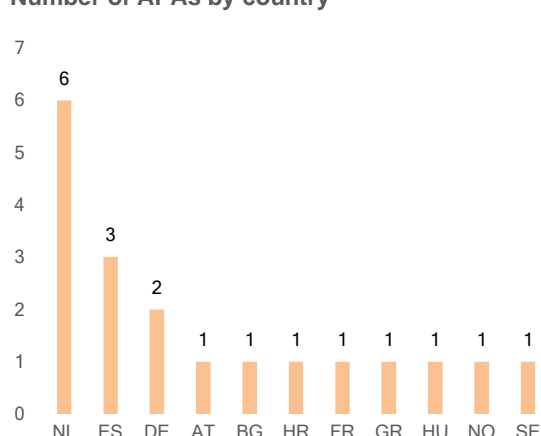
#### Number of EEA30 infrastructures by domicile



Note: Share of EEA infrastructures in 2020 by country domicile.  
Sources: ESMA registers.

### ASR-MiFID-S.3

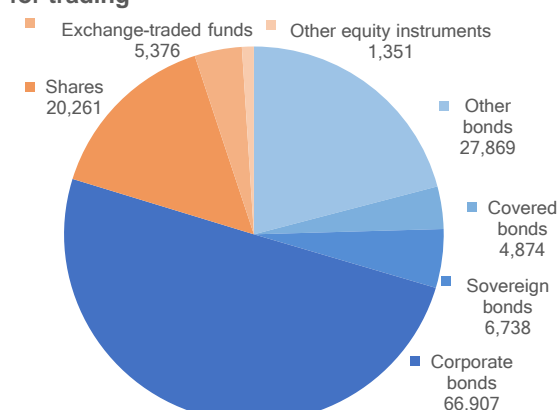
#### Number of APAs by country



Note: Number of EEA APAs in 2020 by country.  
Sources: ESMA registers.

### ASR-MiFID-S.4

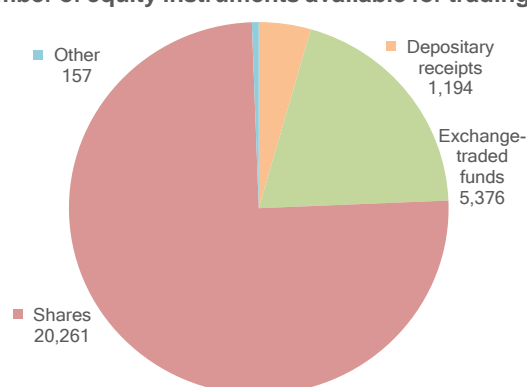
#### Number of bond and equity instrument available for trading



Note: Total number of bond instruments and equity instruments available for trading in 2020. Other bonds include convertible bonds and other public bonds. Other equity instruments include depositary receipts.  
Sources: FIRDS, FITRS, ESMA.

### ASR-MiFID-S.5

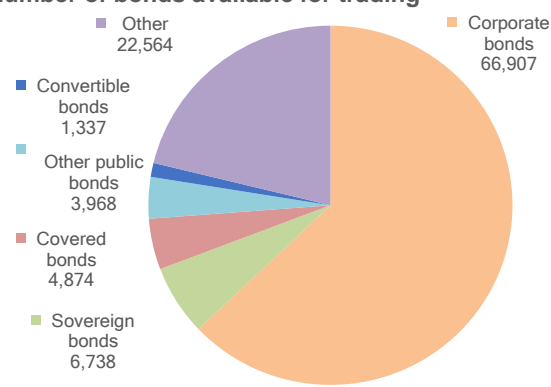
#### Number of equity instruments available for trading



Note: Total number of equity and equity-like instruments available for trading in EEA in 2020.  
Sources: FIRDS, FITRS, ESMA.

### ASR-MiFID-S.6

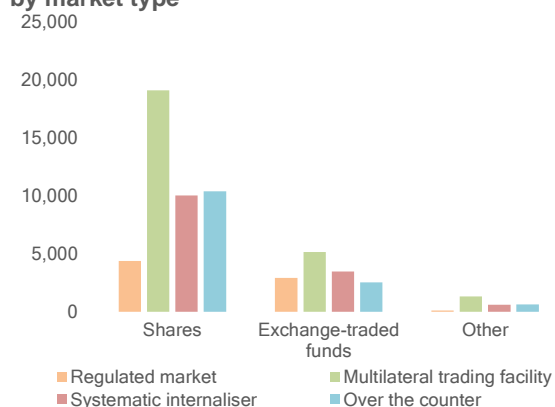
#### Number of bonds available for trading



Note: Total number of bonds available for trading in EEA in 2020.  
Sources: FIRDS, FITRS, ESMA.

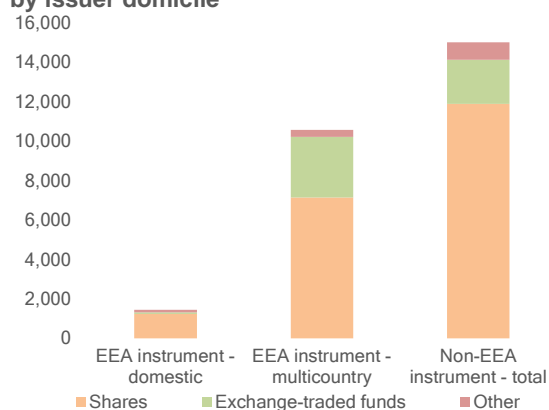
<sup>67</sup> In all the charts, when EEA is mentioned the perimeter is EEA30; when EEA + UK is presented the perimeter is EEA31.

## ASR-MiFID-S.7

**Number of equity instruments available for trading by market type**

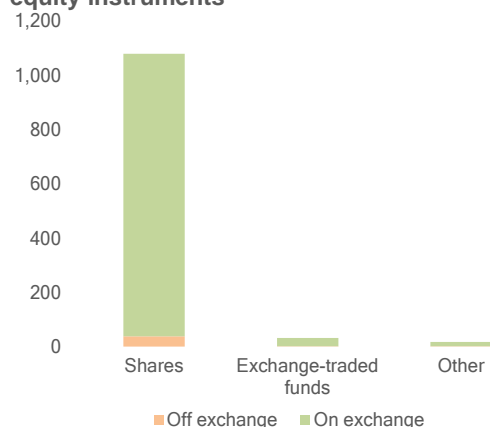
Note: Number of equity and equity-like instruments available for trading in 2020, by market type and instrument. Instruments may be available for trading on more than one market type.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.9

**Number of equity instruments available for trading by issuer domicile**

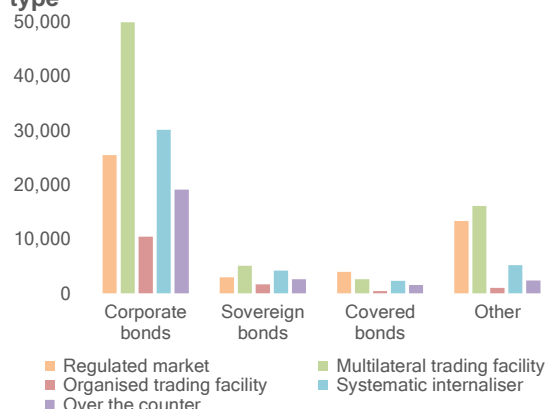
Note: Number of equity and equity-like instruments available for trading domestically and cross-border (by comparing issuer country and trading venue domicile) in 2020.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.11

**Number of transactions on- and off-exchange in equity instruments**

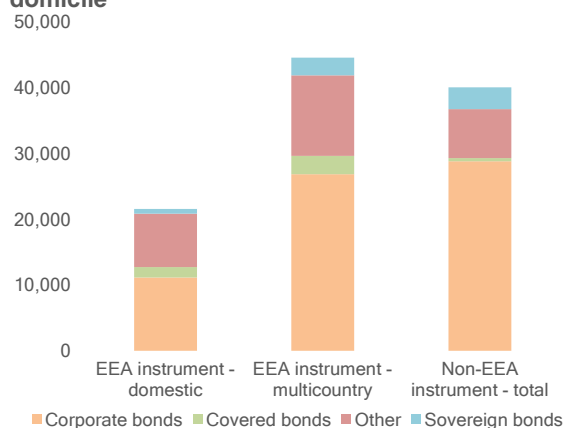
Note: Number of transactions on and off exchange in equity and equity-like instruments in 2020 by instrument type, in million.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.8

**Number of bonds available for trading by market type**

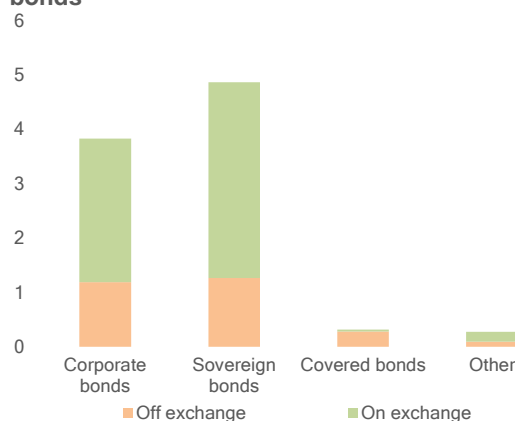
Note: Number of bonds available for trading in 2020, by market type and instrument. Instruments may be available for trading on more than one market type.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.10

**Number of bonds available for trading by issuer domicile**

Note: Number of bonds available for trading domestically and cross-border (by comparing issuer country and trading venue domicile) in 2020.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.12

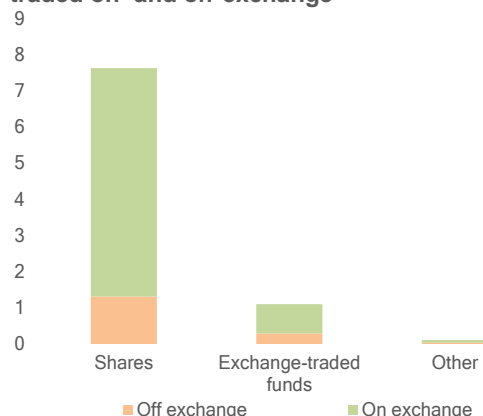
**Number of transactions on- and off-exchange in bonds**

Note: Number of transactions on and off exchange in bonds in 2020 by instruments type, in million. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA.



## ASR-MiFID-S.13

## Annual trading volumes of equity instruments traded on- and off-exchange

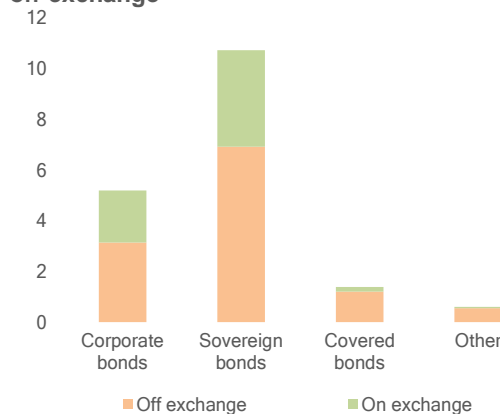


Note: Annual trading volumes of equity and equity-like instruments traded on and off exchange (including through systematic internalisers) in 2020, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.14

## Annual trading volumes of bonds traded on- and off-exchange

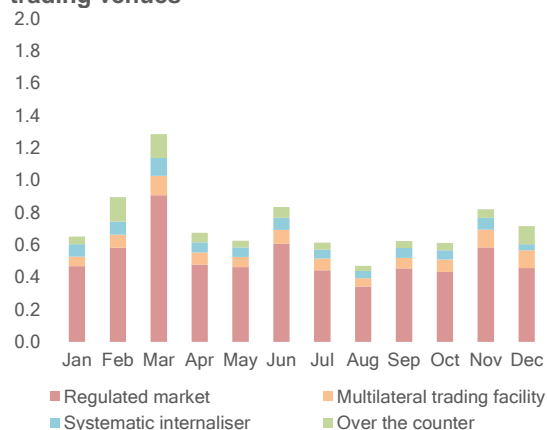


Note: Annual trading volumes of bonds traded on and off exchange (including through systematic internalisers) in 2020, EUR trillion. "Other" includes convertible bonds and other public bonds.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.15

## Monthly trading volumes of equity instruments by trading venues

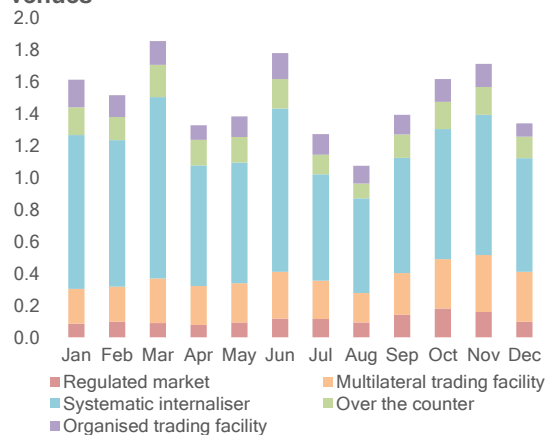


Note: Monthly trading volumes of equity and equity-like instruments in 2020 by trading venues, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.16

## Monthly trading volumes of bonds by trading venues



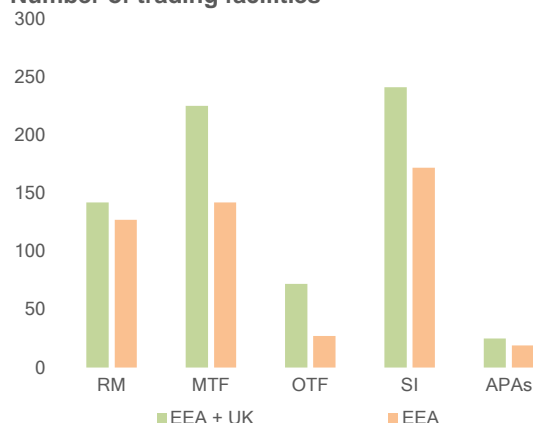
Note: Monthly trading volumes of bonds in 2020 by trading venues, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## Impact of UK withdrawal

## ASR-MiFID-S.17

## Number of trading facilities

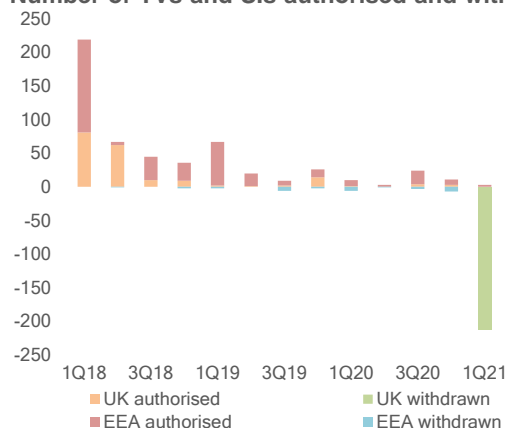


Note: Number of trading facilities in 2020 by market type.

Sources: ESMA registers.

## ASR-MiFID-S.18

## Number of TVs and SIs authorised and withdrawn

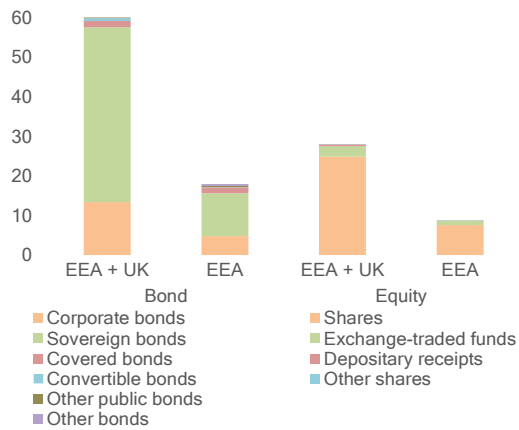


Note: Number of trading venues registered and withdrawn and SIs notifications in ESMA registers from 2018 to the second quarter of 2021.

Sources: ESMA registers.

## ASR-MiFID-S.19

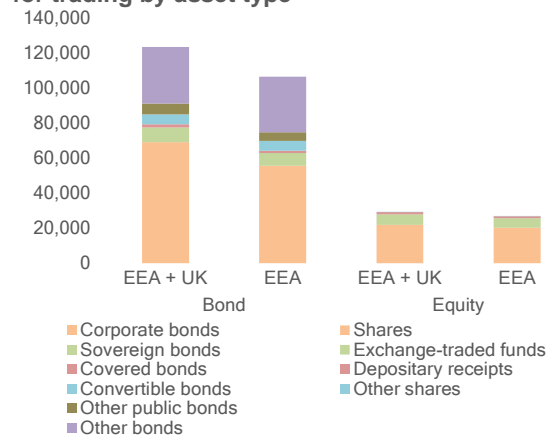
## Annual trading volume by asset type



Note: Annual trading volumes of EEA and EEA + UK in 2020 by asset type, in EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.20

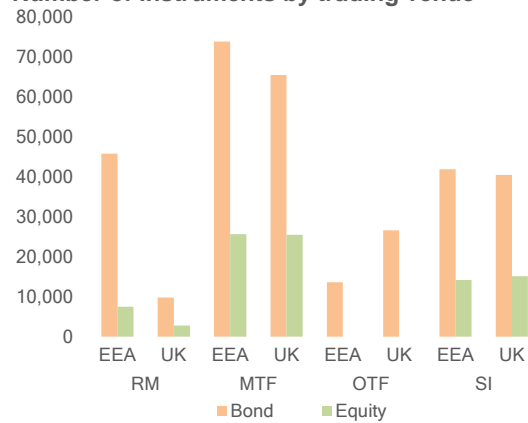
## Number of equity and bond instruments available for trading by asset type



Note: Number of equity, equity-like and bond instruments available for trading in EEA and EEA + UK in 2020 by asset type.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.21

## Number of instruments by trading venue



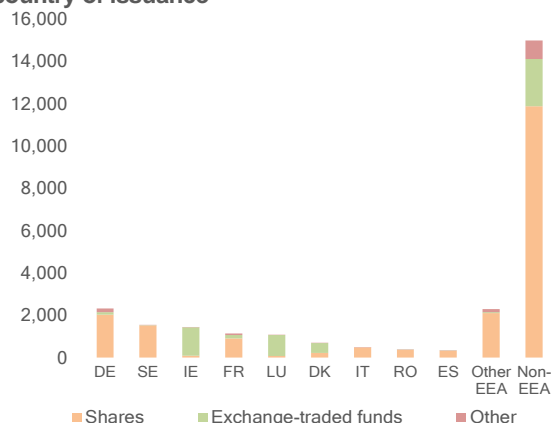
Note: Number of instruments available for trading in 2020 by market type, instrument type and trading venue domicile.  
Sources: FIRDS, FITRS, ESMA.

# Equity markets

## Instruments

ASR-MiFID-S.22

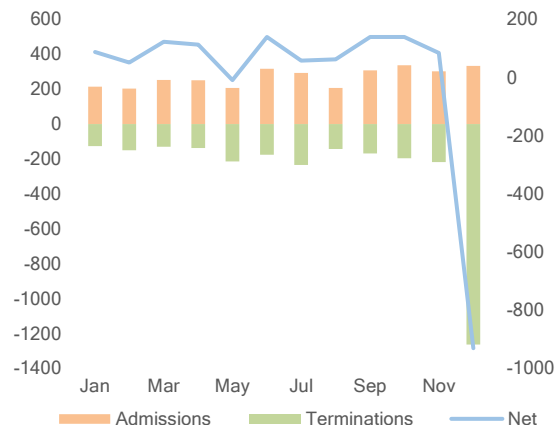
**Number of instruments by instrument type and country of issuance**



Note: Number of equity and equity-like instruments by instrument type and country of issuance.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.23

**Number of instruments admitted and terminated**



Note: Number of equity and equity-like instruments admitted to trading and terminated on EEA trading venues in 2020, and net value, by month.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.24

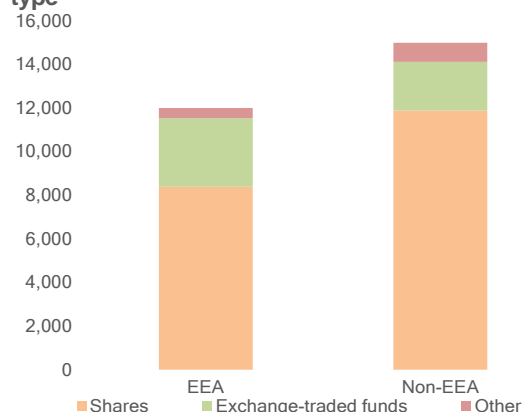
**Number of issuers (LEI) by instrument type and domicile**



Note: Number of issuers (unique LEIs) of equity and equity-like instruments available for trading in 2020. Multi-issuer indicates entities that have issued more than one instrument type.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.25

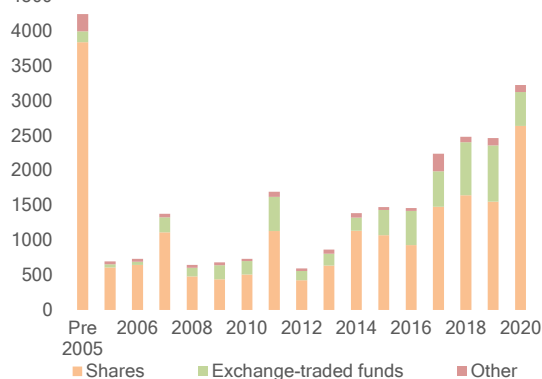
**Number of instruments by issuer and instrument type**



Note: Number of equity and equity-like instruments available for trading in 2020, by issuer origin and instrument type. "Other" includes depository receipts and certificates.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.26

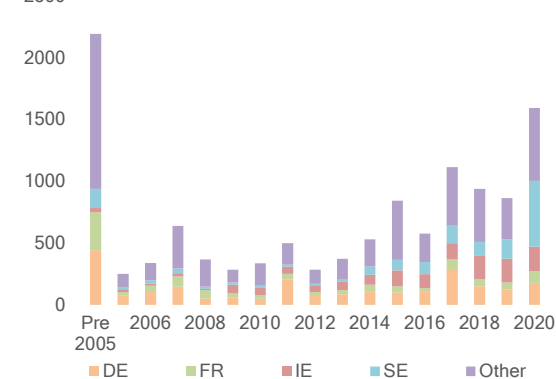
**Number of instruments by start year and type**



Note: Number of equity and equity-like instruments available for trading in 2020, by ISIN trading start year (including new ISINs issued for previously existing instruments, stock splits, etc.).  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.27

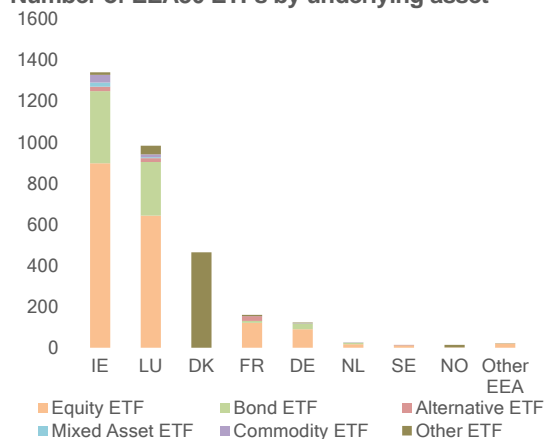
**Number of EEA30 instruments by issuer domicile**



Note: Number of equity and equity-like EEA30 instruments available for trading in 2020 in the EEA, by ISIN trading start year and issuer domicile (including new ISINs issued for previously existing instruments, stock splits, etc.).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.28

## Number of EEA30 ETFs by underlying asset



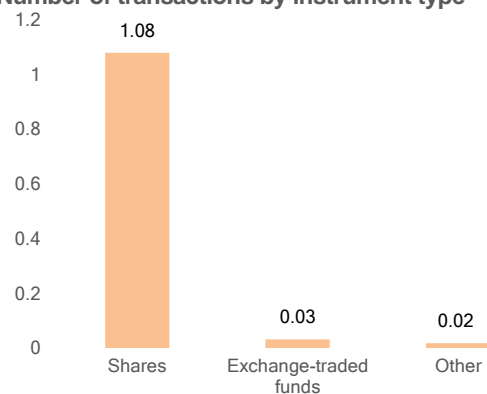
Note: Number of EEA ETFs by underlying asset in 2020.

Sources: FIRDS, FITRS, Refinitiv Eikon, ESMA.

## Trading activity by instrument type

## ASR-MiFID-S.29

## Number of transactions by instrument type

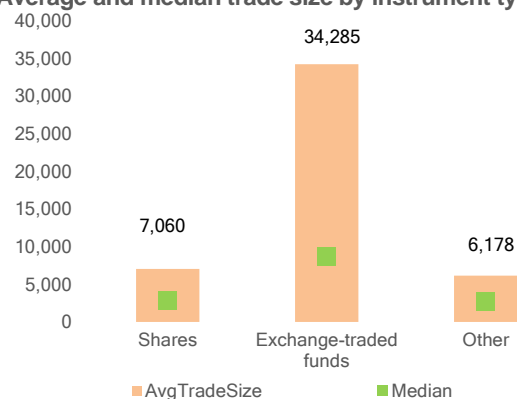


Note: Number of transactions in equity and equity-like instruments in 2020 by instrument type, in bn. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.31

## Average and median trade size by instrument type

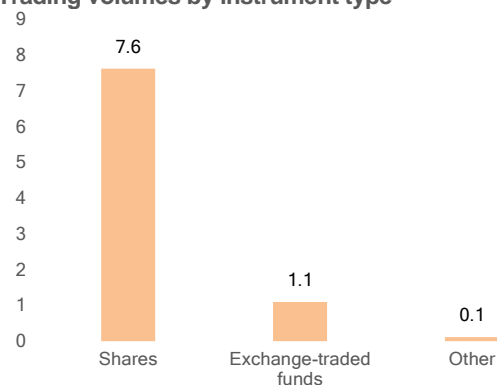


Note: Average trade size and median transaction size of equity and equity-like instruments in 2020 by instrument type, EUR. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.30

## Trading volumes by instrument type

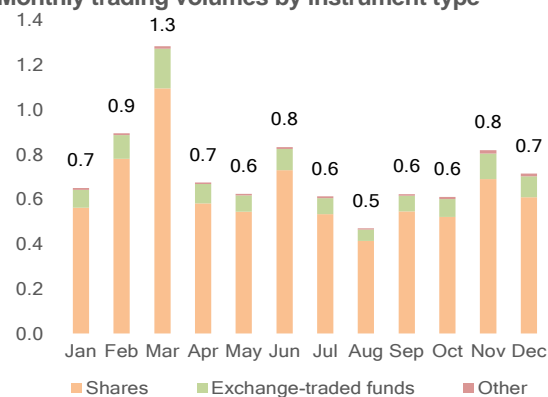


Note: Annual trading volumes of equity and equity-like instruments in 2020 by instrument type, EUR trillion. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.32

## Monthly trading volumes by instrument type

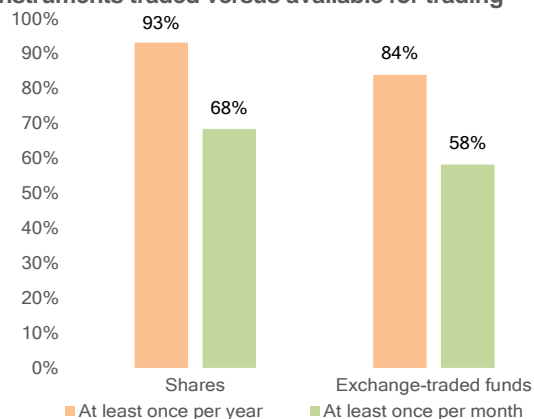


Note: Monthly trading volumes of equity and equity-like instruments in 2020, by instrument type, EUR trillion. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.33

## Instruments traded versus available for trading

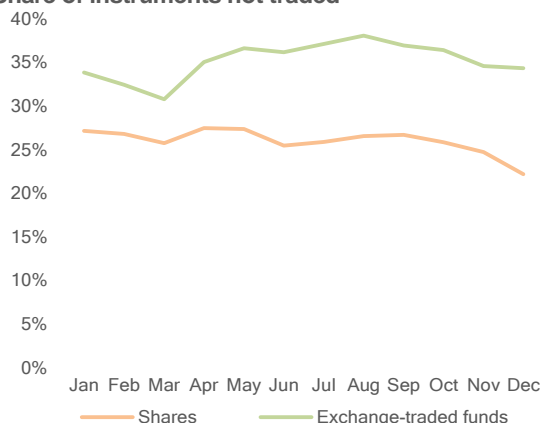


Note: Share of equity and equity-like instruments traded at least once per month and once per year in 2020 by instrument type, as % of instrument type.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.34

## Share of instruments not traded

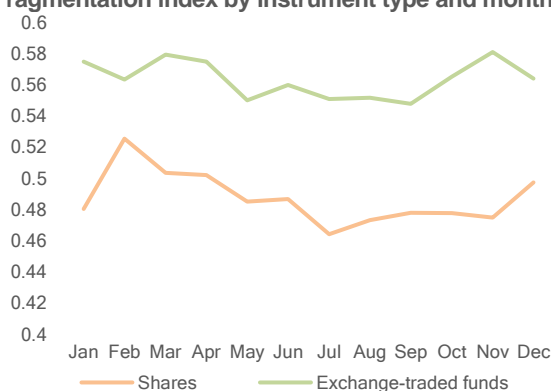


Note: Share of non-traded shares and exchange-traded funds in 2020 by month, in % of all instruments available for trading.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.35

## Fragmentation index by instrument type and month



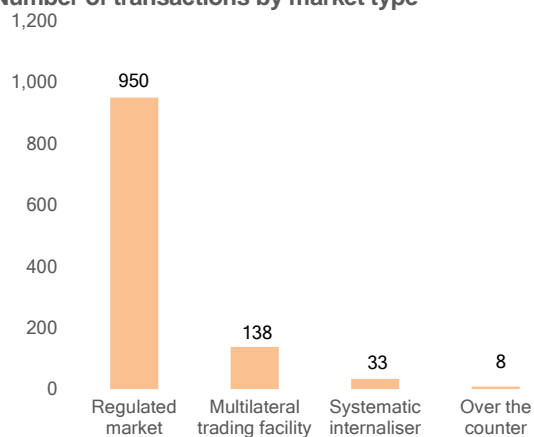
Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by instrument type. Index calculated as (1-HHI) and ranging from 0 (monopoly) to 1 (maximum fragmentation).

Sources: FIRDS, FITRS, ESMA.

## Trading venues

## ASR-MiFID-S.36

## Number of transactions by market type

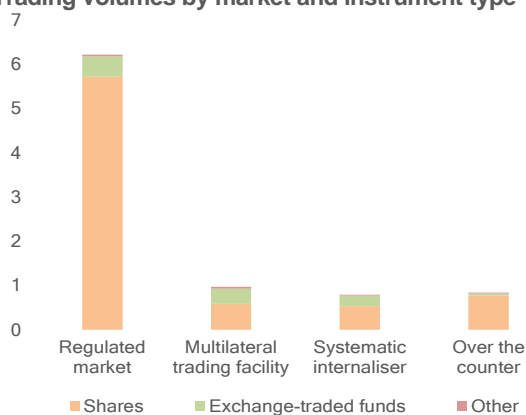


Note: Number of transactions in equity and equity-like instruments in 2020 by market type, in million. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.37

## Trading volumes by market and instrument type



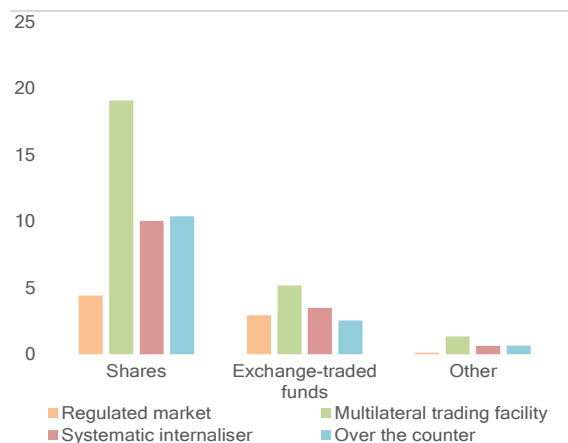
Note: Annual trading volumes of equity and equity-like instruments in 2020 by market and instrument type, EUR trillion. "Other" includes depository receipts and certificates.

Sources: FIRDS, FITRS, ESMA.



## ASR-MiFID-S.38

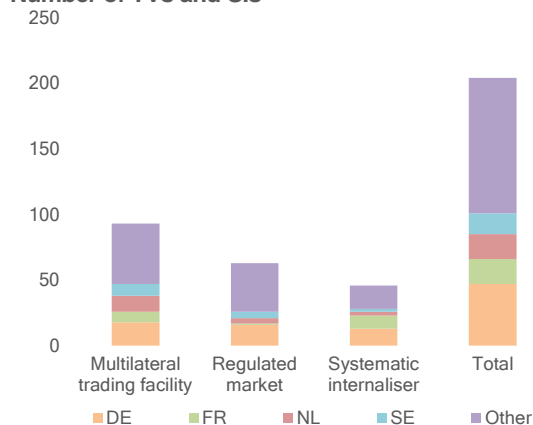
## Number of instruments by instrument and market type



Note: Number of equity and equity-like instruments available for trading in 2020 by market type, in thousands.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.40

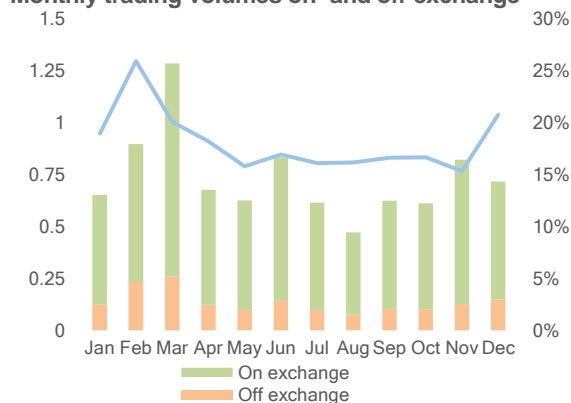
## Number of TVs and SIs



Note: Number of EEA entities on which equity and equity-like instruments are available for trading in 2020, by market type and domicile.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.42

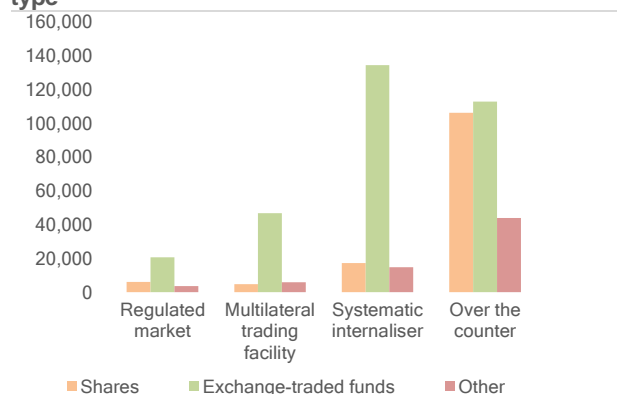
## Monthly trading volumes on- and off-exchange



Note: Monthly trading volumes of equity and equity-like instruments traded on and off exchange (including through systematic internalisers) in 2020, EUR trillion (lhs) and share of off-exchange trading volumes (rhs).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.39

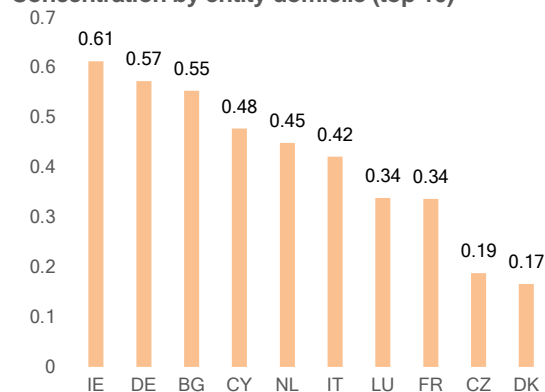
## Average trade size of shares by instrument and market type



Note: Average trade size of equity and equity-like instruments in 2020 by instrument and market type, EUR. "Other" includes depository receipts and certificates.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.41

## Concentration by entity domicile (top 10)

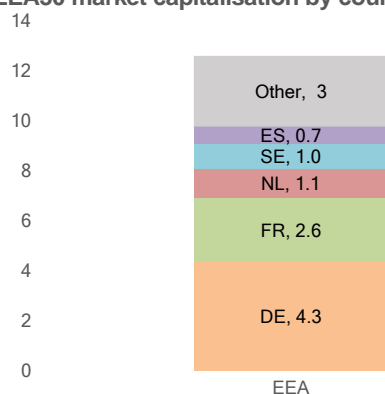


Note: Fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by entity domicile (top 10). Index calculated as  $(1 - HHI)$  and ranging from 0 (monopoly) to 1 (maximum fragmentation).  
Sources: FIRDS, FITRS, ESMA.

## Market capitalisation

ASR-MiFID-S.43

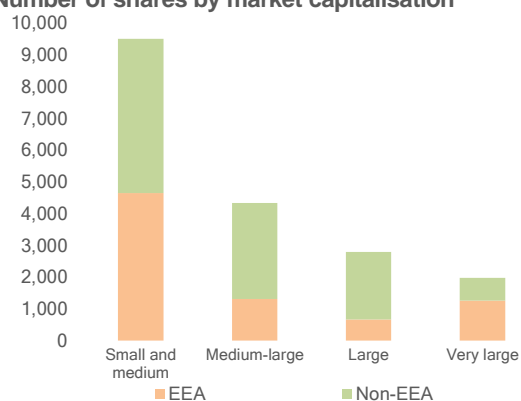
### EEA30 market capitalisation by country



Note: Sum of 2020 EEA market capitalisation by issuer domicile, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.45

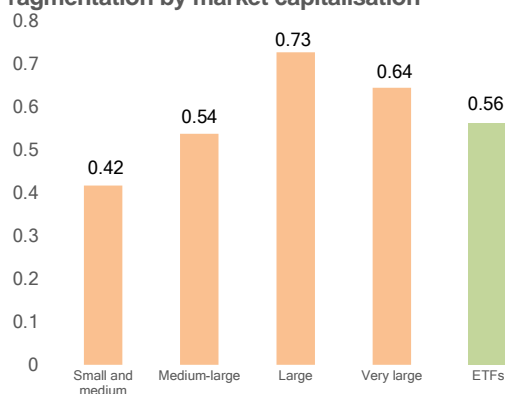
### Number of shares by market capitalisation



Note: Number of shares available for trading by market capitalisation and market type in 2020. "Small and medium" = 0 to 200 million, "Medium large" = 200 million to 2 billion, "Large" = 2 billion to 20 billion, "Very large" = more than 20 billion.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.44

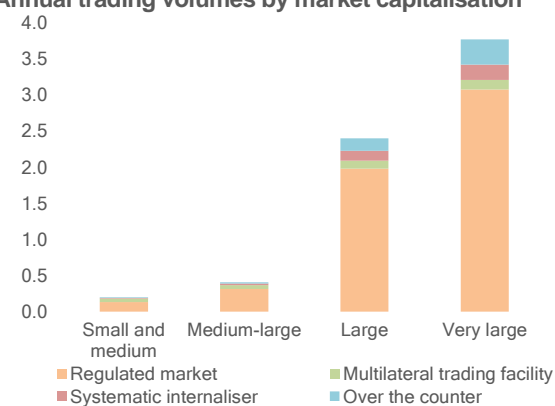
### Fragmentation by market capitalisation



Note: Fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by market capitalisation. Index calculated as (1-HHI) and ranging from 0 (monopoly) to 1 (maximum fragmentation).  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.46

### Annual trading volumes by market capitalisation

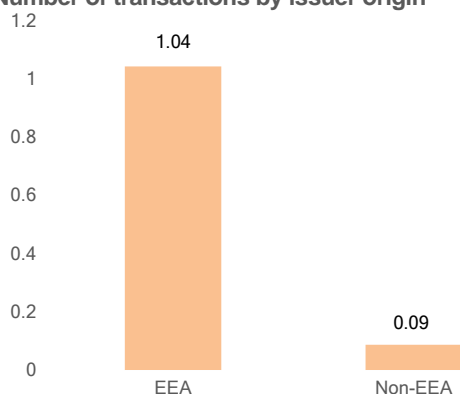


Note: Annual trading volumes of EEA shares by market capitalisation in 2020, EUR trillion. "Small and medium" = 0 to 200 million, "Medium-large" = 200 million to 2 billion, "Large" = 2 billion to 20 billion, "Very Large" = more than 20 billion.  
Sources: FIRDS, FITRS, ESMA.

## International activity

ASR-MiFID-S.47

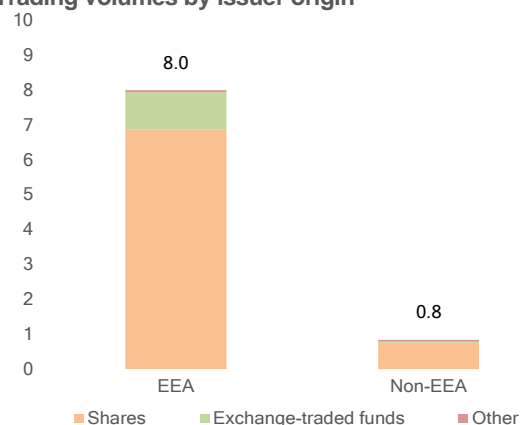
### Number of transactions by issuer origin



Note: Annual number of transactions of equity and equity-like instruments in 2020 by issuer origin, EUR thousands.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.48

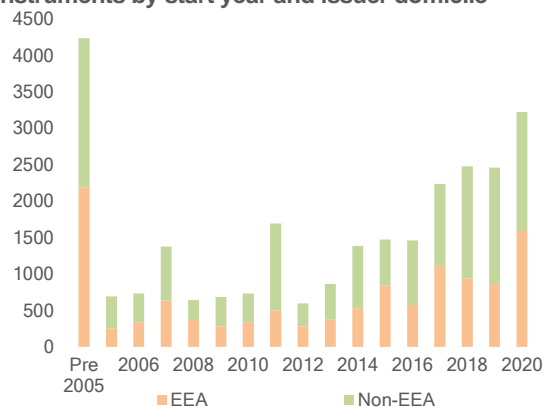
### Trading volumes by issuer origin



Note: Annual trading volumes of equity and equity-like instruments in 2020, by instrument type and issuer domicile.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.49

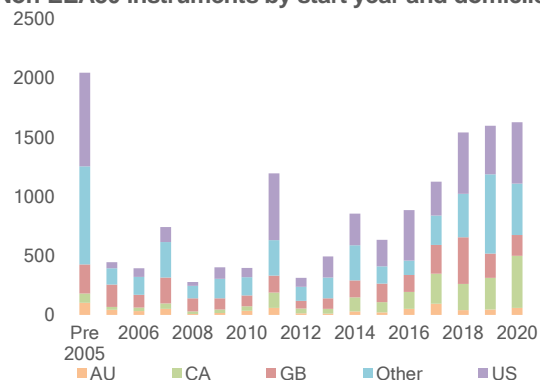
## Instruments by start year and issuer domicile



Note: Number of equity and equity-like instruments available for trading in 2020 in the EEA, by ISIN trading start year and issuer domicile (including new ISINs issued for previously existing instruments, stock splits, etc.).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.50

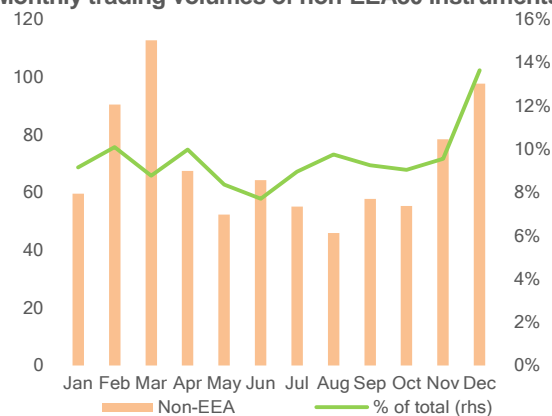
## Non-EEA30 instruments by start year and domicile



Note: Number of equity and equity-like non-EEA instruments available for trading in 2020 in the EEA, by ISIN trading start year and issuer domicile (including new ISINs issued for previously existing instruments, stock splits, etc.).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.51

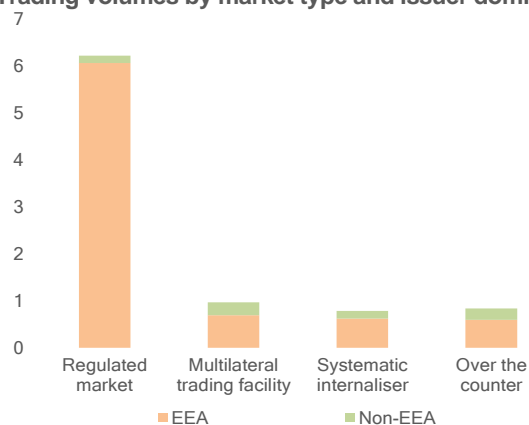
## Monthly trading volumes of non-EEA30 instruments



Note: Monthly trading volumes of non-EEA equity and equity-like instruments in 2020 by month, EUR billion (lhs), and share of total trading in equity and equity-like instruments (rhs).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.52

## Trading volumes by market type and issuer domicile

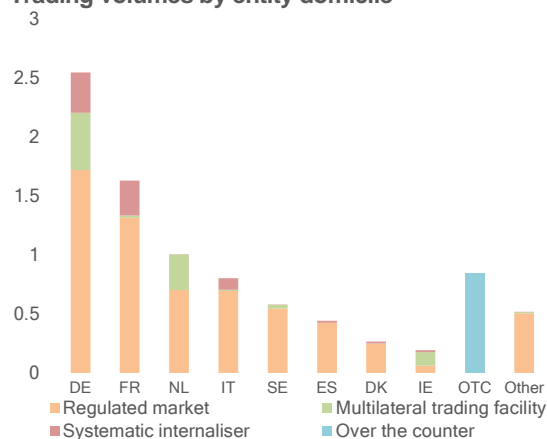


Note: Annual trading volumes of equity and equity-like instruments in 2020, by issuer domicile, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## Fragmentation and cross-border trading

## ASR-MiFID-S.53

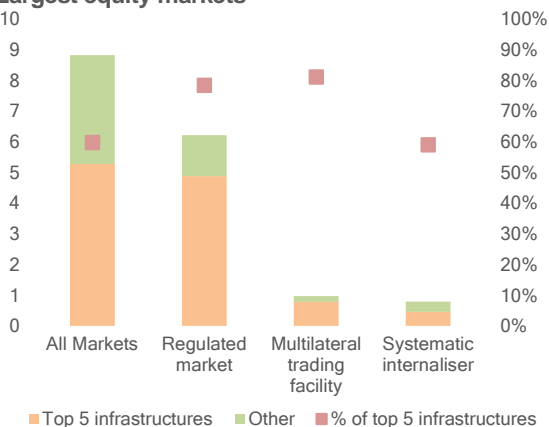
## Trading volumes by entity domicile



Note: Annual trading volumes in equity and equity-like instruments in 2020 by market type and entity domicile, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

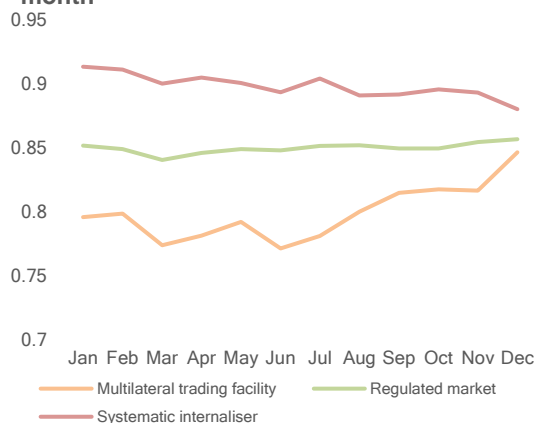
## ASR-MiFID-S.54

## Largest equity markets



Note: Equity trading volumes in top 5 operating MICs by market type, in EUR trillion (lhs) and share of the total, in % (rhs).  
Sources: FIRDS, FITRS, ESMA.

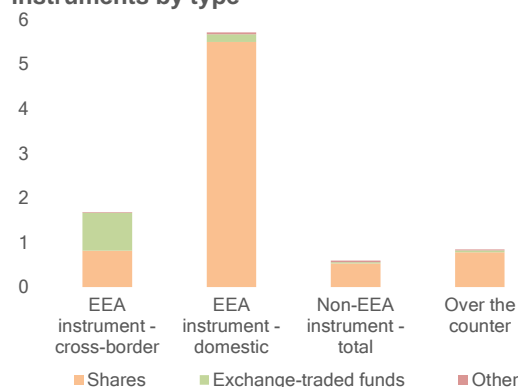
## ASR-MiFID-S.55

**Fragmentation indicator by market type and month**

Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by market type. Index calculated as (1-HHI) and ranging from 0 (monopoly) to 1 (maximum fragmentation).

Sources: FIRDS, FITRS, ESMA.

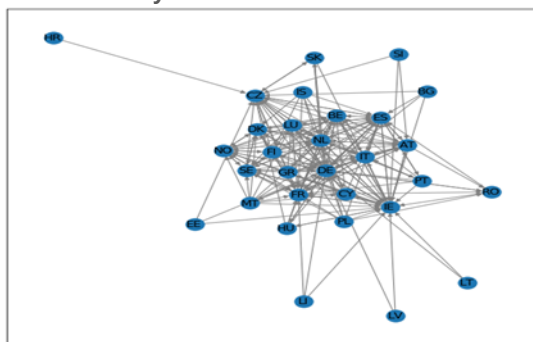
## ASR-MiFID-S.56

**Volumes of cross-border vs. domestically traded instruments by type**

Note: Trading volumes in equity and equity-like instruments available for trading only domestically or cross-border within the EEA (by comparing issuer country and trading venue domicile) in 2020, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.57

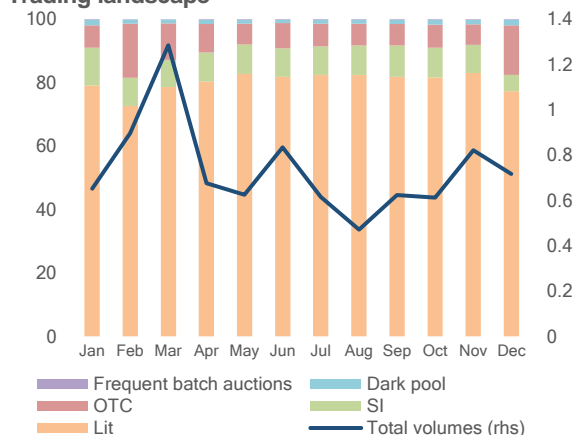
**Network map: share trading activity by TV and issuer country**

Note: Force-directed network of cross-border trading volumes in EEA shares, by TV and issuer domicile. The connections (grey lines) represent cross-border trading volumes. The node at the origin of each grey line represents the issuer domicile, while the node at the end stands for the TV domicile. The more the connections, (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instrument of foreign issuers traded on this trading venue domicile.

Sources: FIRDS, FITRS, ESMA.

**Market transparency**

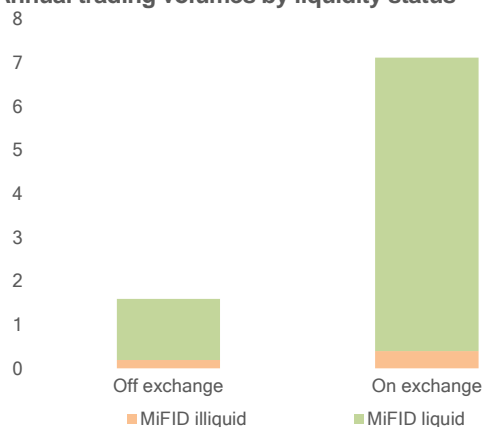
## ASR-MiFID-S.58

**Trading landscape**

Note: Type of equity trading in the EEA as percentage of total volumes in 2020, in % (lhs). Total equity trading volumes on rhs, in EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.59

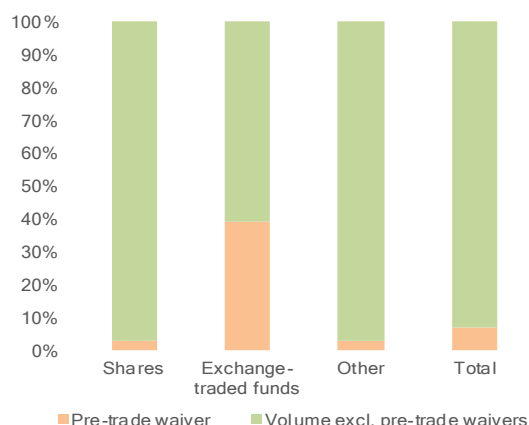
**Annual trading volumes by liquidity status**

Note: Annual trading volumes in equity and equity-like instruments in 2020 by liquidity status under MiFID transparency calculations, EUR trillion.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.60

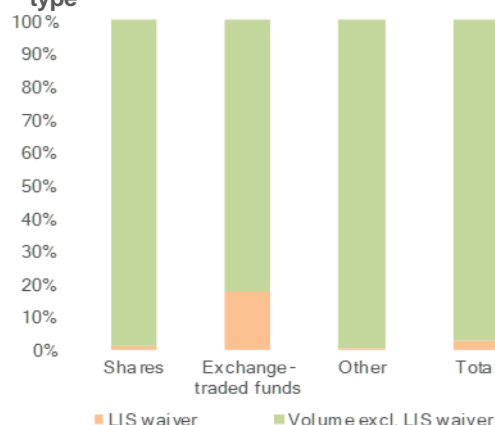
## Waiver trading activity per instrument type



Note: Percentage of trading volume under the pre-trade waiver on-venue in 2020  
Sources: FIRDS, FITRS, ESMA

## ASR-MiFID-S.61

## Large-in-scale waiver trading activity per instrument type

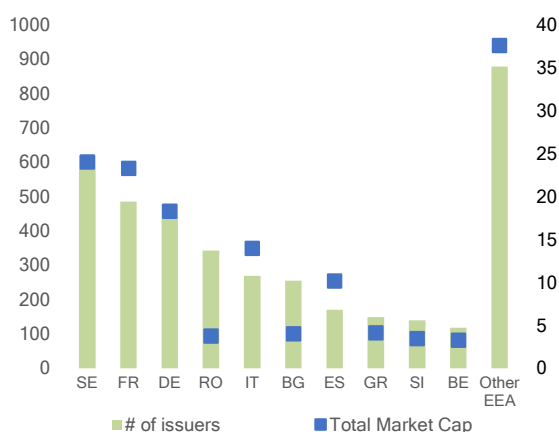


Note: Percentage of trading volume under the large-in-scale waiver on-venue in 2020  
Sources: FIRDS, FITRS, ESMA

## SME trading

## ASR-MiFID-S.62

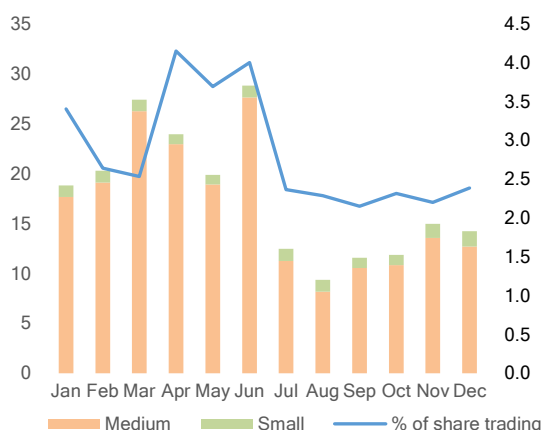
## Number of issuers and market cap by EEA30 domicile



Note: Number of EEA SME issuers (lhs) and total market capitalisation (rhs, in billion) by entity domicile in 2020.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.63

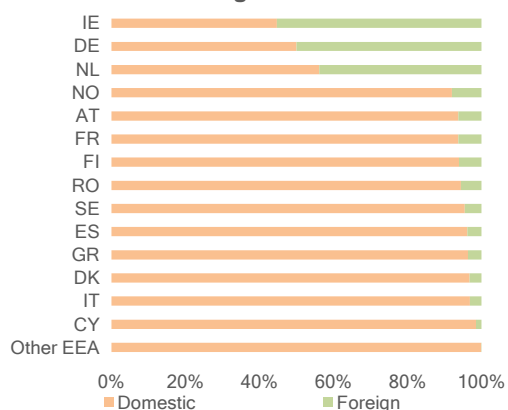
## Monthly trading volumes in SME shares



Note: Monthly trading volumes of SME shares domiciled in the EEA in 2020, EUR billion (lhs) and % of total trading in shares (rhs).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.64

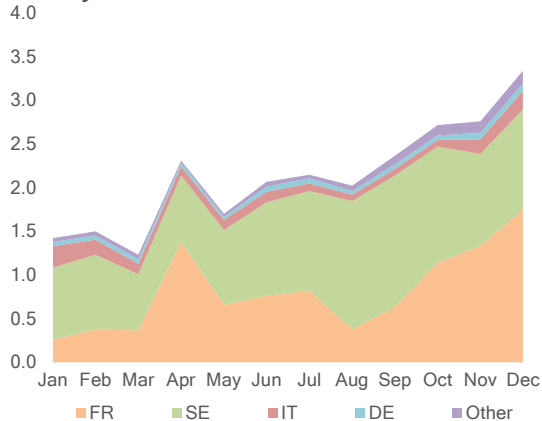
## Share of domestic trading in SME shares



Note: Share of domestic and foreign trading in SME shares on EEA trading venues, in %. 'Domestic' accounts for trading in SME shares domiciled in the same country as the trading venue, 'Foreign' otherwise.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.65

## Monthly SME volumes on SME GMs



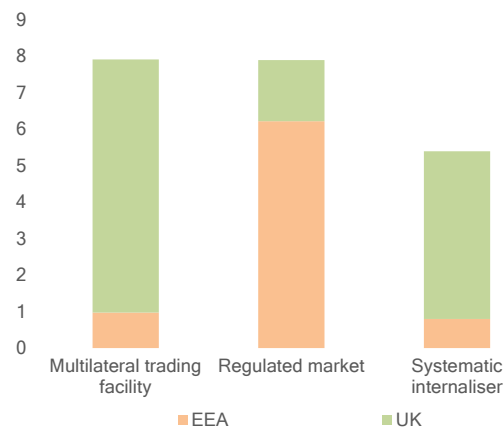
Note: Monthly trading volumes of SME shares on SME Growth Markets, in EUR billion.  
Sources: FIRDS, FITRS, ESMA.



## Impact of UK withdrawal

ASR-MiFID-S.66

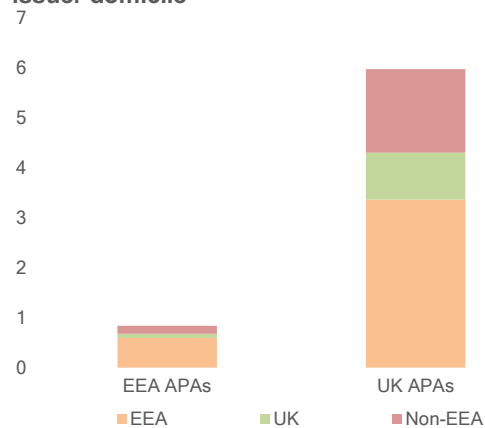
### Trading volumes on EEA30 and UK infrastructures



Note: Annual trading volumes in equity and equity like instruments by market type and trading venue domicile in 2020. EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.68

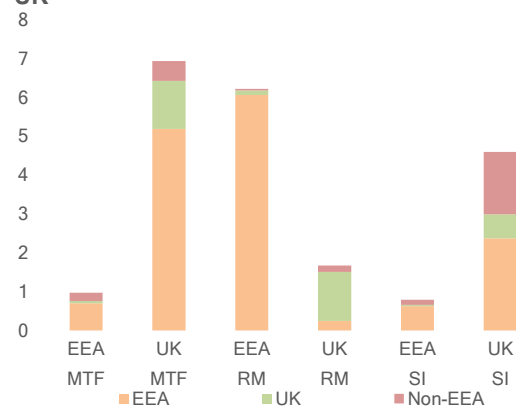
### Annual pure OTC trading volumes by APA and issuer domicile



Note: Total annual pure OTC trading volumes reported by EEA and UK APAs, by issuer domicile in 2020. EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.67

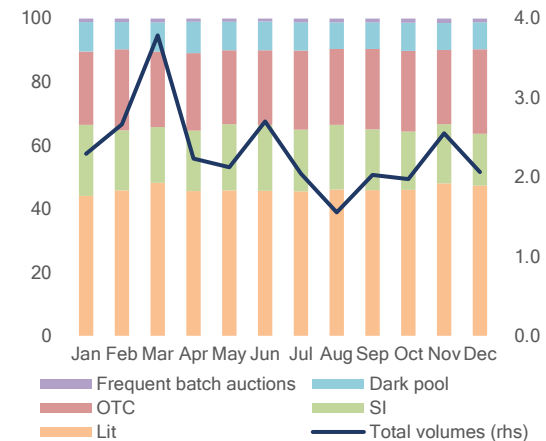
### Trading volumes by issuer domicile, in EEA30 and UK



Note: Annual trading volumes of EEA, UK, and Non-EEA domiciled equity and equity like instruments on EEA vs. UK trading venues + SIs, in 2020. EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

ASR-MiFID-S.69

### Trading landscape in EEA31



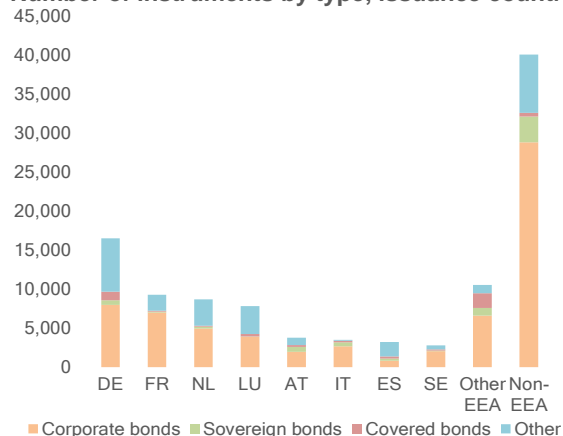
Note: Type of equity trading in the EEA + UK as percentage of the total volumes in 2020, in % (lhs). Total equity volumes on rhs, in EUR tn.  
Sources: FIRDS, FITRS, ESMA.

# Bond markets

## Instruments

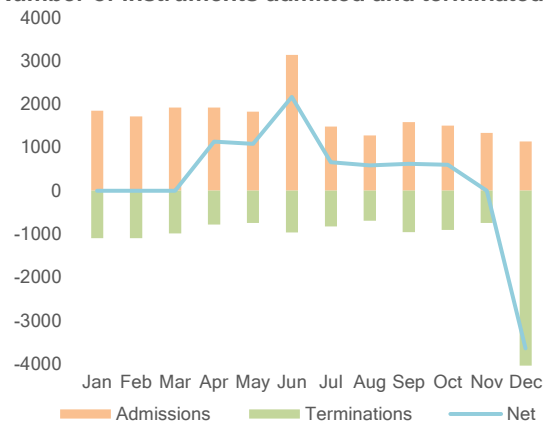
### ASR-MiFID-S.70

#### Number of instruments by type, issuance country



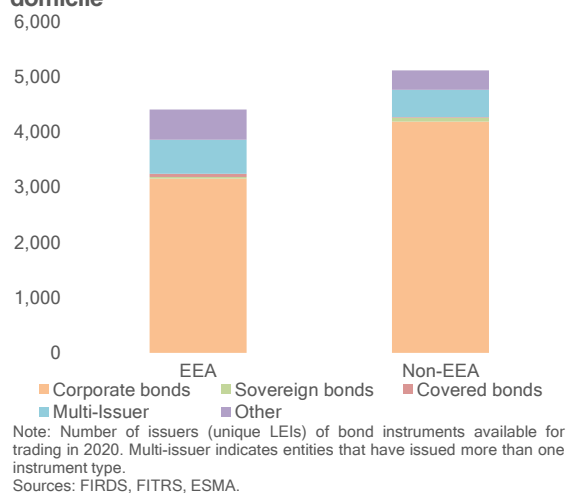
### ASR-MiFID-S.71

#### Number of instruments admitted and terminated



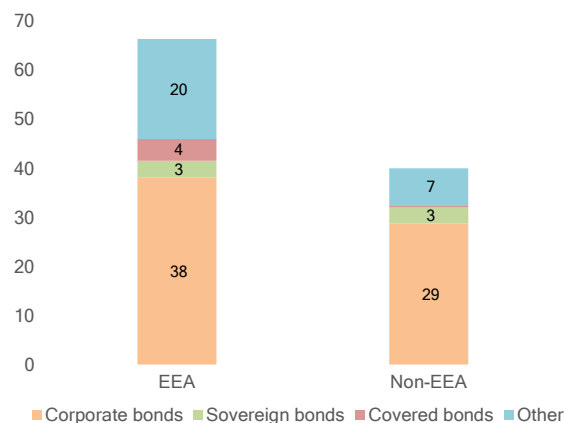
### ASR-MiFID-S.72

#### Number of issuers (LEI) by instrument type and domicile



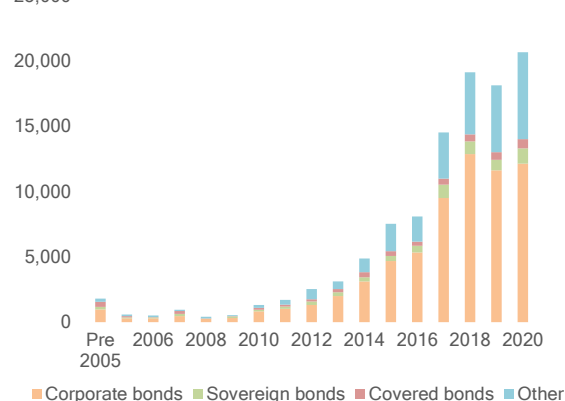
### ASR-MiFID-S.73

#### Number of instruments by issuer and type



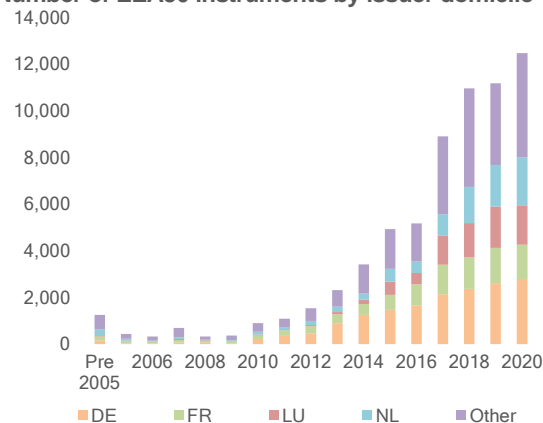
### ASR-MiFID-S.74

#### Number of instruments by start year and type



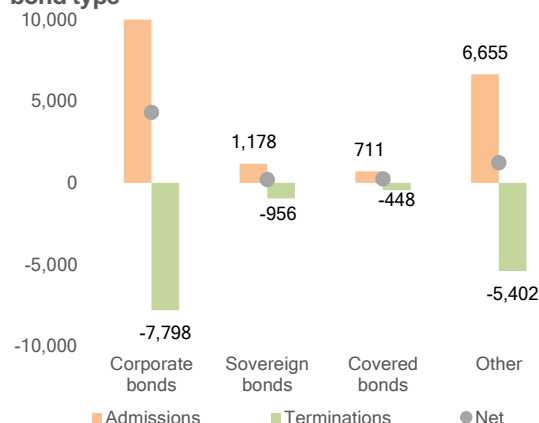
### ASR-MiFID-S.75

#### Number of EEA30 instruments by issuer domicile



## ASR-MiFID-S.76

## Number of admitted and terminated instruments by bond type

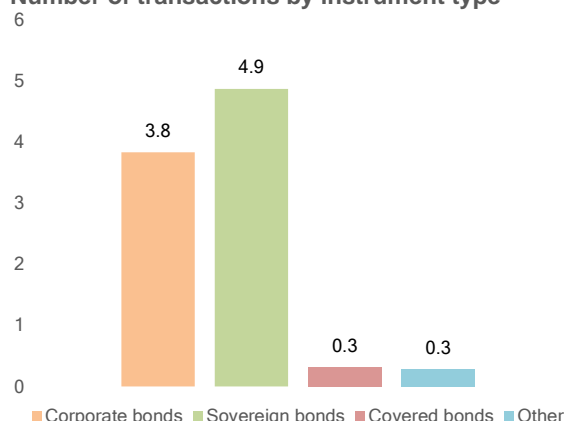


Note: Number of instruments admitted to trading and terminated in 2020, by bond type. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA.

## Trading activity by instrument type

## ASR-MiFID-S.77

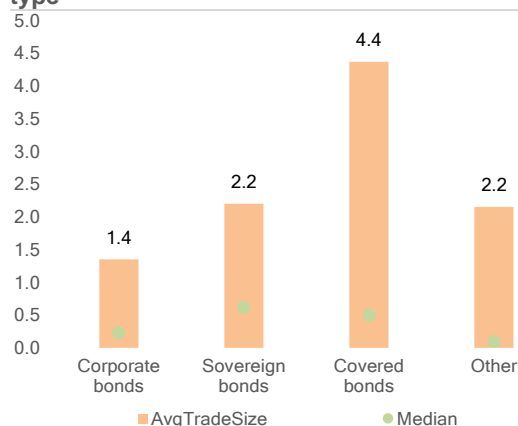
## Number of transactions by instrument type



Note: Number of transactions in bonds in 2020 by market type, in million. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.79

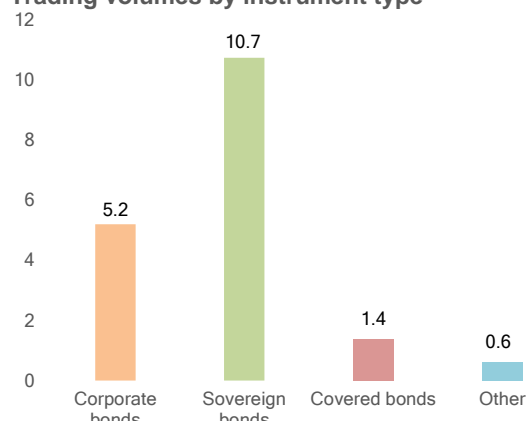
## Average and median trade size by instrument type



Note: Average trade size and median transaction size of bonds in 2020 by bond type, EUR million. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.78

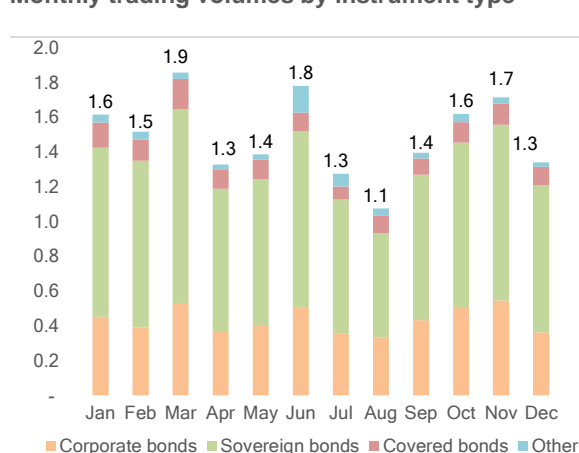
## Trading volumes by instrument type



Note: Annual trading volumes of bonds in 2020 by bond type, EUR trillion. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.80

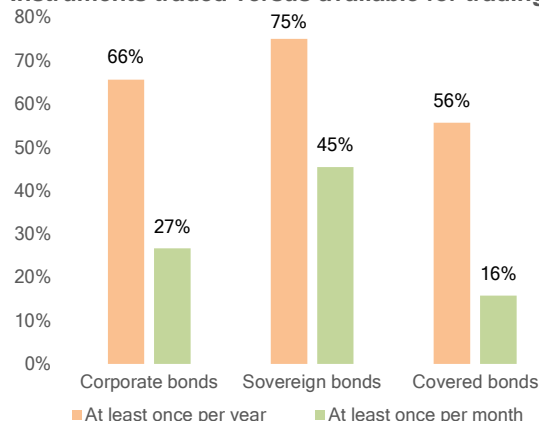
## Monthly trading volumes by instrument type



Note: Monthly trading volumes of bonds in 2020 by bond type, EUR trillion. "Other" includes convertible bonds and other public bonds.  
Sources: FIRDS, FITRS, ESMA

## ASR-MiFID-S.81

## Instruments traded versus available for trading

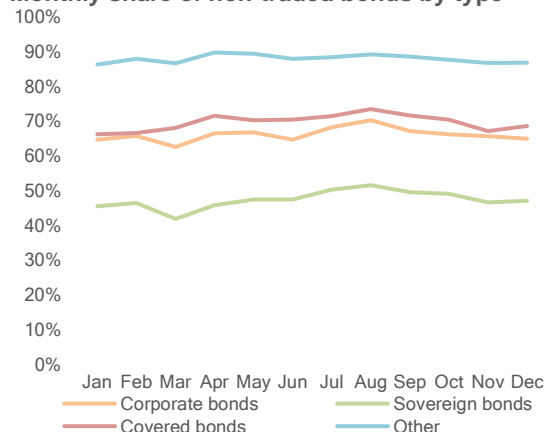


Note: Share of bonds traded at least once per month and once per year in 2020 by instrument type, as % of bond type.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.82

## Monthly share of non-traded bonds by type

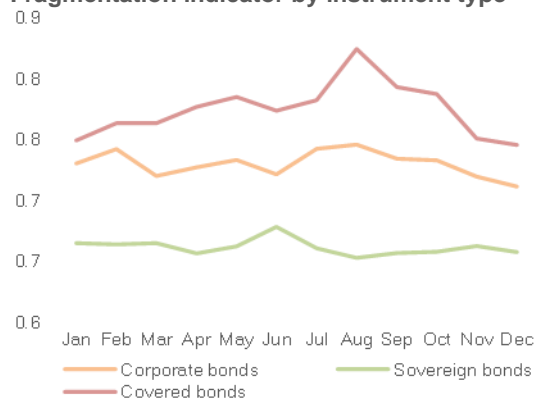


Note: Share of non-traded bonds in 2020 by month, in % of all instruments available for trading.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.83

## Fragmentation indicator by instrument type

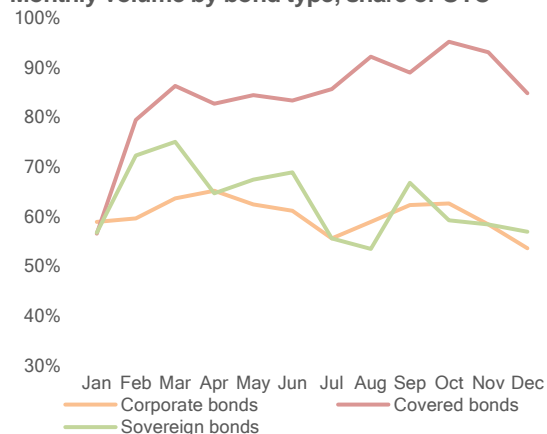


Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by instrument type. Index calculated as (1-HHI) and ranging from 0 (monopoly) to 1 (maximum fragmentation).

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.84

## Monthly volume by bond type, share of OTC



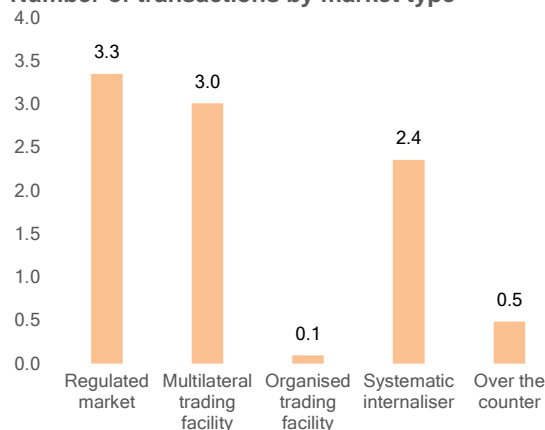
Note: Monthly share of bonds traded off exchange (including through systematic internalisers) in 2020 as % of bond type.

Sources: FIRDS, FITRS, ESMA.

## Trading venues

## ASR-MiFID-S.85

## Number of transactions by market type

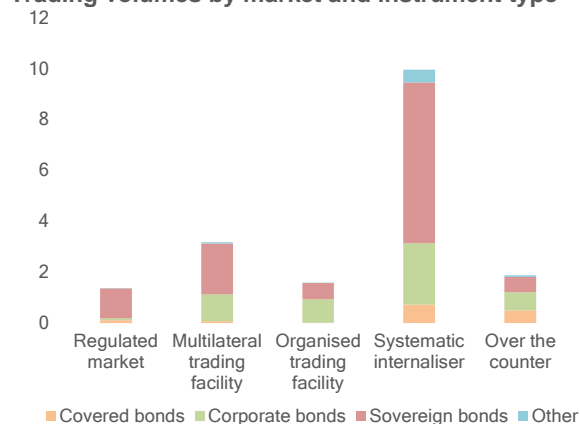


Note: Number of transactions in bonds in 2020 by market type, in million. "Other" includes convertible bonds and other public bonds.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.86

## Trading volumes by market and instrument type

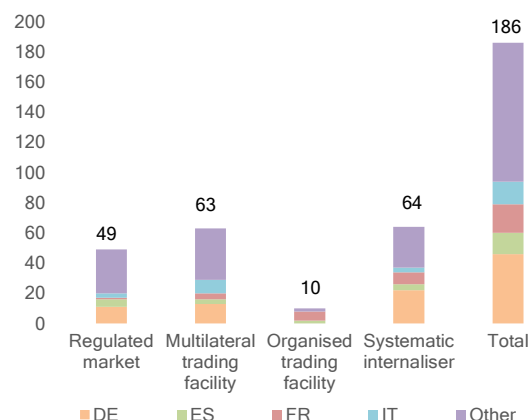


Note: Annual trading volumes of bonds in 2020 by market type, EUR trillion. "Other" includes convertible bonds and other public bonds.

Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.87

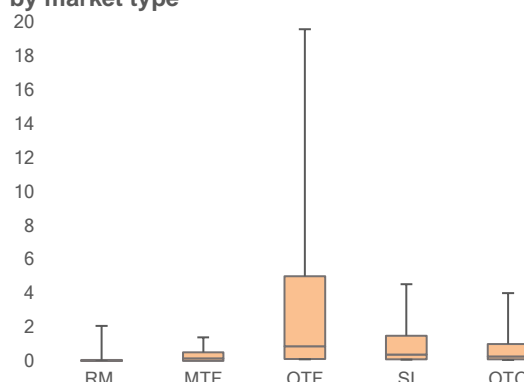
## Number of TVs and SIs by domicile



Note: Number of EEA trading venues on which bonds are available for trading in 2020, by market type.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.88

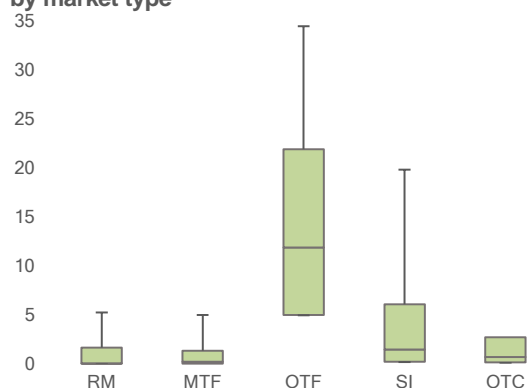
## Distribution of corporate bonds transaction sizes by market type



Note: Distribution of corporate bond transaction sizes by market type, in EUR mn. The 25th percentile threshold is the bottom edge of the column base, the median is the second middle bar, the 75th is the 3rd bar or the end of the box, and 90% of transactions sizes are below the upper data point.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.89

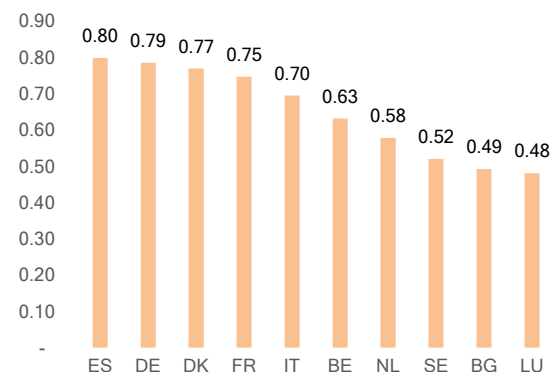
## Distribution of sovereign bonds transaction sizes by market type



Note: Distribution of sovereign bond transaction sizes by market type, in EUR mn. The 25th percentile threshold is the bottom edge of the column base, the median is the second middle bar, the 75th is the 3rd bar or the end of the box, and 90% of transactions sizes are below the upper data point.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.90

## Concentration by entity domicile (top 10)

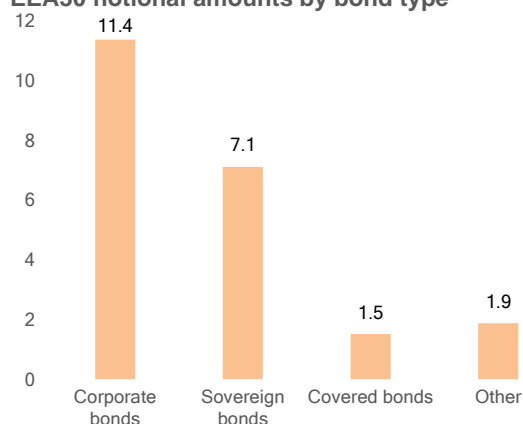


Note: Fragmentation index of bond trading volumes on EEA trading venues and systematic internalisers in 2020, by entity domicile (top 10). Index calculated as  $(1-HHI)$  and ranging from 0 (monopoly) to 1 (maximum fragmentation).  
Sources: FIRDS, FITRS, ESMA.

## Issuance and maturity

## ASR-MiFID-S.91

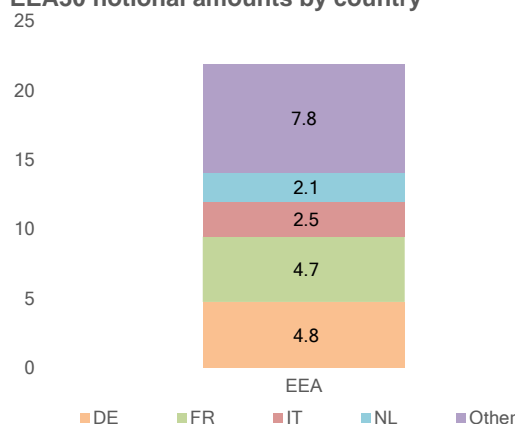
## EEA30 notional amounts by bond type



Note: Sum of nominal amount outstanding from EEA issuers in 2020, by bond type, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.92

## EEA30 notional amounts by country

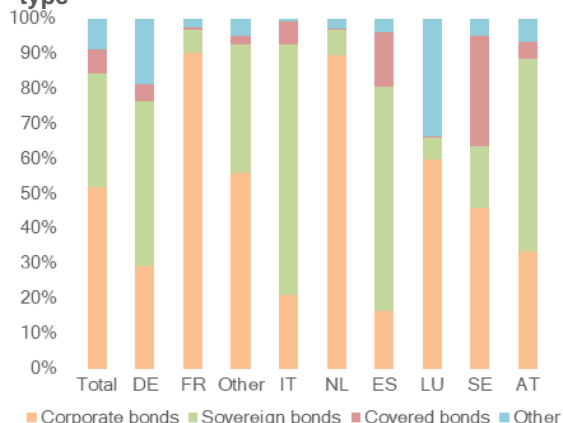


Note: Sum of 2020 EEA bond notional amount outstanding by country, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.



## ASR-MiFID-S.93

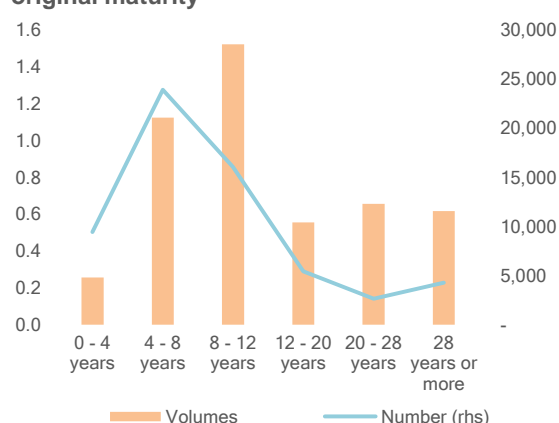
## Issuance by top EEA30 countries and bond type



Note: Share of bond nominal amount outstanding, by issuer domicile and bond type in the EEA, in % of bond type in 2020.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.94

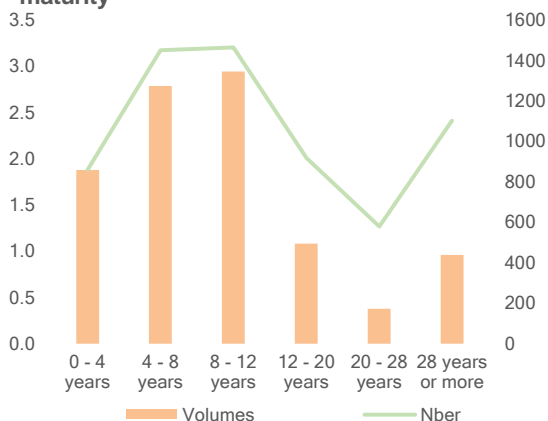
## Trading volumes of corporate bonds by original maturity



Note Annual trading volumes (lhs, EUR trillion) and number of corporate bonds (rhs) in 2020, by original maturity as of 31 December 2020.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.95

## Trading volumes of sovereign bonds by original maturity

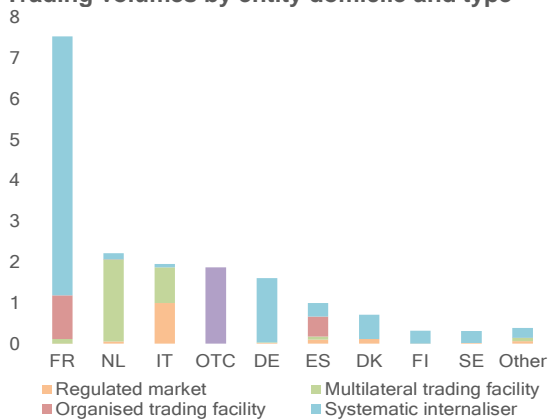


Note Annual trading volumes (lhs, EUR trillion) and number of sovereign bonds (rhs) in 2020, by original maturity as of 31 December 2020.  
Sources: FIRDS, FITRS, ESMA.

## Fragmentation and cross-border activity

## ASR-MiFID-S.96

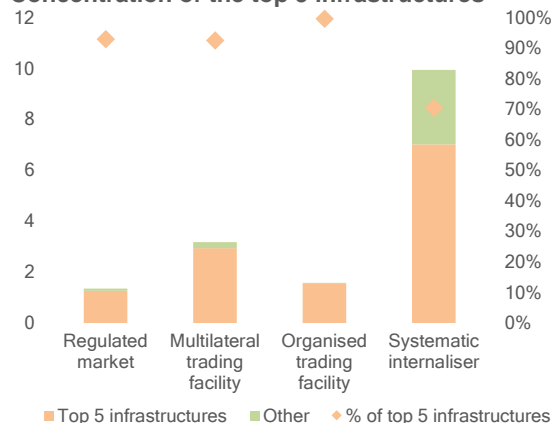
## Trading volumes by entity domicile and type



Note: Annual trading volumes in bonds in 2020 by infrastructure domicile and market type. EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

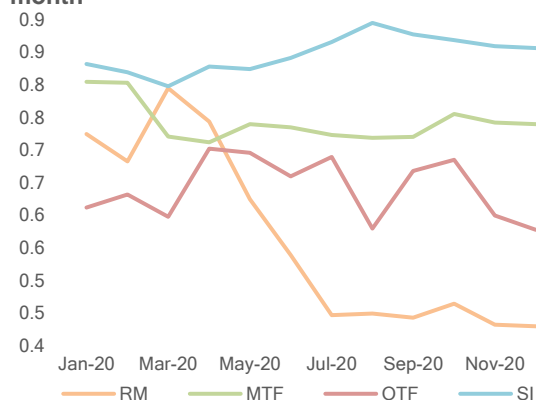
## ASR-MiFID-S.97

## Concentration of the top 5 infrastructures



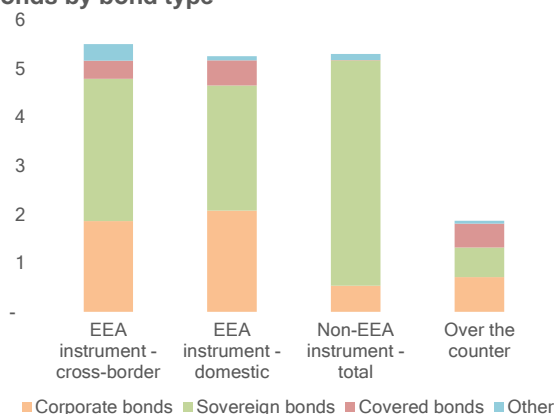
Note: Top 5 infrastructures annual trading volumes of bonds in 2020, EUR trillion and share of the total volumes (%).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.98

**Fragmentation indicator by market type and month**

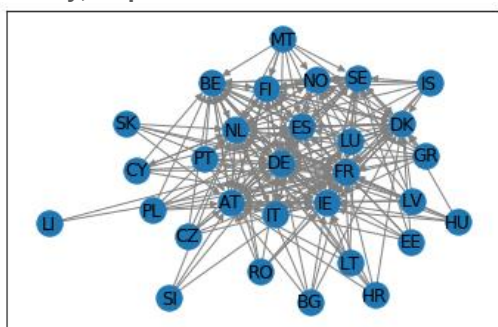
Note: Monthly fragmentation index of trading volumes on EEA trading venues and systematic internalisers in 2020, by market type. Index calculated as  $(1 - HHI)$  and ranging from 0 (monopoly) to 1 (maximum fragmentation).  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.99

**Volumes of cross-border vs. domestically traded bonds by bond type**

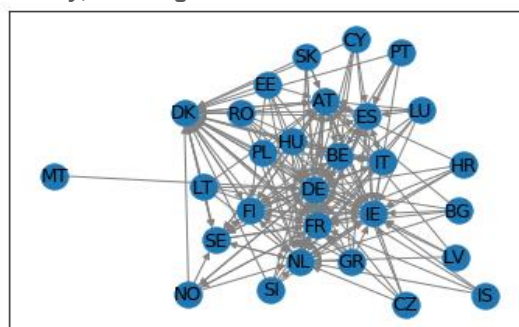
Note: Annual trading volumes of bonds by type, trading domestically and cross-border (comparing issuer country and the TV or SI domicile) in 2020, EUR trillion. Over-the-counter is only pure OTC.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.100

**Network map: trading activity by TV and issuer country, corporate bonds**

Note: Force-directed network of cross-border trading volumes in EEA corporate bonds, by TV and issuer domicile. The connections (grey lines) represent cross-border trading volumes. The node at the origin of each grey line represents the issuer domicile, while the node at the end stands for the TV domicile. The more the connections (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instruments of foreign issuers traded on this TV domicile.  
Sources: FIRDS, FITRS, ESMA.

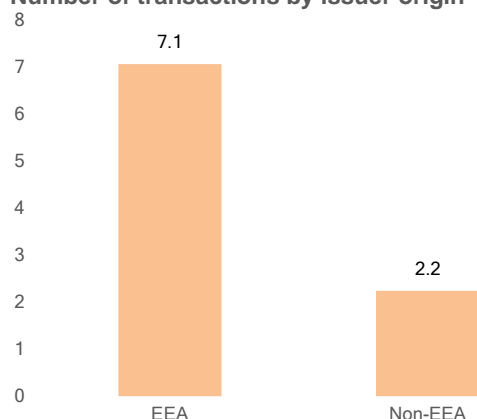
## ASR-MiFID-S.101

**Network map: trading activity by TV and issuer of country, sovereign bonds**

Note: Force-directed network of cross-border trading volumes in EEA sovereign bonds, by TV and issuer domicile. The connections (grey lines) represent cross-border trading volumes. The node at the origin of each grey line represents the issuer domicile, while the node at the end stands for the TV domicile. The more the connections (i.e. a higher number of grey lines going to the node), the larger the trading volumes in instruments of foreign issuers traded on this TV domicile.  
Sources: FIRDS, FITRS, ESMA.

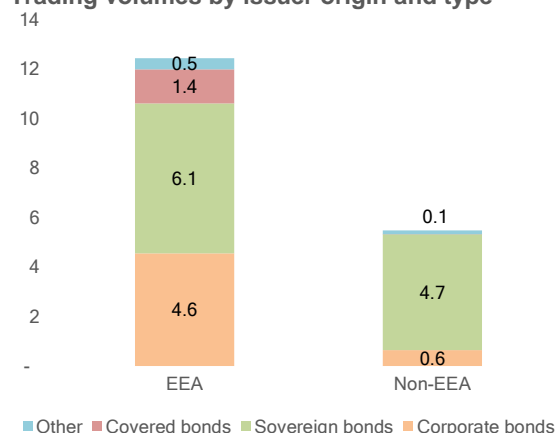
**International activity**

## ASR-MiFID-S.102

**Number of transactions by issuer origin**

Note: Annual number of transactions of bonds in 2020 by issuer origin, EUR million.  
Sources: FIRDS, FITRS, ESMA.

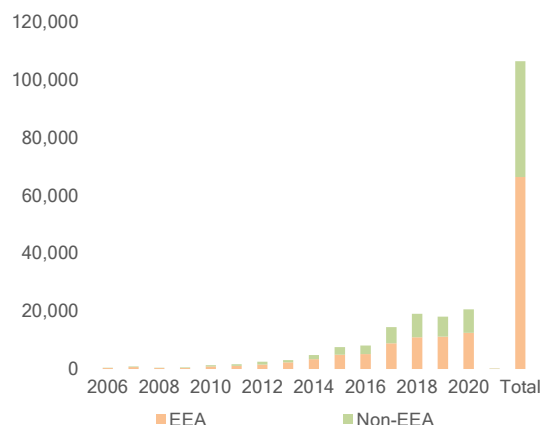
## ASR-MiFID-S.103

**Trading volumes by issuer origin and type**

Note: Annual trading volumes of bonds in 2020 by issuer domicile and bond type, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.104

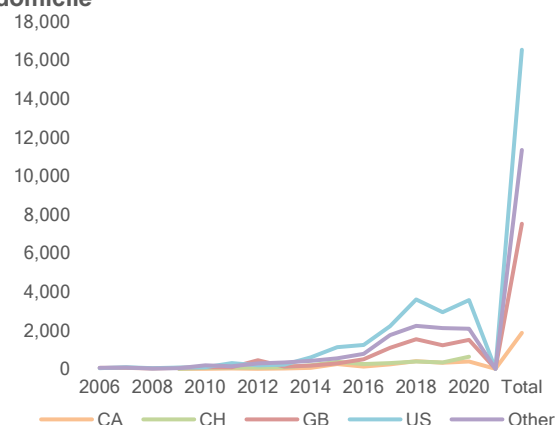
## Instruments by start year and issuer domicile



Note: Number of bonds available for trading in 2020 in the EEA, by ISIN trading start year and issuer domicile.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.105

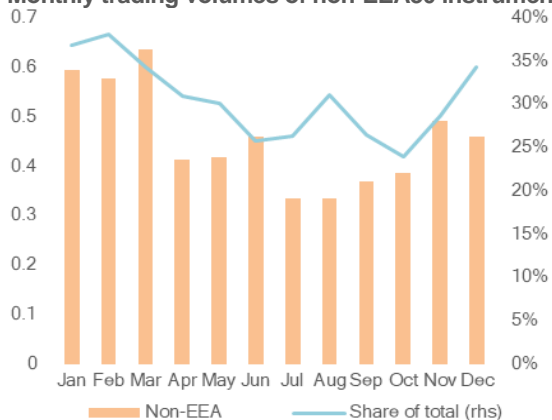
## Non-EEA30 instruments by start year and domicile



Note: Number of non-EEA bonds available for trading in 2020 in the EEA, by ISIN trading start year and issuer domicile.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.106

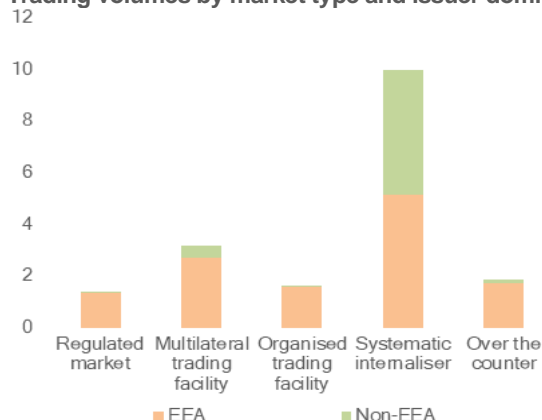
## Monthly trading volumes of non-EEA30 instruments



Note: Monthly trading volumes of non-EEA bonds in 2020, EUR trillion, and share in total bond trading (right axis), in %.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.107

## Trading volumes by market type and issuer domicile

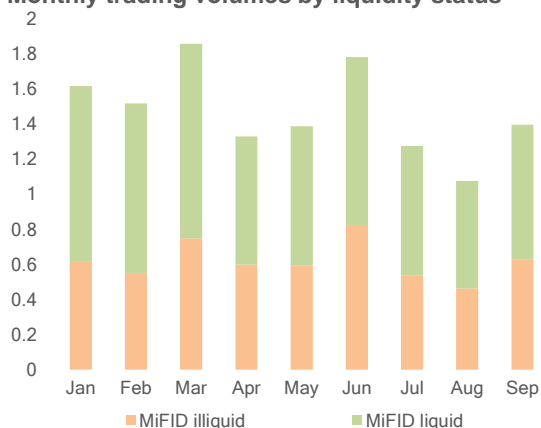


Note: Annual trading volumes of bonds in 2020 by issuer domicile, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## Market transparency

## ASR-MiFID-S.108

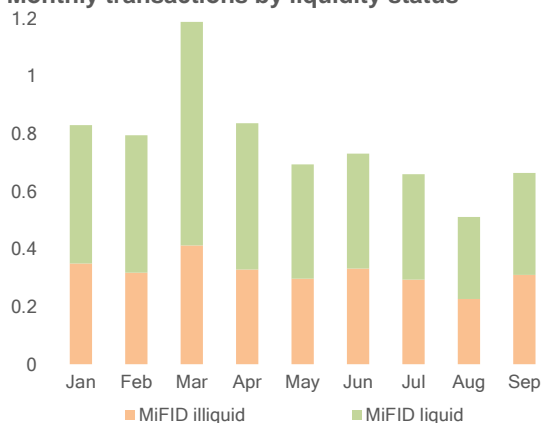
## Monthly trading volumes by liquidity status



Note: Monthly volumes of bonds by liquidity status under MiFID transparency calculations, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

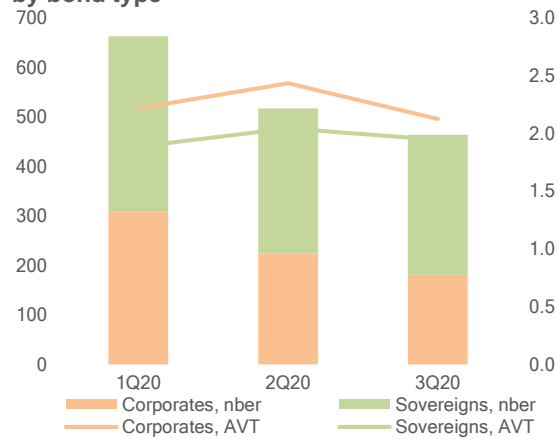
## ASR-MiFID-S.109

## Monthly transactions by liquidity status



Note: Monthly number of transactions for bonds by liquidity status under MiFID transparency calculations, EUR million.  
Sources: FIRDS, FITRS, ESMA.

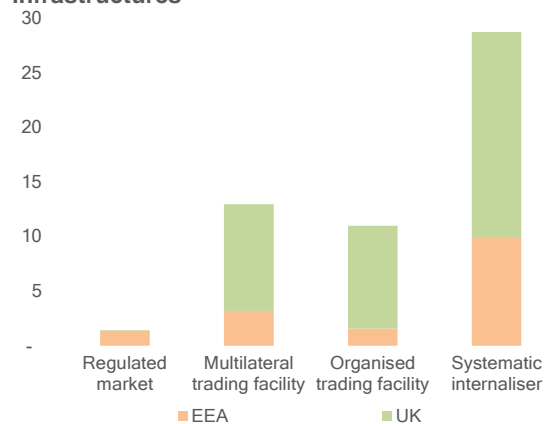
## ASR-MiFID-S.110

**Number of liquid bonds and average trade size, by bond type**

Note: Number of corporate and sovereign liquid bonds (lhs), and average trade sizes of corporate and sovereign liquid bond in EUR million (rhs).  
Sources: FIRDS, FITRS, ESMA.

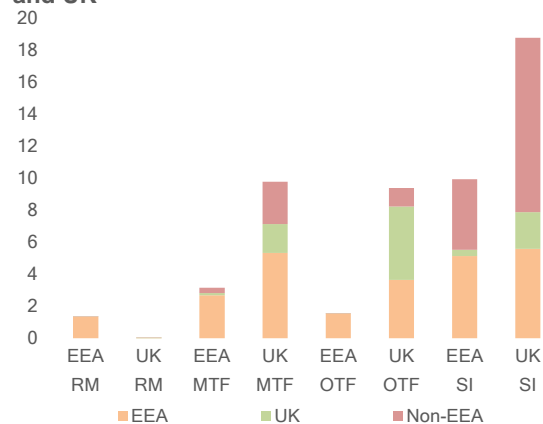
**Impact of UK withdrawal**

## ASR-MiFID-S.111

**Trading volumes on EEA30 and UK infrastructures**

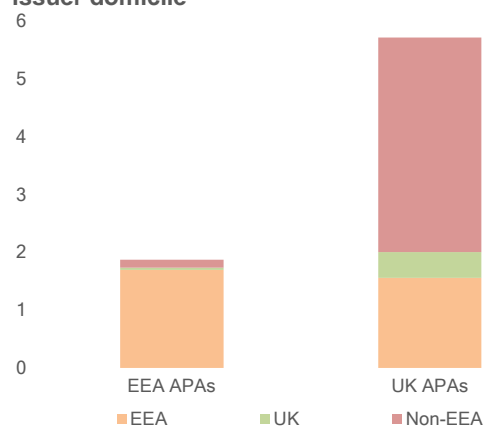
Note: Annual trading volumes in bond instruments by market type and trading venue or infrastructure domicile in 2020, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.112

**Trading volumes by issuer domicile, in EEA30 and UK**

Note: Annual trading volumes of EEA, UK, and non-EEA domiciled bond instruments in 2020 on EEA and UK trading venues and SIs, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

## ASR-MiFID-S.113

**Annual pure OTC trading volumes by APA and issuer domicile**

Note: Total annual pure OTC trading volumes in bonds reported by EEA and UK APAs by issuer domicile, in 2020, EUR trillion.  
Sources: FIRDS, FITRS, ESMA.

# Annex

# Glossary

**Depository Receipt:** Depository receipts are financial instruments negotiable on a regulated market, and which represent ownership of the securities of a non-domiciled issuer. Depository receipts allows investors to hold shares in equity of a foreign company that are traded on a local exchange.

**Double Volume Cap (DVC):** The double volume cap mechanism (DVCM) (Article 5 of MiFIR) aims to limit the trading under the reference price waiver (Article 4(1)(a) of MiFIR) and the negotiated transaction waiver for liquid instruments (Article 4(1)(b)(i) of MiFIR) in an equity instrument.

**Exchange traded fund (ETF):** An ETF is a basket of securities that tracks an underlying index, although they can invest in any number of industry sectors or use various strategies. ETFs are in many ways similar to mutual funds; however, they are continuously tradeable on at least one regulated market or multilateral trading facility (MTF).

**Financial Instruments Reference Data System (FIRDS):** Register of instruments reference data collected under MAR Art.4 and MiFIR Art.27.

**Financial Instruments Transparency System (FITRS):** Register of equity and non-equity transparency calculation results.

**Large in scale (LIS):** For orders that are large in scale compared with normal market size, avoiding a negative impacting on the market.

**Multilateral Trading Facility (MTFs):** Multilateral Trading Facilities are another type of non-discretionary TV. They are operated by a qualifying investment firm, or a market operator, and bring together multiple third-party buying and selling interests in financial instruments, in accordance with non-discriminatory rules, in a way that results in a contract.

**Organised Trading Facility (OTF):** Organised Trading Facilities are a new type of TV venue introduced by MiFID II that allows trading of non-equity instruments. In the same manner, OTF are multilateral systems in which multiple third-party buying and selling interests in bonds, structured finance products, emission allowances or derivatives are able to interact in the system in a way that results in a contract. A key difference with other TVs lies in the discretionary basis of OTF execution, taking a role in negotiations between market participants. The creation of OTF intends to level the playing field between the various venues for the execution of orders.

**Pre-trade transparency** refers to the obligation for market operators and investment firms operating a trading venue to make public current bid and offer prices, as well as the depth of trading interests at those prices which are advertised through their systems for financial instruments traded on a trading venue.

**Post-trade transparency** refers to the obligation for market operators and investment firms operating a trading venue to make public the price, volume and time of the transactions executed in respect to financial instruments traded on a trading venue as close to real-time as is technically possible.

**Regulated Market (RM):** Regulated Markets are multilateral systems operated by and/or managed by a market operator, which bring together multiple third-party buying and selling interests in financial instruments, in accordance with its nondiscretionary rules, and in a way that results in a contract.

**Systematic Internaliser (SI):** Systematic Internalisers are investment firms which, on an organised, frequent systematic and substantial basis, deals on own account when executing client orders. They offer a third avenue for trading outside a lit market but without the liquidity disadvantage of pure bilateral OTC transactions. MiFID II/MiFIR introduced the obligation for investment firms to trade most shares on a trading venue or an SI and extended it to non-equity instruments. SIs tend to be operated either by investment banks or by electronic liquidity providers such as high-frequency market makers.

**SME GM:** MiFID II introduces a new category of MTFs named after 'SME growth markets (GM)', aiming at facilitating access to capital markets for small and medium-sized enterprises. Increased access to diversified sources of finance by smaller businesses in the EU is a key goal of the Capital Markets Union (CMU) agenda. MTFs or MTF segments can be registered as an SME growth market, provided that at least 50% of the issuers with shares available for trading on the relevant exchange have a market capitalisation of less than EUR 200mn.

**Trading Venue (TV):** A trading venue refers to an EEA30 trading venue which includes Regulated Markets (RM), Multilateral Trading Facilities (MTF) and Organised Trading Facilities (OTF).



# List of abbreviations

APA	Approved Publication Arrangement
ARM	Approved Reporting Mechanism
CMU	Capital Market Union
CTP	Consolidated Tape Provider
DVC	Double Volume Cap mechanism
EMIR	European Markets Infrastructure Regulation
EEA30	European Economic Area
EEA31	EEA30 and the UK
EA	Euro area
ESMA	European Securities and Markets Authority
ETF	Exchange-traded fund
FIRDS	Financial Instruments Reference Data System
FITRS	Financial Instruments Transparency System
ECB	European Central Bank
EU	European Union
IPO	Initial Public Offering
ISIN	International Securities Identification Number
LEI	Legal Entity Identifier
LIS	Large in scale
MiFID I	Markets in Financial Instruments Directive – Directive 2004/39/EC of the European Parliament and of the Council
MiFID II	Markets in Financial Instruments Directive (recast) – Directive 2014/65/EU of the European Parliament and of the Council
MiFIR	Markets in Financial Instruments Regulation – Regulation 600/2014 of the European Parliament and of the Council
MTF	Multilateral trading facility
NCA	National competent authority
OTC	Over the counter
OTF	Organised Trading Facility
ppt	Percentage point
RM	Regulated market
RTS	Regulatory Technical Standard
SME GM	SME growth market
SI	Systematic internaliser
SSTI	Size specific to the instrument
STO	Share trading obligation
TV	Trading Venue

*Currencies and countries abbreviated in accordance with ISO standards*

