No. 1, 2023

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Market environment

A.1 EU market price performance

A.2 EU market volatilities

A.3 Economic policy uncertainty

A.4 EU market confidence

A.5 EUR exchange rates

A.6 ESMA composite indicator of systemic stress

Note: Return indices on EA equities (Datastream regional index), global commodities (S&P GSCI) converted to EUR, EA corporate and sovereign bonds (iBoxx EUR, all maturities), 01/04/2020=100. Sources: Refinitiv Datastream, ESMA.

Note: Economic Policy Uncertainty Index (EPU), developed by Baker et al. (www.policyuncertainty.com), based on the frequency of articles in European newspapers that contain the following triple: "economic" or "economy", "uncertain" or "uncertainty" and one or more policy-relevant terms. Global aggregation based on PPP-adjusted GDP weights. Implied volatility of EURO STOXX 50 (VSTOXX), monthly average, on the right-hand side. Sources: Baker, Bloom, and Davis 2015; Refinitiv Datastream, ESMA.

Note: European Commission survey of EU27 financial services sector and subsectors (NACE Rev.2 64, 65, 66). Confidence indicators are averages of the net balance of responses to questions on development of the business situation over the past three months, evolution of demand over the past three months and expectation of demand over the next three months, in % of answers received. Fin.=financial. Ins.=insurance. Sources: European Commission, ESMA.

Note: Spot exchange rates to EUR. Emerging is an average of spot exchange rates for CNY, BRL, RUB, INR, MXN, IDR and TRY weighted by GDP as of start date year. 01/04/2020=100. Increases in value represent an appreciation of EUR. 1Y-MA USD one-year moving average of the USD exchange rate. Sources: ECB, IMF, ESMA.

Note: ESMA version of the ECB CISIS indicator measuring systemic stress in securities markets. It focuses on three financial market segments: equity, bond and money markets, aggregated through standard portfolio theory. It is based on securities market indicators such as volatilities and risk spreads. Sources: ECB, ESMA.
Securities markets

**Equity markets**

A.7 Global equity price performance by region

A.8 EU equity price performance of national indices

A.9 EU equity price performance by sector

A.10 US and EU equity price-earnings ratios

A.11 EU implied equity volatility

A.12 EU implied equity volatility by option maturity
**A.19**
EU and US 10Y sovereign yields

![Graph showing EU and US 10Y sovereign yields](image)

Note: Yields on 10Y sovereign bonds, selected countries, in %. 1Y-MA = one-year moving average of EA 10Y bond indices computed by Datastream. Sources: Refinitiv Datastream, ESMA.

**A.20**
EU 10Y sovereign spreads

![Graph showing EU 10Y sovereign spreads](image)

Note: Selected 10Y EA sovereign bond risk premia (vs. DE Bunds), in %. Sources: Refinitiv Datastream, ESMA.

**A.21**
EU sovereign yield correlation dispersion

![Graph showing EU sovereign yield correlation dispersion](image)

Note: Dispersion of correlations of 10Y DE Bunds and 15 other EU27 countries’ sovereign bond redemption yields over a 60-day rolling window. Sources: Refinitiv Datastream, ESMA.

**A.22**
EU equity-sovereign bond returns correlation dispersion

![Graph showing EU equity-sovereign bond returns correlation dispersion](image)

Note: Dispersion of the correlation between daily returns of national equity indices and national sovereign debt return index, for 16 countries in the EU27, over a 60-day rolling window. Sources: Refinitiv Datastream, ESMA.

**A.23**
EU 10Y sovereign bond volatility

![Graph showing EU 10Y sovereign bond volatility](image)

Note: Annualised 40-day volatility of 10Y sovereign bonds, selected countries, in %. 1Y-MA = one-year moving average of EA 10Y bond indices computed by Datastream. Sources: Refinitiv Datastream, ESMA.

**A.24**
Global sovereign CDS spreads

![Graph showing global sovereign CDS spreads](image)

Note: Datastream CDS sovereign indices (5 years, mid-spread), in bps. Sources: Refinitiv Datastream, ESMA.
EU sovereign bid-ask spread

A.25

Note: Bid-ask spread as a monthly average of bid-ask spreads weighted by trading volumes for bonds both traded on one of 12 EU27 domestic markets (AT, BE, DE, ES, FI, FR, GR, IE, IT, NL, PT and SI) and Euro MTS, in EUR.
Sources: MTS, ESMA.

ESMA composite sovereign bond liquidity index

A.26

Note: Composite indicator of market liquidity in the sovereign bond market for the domestic and Euro MTS platforms, computed by applying the principal component methodology to four input liquidity measures (Amihud illiquidity coefficient, Bid-ask spread, Roll illiquidity measure and Turnover). The indicator range is between 0 (higher liquidity) and 1 (lower liquidity).
Sources: MTS, ESMA.

EU sovereign bond liquidity

A.27

Note: Liquidity measured as median across countries of the bid-ask yields difference for 10Y sovereign bonds, in bps. Lower figures mean more liquidity and vice versa. 22 EEA30 countries are included.

EU sovereign bond liquidity dispersion

A.28

Note: Dispersion of liquidity measured as median across countries of the bid-ask yields difference for 10Y sovereign bonds, in bps. Lower figures mean more liquidity and vice-versa. 22 EEA30 countries are included.
Sources: Refinitiv EIKON, ESMA.

EU sovereign bond futures liquidity

A.29

Note: One-month moving averages of the Hul-Heubel illiquidity indicator for selected 10Y sovereign bond futures, in %. Lower figures mean more liquidity and vice-versa.
Sources: Refinitiv Datastream, ESMA.

EU sovereign bond redenomination risk

A.30

Note: Difference between 5Y CDS spreads under the 2014 ISDA definition (where debt redenomination is a credit event), and under the 2003 ISDA definition (where it is not), in bps.
Sources: Refinitiv Datastream, ESMA.
Corporate bond markets

A.31 EU corporate yields by credit rating

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

A.32 EU corporate spreads by credit rating

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

A.33 EU corporate rating distribution

Note: Outstanding amount of corporate bonds in the EEA30 as of issuance date by rating category, in % of the total. Maturities < 12 months are excluded. Sources: Refinitiv EIKON, ESMA.

A.34 EU corporate bid-ask spread and Amihud indicator

Note: Markit iBoxx EUR Corporate Bond Index bid-ask spread, in bps, computed as a one-month moving average of the constituents bid-ask spread. Amihud liquidity coefficient index between 0 and 1. Highest value indicates less liquidity.

A.35 EU corporate debt redemption profile by sector

Note: Quarterly redemptions over 5Y-horizon by EEA30 private financial and non-financial corporates, EUR bn. 1Y-change= difference between the sum of this year’s (four last quarters) and last year’s (8th to 5th last quarters) redemptions. Maturities < 12 months are excluded. Sources: Refinitiv EIKON, ESMA.

A.36 EU sovereign-corporate yield correlation

Note: Dispersion of correlation between Barclays Aggregate for corporate and 10Y sovereign bond redemption yields for AT, BE, ES, FI, FR, IT and NL. Sources: Refinitiv Datastream, ESMA.
### Credit quality

#### A.39 EU SFI ratings issued by collateral type

Note: Number of rated EEA30 structured finance instruments by asset class. ABS=Asset-backed securities (r.h.axis); CDO=Collateralised debt obligations; CMBS=Commercial mortgage-backed securities; OTH=Other; RMBS=Residential mortgage-backed securities. Asset backed commercial paper omitted due to very small sample size. Sources: RADAR, ESMA.

#### A.40 EU SFI ratings outstanding by collateral type

Note: Outstanding ratings of EEA30 structured finance instruments by asset class, in % of total. ABS=Asset-backed securities; CDO=Collateralised debt obligations; CMBS=Commercial mortgage-backed securities; OTH=Other; RMBS=Residential mortgage-backed securities. Asset backed commercial paper omitted due to very small sample size. Sources: RADAR, ESMA.

#### A.41 Credit rating distribution of EU covered bonds

Note: Outstanding amount of covered bonds in the EEA30 as of issuance date by rating category, in % of the total. Maturities < 12 months are excluded. Sources: Refinitiv EIKON, ESMA.

#### A.42 EU SFI rating changes

Note: Aggregate number of notch changes on securitised assets issued in the EEA30 with long-term ratings, for upgrades and downgrades. Sources: RADAR, ESMA.
A.43 EU non-financial corporate rating changes

A.44 Size of EU credit rating changes

A.45 EU credit ratings drift by asset class

A.46 EU credit ratings volatility by asset class

A.47 EU corporate issuer downgrades

A.48 EU credit rating outlook by rating category
Securities lending

A.49 EU securities lending market value by asset type

```
<table>
<thead>
<tr>
<th>Month</th>
<th>Corporate bonds</th>
<th>Sovereign bonds</th>
<th>Equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-19</td>
<td>200</td>
<td>180</td>
<td>160</td>
</tr>
<tr>
<td>Jun-20</td>
<td>180</td>
<td>160</td>
<td>140</td>
</tr>
<tr>
<td>Dec-20</td>
<td>160</td>
<td>140</td>
<td>120</td>
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<tr>
<td>Jun-21</td>
<td>140</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td>Dec-21</td>
<td>120</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>Jun-22</td>
<td>100</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>Dec-22</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>
```

Note: Value on loan of securities issued in the EEA by asset class, in EUR bn.
Sources: FIS Astec, Quandl, ESMA.

A.50 EU securities utilisation rate

```
<table>
<thead>
<tr>
<th>Month</th>
<th>Corporate bonds</th>
<th>Sovereign bonds</th>
</tr>
</thead>
<tbody>
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<td>Dec-19</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Jun-20</td>
<td>20</td>
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<td>Jun-21</td>
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<td>5</td>
</tr>
<tr>
<td>Dec-21</td>
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<td>Jun-22</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dec-22</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
```

Note: Utilisation rate of securities issued in the EEA, by asset class. Utilisation rate in percent: the ratio of the market value of securities lent over the market value of securities available for lending.
Sources: FIS Astec, Quandl, ESMA.

A.51 EU securities lending with open maturity

```
<table>
<thead>
<tr>
<th>Month</th>
<th>Corporate bonds</th>
<th>Sovereign bonds</th>
<th>Equities</th>
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</thead>
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<td>90</td>
<td>80</td>
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<tr>
<td>Jun-20</td>
<td>90</td>
<td>80</td>
<td>70</td>
</tr>
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<td>Dec-20</td>
<td>80</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>Jun-21</td>
<td>70</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>Dec-21</td>
<td>60</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Jun-22</td>
<td>50</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Dec-22</td>
<td>40</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>
```

Note: Value of open-ended lending over total lending by asset class, in percentage.
Sources: FIS Astec, Quandl, ESMA.

A.52 Global sovereign bond utilisation rate by region

```
<table>
<thead>
<tr>
<th>Month</th>
<th>EEA30</th>
<th>US</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-19</td>
<td>45</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>Jun-20</td>
<td>40</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>Dec-20</td>
<td>35</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Jun-21</td>
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<td>25</td>
<td>20</td>
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<td>Dec-21</td>
<td>25</td>
<td>20</td>
<td>15</td>
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<tr>
<td>Jun-22</td>
<td>20</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Dec-22</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>
```

Note: Utilisation rate of sovereign bonds issued in EEA countries, in the US and in the UK. Utilisation rate in percent: the ratio of the market value of securities lent over the market value of securities available for lending.
Sources: FIS Astec, Quandl, ESMA.

Short selling

A.53 Dispersion of net short positions in EU shares

```
<table>
<thead>
<tr>
<th>Month</th>
<th>Top 25%</th>
<th>Core 50%</th>
<th>Bottom 25%</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep-20</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Jan-21</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>May-21</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Sep-21</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Jan-22</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>May-22</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sep-22</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>
```

Note: Dispersion of net short selling positions by country in the EEA30 as percentage of market value of those positions relative to each country’s blue-chip index market value. The 0.1% threshold entered into force on 31 January 2022 for all EU countries. NO, IS and LI continue to use the 0.2% threshold until the CDR 2022/27 is incorporated in their national legislation. Partially or fully missing data for the following countries: DK, GR, NL, PL and RO.
Sources: NCAs, Refinitiv Datastream, ESMA.

A.54 Value of net short positions in EU shares by sector

```
<table>
<thead>
<tr>
<th>Month</th>
<th>Energy</th>
<th>Financials</th>
<th>Technology</th>
<th>Telecom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep-20</td>
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<td>1.8</td>
<td>1.6</td>
<td>1.4</td>
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<tr>
<td>Jan-21</td>
<td>1.8</td>
<td>1.6</td>
<td>1.4</td>
<td>1.2</td>
</tr>
<tr>
<td>May-21</td>
<td>1.6</td>
<td>1.4</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Sep-21</td>
<td>1.4</td>
<td>1.2</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Jan-22</td>
<td>1.2</td>
<td>1.0</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>May-22</td>
<td>1.0</td>
<td>0.8</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Sep-22</td>
<td>0.8</td>
<td>0.6</td>
<td>0.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>
```

Note: Market value of net short selling positions in EU shares as percentage of market value of selected EA sectoral indices. The 0.1% reporting threshold entered into force on 31 January 2022 for all EU countries. NO, IS and LI will continue to use the 0.2% reporting threshold until their national legislation is amended. Partially or fully missing data for the following countries: DK, GR, NL, PL and RO.
Sources: NCAs, Refinitiv Datastream, ESMA.
**A.55 Net short positions in industrial shares and equity prices**

Note: Market value of net short selling positions in EA industrial shares as percentage of market value of EA industrial sectoral index. 01/03/2020=100. The 0.1% threshold entered into force on 31 January 2022 for all EU countries. NO, IS and LI continue to use the 0.2% threshold until the CDR 2022/27 is incorporated in their national legislation. Partially or fully missing data for the following countries: DK, GR, NL, PL, and RO.

Sources: NCAs, Refinitiv Datastream, ESMA.

**A.56 Net short positions in EU financial shares and equity prices**

Note: Market value of net short selling positions in EA financial shares as percentage of market value of EA financial sectoral index. 01/03/2020=100. The 0.1% threshold entered into force on 31 January 2022 for all EU countries. NO, IS and LI continue to use the 0.2% threshold until the CDR 2022/27 is incorporated in their national legislation. Partially or fully missing data for the following countries: DK, GR, NL, PL, and RO.

Sources: NCAs, Refinitiv Datastream, ESMA.

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**Money markets**

**A.57 Euro area interest rates**

Note: EA money market interest rates, in %.

Sources: Refinitiv Datastream, ESMA.

**A.58 Euribor rates by maturity**

Note: Euribor interest rates by maturity, in %.

Sources: Refinitiv Datastream, ESMA.

**A.59 Interbank rate spreads to overnight index swap**

Note: Spreads between 3M interbank interest rates and 3M overnight index swaps, in bps.

Sources: Refinitiv Datastream, ESMA.

**A.60 Interbank overnight activity**

Note: 1M-MA of daily lending volumes on Euro short-term rate (€STR), EUR bn, and Sterling Overnight Index Average (SONIA), GBP bn.

Sources: ECB, Refinitiv EIKON, ESMA.
Commodities

A.61
Dutch Natural Gas Futures open interest

2,500
2,000
1,500
1,000
500
0
Commercials Financials Investment Firms

Note: Open interests on Dutch Natural Gas Futures by commercial, financials traders (funds and other financial institutions) and investment firms, in mn. Spikes might reflect data quality issues.
Sources: ESMA Weekly Commodity Derivatives Positions Reporting, ESMA.

A.62
Dutch Natural Gas Futures net positions

500
400
300
200
100
0
-100
-200
-300
-400
-500
Commercials (hedging) Financials (other use)
Commercials (other use)

Note: Net number of positions (long minus short) on Dutch Natural Gas Future held by commercial traders and financials traders (funds and other financial institutions) in mn.
Sources: ESMA Weekly Commodity Derivatives Positions Reporting, ESMA.
Asset management

Fund industry

A.63 EU fund performance

A.64 Volatility of EU fund returns

A.65 EU fund assets by market segment

A.66 EU fund NAV by legal form

A.67 EU fund NAV by market segment

A.68 EU fund leverage by market segment

Note: EU27-domiciled investment funds’ annual average monthly returns, asset weighted, in %.
Sources: Thomson Reuters Lipper, ESMA.

Note: Annualised 40D historical return volatility of EU27 domiciled mutual funds, in %.
Sources: Thomson Reuters Lipper, ESMA.

Note: AuM of EA funds by fund type, EUR tn.
Sources: ECB, ESMA.

Note: NAV of EEA30 funds, EUR tn.
Sources: EFAMA, ESMA.

Note: Leverage of EA investment funds by fund type computed as the AuM/NAV ratio.
Sources: ECB, ESMA.
A.69
EU fund flows by fund type

A.70
EU fund flows by regional investment focus

A.71
EU bond fund flows by regional investment focus

A.72
EU equity fund flows by regional investment focus

A.73
Net flows in EU bond funds

A.74
Net asset valuation of EU funds

Note: EU27 fund quarterly net flows, in % of NAV.
Sources: Refinitiv Lipper, ESMA.

Note: EU27 bond and equity funds (BF and EF) monthly flows over time since 2004 by regional investment focus, in % of NAV.
Sources: Refinitiv Lipper, ESMA.

Note: EU27 bond fund montly flows by regional investment focus, in % of NAV.
Sources: Refinitiv Lipper, ESMA.

Note: EU27 Equity fund monthly flows by regional investment focus, in % of NAV.
Sources: Refinitiv Lipper, ESMA.

Note: Two-month cumulative net flows for EU27 bond funds, EUR bn. Funds investing in corporate and government bonds that qualify for another category are only reported once e.g. funds investing in emerging government bonds reported as Emerging funds investing in HY corporate bonds reported as HY.
Sources: Refinitiv Lipper, ESMA.
**A.75**  
Liquidity risk profile of EU bond funds

Note: Quarterly effective average maturity of EU27 fund assets, in years; ESMA liquidity ratio (rhs, in reverse order).  
Sources: Refinitiv Lipper, ESMA.

**A.76**  
Cash held by EU corporate bond funds

Note: Median and difference between the first and 3rd quartile of the value of cash held by EU27 corporate bond funds, in % of portfolio holdings (%). Short positions can have a negative value.  
Sources: Refinitiv Lipper, ESMA.

**A.77**  
Credit quality of EU bond funds’ assets

Note: Quarterly average credit quality (S&P ratings; 1= AAA; 4= BBB; 10 = D) for EU27-domiciled funds.  
Sources: Refinitiv Lipper, ESMA.

**A.78**  
Maturity of EU bond funds’ assets

Note: Weighted average effective maturity of EU bond funds’ assets, data in years.

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**Money market funds**

**A.79**  
EU MMF performance

Note: EU27-domiciled MMFs’ average yearly returns by month, asset-weighted, in %. The graph shows the median and average asset-weighted returns and the difference between the returns corresponding to the 98th and the 2nd percentile (light blue corridor).  
Sources: Refinitiv Lipper, ESMA.

**A.80**  
MMF flows by domicile

Note: Monthly net flows for MMFs by domicile, in % of NAV.  
Sources: Refinitiv Lipper, ESMA.
A.81 EU MMF flows by geographical focus

Note: EU27 MMF monthly net flows by geographical focus, in % of NAV. Sources: Refinitiv Lipper, ESMA.

A.82 EU MMF assets and leverage

Note: NAV and AuM of EA MMFs, EUR tn. Leverage computed as the AuM/NAV ratio. 5Y-MA=five-year moving average of the leverage ratio. Sources: ECB, ESMA.

A.83 EU MMF maturity

Note: Weighted average maturity (WAM) and weighted average life (WAL) of Europe-domiciled MMFs, in days. Aggregation carried out by weighting individual MMFs’ WAM and WAL by AuM.

A.84 EU MMF liquidity

Note: Daily and weekly liquidity includes all assets maturing overnight and shares by AAA MMFs, securities issued by highly rated sovereigns with a maturity of less than one year, in % of total assets. Aggregation carried out using individual Europe-domiciled MMF data weighted by AuM.

A.85 EU hedge fund returns

Note: EU27 domiciled hedge funds’ monthly returns, %. The graph shows the returns’ median, the difference between the returns corresponding to the 98th and 25th percentiles (light blue corridor) and the difference between the returns corresponding to the 1st and 3rd quartiles (dotted line corridor). Sources: Lipper Tass, ESMA.

A.86 EU alternative fund performance by strategy

Note: Growth in hedge fund performance indices by strategy: Hedge fund index (Total), arbitrage, Commodity Trading Advisor (CTA), distressed debt, event driven, fixed income, long/short equity, macro, multi-strategy, relative value (RV), in %. Sources: Eurekahedge, ESMA.
**A.87 EU alternative fund flows by domicile**

![Graph showing EU alternative fund flows by domicile]

Note: Alternative mutual fund monthly net flows by domicile, in % of NAV. Data on alternative mutual funds represent only a subset of the entire alternative fund industry. Sources: Refinitiv Lipper, ESMA.

**A.88 EU alternative fund assets and leverage**

![Graph showing EU alternative fund assets and leverage]

Note: NAV and AuM of EU alternative funds, EUR bn. Leverage computed as the AuM/NAV ratio. 1Y-MA=one-year moving average for the leverage ratio. Sources: ECB, ESMA.

**A.89 Alternative fund flows by geographical focus**

![Graph showing alternative fund flows by geographical focus]

Note: EU27 domiciled alternative mutual funds net flows by geographical investment focus, in % of NAV. Data on alternative mutual funds represent only a subset of the entire alternative fund industry. Sources: Refinitiv Lipper, ESMA.

**A.90 Direct and indirect EU property flows**

![Graph showing direct and indirect EU property flows]

Note: Two-month cumulative flows for direct and indirect EU27 domiciled property funds. Indirect property funds invest in securities of real estate companies, including Real Estate Investment Trusts (REITs), in EUR bn. Sources: Morningstar, ESMA.
**Exchange-traded funds**

### A.91 EU ETF returns

- **Graph**: Shows average yearly returns by month, asset-weighted, in %. The graph shows the median and average asset-weighted returns and the difference between the returns corresponding to the 98th and the 2nd percentile (light blue corridor).
- **Note**: EU27-domiciled ETFs’ average yearly returns by month, asset-weighted, in %. Yearly standard deviation reported on monthly frequency. End-of-month data.
- **Sources**: Refinitiv Lipper, ESMA.

### A.92 EU ETF returns volatility

- **Graph**: Annualised 40-day historical return volatility of EU27-domiciled ETFs, in %.
- **Note**: Annualised 40-day historical return volatility of EU27-domiciled ETFs, in %.
- **Sources**: Refinitiv Lipper, ESMA.

### A.93 EU ETF and NAV by domicile

- **Graph**: NAV, EUR bn, and number of ETFs by domicile.
- **Note**: NAV, EUR bn, and number of ETFs by domicile.
- **Sources**: Refinitiv Lipper, ESMA.

### A.94 EU ETF NAV by asset type

- **Graph**: NAV of EU27 ETFs by asset type, EUR bn.
- **Note**: NAV of EU27 ETFs by asset type, EUR bn.
- **Sources**: Refinitiv Lipper, ESMA.

### A.95 EU ETF tracking error

- **Graph**: Tracking error defined as standard deviation of mutual fund excess returns compared with benchmark. The graph shows the tracking error for EU27 ETFs and mutual funds both UCITS and non-UCITS. Yearly standard deviation reported on monthly frequency. End-of-month data.
- **Note**: Tracking error defined as standard deviation of mutual fund excess returns compared with benchmark. The graph shows the tracking error for EU27 ETFs and mutual funds both UCITS and non-UCITS. Yearly standard deviation reported on monthly frequency. End-of-month data.
- **Sources**: Refinitiv Lipper, ESMA.

### A.96 EU and US ETF flows by domicile

- **Graph**: ETF net flows by domicile, in % of NAV.
- **Note**: ETF net flows by domicile, in % of NAV.
- **Sources**: Refinitiv Lipper, ESMA.
A.97 Assets of leveraged EU ETFs

Note: Total assets of leveraged long and leveraged short ETFs with primary listings in Europe, in EUR bn and total number of products (rhs), in thousand.

A.98 Average beta values for EU ETFs

Note: Annual average beta for leveraged and unleveraged EU27 ETFs. Leveraged ETFs are self-reported. The annual average monthly beta is measured as the volatility of a fund return in comparison to its benchmark. An unleveraged ETF replicating its benchmark will typically have a beta close to 1.0.
Sources: Refinitiv Lipper, ESMA.

A.99 Assets of EU ETFs by replication method

Note: Total assets of physical and synthetic ETFs with primary listings in Europe, in EUR bn and total number of products (rhs).
Sources: ETFGI, ESMA

A.100 Flows into EU ETFs by replication method

Note: Net flows of physical and synthetic ETFs with primary listings in Europe, in EUR bn.
Sources: ETFGI, ESMA.
**Consumers**

### Investment resources available to households

**A.101**

EU household disposable income growth

![Graph showing EU household disposable income growth](image1)

**A.102**

EU household saving and investment rates

![Graph showing EU household saving and investment rates](image2)

**Note:** Annualised growth rate of household gross disposable income is adjusted for changes in pension entitlements for EU27 countries, in %. 5Y-MA=five-year moving average of the growth rate. Sources: Eurostat, ESMA.

**A.103**

EU investor sentiment

![Graph showing EU investor sentiment](image3)

**A.104**

EU household asset growth

![Graph showing EU household asset growth](image4)

**Note:** Annualised growth rate real and financial assets of EA households, in %. 5Y-MA=five-year moving average of the growth rates. Sources: ECB, ESMA.

### Asset allocation by retail investors

**A.105**

EU household growth rates in financial assets

![Graph showing EU household growth rates in financial assets](image5)

**Note:** Average annualised growth rates of financial asset classes held by EU27 households, in %. Other assets=other accounts receivable/payable. Sources: ECB, ESMA.

**A.106**

EU household financial assets by class

![Graph showing EU household financial assets by class](image6)

**Note:** Financial assets of EU27 households, EUR in. Other assets=Insurance technical reserves, financial derivatives, loans granted and other accounts receivable. Sources: ECB, ESMA.
**A.113** Bond UCITS net flows by management type

Note: EU27 bond UCITS annual net flows from retail and institutional investors at quarterly frequency by management type, EUR bn.

Sources: Refinitiv Lipper, ESMA.

**A.114** Equity active funds closet index indicator

Note: Note: EU27 active equity UCITS share of potential closet index (CI) within our sample. Share of total, %. Potential CI based on three criteria: Active Share (AS) < 60% and Tracking Error (TE) < 4%; AS < 50% and TE < 3%; AS < 50% and TE < 3% and R-squared (R2) > 95%.

Sources: Morningstar Direct, ESMA.

### Costs and performance

**A.115** EU household portfolio returns

Note: One-year moving average of the monthly gross nominal and real returns of a stylised EU household portfolio, in %. Asset weights, computed using National Financial Accounts by Institutional Sectors, are 36% for collective investment schemes, 39% for deposits, 22% for shares and 3% for debt securities. Costs, fees and other charges incurred for buying, holding or selling these instruments are not taken into account.

Sources: Refinitiv Datastream, Refinitiv Lipper, ECB, Eurostat, ESMA.

**A.116** EU fund synthetic risk and reward indicator

Note: The calculated Synthetic Risk and Reward Indicator (SSRI) is based on ESMA SSRI guidelines. It is computed via a simple 5-year annualised volatility measure which is then translated into categories 1-7 (with 7 representing higher levels of volatility).

Sources: Refinitiv Lipper, ESMA.

**A.117** UCITS retail investor dispersion of net performance

Note: Dispersion of EU27 UCITS net performances, retail investors only, adjusted for total expense ratio and load fees, in %. Distribution represents selected EU27 markets.

Sources: Refinitiv Lipper, ESMA.

**A.118** UCITS retail investors net performance by asset class

Note: Evolution of gross annual performance of EU27 UCITS, retail investors only, by asset class, in %.

Sources: Refinitiv Lipper, ESMA.
A.119

Equity UCITS total costs by management type

Note: Evolution of total costs (ongoing costs (TER), subscription and redemption fees) of EU27 equity UCITS, retail and institutional investors, by management type, in bps.
Sources: Refinitiv Lipper, ESMA.

A.120

Equity UCITS net performance by management type

Note: Evolution of net annual performance (net of ongoing costs (TER), subscription and redemption fees) of EU27 equity UCITS, retail and institutional investors, by management type, in %.
Sources: Refinitiv Lipper, ESMA.

A.121

Bond UCITS total costs by management type

Note: Evolution of total costs (ongoing costs (TER), subscription and redemption fees) of EU27 bond UCITS, retail and institutional investors, by management type, in bps.
Sources: Refinitiv Lipper, ESMA.

A.122

Bond UCITS net performance by management type

Note: Evolution of net annual performance (net of ongoing costs (TER), subscription and redemption fees) of EU27 bond UCITS, retail and institutional investors, by management type, in %.
Sources: Refinitiv Lipper, ESMA.
Complaints

A.123

EU complaints

![Graph showing EU complaints by quarter from 3Q20 to 3Q22.]

Note: Number of complaints recorded by quarterly-reporting NCAs (n=14) via given reporting channels. "NCA"=Reports lodged directly by consumers with NCAs. "Firms"=Complaints recorded by NCAs via firms. "Average total"=Average total number from 3Q20 to 3Q22. Sources: ESMA complaints database.

A.124

EU complaints by type of firm involved

![Graph showing EU complaints by type of firm involved from 3Q20 to 3Q22.]

Note: Share of complaints for quarterly-reporting NCAs (n=14) received direct from consumers and via firms by type of firm involved, excluding complaints with firm type recorded. "Total with MiFID service reported"=Number of complaints via these reporting channels including those with none of the listed causes recorded.

A.125

EU complaints by underlying cause

![Graph showing EU complaints by underlying cause from 3Q20 to 3Q22.]

Note: Share of complaints for quarterly-reporting NCAs (n=14) received direct from consumers and via firms by underlying cause, excluding complaints with no cause recorded. "Unauth. bus."=Unauthorised business. "Appr/suit"=Appropriateness or suitability assessment. "Info quality"=Quality or lack of information. "Total with cause reported"=Number of complaints via these reporting channels including those with none of the listed causes recorded.

A.126

EU complaints by type of financial instrument

![Graph showing EU complaints by type of financial instrument from 3Q20 to 3Q22.]

Note: Share of complaints for quarterly-reporting NCAs (n=14) received direct from consumers and via firms by type of financial instrument, where none of the instruments listed was reported. "Total with instrument cited"=Number of complaints via these reporting channels excluding those with instrument type not reported or reported as "other" or "N/A." "Total complaints"=Number of complaints via these reporting channels whether or not further categorisation possible. "CFDs"=Contracts for Differences.

A.127

EU complaints by MiFID II service

![Graph showing EU complaints by MiFID II service from 3Q20 to 3Q22.]

Note: Share of complaints for quarterly-reporting NCAs (n=14) received direct from consumers and via firms recorded as associated with a given MiFID service, excluding complaints with no such category recorded, all reporting channels. "Total with MiFID service reported"=Total complaints received via these reporting channels recorded as associated with a MiFID service.

Sources: ESMA complaints database.
Infrastructures and services

Trading venues and MiFID entities

A.128 EU equity trading by trading type

A.129 EU trading turnover by type of assets

A.130 EU circuit breaker occurrences by market capitalisation

A.131 EU circuit breaker trigger events by sector

A.132 EU trading system capacity proxy

A.133 EU equity market concentration
Central counterparties

**A.134 Initial margins held at EU and UK CCPs**

Note: Initial margin required as well as additional margin posted by EU and UK CCPs, in EUR bn.
Sources: Clarus Financial Technology, CPMI-IOSCO PQD, ESMA.

**A.135 Margin breaches at selected EU CCPs**

Note: Average and maximum margin breach size over the past 12 month at selected EU CCPs, as a percentage of the total margin held, as of 30th September 2022. (Data for Athex Clearing, BME Clearing, CC&G and Euro CCP not reported)
Sources: Clarus Financial Technology, PQD, ESMA.

**A.136 Initial margins held at EU CCPs by asset class**

Note: Outstanding amounts of initial margin required and excess collateral received by EU CCPs for derivatives (CCP-A, CC&B, BME clearing) in EUR bn.
Sources: TRs, ESMA.

**A.137 Initial margins held at EU and UK CCPs by account**

Note: Total initial margin required, split by house accounts (participants positions on their own account), client gross (when initial margin for the positions of indirect participants must be provided for each indirect participant’s own position) and client net (when positions are netted within a group of clients). As of 30th June 2022.
Sources: Clarus Financial Technology, CPMI-IOSCO PQD, ESMA.

**A.138 IRD clearing volumes by CCP**

Note: Quarterly notional volumes cleared for OTC and ETD IRDs in EUR, USD, JPY or GBP. Market shares by CCP in % of total quarterly volumes cleared for these products. Total volumes in EUR bn.
Sources: Clarus Financial Technology, ESMA.

**A.139 Credit derivatives clearing volumes by CCP**

Note: Quarterly notional volumes cleared for CDS, CDX and CDX futures & swaptions in EUR, USD, JPY or GBP. Market shares by CCP in % of total quarterly volumes cleared for these products. Total volumes in EUR bn.
Sources: Clarus Financial Technology, ESMA.
Central securities depositories

**A.142 Settlement activity in EU CSDs by asset class**

Note: Total value of settlement instructions in the EEA30 as reported by NCAs, in EUR, one-week moving averages. Missing data for some CSDs prior to mid-March 2020. Dotted lines represent one-year moving averages of the respective asset classes.

**A.143 Settlement fails in EU CSDs by asset class**

Note: Share of failed settlement instructions in the EEA30, in % of value, one-week moving averages. Missing data for some CSDs prior to mid-March 2020. Dotted lines represent one-year moving averages of the respective asset classes.

**A.144 Number of settlement instructions in EU CSDs**

Note: Total number of settlement instructions in the EEA30 as reported by NCAs, in thousand, one-week moving averages. Missing data for some CSDs prior to mid-March 2020. Dotted lines represent one-year moving averages of the respective asset classes.

**A.145 Number of failed settlement instructions in EU CSDs**

Note: Share of failed settlement instructions in the EEA30, in % of number of instructions, one-week moving averages. Missing data for some CSDs prior to mid-March 2020. Dotted lines represent one-year moving averages of the respective asset classes.
Credit rating agencies

**A.146** Outstanding EU credit ratings issued by Big 3 CRAs

![Graph showing outstanding EU credit ratings issued by Big 3 CRAs](image)

Note: Evolution of the number of outstanding EEA30 issuer and instrument ratings by debt category, indexed 1Q16/100. NFC = non-financial, Fin = financial, Ins = insurance, Intl = international, Reg = regional, Supra = supranational.

**A.147** Share of outstanding EU credit ratings: Big 3 CRAs vs. rest

![Graph showing share of outstanding EU credit ratings: Big 3 CRAs vs. rest](image)

Note: Share of outstanding ratings of EEA30 issuers and instruments from Big 3 CRAs (S&P, Moody’s and Fitch) and ratings from all other CRAs in %.
Sources: RADAR, ESMA.

**A.148** Changes in outstanding EU SFI ratings

![Graph showing changes in outstanding EU SFI ratings](image)

Note: Number of withdrawn and new ratings for structured finance instruments, EEA30 ratings.
Sources: RADAR, ESMA.

**A.149** Changes in outstanding EU covered bond ratings

![Graph showing changes in outstanding EU covered bond ratings](image)

Note: Number of withdrawn and new ratings for covered bond ratings, EEA30 ratings.
Sources: RADAR, ESMA.
Financial benchmarks

A.150
IRDs linked to new RFRs

A.151
IRDs linked to Euribor and Libor

A.152
€STR rate

A.153
€STR volumes

Note: Gross notional amount of IRD outstanding referencing new benchmarks, EUR tn.
Sources: TRs, ESMA.

Note: Gross notional amount of IRD outstanding referencing benchmarks, EUR tn.
Sources: TRs, ESMA.

Note: Rates at the 25th and 75th percentiles of total volumes as well as the trimmed one, after removing the top and bottom 25% and calculating the mean of the remaining 50% of the volume-weighted distribution of rates.
Sources: ECB, ESMA.
Market-based finance

Capital markets financing

A.154
Total EU market financing

A.155
EU equity issuance by deal type

A.156
Cumulative high yield bond issuance

A.157
EU corporate bond issuance and outstanding by rating

A.158
Corporate bond issuance by maturity buckets

A.159
Corporate bond issuance by rating class

Note: Liabilities of EA NFCs, by deal type as a share of total liabilities. Others include financial derivatives and employee stock options; insurance, pensions and standardised guarantees schemes; trade credits and advances of NFC; and other accounts receivable/payable. Mkt. financing (rhs)= annual growth rate in debt securities, equity and investment fund (IF) shares, in %.
Sources: ECB, ESMA.

Note: Cumulative amount of gross HY corporate bond issuance in the EEA30 since 2017, EUR bn.
Sources: Refinitiv Eikon, ESMA.

Note: Corporate bond gross issuance in the EEA30 by rating bucket, EUR bn. Avg. rating/weighted average rating computed as a one-year moving average of ratings converted to a numerical scale (AAA=1, AA=2, etc.) excluding non-rated bonds. Maturities < 12 months are excluded.
Sources: Refinitiv EIKON, ESMA.
Note: Equity gross issuance in the EEA30 by sector, EUR bn. Financials includes banking & investment services, insurance, investment trusts and real estate.
Sources: Refinitiv EIKON, ESMA.

Note: Retained and placed securitised products gross issuance in Europe, EUR bn, and outstanding amounts (rhs), EUR tn. Data includes ABS, CDO, MBS, SME, WBS.
Sources: AFME, ESMA.

Note: Amount of wholesale funding provided by EA non-banks, EUR tn, and growth rate (rhs), in %. Securitised assets are net of retained securitisations. Resident OFI reflects the difference between the total financial sector and the known sub-sectors within the statistical financial accounts (i.e. assets from banking sector, insurances, pension funds, financial vehicle corporations, investment funds and money market funds).
Sources: ECB, ESMA.
SMEs

A.166 EU SME trading volumes

Note: Monthly trading volumes on EEA30 venues of SME shares, EUR bn (rhs), and % share of the total trading in shares (rhs). 'Small' = [0.0-20mn], 'Medium' = [20mn-200mn]. 2022 classification of SMEs is based on share market capitalisation in 2021.
Sources: FIRDS, FITRS, ESMA.

Market-based credit intermediation

A.168 EU sovereign repo market specialness

Note: Median, 75th and 90th percentile of weekly specialness, measured as the difference between general collateral and special collateral repo rates on government bonds in nine EUR repo markets (AT, BE, DE, ES, FI, FR, IT, NL and PT).
Sources: CME Group Benchmark Administration Limited, ESMA.

A.169 EU sovereign repo market turnover

Note: Repo transaction volumes executed through CCPs in nine sovereign EUR repo markets (AT, BE, DE, ES, FI, FR, IT, NL and PT), EUR bn.
Sources: CME Group Benchmark Administration Limited, ESMA.

A.170 Total assets of EU MMFs and other financial institutions

Note: Total assets for EU MMFs and other financial institutions (OFI): investment funds (IF), financial vehicle corporations (FVC), Other OFI estimated with ECB Quarterly Sector Accounts, in EUR bn. Expressed in % of bank assets on rhs.
Sources: ECB, ESMA.

A.171 EU financial market interconnectedness

Note: EA loan and debt securities vis-à-vis MFI counterparts, as a share of total assets, investment funds and MMFs, in %. Total funds includes: bond funds, equity funds, mixed funds, real estate funds, hedge funds, MMFs and other non-MMF investment funds.
Sources: ECB, ESMA.
A.172
Credit terms in EU SFT and OTC derivatives

Note: Weighted average of responses to the question: "Over the past three months, how have terms offered as reflected across the entire spectrum of EUR-denominated instruments in securities financing and OTC derivatives transaction types changed?" 1=tightened considerably, 2=tightened somewhat, 3=remained basically unchanged, 4=eased somewhat, and 5=eased considerably.
Sources: ECB, ESMA.

A.173
EU securities financing conditions

Note: Weighted average of responses to the questions "Over the past three months, how has demand for funding/how have liquidity and functioning for all EUR-denominated collateral types changed?" 1=decreased/deteriorated considerably, 2=decreased/deteriorated somewhat, 3=remained basically unchanged, 4=increased/improved somewhat, and 5=increased/improved considerably.
Sources: ECB, ESMA.
Sustainable finance

ESG investing

A.174 Global ESG leaders index performance

Note: MSCI ESG leaders total return indices, denominated in USD, indexed with 01/09/2020=100.
Sources: Refinitiv Datastream, ESMA.

A.175 EU ESG leaders index risk-adjusted returns

Note: Annual returns of the EURO STOXX 50 and its ESG leaders subindices in %.
Risk-adjusted returns, on rhs, measured as Sharpe ratios. Current year data year-to-date.
Sources: Refinitiv Datastream, ESMA.

A.176 EU ESG fund assets

Note: AUM of EU-domiciled ESG funds by type of fund, EUR bn, and share of ESG fund AUM in total fund AUM (rhs), in %.
Sources: Morningstar, Refinitiv Lipper, ESMA.

A.177 EU ESG equity fund flows

Note: Cumulative monthly net flows in ESG and non-ESG equity funds since June 2020, EUR bn.
Sources: Morningstar, Refinitiv Lipper, ESMA.

A.178 Number of EU and US climate-related controversies

Note: Quarterly number of new climate-related controversies involving EEA financial sector firms (based on the STOXX Europe 600) and US financial sector firms (based on the S&P 500), and share of climate-related controversies. Climate-related controversies include greenhouse gas emissions, soy, forest burning, energy management, arctic drilling and coal-fired power plants.
Sources: RepRisk, ESMA.

A.179 Reputational Risk Index of EU firms

Note: Average quarterly RepRisk Index (RRI) for financial vs. non-financial sector firms from the STOXX Europe 600 index. The RRI captures firms’ reputational risk related to ESG issues based on reach and impact of public information, ranging from 0 (no risk) to 100 (maximum risk).
Sources: RepRisk, ESMA.
### Sustainable debt

**A.182 EU ESG bonds outstanding**

Note: Total amount of ESG bonds outstanding issued by EEA30-domiciled issuers, EUR bn.
Sources: Refinitiv EIKON, ESMA.

**A.183 EU green bond quarterly issuance**

Note: Green bond gross issuance in the EEA30 by sector, EUR bn.
Sources: Refinitiv EIKON, ESMA.

**A.184 Labelled EU green bond issuance**

Note: ESG bond gross issuance in the EEA30, EUR bn, and share of other ESG bonds (rhs), in %. Other = all ESG bonds not labelled "Green" by the Climate Bond Initiative and/or aligned with the ICMA Green Bond Principles.
Sources: Refinitiv EIKON, ESMA.

**A.185 EU social bond issuance by project type**

Note: Social bond gross issuance in the EEA30 by project type, in %, as a share of total social bond gross issuance (rhs), in EUR bn.
Sources: Refinitiv EIKON, ESMA.
A.186
EU corporate green bond liquidity

A.187
EU sovereign green bond liquidity

Carbon markets

A.188
EU emission allowance prices

A.189
EU emission allowance returns volatility

A.190
Share of hedging positions in EUA futures by non-financials

A.191
Number of positions in EUA derivatives held by funds

Notes:
- One-month moving average of the bid-ask spread of green and conventional bonds from European sovereign green bond issuers, as a monthly average of bid-ask spreads weighted by trading volumes across 12 EU27 domestic markets (AT, BE, DE, ES, FI, FR, GR, IE, IT, NL, PT and SI) and Euro MTS, in EUR.
- Bid-ask spread of green and conventional bonds from government, supranational and agency green bond issuers, as a monthly average of bid-ask spreads weighted by trading volumes across 12 EU27 domestic markets (AT, BE, DE, ES, FI, FR, GR, IE, IT, NL, PT and SI) and Euro MTS, in EUR.
- Rolling 5-day standard deviation of daily changes in EU emission allowance spot prices, in %.
- Share of hedging and non-hedging positions in %.
- Weekly number of long and short positions in EU emission allowance derivative contracts held by investment funds, four-week moving averages.

Sources:
- IHS Markit, ESMA.
- MTS, ESMA.
- Refinitiv Datastream, ESMA.
- Refinitiv EIKON, ESMA.
- ESMA commodity derivatives weekly position reporting.
A.192
Number of EU firms disclosing Scope 1 GHG emissions

0 200 400 600 800 1,000 1,200

Note: Number of EEA-domiciled firms listed in the EU disclosing Scope 1 (direct) greenhouse gas emissions, by market capitalisation and statement year. SMEs=below 200mn; Medium-large=from 200mn to 2bn; Large=from 2bn to 20bn; Very large=above 20bn.
Sources: Refinitiv EIKON, FIRDS, ESMA.

A.193
Share of EU firms disclosing GHG emissions target

0% 20% 40% 60% 80% 100%
SMEs Medium-large Large Very large

Note: Share of EEA-domiciled firms listed in the EU disclosing a greenhouse gas emission reduction target, by market capitalisation. SMEs=below 200mn; Medium-large=from 200mn to 2bn; Large=from 2bn to 20bn; Very large=above 20bn.
Sources: Refinitiv EIKON, FIRDS, ESMA.
Financial innovation

Financial innovation

A.194
Crypto asset market capitalisation

A.195
Crypto asset prices

Note: Market capitalisation of Bitcoin, Ethereum, Tether and other crypto-assets, in EUR bn.
Sources: CoinMarketCap, ESMA.

A.196
Crypto asset price volatilities

A.197
Crypto asset trading volumes

Note: Annualised 30-day historical volatility of EURO STOXX 50, EUR/USD spot rate returns and USD-denominated returns for Bitcoin, Ethereum and gold, in %.
Sources: Refinitiv Datastream, ESMA.

A.198
Stablecoin market capitalisation

A.199
Stablecoin trading volumes

Note: Market capitalisation of Binance USD, Tether, USD Coin and other stablecoins, in EUR bn.
Sources: CoinMarketCap, ESMA.
A.200
Bitcoin futures market

Note: Total open interest in Bitcoin futures, in thousand of contracts, and change in monthly average total open interest, in %.
Sources: Refinitiv Datastream, ESMA.