

TRV Risk Monitor

ESMA Report on Trends, Risks and Vulnerabilities

No. 1, 2025



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ISBN 978-92-95235-78-6, doi: 10.2856/7894939, ISSN 2599-8749, EK-01-25-000-EN-N
Luxembourg: Publications Office of the European Union

European Securities and Markets Authority (ESMA)
Economics, Financial Stability and Risk Department
201- 203 Rue de Bercy
FR- 75012 Paris
risk.analysis@esma.europa.eu

ESMA - 201- 203 rue de Bercy - CS 80910 - 75589 Paris Cedex 12 - France - www.esma.europa.eu

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Executive summary

Risk summary and outlook

Markets in ESMA's remit continued to be resilient in 2H24, despite higher volatility than in 1H24 and significant ongoing geopolitical risks and uncertainties, including on the extent of further monetary policy loosening. Overall, risks remain at high or very high levels. Political risks continue to grow with substantial uncertainty in key EU member states and at international level. Budgetary difficulties, looming public debt issues, trade conflicts and other salient political controversies carry the potential for financial market instability. The continued surge in equity markets and record-highs in crypto-asset valuations, driven by expectations of a deregulatory policy agenda, underline the concerns over a decoupling of financial markets from economic realities. Risks are compounded by the increased likelihood of technological disruptions, particularly from cyber and hybrid threats that continue to grow amid the geopolitical tensions.

Key risk drivers

Risk drivers

Uncertainty from a shifting macroeconomic context: The EU's economic performance and monetary responses provide an uncertain backdrop for EU financial markets. While falling, debt servicing and refinancing costs still weigh on corporates and sovereigns. Subdued real estate market prices, particularly for commercial real estate, have not been fully priced in by real estate funds. Growing exuberance in US equities and crypto assets intensifies the risks of drastic market corrections.

Geopolitical and peripheral risks: A confluence of external risks is serving as a potential market instability trigger. At the same time, geopolitical uncertainties and looming global trade conflicts are adding to the volatility of the financial system. The ability of the EU and its member states to respond effectively and in unison to political challenges is decisive for containing market uncertainty.

Operational and technology disruptions: Rising cyber and hybrid threats increase risks of technological disruptions, including in financial sectors, with associated risks of sensitive market reactions. Vulnerabilities to disruptions are exacerbated by the concentrated dependencies on information technology provided by relatively few firms. These operational and structural issues also risk diminishing the expected efficiency gains from the growing use of AI.

Green transition risks: Delays to green transition policies to a more sustainable economy could raise financial stability and investor protection risks, e.g. through growing climate physical risks. Greenwashing and related malpractices risk undermining investor trust.

Social media driven investments: Investors, especially those less sophisticated with limited knowledge or resources, are at risk of receiving false or misleading information through social media. As finance-related postings expand, investors not verifying the reliability and quality of information may incur losses. With a renewed surge in certain markets, such as crypto assets, risks from these assets grow.

Previous risk level	Current risk level	Outlook
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Note: Summary of key drivers of risks in financial markets under ESMA's remit. The summary is not a complete list and can change over time.

Market monitoring

Securities markets: European equity valuations moved downwards in 4Q24, continuing the diverging performance trend between EU and US equity indices, as economic policy uncertainty increased. Within the EU, considerable disparities in performance across sectors and countries persisted. In fixed income markets, corporate bond spreads have reached historically low levels, especially the high-yield (HY) segment.

Asset management: In the second half of 2024, the growth of EU fund assets was due to valuation effects with most fund categories exhibiting positive performance amid muted flows. Overall equity fund performance outperformed that of EU indices, reflecting a growing exposure of equity funds to the US market. However, this may also expose the fund industry to higher market risks as the US market showed signs of overvaluation. Leverage remains high in the hedge fund sector. There has been little commercial real estate fund valuation adjustment to underlying market prices.

Consumers: Confidence around future market conditions was weak, despite continuing improvement in the aggregate financial position of households. Consumers continued to increase their direct and indirect exposures to bonds amid higher interest rates. The average performance of retail investments improved in 2024. Consumer complaint levels rose significantly in 3Q24.

Infrastructures and services: Cyber risks continue to grow globally amid geopolitical tensions, though incidences so far have not had systemic implications. In 2H24 overall equity-trading volumes remained high (+23% year-on-year), with the share of Systematic Internalisers activity growing slightly. Settlement failure rates decreased in the second half of 2024, continuing a downward trend observed since the implementation of cash penalties under CSDR in 2022. The distribution and issuance of credit ratings remained similar to previous periods, albeit with a small decrease in the number of outstanding credit ratings associated with financials and covered bonds.

Structural developments

Market-based finance: The financing of European corporates through capital markets lost momentum during 2024. The market environment continues to be very challenging and equity issuance has remained weak overall, though initial public offering (IPO) activity showed signs of improvement in the first part of the year. Corporate bond issuance slightly declined in 2H24 but remained close to historically high levels. The corporate-bond outlook continues to show a significant upcoming maturity wall from 2025 to 2028. In this context, corporate debt sustainability remains a risk, especially in lower quality segments.

Sustainable finance: Global climate policy uncertainty continued to build during the second half of 2024. A renewed focus on the need to consolidate public finances in advanced economies raises questions on governments' abilities to finance the transition, when lower momentum in ESG investing signals a reduced investor appetite for 'green' investment products. However, the EU green bond market's strength, underpinned by non-financial corporate issuance, suggests that a broader greening of the European economy is underway.

Financial innovation: Crypto-asset prices boomed following the US election, with the new administration's pro-crypto stance fuelling optimism in the market. Bitcoin rose 30% and meme coins, including the largest, Dogecoin, saw their value surge dramatically. The rally pushed the total market capitalisation of crypto assets to EUR 3.3tn as of end-December 2024, 27% above the historical peak of November 2021. These developments prompted ESMA to renew its [warning](#) to investors on the highly speculative nature of many crypto-assets.

Risk dashboard

Risk categories

Category

- Liquidity risks
- Market risks
- Credit risks
- Contagion risks
- Operational risks
- Environmental risks

Previous risk level	Current risk level	Outlook
■	■	→
■	■	→
■	■	→
■	■	↗
■	■	→
■	■	→

Market segments

Securities markets

Risks

- Uncertainty about possible discrepancy in timing and level of monetary policy loosening between US and EU could drive market corrections
- Heightened geopolitical risks and economic policy uncertainty raise likelihood of market volatility
- Corporate bond spreads are historically low, including HY; concerns that search for yield and excessive risk-taking could lead to price misalignments and abrupt re-pricing of risks as macroeconomic conditions change
- With record high stock market valuations in the US, risk of disproportionate reactions to unexpected events, given ongoing market nervousness

Previous risk level	Current risk level	Outlook
■	■	↗

Asset management

Risks

- Increasing exposure to the US equity market raises concerns around market risk as the US market shows signs of overvaluation
- Shocks affecting both asset liquidity and liquidity demands could challenge funds exposed to liquidity mismatches
- Increased leverage in AIFs
- Delayed impact of monetary policy tightening, especially in sectors exposed to unrealised losses such as real estate

Previous risk level	Current risk level	Outlook
■	■	→

Consumers

Risks

- Aggressive marketing, especially of higher-risk structured products and crypto-assets
- Digitalisation, including gamified interfaces and emerging use of artificial-intelligence (AI) tools for client services
- Lack of consumer proficiency in social-media-driven and copy trading
- Potential greenwashing and limited ESG investing literacy
- Poorly disclosed high costs

Previous risk level	Current risk level	Outlook
■	■	→

Infrastructures and services

Risks

- Cyber risks continue to grow globally amid geopolitical tensions, and while incidences have not yet had systemic implications, the CrowdStrike outage underlined the potential for damage to the financial system
- Ongoing significant operational risk to infrastructures generally, including exposure from increasing digitalisation and the use of cloud services in core production processes
- High reactivity to market events raises risks of margin breaches and trade disruptions, such as increases in settlement fails

Previous risk level	Current risk level	Outlook
■	■	↗

Note: Assessment of the main risks by drivers and categories for markets within ESMA's remit since the last assessment, and outlook for the forthcoming quarter. Risk dashboard based on the categorisation of the European Supervisory Authorities Joint Committee. Risk drivers are key factors influencing potential risks within ESMA's remit, assessed through a narrative-based approach. Colours indicate current risk intensity. Coding: green = potential risk; yellow = elevated risk; orange = high risk; red = very high risk. Upward-pointing arrows = increase in risk intensity; downward-pointing arrows = decrease in risk intensity; horizontal arrows = no change. Change is measured with respect to the previous quarter; the outlook refers to the forthcoming quarter.

Recent TRV Risk Analysis

ESMA publishes in-depth analyses across a wide range of risk issues. The list below highlights key recent ESMA Risk Analysis publications and their website links, as well as the latest editions of our ESMA Market Report series. For a full list of publications, visit our [ESMA Risk Analysis webpage](#).

Securities markets, infrastructures and services

- Real estate markets – Risk exposures in EU securities markets and investment funds [Link](#)
- Evolution of EEA share market structure since MiFID II [Link](#)
- The August 2022 surge in the price of natural gas futures [Link](#)
- The EU securitisation market – an overview [Link](#)

Asset management

- Assessing risks posed by leveraged AIFs in the EU [Link](#)

Consumers

- Social media sentiment: Influence on EU equity prices [Link](#)

Sustainable finance

- Assessing portfolio exposures to climate physical risks [Link](#)
- Impact investing – Do SDG funds fulfil their promises? [Link](#)
- The financial impact of greenwashing controversies [Link](#)
- Dynamic modelling of climate shocks in the investment fund sector [Link](#)
- The European sustainable debt market – Do issuers benefit from an ESG pricing effect? [Link](#)
- ESG names and claims in the EU fund industry [Link](#)

Financial innovation

- Neo-brokers in the EU: developments, benefits and risks [Link](#)
- Crypto assets: Market structures and EU relevance [Link](#)
- Decentralised Finance: A categorisation of smart contracts [Link](#)
- Decentralised Finance in the EU: Developments and risks [Link](#)

ESMA Market Reports

- Costs and Performance of EU retail investment products 2024 [Link](#)
- EU Prospectuses 2024 [Link](#)
- EU Carbon Markets 2024 [Link](#)
- Crowdfunding in the EU 2024 [Link](#)
- EU Securities Financing Transactions Markets 2024 [Link](#)
- EU Securities Markets 2023 [Link](#)
- EU Alternative Investment Funds 2023 [Link](#)
- EU Derivatives Markets 2023 [Link](#)
- EU Credit Ratings Market 2023 [Link](#)
- EU Money Market Fund Market 2023 [Link](#)

Risk monitoring

Market environment

Despite improving economic conditions, the **external environment** remains challenging for EU financial markets, with significant uncertainties related to the global real economy, markets, and a variety of political sources.

Macro-financial conditions are expected to gradually improve as monetary policy loosening feeds through, though more slowly than in previous forecasts and with regional variation within the EU (Chart 1). In its autumn forecast the European Commission's expects real GDP growth for the EU of 0.9% for 2024 and 1.5 % for 2025, down slightly on spring forecasts (-0.1pps). The global outlook appears unchanged. The IMF kept its global growth forecasts at 3.2 % for both 2024 and 2025.¹ With the new US administration there is increased likelihood of economic fragmentation at the global level, adding further uncertainty to the outlook and could lead to market volatilities as policies emerge.

Inflation in the EU broadly continues to fall. The Commission lowered its EU inflation estimates and forecasts to 2.6 % for 2024 (-0.1 pps) but increased it to 2.4 % for 2025 (+0.2 pps). Inflation also remains vulnerable to future energy price rises, as seen in a pick-up in inflation in October, when oil prices rose briefly..

Interest rates started being cut in 2024 by the main central banks. The ECB made 25bps cuts in June, September, October and December, while the US Federal Reserve Bank cut rates by 50bps in September and by 25bps in November and December. However, there remains uncertainty on the extent and timing of future rate cuts, with potential for divergences in rate-cutting schedules between the EU and the US, particularly with the expected policy changes from the new US administration.

Global financial conditions should ease as lending rates are reduced with falling central bank interest rates. For now, however, bank credit standards in the euro area have remained largely unchanged in 2H24.² Ongoing uncertainty on the

pace and extent of interest rate cuts and **possible divergence** here between major global economies remains an overarching risk driver.

Energy prices were generally flat in early 2H but rose at the end of the year. Oil prices initially fell on weak global demand but jumped in October, with the escalation of the war in the Middle East, before falling back down. Natural gas Dutch TTF also showed a generally flat price trend until trending upwards later in the reporting period with the approach of winter and in anticipation of the end of Russian gas being supplied through Ukraine. With a colder winter, EU storage levels decreased more quickly than in previous years, which will mean demand in the coming year to refill storage will also be greater.³ This will add to upward price pressures and could fuel short-term price volatility. Nonetheless, price levels remained well below the activation thresholds for the market correction mechanism.⁴

Asset price patterns changed in the second half of 2024 from the low volatility growth of early 2024 (Charts 2 and 4). Geo-political events, such as the European and French Parliamentary elections in June, the successive French government changes, and weaker-than-expected early August US economic indicators, drove dips in equity values. Divergence has been increasing between US and European equities. US equities continued to grow rapidly, while those in Europe have followed flatter trends. In fixed income markets, corporate spreads continued to narrow, as in 1H24, particularly for high-yield corporates (Chart 3). This risk-on behaviour suggests a possible underestimation of credit risks for lower-rated debt. Yields have moved with evolving rate expectations, with increases in late 2024 suggesting growing expectations of shallower or less frequent rate cuts. US yields also increased more than European - a growing sign that US rate changes will diverge from European.

The increased interest rates affected **real estate** valuations and raised refinancing costs⁵. The fall in residential real estate prices appears to have

¹ IMF (2024), [World Economic Outlook October 2024](#); European Commission (2024), [European Economic Forecast – Autumn 2024](#)

² ECB (2024), [The euro area bank lending survey - Third quarter of 2024](#)

³ Financial Times (2024), [EU burns through gas storage at fastest rate since energy crisis](#), 24 December.

⁴ The market correction mechanism, set to expire at the end of January 2025, is activated either (i) if the front-month future price on the Dutch TTF is above EUR 180

per megawatt-hour or (ii) if the difference between the future price and a reference price calculated by ACER, based on the average price of several liquefied natural gas price markers, is higher than EUR 35. See ESMA (2023), ['Effects Assessment of the impact of the market correction mechanism on financial markets'](#), March.

⁵ See ESMA (2024), [Real estate markets – Risk exposures in EU securities markets and investment funds](#), January.

abated in 2024, with EU real estate property indices starting to rise at the end of 2023 and in 1H24.⁶ In contrast, the fall in commercial real estate (CRE) prices continued in the first half of 2024, with little sign yet of slowing.⁷ Also, as real estate funds comprise 22 % of EU CRE investment but CRE fund price adjustments have been muted so far, these funds remain exposed to the ongoing market correction (Chart 18). Risks could materialise here from a combination of vulnerabilities, including unrealised losses, large market footprint and liquidity mismatches, particularly in the case of open-ended funds.

There are early **signs of credit quality improvement** particularly among non-financial corporates which had experienced negative ratings drift⁸ and increased defaults in 2024. Real estate ratings drift remained negative but continued to improve, reaching levels more in line with other sectors. Banks have also continued to face limited credit risk materialisation, and public indebtedness in the EU has fallen on average. However, in the short-to-medium-term some credit risks will persist, heightened by an increasing number of corporate issuers requiring refinancing in 2025. These issuers still face much higher funding expenses than a couple of years back.

The current uncertainty on rate-cutting is exacerbated by continuing high levels of **geopolitical uncertainties** and risks. The collapse of the coalition government in Germany in November, and the fall of the French Government in December and associated failure to pass a budget for 2025, are creating major uncertainties in the EU's two largest economies. Elsewhere, the change in US administration is expected to bring shifts in policy direction, both economically – with the possible imposition of tariffs and a deregulatory policy agenda within the US – and geopolitically as the US's policies on Ukraine, the Middle East and China change.

In line with this, the **economic policy uncertainty** indices (Chart 5) grew for European, global and US measures in 2H24, particularly later in the year after the US election and the increase in uncertainty on US policies. Given this, sudden adverse changes or external events

could spread rapidly and lead to strong market reactivity and a general surge in risk aversion.

Government debt levels in EU member states relative to GDP continued to fall. EU gross government debt-to-GDP ratio fell, to 81.7 % in 2Q24, down 0.4pps year-on-year (and to 88.1 % in the euro area (EA)).⁹ However, debt is projected to rise in the Euro area into 2026. Given the still weak growth outlook and the different fiscal stances among member states, important concerns remain over debt sustainability. Political risks are also important here, as seen after the French parliamentary election in the summer when French sovereign spreads to Germany reached their highest levels since the euro-zone crisis in 2012 on growing market concerns on French debt sustainability, trending upwards since, with the uncertainty and government collapse in November.

Our composite market indicator suggests **systemic stress** rose during the summer, in response to increased market volatility in equity markets and bond markets following the European and French elections in June and the falls in equity prices in early August on the weaker-than-expected US economic indicators. Moreover, the correlation contribution also rose in the summer, indicative of greater risks from contagion. With the ongoing significant geopolitical and macroeconomic uncertainty, there are risks of increased systemic stress ahead.

Net investment flows from EA-domiciled investors were out of the Euro area in the second half of 2024 (Chart A.7)¹⁰. Outflows were predominantly driven by purchases of non-EA long-term debt securities by EA investors and by sales of EA debt securities by non-EA investors, which more than offset increased investment by non-EA investors into EA equities.

⁶ ECB (2024), [Residential property price indicator, Euro area 20 \(fixed composition\) as of 1 January 2023, Quarterly](#), accessed 5 December 2024.

⁷ ECB (2024), [Commercial property price indicator, Euro area 18 \(fixed composition\) as of 1 January 2014, Quarterly](#), accessed 5 December 2024.

⁸ Ratings drift is a metric measuring the direction of rating change; it is the ratio of difference of the aggregate rating

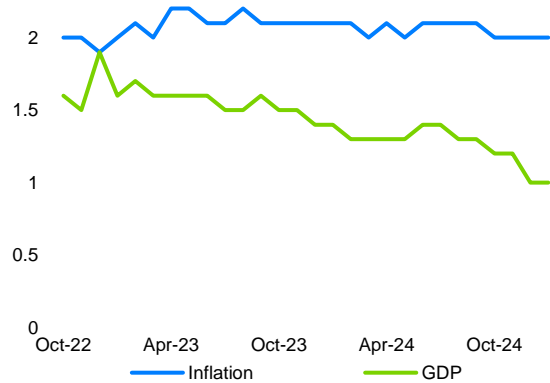
upgrades and downgrades during a period to the number of ratings outstanding at the start of the period.

⁹ See Eurostat (2024) [Euro indicators: 2nd quarter 2024 release 22 October 2024](#) and European Commission (2024), [European Economic Forecast – Autumn 2024](#),

¹⁰ Charts with an A prefix are located in the [TRV Statistical Annex](#).

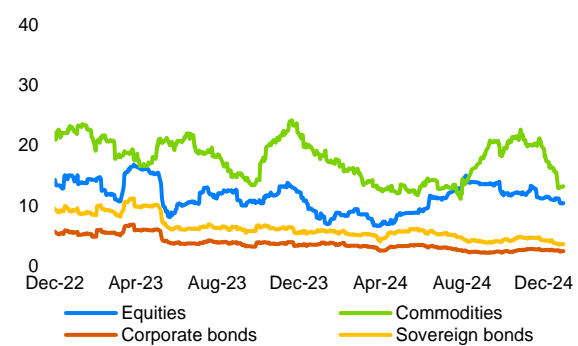
Key indicators

Chart 1
Evolution of GDP and inflation forecasts for 2025
GDP forecast falls, inflation forecast stable
 2.5



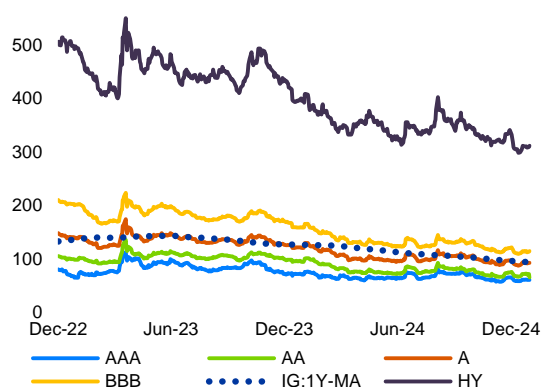
Note: Median GDP growth and inflation forecast for the euro area for 2025, by vintage month, in %.
 Sources: Refinitiv Eikon, ESMA.

Chart 2
Market volatilities
Volatility grows for equities and commodities
 50



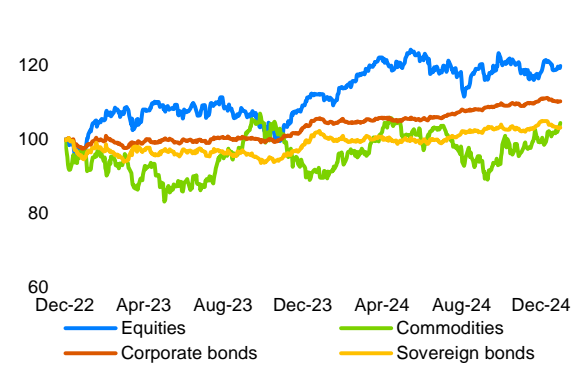
Note: Annualised 40D volatility of return indices on EA equities (Datastream regional index), global commodities (S&P GSCI) converted to EUR, EA corporate and sovereign bonds (iBoxx EUR, all maturities), in %.
 Sources: Refinitiv Datastream, ESMA.

Chart 3
Corporate bond spreads
Spreads continue to narrow
 600



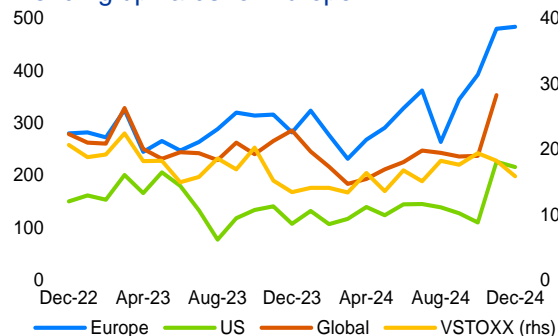
Note: ICE BofAML EA corporate bond option-adjusted spreads by rating, in bps. IG:1Y-MA=one-year moving average of all investment grade indices.
 Sources: Refinitiv Datastream, St Louis Fed, ESMA.

Chart 4
Market performance
Equities and commodities flat trend, bonds up
 140



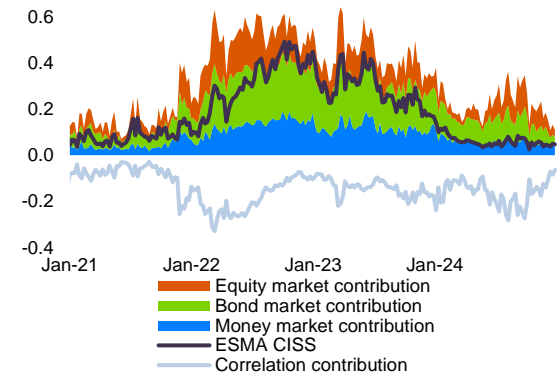
Note: Return indices on EA equities (Datastream regional index), global commodities (S&P GSCI) converted to EUR, EA corporate and sovereign bonds (iBoxx EUR, all maturities). 01/12/2022=100.
 Sources: Refinitiv Datastream, ESMA.

Chart 5
Economic policy uncertainty index
Trending upwards for Europe
 500



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.

Chart 6
ESMA systemic stress indicator
Systemic stress increases in summer then drops



Note: ESMA version of the ECB CISS 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: flat performance, rising volatility

The performance of **European equity markets** levelled off in the second half of 2024, with major EU indices (Euro Stoxx 50 and STOXX 600) marking +0.7% and -0.7% as of end-December compared to the end of 2Q24. Macroeconomic uncertainty and geopolitical tensions had a notable impact on European stocks. Globally, markets rose by 5.3% in 2H24 compared to end-June 2024, despite higher volatility levels (Chart 11). In August 2024, a volatility spike caused by weaker-than-expected US economic indicators and the unwinding of Yen carry trades led to a short-lived drop in prices. Nevertheless, global equity indices quickly recovered the losses in the following weeks (Chart 10). Despite positive performance at a global level, equity markets remain characterized by nervousness and uncertainty on the future interest rate path. On December 18, the CBOE Volatility Index (VIX) saw another spike (Chart 11), linked to investor reactions on slower-than-expected monetary easing projections for 2025.

The US market continued to demonstrate strong growth (+8.4% in 2H24), widening the gap with its EU counterparts. Furthermore, the divergence is evident in **price-to-earnings (PE) ratios**, with US ratios significantly above historical averages, indicating potential overvaluation¹¹. Conversely, the ratios of EU firms remained consistent with long-term average levels (Chart 7). The difference is largely due to the strong performance of the 'Magnificent Seven' group of technology stocks; with these omitted price-earning ratios are much less divergent.

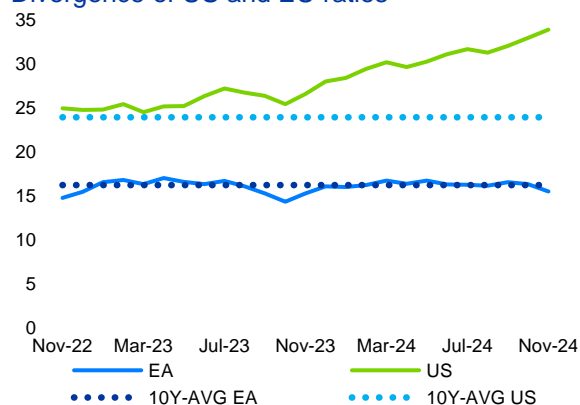
There were considerable disparities in the performance of different economic sectors (Chart 12) and countries (Chart A.9) across Europe. Within the EU, market performance in 2H24 varied widely between Member States: some national indices showed moderate growth (DE, ES, HU, IE), while others were flat (FR, PT) or negative (PL, RO).

In terms of sectoral heterogeneity, **banks and financial services** recorded increases in valuations (+11.3% and +10.1% respectively), while non-financials, after some positive

momentum in 3Q24, recorded a decrease in value as of end-December (-2.4% vs. 1H24).

Chart 7

US and EU equity price-earnings ratios
Divergence of US and EU ratios



Note: Price-earning ratios based on average inflation-adjusted earnings from the previous 10 years (cyclically adjusted price-earning ratios). Averages computed from the most recent data point up to 10 years before.
Sources: Refinitiv Datastream, ESMA.

Despite increasing volatility levels, the liquidity of EU stocks did not deteriorate compared to 1H24, as highlighted by moderate improvements in bid-ask spreads (Chart A.14) and by stable developments in ESMA's equity illiquidity indicator (Chart A.15).

Fixed income: yield instability amid uncertainty

Bond yields have remained broadly unstable and very reactive to developments in the macroeconomic environment and investors' assessment about the pace of monetary policy normalisation in the major economies. Yields have changed direction several times during the year, in connection with revisions of expectations about the future path of interest rates. Despite considerable uncertainty, financial market conditions have remained benign overall. Market volatility has continued to decline and both sovereign and corporate bond spreads have compressed further.

After peaking at the beginning of 2024,¹² **sovereign bond yields** declined in the following months and rose again since the beginning of October. Risk-free rates remained particularly sensitive to changes in the macroeconomic outlook and to investor expectations on growth, inflation, and the pace of monetary policy

¹¹ See also Financial Times (2024), [The mother of all bubbles](#), December.

¹² See ESMA (2024), [Report on Trends, Risks and Vulnerabilities](#), No 2-2024, August.

normalisation in advanced economies. Yields rose in the run-up to, and immediate aftermath of, US elections, although the move was more pronounced in the US, where better-than-expected macroeconomic data¹³ and renewed upside risks to inflation dynamics¹⁴ have led investors to anticipate slower monetary easing than previously.

Yields have been more stable in Europe, with investors and market prices adjusting in response to potentially diverging economic outlooks, speed of disinflation and monetary loosening in the months ahead. In 4Q24 yields in Germany, France and Italy have risen by +30, +29 and +8 bps (to 2.4%, 3.1% and 3.4% respectively). In contrast, US Treasury yields rose by almost +80 bps over the same period (to 4.6%). Yields also increased in UK (+56 bps to 4.6%).

Sovereign spreads across euro area countries have continued to narrow overall, amid a sustained net supply of bonds which has so far been met by strong demand from private investors. In the context of a post low interest rate environment and an uncertain macroeconomic outlook, the bond segment remains attractive to private investors, supporting the placement of securities and the overall capacity of the market to absorb euro area debt despite a reduced central bank presence.¹⁵

The spread between French and German government bond yields has widened in 2024 as a result of the increased uncertainty following the political developments in France that led to the collapse of the government. Spreads have increased during the second half of the 2024, reaching almost 90 basis points in early December and remaining well above the levels observed at the beginning of the last year; although historically high, spread levels have remained well below those observed in 2010-2012. Market conditions have also remained generally benign so far.

Corporate bond yields fell over 2024, reaching their lowest levels in recent years, well below the 2022-23 highs. The trend was visible across all rating categories. However, it was more pronounced for bonds of lower credit quality with significant further compression in corporate spreads. At the end of December, the spreads of AAA, A and BBB securities were, respectively, at 60, 92 and 114 bps, the lowest values in 3 years. Spread compression has been even more

pronounced in the US, where premia narrowed to the lowest levels in almost 20 years.¹⁶ Much of the corporate bond yield decline took place over the summer, as optimism grew that central banks would succeed in taming inflation while avoiding a deep recession.

With **corporate bond spreads** at historical lows and benign market sentiment despite considerable macroeconomic uncertainty, concerns remain that the search for yield and the excessive risk-taking by end-investors could lead to pricing misalignments and a potential underestimation of risks in some financial assets. This could expose markets to abrupt reassessments and potentially disorderly repricing of credit risk.

Although declining slightly in 2024, bond issuance continues to be high overall (see market-based finance section). As in previous years, HY bonds continued to perform better than IG bonds, reflecting strong investor demand to lock in high yields in anticipation of rate cuts by central banks.

Despite considerable uncertainty, overall **financial market conditions** have remained benign so far. Liquidity indicators for sovereign bonds have continued to improve during the year, benefiting from the onset of monetary easing in many advanced economies and despite a temporary deterioration related to political instability in France following the European elections in June and the stock market turbulence in August. Corporate bond liquidity indicators also remain at good levels.

Bond volatility has declined further, returning to levels close to those seen before the start of the monetary tightening cycle in the euro area.

Credit quality: improving picture for non-financials

In late 2024 indicators based on ratings issued by credit rating agencies (CRAs) for European debt began to show some signs of credit quality improvement for corporate non-financials after a marked deterioration over 2024.

Ratings drift, a measure of the direction and strength of the net change in credit quality generally trended upwards. While remaining negative, EEA **non-financial corporates** drift

¹³ See also Financial Times (2024), '[Treasury sell-off reverberates through global markets](#)', October.

¹⁴ See also Financial Times (2024), '[Inflation worries seep back into US bond market](#)', November.

¹⁵ See ECB (2024), '[Financial Stability Review](#)', November.

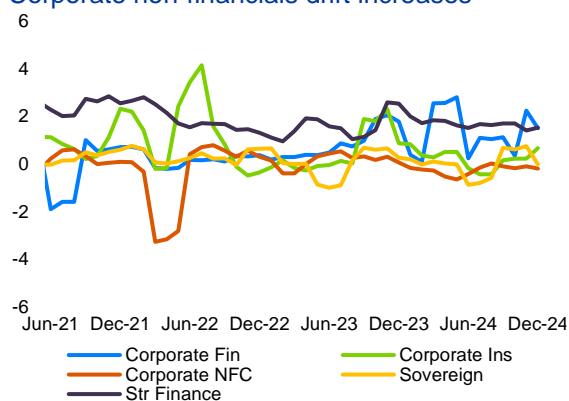
¹⁶ See also Financial Times (2024), '[Soft landing' bets push US corporate spreads to lowest in almost 20 years](#)', November.

increased towards zero, indicative of levels of upgrades approaching levels of downgrades for these firms (Chart 8). Part of the ongoing decline in credit quality of non-financials was a continuing drop in the credit quality of real estate firms, though the ratings drift for these also became less negative, approaching zero. Ratings drift for financials, though lower than in early 2024, remained positive, while ratings drift for insurers became positive again at the end of 2024.

For **structured finance** ratings drift remained positive and stable overall. However, ratings drift for CMBS was strongly negative, indicative of the continuing challenging context for commercial real estate markets (see Market Environment section). In contrast, drifts for RMBS, ABS and CDO remained positive and relatively stable.

Sovereigns drift initially rose in the reporting period, driven by upgrades in state and regional ratings. Fitch upgraded Cyprus and Ireland in October. However, France was downgraded by Scope in October and by Moody's in December. Fitch affirmed its rating for France but moved its outlook to negative. These actions reflected the increased political and fiscal risks associated with government instability and uncertainty. S&P maintained its stable outlook on France in November after its downgrade in May.

Chart 8
Ratings drift by debt type
Corporate non-financials drift increases



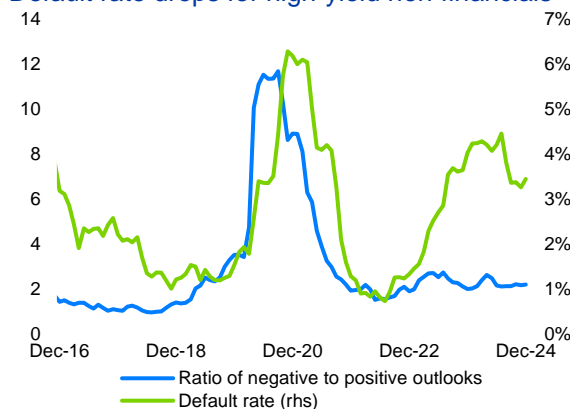
Note: 3-month moving average of net rating changes in EEA outstanding ratings from all credit rating agencies, excluding CERVED and ICAP, by asset class, computed as the percentage of upgrades minus the percentage of downgrades. Fin - Financials, Ins - Insurance, NFC - non-financials. Sources: RADAR, ESMA.

Fallen angels (IG EEA ratings downgraded to HY) were very similar to the previous half year. In 2H24, 0.12 % of corporate investment grade ratings (up from 0.11 % in 1H24) and 0.24 % of structured finance investment grade ratings (up from 0.2% in 1H24) were fallen angels. As in previous periods, there were no fallen angels in

sovereigns. Levels remain below or near to historical averages (0.27 % for corporates and 0.24 % for structured finance since 2015); thus, risks that fallen angels could drive fire-sales by investors remain limited.

Among EEA HY grade non-financial corporates, the twelve-month **default rate** has been falling since the summer (Chart 9), suggesting defaults have peaked. Half-yearly defaults for HY corporates also fell, to 0.9 % in the second half of 2024, from 1.6 % in the first half. Corporate defaults were associated with non-financials, and as in 1H24, were particularly among real estate ratings. Defaults for high-yield structured finance likewise fell, to 0.1% in 2H24 from 0.19% in 1H24. Also, as in 1H24, there were no reported defaults of IG ratings in any debt category.

Chart 9
Ratio of negative to positive outlooks and default rate
Default rate drops for high-yield non-financials



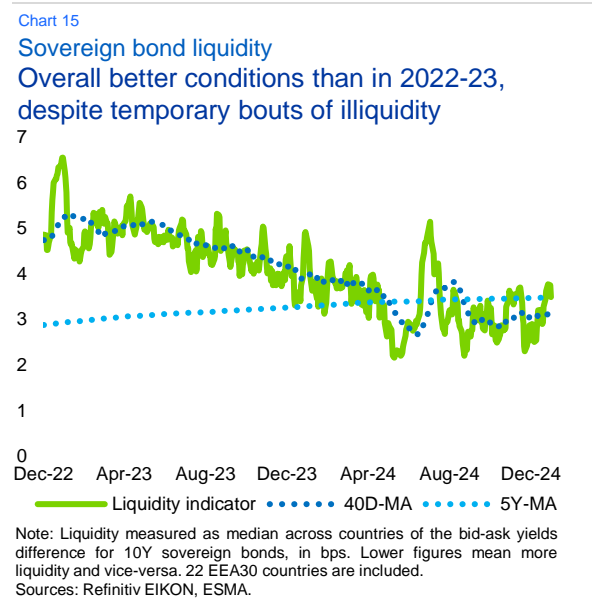
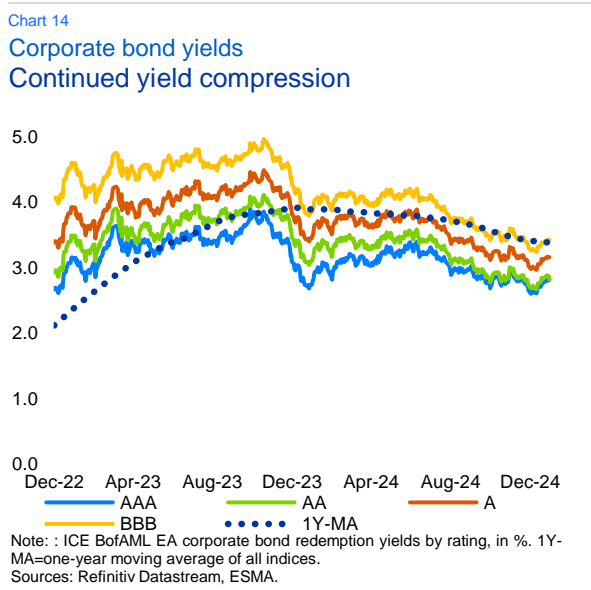
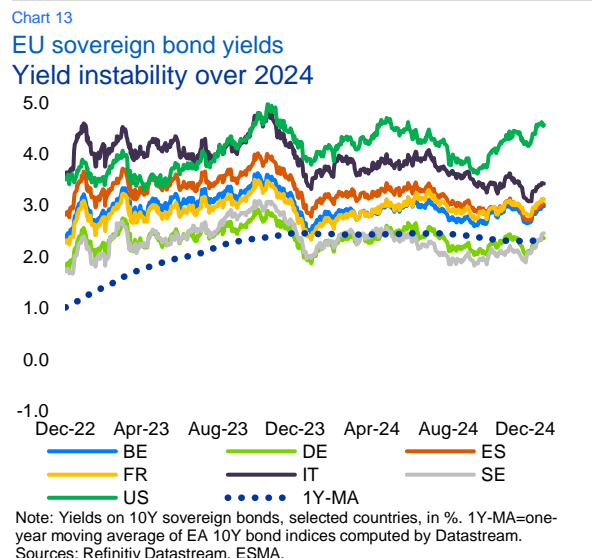
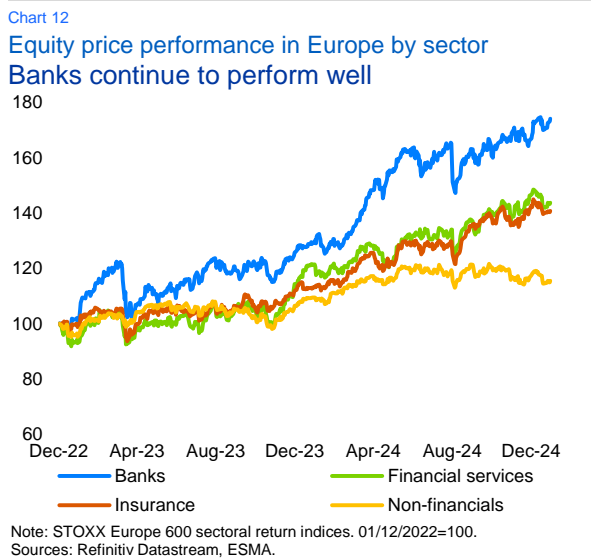
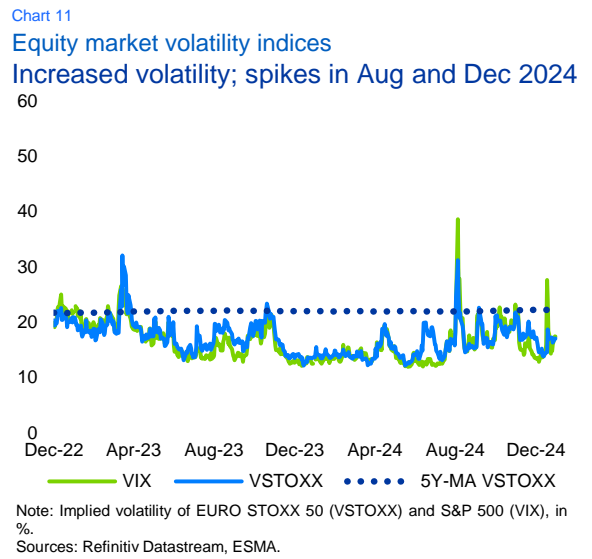
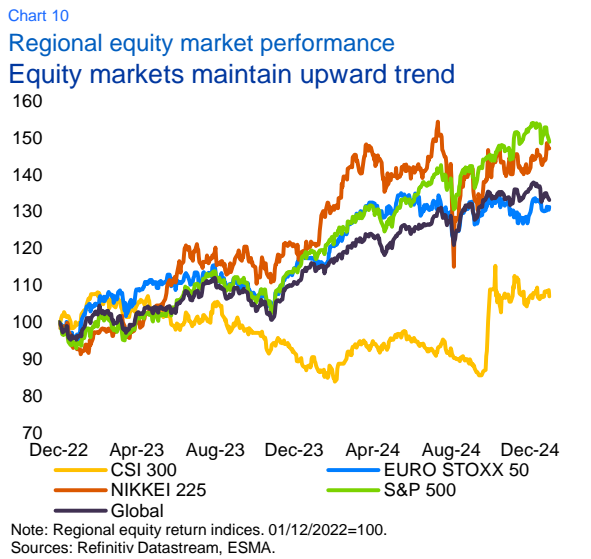
Note: Ratio of negative to positive outlooks and the 12-month rolling default rate in the EEA (defaults in previous 12 months as proportion of outstanding ratings 12 months ago) in percent. Sources: RADAR, ESMA.

While starting to ease, credit risks in securities markets remain given the economic uncertainties and the fact that the volume of issuance needing to be refinanced in 2025 and 2026 is still high (Chart 40). This could drive further downgrades and defaults¹⁷, particularly for HY corporates facing a large step increase in funding costs, even with recently cut interest rates.

¹⁷ The major CRAs also anticipate increases in European corporate high-yield default rates, see S&P (2023), [Default, Transition, and Recovery: The European](#)

[Speculative-Grade Corporate Default Rate Could Rise To 3.75 % By June 2024.](#)

Key indicators

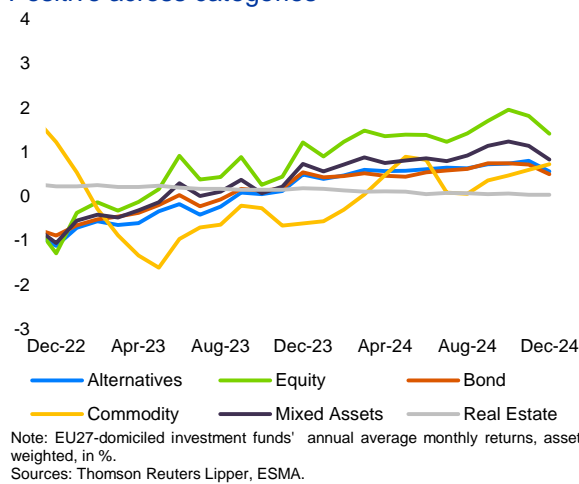


Asset management

Overvaluation concerns

EA fund assets grew by 3% in 3Q24, a total increase of EUR 1.9tn for the whole of 2024, up to EUR 19tn of assets (+11% in 2024). Most of this increase (70%) is due to valuation effects. This is reflected in the **performance** of EU funds, which reached 2-year high across most fund categories in 3Q24, before receding. Eventually, monthly equity fund returns over the last 12 months remained stable at 1.4% in 2H24. Similarly, bond funds (0.5%) and mixed asset funds (0.8%) reported steady performances. Finally, MMF reached a five-year high performance, up to 0.6%.

Chart 16
Fund performance
Positive across categories

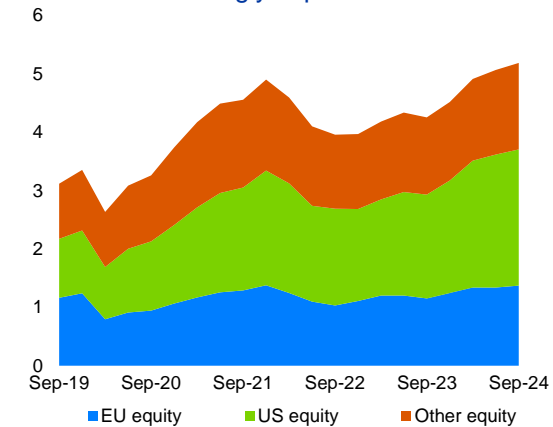


Despite their positive performance, **flows** into EU funds were muted in 2H24, with net flows close to zero for equity and mixed funds, while fixed income funds continued to attract positive flows both in bond funds (5% of NAV) and MMF (9% of NAV) (Chart 21).

The performance of equity funds contrasts with that of the main EU indices which levelled off in the second half of 2024 (see Securities Markets section). However, it is consistent with the growth of the US equity market to which they are increasingly exposed. Over the last five years, 77% of the flows in EU equity funds (excluding ETFs) were directed to US equity holdings. Combining flows and valuation effects, the share of US stocks in EA equity fund portfolios increased from 32% of equity holdings in 2019 to 45% in 3Q24 (Chart 17). While the performance of equity funds benefited from an increased

exposure to US assets, this also increases their exposure to **market risk** amid concerns about overvaluation of the US market and concentration of US capitalisation in a few stocks.

Chart 17
Equity fund assets
EA funds increasingly exposed to US assets



Key risks remain elevated

Deteriorating macroeconomic conditions expose funds to elevated risks, especially liquidity, credit, and valuation risk.

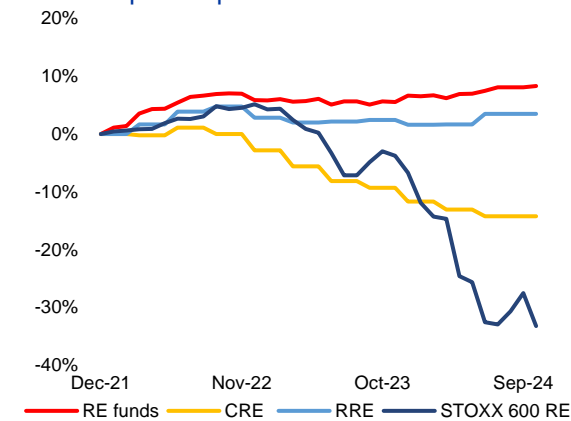
Corporate bond fund cash holdings increased from 1.8% to 2.6% in 2H24 but remained below their long-term average, thus limiting cash available to mitigate **liquidity risk**. This is further reflected when looking at the weighted liquidity of HY fund assets which reached a 10-year low (4.1 % of NAV).

The risk of materialisation of **credit risk** remained elevated in 2H24 for HY funds (Chart 23). The credit quality of HY portfolios has stabilised between BB- and B+ on average since 2021, compared to BB on average pre-pandemic. However, the risk outlook is now showing some signs of credit quality improvement for non-financial corporates, as discussed in the market environment and securities market sections.

Interest rate risk benefits from the better outlook on inflation and monetary policy, but there are also signs of funds lengthening the duration of their assets, as the effective maturity of HY portfolio increased from 4.1 to 4.9 years in 2024, a 10-year high.

Valuation remained a concern for funds exposed to less liquid markets. Real-estate prices dropped in the commercial (CRE) property markets by 14% since December 2021, while the value of EU companies exposed to the RE sector dropped by 33%. However, the value of EA RE funds remained relatively stable over the same period (Chart 18). The average trend in the EA does not reflect the diversity of the developments in national markets, with RE fund valuation dropping by around 10% both in France and in the Netherlands, while increasing by around 7% in Germany since 2022. There still is a risk of unrealised losses for funds that have not reevaluated the value of their portfolio.

Chart 18
Real estate fund value
Limited impact of price decline on RE funds



Note: CRE and RRE prices, Stoxx 600 RE index and valuation of RE funds in EA jurisdictions since December 2021, in %.
Sources: ECB.

After a significant increase end-2023, the recourse to liquidity management tools decreased across jurisdictions in 2H24. Still, the combination of declining real estate prices and outflows created pressure on RE funds in some jurisdictions. In Austria, funds experienced redemptions amounting to 22% of the sector NAV since June 2022¹⁸. Austrian funds are particularly exposed to redemption pressure as most of them are retail open-ended funds offering daily redemption (Textbox 1).

Textbox 1

Liquidity mismatches in real estate funds

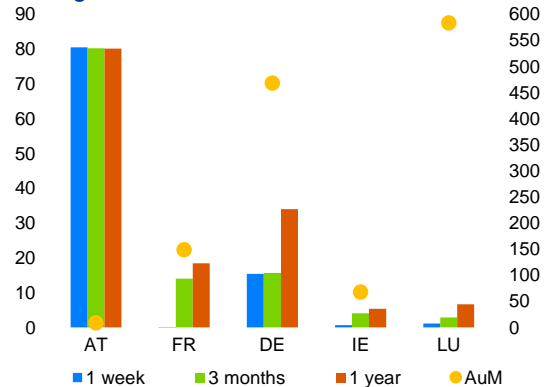
The majority (58%) of RE funds are open-ended in the EU. Of these, 21% offer daily liquidity, but 60% of them also have long notice periods (more than 6 months) which helps managing redemption requests. In contrast, funds offering frequent redemptions without a long notice period are exposed to liquidity mismatches, measured as the difference (“shortage”) between the percentage of the NAV that can be redeemed and the percentage of assets that can be liquidated over the same period:

- In Austria, the average liquidity mismatch represents 81% of NAV within 1 week (Chart 19). This reflects that most Austrian RE funds are open-ended funds with daily redemption rights that are primarily marketed to retail investors. Liquidity mismatches will be mitigated by national legal requirements applicable from 2027.
- In Germany, half of the market is subject to a statutory notice period of 1 year. This restriction does not apply to “Spezialfonds” (special funds) which offer daily redemption with a short notice period. As a result, liquidity mismatches are relatively high (16% of NAV within 1 week) and become significantly higher over 1 year (34%).
- In France, the average mismatch between redemption frequency and asset liquidity is limited (the 3-month shortage is 14%), but a subset of funds has a significant liquidity mismatch, as the market comprises a mix of open-ended and closed-ended RE funds.

Finally, liquidity mismatches are limited in jurisdictions where RE funds are closed-ended or subject to long notice periods (e.g. Belgium, Italy, the Netherlands, and Poland).

Chart 19
Liquidity mismatches

Divergent situation across member states



Note: Liquidity shortage of RE funds included in the Article 25 sample over 1 week, 3 months and 1 year, in % of NAV (lhs). Liquidity shortage is defined as the sum of liquidity deficits at the level of the funds, as not compensated by liquidity surplus; AuM of RE funds in Article 25 sample, in EUR bn (rhs).
Sources: AIFMD database, ESMA.

Similar valuation concerns may arise in **private equity (PE) funds**, as the sector has experienced significant growth, doubling its size since 2020 to EUR 722bn (Chart 20, PE funds included in “other funds” category). Private equity funds are not exposed to redemption risk as they are mostly closed ended.

¹⁸ Quarterly report, FMA, 3Q 2024.

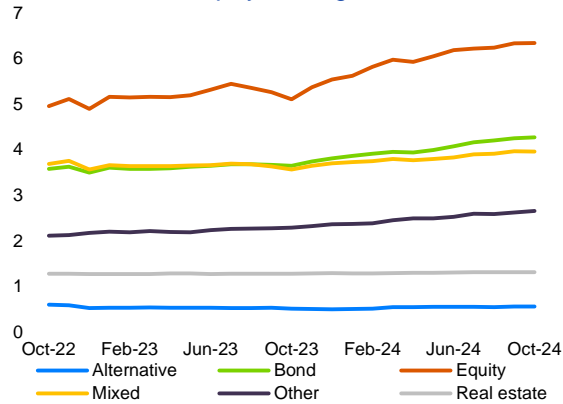
The use of **leverage** increased in alternative investment funds, with financial leverage significantly higher (141%) than the rest of the industry (Chart 24). Hedge funds especially continue to be particularly leveraged: HF making a “substantial” use of leverage (leverage above 300% according to the commitment method) had a total exposure of EUR 210bn for a NAV of EUR 12bn, which represents a multiple of 18.

Key indicators

Chart 20

EA fund assets

Valuation drives equity funds growth

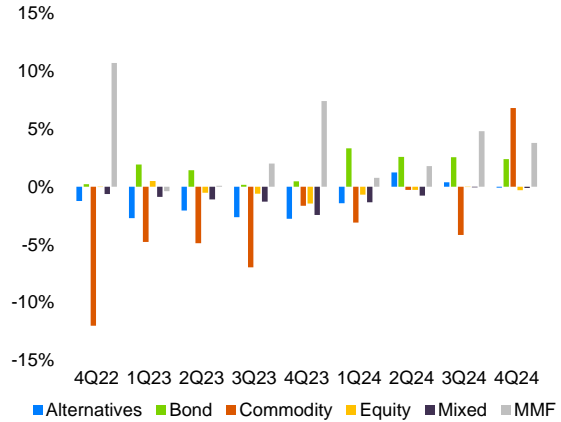


Note: AuM of EA funds by fund type, EUR tn.
Sources: ECB, ESMA.

Chart 21

EU fund flows by fund type

Muted flows

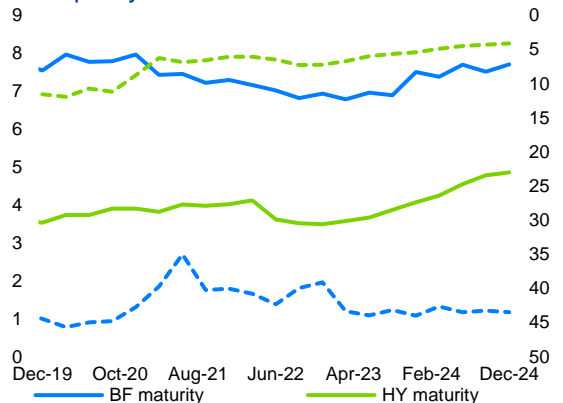


Note: EU27-domiciled funds' quarterly flows, in % of NAV.
Sources: Refinitiv Lipper, ESMA.

Chart 22

Liquidity risk profile of EU bond funds

HY liquidity ratio at its lowest

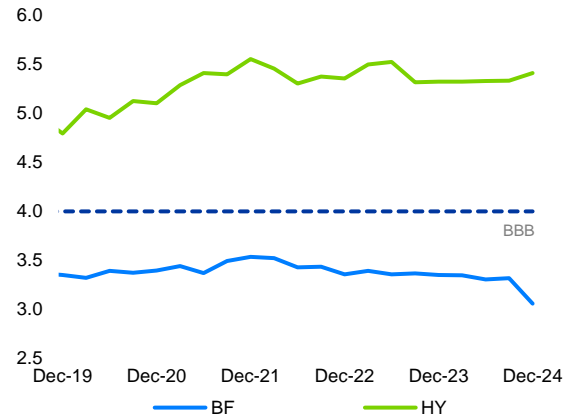


Note: Quarterly effective average maturity of EU27 fund assets, in years; ESMA liquidity ratio (rhs, in reverse order).
Sources: Refinitiv Lipper, ESMA.

Chart 23

Credit risk

Credit risk elevated in HY funds

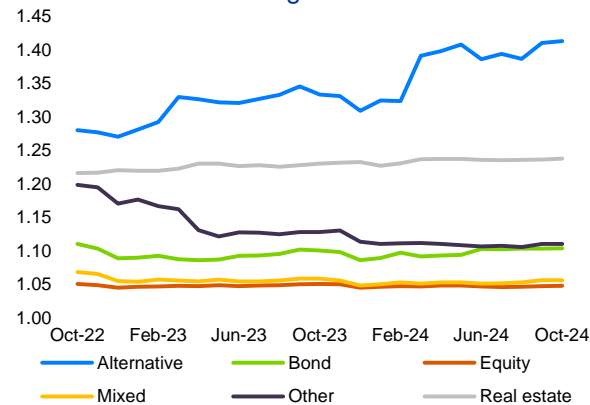


Note: Quarterly average credit quality (S&P ratings; 1= AAA; 4= BBB; 10 = D) for EU27-domiciled funds.
Sources: Refinitiv Lipper, ESMA.

Chart 24

Leverage

Alternative funds leverage increases

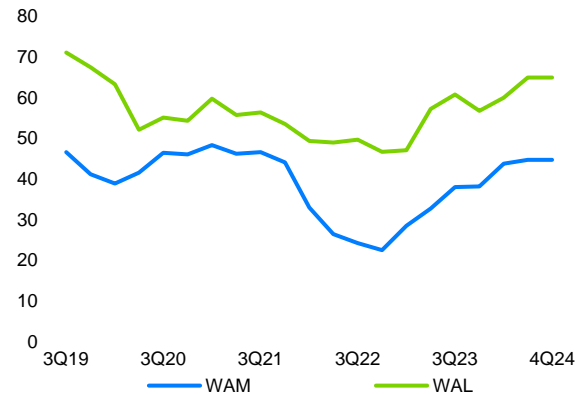


Note: Leverage of EA investment funds by fund type computed as the AuM/NAV ratio.
Sources: ECB, ESMA.

Chart 25

MMF maturity

WAM and WAL stable



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.
Sources: Fitch Ratings, ESMA.

Consumers

Confidence muted

Investor confidence in future market conditions was muted in 2H24 (Chart 27), amid geopolitical uncertainty and low economic growth. Sentiment in current market conditions remained especially weak, reaching a two-year low. Nonetheless, the aggregate financial position of households continued to recover. Disposable income growth (5.6%) remained above inflation (3.5%) in the 12 months to June 2024. The value of financial assets owned by households increased significantly YoY (8.8%) in 3Q24, while real assets saw a recovery and registered growth (2.0%), having been strongly negative at the end of 2023.

Consumers continued to increase their **exposure to debt securities**, which offered higher returns than in much of the previous decade of very low interest rates. Net inflows into **bonds** held by EU households were around 1.3% of disposable income as of 3Q24, almost a quarter of net financial investments by households, second only to inflows into bank deposits (2.5%). The total value of bonds held by EU households increased by almost a third in the 12 months to June 2024. Nonetheless, bonds remain a minor asset class for EU households, at less than 3 % of their financial assets, versus 26 % for equities and 10 % for investment funds.¹⁹ The share of EU household financial assets represented by equities has remained stable in recent years following a step increase in late 2020, during the pandemic (Chart 28). Retail investors also showed high demand for **bond funds**, with total inflows of almost EUR 120bn in 3Q24, more than any other asset class.

Improving returns

The **performance of retail investments** was positive in 3Q24. Based on a stylised portfolio for retail investors, the 1Y-MA of monthly gross returns stood at 0.9% in nominal terms, or 0.7% in real terms.

In 4Q24, **retail fund returns** were strongly positive, with positive annual performance net of costs across all asset classes (Chart 30). Retail equity funds delivered the highest net returns during this period (15%), followed by mixed funds

(10%), alternative funds (7%) and bond funds (6%). Aggregate annual performance for equity funds has been relatively volatile in recent years, having reached a low point of -17% by the end of 2022. The relatively high level of volatility in returns reflects the risk profile of the underlying equities compared to bonds.

While all asset classes exhibited positive and improving returns, **net flows into retail funds** continued to vary widely by asset class. On the one hand, retail investors disinvested from mixed and equity funds (with net flows of EUR -85bn and EUR -44bn respectively). At the same time, a large majority of the strong inflows into bond funds by retail investors went to actively-managed funds (Chart 29), which had seen strong outflows in 2022.

Actively-managed retail bond funds have therefore shown high dependence of flows on returns. At the same time, net flows to passively-managed bond funds have been far more stable. These large differences in flow sensitivity between management styles have been present despite limited differences in net performance of bond funds by management style (+6.0% for active bond funds in 2Q24, +5.2% for bond ETFs and +5.4% for passive non-ETF bond funds).

Crowdfunding caters to retail investors

Crowdfunding is an innovative form of **alternative finance** that typically involves small investments from many people (or a 'crowd') through digital platforms. As such, it caters to retail investors seeking to invest small sums in niche projects. Recent data indicate that EU retail investors in crowdfunding platforms on average invest under EUR 1 000, far less than professional investors.

The EU crowdfunding market remains limited in scale. In 2023, platforms registered under the European Crowdfunding Service Providers for Business Regulation (ECSPR) raised somewhat over EUR 1bn. However, there is much variation in national market size, participation rates and cross-border business, suggesting significant **scope for crowdfunding to scale up** across the EU, in line with the objectives of ECSPR. ESMA

¹⁹ The overall allocation of household financial assets by class varies considerably across countries. For example, combined holdings of equity and investment fund shares

in 2023 ranged from 16% in Ireland to 71% in Estonia (source: Eurostat).

recently published its first annual report on the EU crowdfunding market and will continue to monitor market developments and risks (Textbox 2).²⁰

Textbox 2

Crowdfunding in the EU

Crowdfunding platforms facilitate the matching of prospective investors or lenders with businesses seeking funding, which tend to be start-ups and small and medium-sized enterprises (SMEs). In contrast to banking, crowdfunding directly links investors and those seeking funding. ECSPR, which came into effect in 2021, sets out EU rules for investment-based and lending-based crowdfunding services for business financing.

In January 2025, ESMA published its first annual market report on crowdfunding in the EU. The report covers a sample of 98 crowdfunding service providers registered by the end of 2023 in 17 EU Member States. Based on this sample, crowdfunding raised in total over EUR 1bn in 2023. Loan-based crowdfunding was the most common form of funding model (65% of funding raised), followed by debt-based (17%) and equity-based (6%). The average amount raised per loan-based project was around a third of that for debt-based and equity-based projects.

A large majority of investors were retail (87%), who tended to invest smaller amounts than sophisticated and especially professional investors. The leading economic sectors to which crowdfunding was distributed were professional, scientific and technical services (33% of funding raised), followed by construction (21%). France was the leading hub for crowdfunding in terms of capital raised and numbers of platforms, followed by the Netherlands. The largest number of investors were resident in Lithuania. These countries have all had national crowdfunding regimes in place for several years.

Influence of social media

Social media continued to represent a frequently used source of information linked to financial markets dynamics. The ESMA indicator for social media activity linked to each of the STOXX 600 constituents shows sustained, stable social media activity. Notably, social media sentiment deteriorated from the peak of June 2024, reaching the lowest point of the year. This deterioration in sentiment came alongside uncertainty over the US elections and against the background of heightened geopolitical tensions. However, there is no evidence of specific substantial messages mentioning geopolitical events in conversations on the STOXX 600 constituents.

A textual analysis of the messages in 2H24 shows that the most frequently posted expressions are linked to words that call **attention** to stock instruments. Terms such as “alert”, “top”, “risers”, “fallers” were the most mentioned over the reporting period.

²⁰ ESMA [Market Report on Crowdfunding in the EU 2024](#), ESMA50-2085271018-4039.

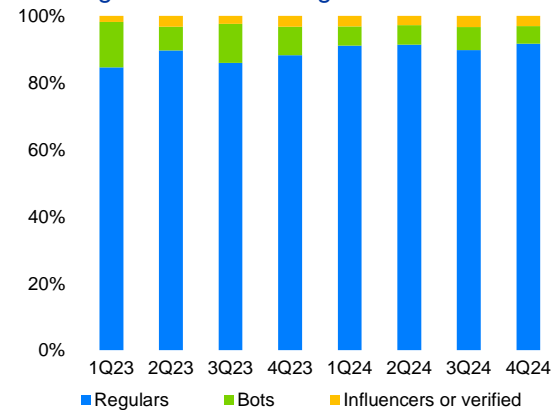
²¹ Social media activity continues to be closely linked to developments around crypto assets, as highlighted in the Innovation section of this report (Textbox 6).

Among all social media message authors, 92% were regular users, 5% bots and 3% influencers or verified profiles. Overall, the share of active users has increased by 3 percentage points with respect to the previous half of the year. This coincided with a decline of the same amount in automatically generated messages (i.e. authored by bots).²¹

Chart 26

Social media authors

Growing interactions of regular users



Note: Share of authors of social media messages linked to the constituents of the EuroSTOXX600 by type, %.
Sources: Stockpulse, ESMA.

Investor protection: complaints rise

Complaints reported through firms and directly by consumers to national competent authorities (NCAs) jumped to around 6 400 in 3Q24, well above their two-year quarterly average (Chart 32). This spike in complaints volumes was associated with a real estate fund in Germany that experienced a value correction the previous quarter. Complaint numbers are down from the high levels seen during the pandemic amid turbulent trading conditions and a boom in retail trading.

In 3Q24, among complaints for which an instrument type was recorded, almost half (49%) related to equities, followed by CFDs (22%) and funds (20%). The share of the total attributed to complaints about equities and funds was sharply up on the previous quarter. However, these figures should be interpreted with caution, as most complaints were not able to be categorised by instrument type.²² Among complaints for

²² Interpreting patterns in complaints data requires an understanding of recent events and data limitations, such as significant time lags and heterogeneity between Member States. An additional reason for caution is that the data do not include some major retail markets for

which information is available on the MiFID service involved, most (74%) relate to execution of orders, followed by portfolio management (15%) and investment advice (12%).

Among complaints for which the underlying cause has been categorised, the leading cause was general administrative issues (70%), followed by unauthorised business (21%) and fees or terms of contract (4%).

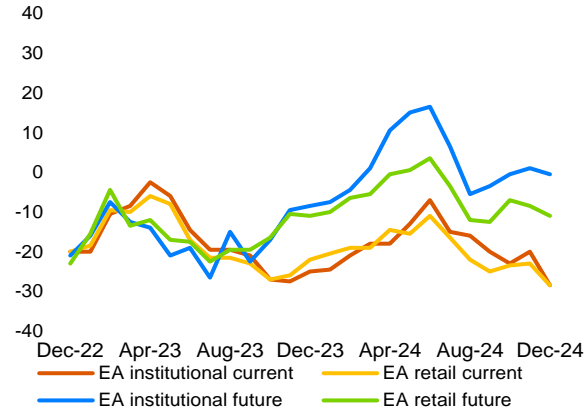
these products (e.g., Netherlands, Poland) and only some complaints can be categorised as referring to a financial

instrument.

Key indicators

Chart 27

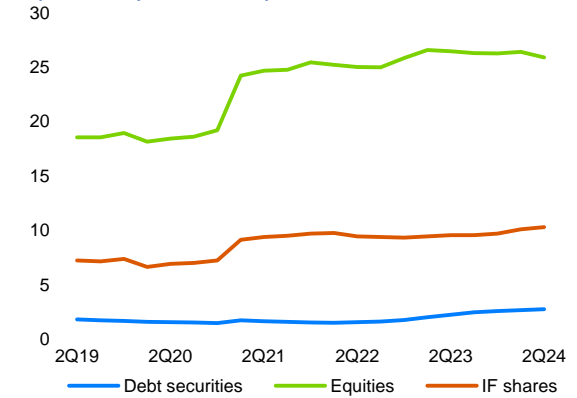
Investor sentiment Confidence remains weak



Note: Sentix Sentiment Indicators for the EA retail and institutional investors on a ten-year horizon. The zero benchmark is a risk-neutral position. Sources: Refinitiv Datastream, ESMA.

Chart 28

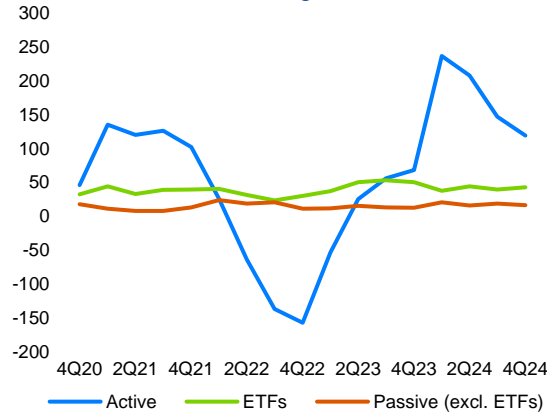
Share of securities in household financial assets Equities represent a quarter



Note: Share of debt securities, equities and IF shares into the financial assets of EU27 households, in %. IF shares=investment fund shares. Sources: ECB, ESMA.

Chart 29

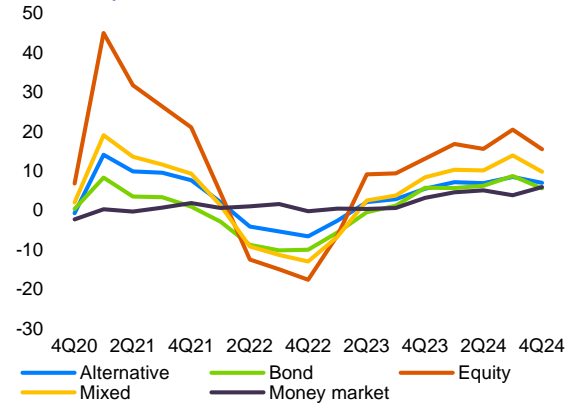
Retail UCITS bond fund flows by management style Active bond funds see high inflows



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

Chart 30

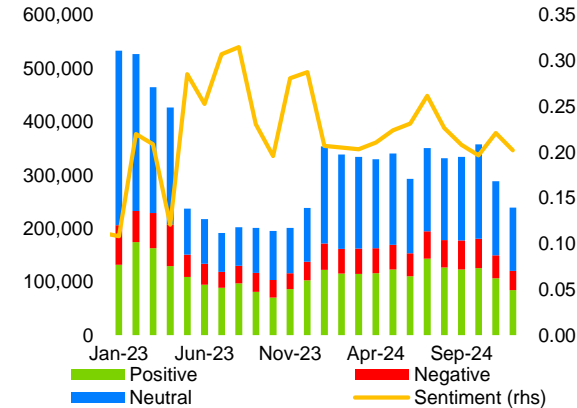
Retail UCITS net return by asset type Positive performance across asset classes



Note: Evolution of net annual performance (net of ongoing costs (TER), subscription and redemptions fees) of EU27 UCITS, retail investors only, by asset class, in %. Sources: Refinitiv Lipper, ESMA.

Chart 31

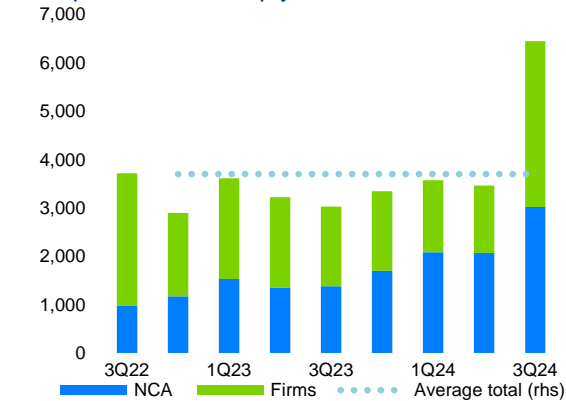
Social media attention Sustained attention on EU stocks



Note: Social media messages mentioning constituents of the Stoxx 600 Index, classified by sentiment type. "Neutral" messages are defined as the number of "Total" messages minus "Positive" and "Negative". Sources: Stockpulse, ESMA.

Chart 32

Overall complaint volumes Complaints rise sharply



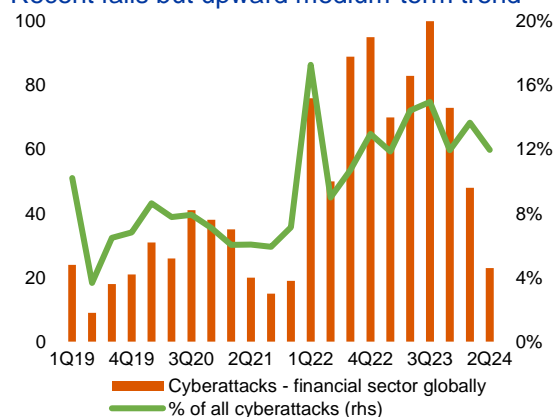
Note: Number of complaints recorded by quarterly-reporting NCAs (n=13) via given reporting channels. "NCA"=Reports lodged directly by consumers with NCAs. "Firms"=Complaints recorded by NCAs via firms. "Average total"=average total number from 2Q22 to 2Q24. Sources: ESMA complaints database.

Infrastructures and services

Cyber risk rising as global concern

Cyber events continue to pose a significant threat to financial stability, although the number of incidents has recently receded below past peaks according to some sources (Chart 33). Financial firms remain among the most targeted entities.²³ The frequency of events remains worrying, with the sophistication of cyber-attacks increasing and cyber threats continuing to be ranked as a top risk in risk assessments by industry and by authorities worldwide.

Chart 33
Cyberattacks on financial sector entities
Recent falls but upward medium-term trend



Note: Cyberattacks on financial sector entities globally by quarter, publicly-acknowledged incidents. For details, see *Harry, C., & Gallagher, N. (2018). Classifying cyber events. Journal of Information Warfare, 17(3), 17-31*
Sources: University of Maryland CISSM Cyber Attacks Database, ESMA

The financial impact of cyber incidents is also significant and growing. The IMF estimates²⁴ global direct losses to be around USD 28 bn from 2020, but the total cost of cybercrime could be much higher when indirect²⁵ losses are also taken into account. Estimates vary widely²⁶ and the total cost of cybercrime is expected to rise sharply in the future.²⁷

Several factors are contributing to the increasing relevance of cyber events. These include a greater 'exposure' to cyber risks as businesses become more and more reliant on technology and financial innovation; a greater availability of tools to cyber criminals, widening the pool of actors capable of using these techniques; and an increase in geopolitical tensions.

Although a systemic cyber event has not yet occurred in the financial system, past events have shown that cyber incidents can easily morph into traditional risks, such as liquidity shortages, market disruptions, and contagion effects, and pose a threat to financial stability. Work is underway globally to enhance the operational resilience of financial systems. Initiatives include the establishment of reporting requirements for firms to support cyber risk assessments by market participants and authorities (Textbox 3).

Textbox 3

Systemic cyber risk: a step towards better tracking and understanding of threats

Recent global financial stability assessments highlight the growing significance of technological vulnerabilities and cyber threats as potential sources of systemic disruption. However, a general lack of information in this context emerges as a key obstacle for both market participants and authorities to conduct comprehensive risk assessments and analysis.

Publicly available data on cyber events remains scarce, or fragmented across multiple datasets.²⁸ This is largely due to reputational concerns, as firms have an incentive to avoid disclosing operational failures that could undermine trust and hamper their business, and the lack of formal requirements to report cyber incidents in many jurisdictions. Inadequate information leads to potential underestimation²⁹ of risk and, ultimately, to a reduced ability to take appropriate action to prevent or mitigate cyber threats.

In Europe, the Digital Operational Resilience Act (DORA) is set to have a concrete impact in this realm. The forthcoming regulatory framework aims to establish a comprehensive and harmonised approach to digital operational resilience across EU financial institutions. It also establishes a reporting regime for major Information and Communication Technology (ICT) incidents by EU financial entities. The reporting framework covers relevant aspects of the cyber

²³ According to some estimates, financial firms are 300 times as likely as other companies to be targeted by a cyberattack. See, e.g., BCG (2019), '[Global Wealth 2019: Reigniting Radical Growth](#)', June.

²⁴ See IMF (2024), '[Global Financial Stability Report](#)', April.

²⁵ Direct losses include, for example, loss of business revenue due to operational disruptions, the amount of extortion or the amount spent to remedy the damage; indirect losses include reputational damage, loss of future business and reduced productivity.

²⁶ The total cost of cybercrime could be as high as USD 200 bn per year worldwide, with other estimates ranging from 1 to 10 per cent of global GDP.

²⁷ See, e.g., Center for Strategic and International Studies (2020), '[The Hidden Costs of Cybercrime](#)'; Statista (2024), '[Cybercrime Expected To Skyrocket in Coming Years](#)'.

²⁸ Examples include the University of Maryland [CISSM Cyber Attacks Database](#) and the [Advisen Cyber Loss Dataset](#).

²⁹ For example, an increase in cyber incidents may be mistakenly associated with improved reporting by firms (and vice versa). In addition, the disclosure of cyber incidents may be subject to reporting lags, leading to a potential underestimation of cyber events in the more recent periods.

event, including information on: the affected institution; the nature³⁰ of the incident; the time of detection and the duration of the cyber event; the number of clients, counterparties and transactions affected; the amount of direct and indirect costs and losses incurred; and whether the incident originated from a third-party service provider on which the financial institution relies to perform its critical functions and services. The reporting regime entered into force on 17 January 2025.³¹

The framework fundamentally addresses information gaps and collective action problems in managing digital risks. It marks an important step towards a comprehensive oversight framework of critical entities providing ICT services to the financial system. It also enhances the ability to identify potential systemic vulnerabilities. For example, it will allow the development of more advanced monitoring tools and risk indicators to comprehensively track the occurrence of major cyber incidents and their frequency over time or across sectors and countries. It will also enable a better identification of contagion channels and system-wide vulnerabilities by analysing complex networks of ICT interdependencies between third-party service providers and financial firms; and ultimately to analyse and reassess over time responsiveness of the financial system to cyber threats.

By creating a standardised, mandatory reporting framework, these initiatives have the potential to significantly improve the ability of market participants and authorities to identify, better understand and potentially mitigate cyber risks and their impact on financial stability.

Trading venues: high volume, stable composition

Reported **equity trading volumes** remained on average in line with 1H24 (+1.3%, monthly) and showed higher activity compared to 2H23 (+29%), in line with increased market volatility and the surge in global stock markets over the whole 2024.

In terms of composition, activity on EEA systematic internalisers increased slightly (+0.7% relative to 1H24), while a small decrease in the share of lit trading was observed (-0.6%). The share of trading on EEA dark pools, periodic auctions and OTC remained unchanged (Chart 34).

Settlements: fail rates continue to decrease

Settlement fail rates decreased in the second half of 2024, continuing the broader downward

trend observed since the implementation of cash penalties under CSDR in February 2022 (Chart 37). Fail rates for UCITS returned to lower levels at the beginning of the semester, following a spike in March linked to a specific type of settlement instruction within one securities settlement system.

ETFs have also consistently exhibited higher fail rates compared to other asset classes in the reporting period. This is due to ETF trades happening in the secondary market (at broker level), following subscriptions and redemptions happening in the primary market (at transfer agent level), with an issuing date that can go up to T+3 or T+4. The ETF settlement inefficiency is also due to the high fragmentation of the trading and settlement of ETF shares and their lower liquidity compared to shares.

CRAs: fewer EEA ratings

The total number of outstanding ratings reported to ESMA fell very slightly, by 0.2%, in the second half of 2024, to 566,500 ratings. Of these ratings outstanding, 27% were for EEA issuers or instruments, 4% were for those in the UK and 52% were for those in the US. Underlying the slight fall in ratings overall was a more substantive reduction in the number of outstanding EEA ratings during the reporting period. These fell 2% to 153,750. This was largely driven by corporate ratings 120,100 (-3500), particularly financials. Sovereigns fell slightly, to 19,100 (-100), while structured finance rating numbers continued to grow, reaching 14,450 (+650) (Chart 39).

A sizeable part of the drop in corporate ratings was associated with Creditreform, a credit rating agency whose number of outstanding corporate ratings fell by about 2000, driven by its decision to withdraw some ratings for business reasons.³² The reduction included some covered bond ratings which, alongside market-driven withdrawals of some covered bond ratings by Standard and Poor's and Fitch,³³ contributed to an exceptionally large fall in the number of outstanding covered bond ratings in the reporting period (Chart 39).

³⁰ This would include information on the type of incident, such as whether it is a cybersecurity incident, a system failure or an incident caused by an external event, and information on the techniques used by the threat actor, such as whether it is caused by a (D)DoS attack, identity theft or ransomware.

³¹ From that date, financial firms will be required to report major ICT incidents and, on a voluntary basis, significant cyber threats to their supervisors, who will in turn share

the information with the relevant public authorities, including the European Supervisory Authorities (ESAs).

³² Creditreform (2024), [Withdrawal of Bank, Corporate and Covered Bond Ratings](#). Press Release: December 18.

³³ See Fitch Ratings (2024) [Fitch Plans to Withdraw Ratings of Mortgage Covered Bonds of Danske Bank A/S and Realkredit Danmark A/S](#), November 7, and Standard and Poor's (2024), [Caisse Francaise de Financement Local](#)

In line with previous periods, around half of new ratings for EEA debt were issued by **smaller CRAs**, with 50% (-7pps) issued by CRAs not among the 'big three' (Fitch, Moody's, and Standard and Poor's). However, smaller CRAs also accounted for more withdrawals of ratings, 59% (+7pps). In line with this, we saw an increase in the share of the **big three CRAs** in outstanding long-term ratings, which rose to 62% (+1pp) (Chart A.141).

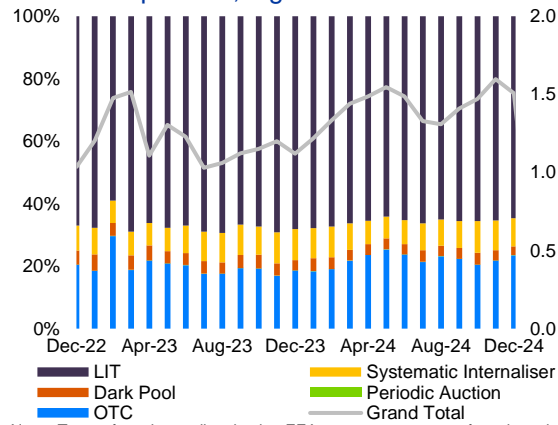
Moreover, as in previous periods, **the share of ratings solicited by issuers** remained highly dominated by the big three CRAs (89% in 2H24, unchanged), with this share high across debt types (89% for corporates, 88% for sovereigns and 89% for structured finance). Thus, while there is significant activity by smaller CRAs, this activity remains almost entirely focused on the issuance of ratings not solicited by the debt issuer.

Key indicators

Chart 34

Equity trading volumes

Stable composition, high volumes in 2024

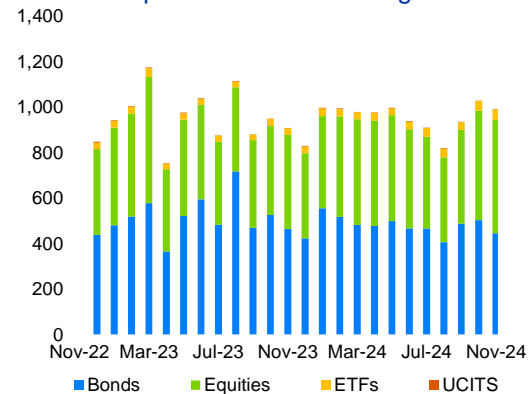


Note: Type of equity trading in the EEA as a percentage of total equity turnover. Total equity trading turnover in EUR trillion (rhs). Last available data point is December 2024.
Sources: FIRDS, FITRS, ESMA.

Chart 35

Turnover by asset type

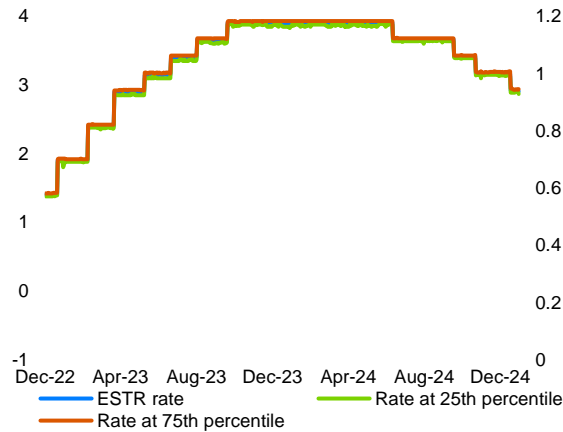
Stable composition of on-exchange turnover



Note: Monthly turnover on EEA30 trading venues by type of assets, in EUR bn. Data for Aquis Exchange, CBOE Europe Equities, Equiduct, London Stock Exchange and Turquoise are not reported for bonds, ETFs and UCITS.
Sources: FESE, ESMA.

Chart 36

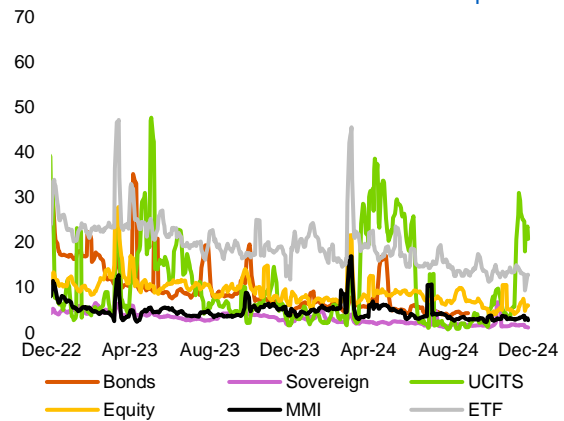
€STR rate



Note: €STR rates at 25th, 50th and 75th percentile of volume, in %.
Sources: ECB, ESMA.

Chart 37

Settlement fails in EEA central securities depositories

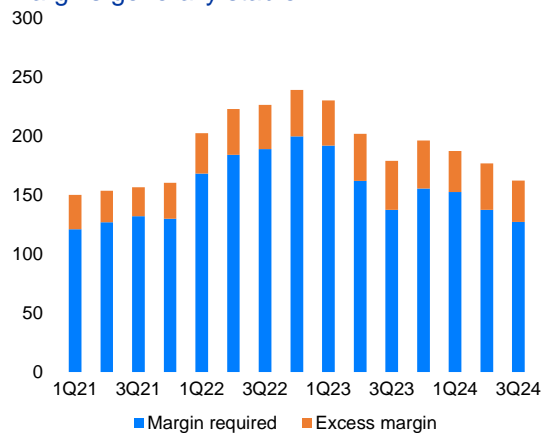


Note: Settlement fails as a % of total value of settlement instructions at EEA level. One-week moving averages. Extreme values removed.
Sources: CSDR7, ESMA

Chart 38

Initial margins for EU CCPs

Margins generally stable

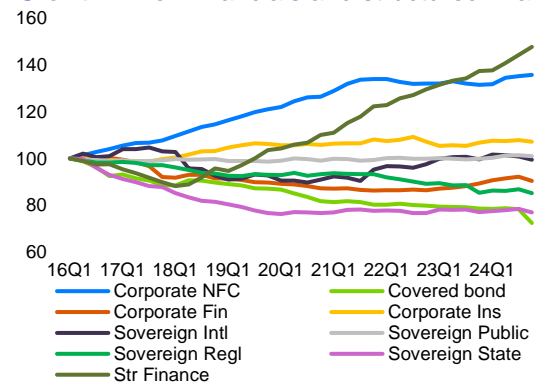


Note: Initial margin required as well as additional margin posted by EU CCPs, in EUR bn.
Sources: Clarus Financial Technology, CPMI-IOSCO PQD, ESMA.

Chart 39

Outstanding ratings

Growth in non-financials and structured finance



Note: Evolution of the number of outstanding EEA issuer and instrument ratings by debt category on last day of quarter, indexed at 31 March 2016=100. S&P, Moody's and Fitch. NFC - non financial, Fin - financial, Ins - insurance, Intl - international, Reg - regional. Supranational sovereigns omitted due to very small population.
Sources: RADAR, ESMA.

Structural developments

Market-based finance

Financing sluggish

European capital markets continued to provide important sources of corporate financing with a modest recovery in the annual growth rate of **market financing** in the second half of 2024. Market-based financing remained at moderate levels in 2H24, but was still growing and well above the lows of 2022 (Chart 41). Issuance on corporate bond markets remained a particularly significant source of funding for European corporates. While in contrast, the market for initial public offerings (IPOs) remained weak overall.

According to a recent survey on the access to finance of enterprises³⁴, fewer firms expect to see an improvement in the availability of financing in the coming months. And, to a higher extent than at the beginning of 2024, Euro area (EA) enterprises perceived the general economic outlook as the main factor hampering the availability of financing.

Equity issuance subdued

Equity market issuance was sluggish in 2H24, with the decline affecting both IPOs and follow-on issuances, amid uncertainty related to macro-financial conditions and rising volatility (see market environment and securities market sections). The total number of **issuances in primary equity markets** slipped to just above 400 in 2H24 (from more than 500 in 1H24), corresponding to a total volume of about EUR 26bn, about 45% less than in 1H24 (Chart 42). Although equity issuance has been modest in 2024, and particularly low in the third quarter of the year, there is some consensus on a potential revival of the market over the course of 2025.³⁵ Most of equity issuances remained concentrated within industrial firms and issuances were highest in Denmark, Sweden and Germany.

The **IPO market** continued to be subdued in the second half of 2024, though it settled at levels slightly above those of 2023, given the increase in activity observed in the first part of the year (Chart 42).³⁶ In 2H24 IPO activity totalled close to

EUR 2 bn, down significantly from the previous semester (EUR 7.8 bn).

The secondary offerings of already publicly-listed firms continue to be much higher than IPO volumes (Chart 42). However, **follow-on** decreased to EUR 24 bn in 2H24, about 40% lower than in 1H24.

Steady corporate bond issuance

Corporate bond issuance (Chart 43) has been stable at historically high levels since the start of 2024. Issuance volumes amounted to around EUR 950 bn in 2H24, roughly in line with the previous semester (EUR 1tn). About 80% of dealmaking activity concerns financial firms. More than half of the 2H24 issuance was in unrated bonds (EUR 570bn or 60%). Among rated bonds, issuance remained concentrated in IG securities (around EUR 300bn or 77%). HY issuance was broadly stable in 2H24 (EUR 87 bn), just above 1H24 levels (EUR 84bn) and still supported by investor demand (see securities markets section). The average credit rating at issuance remained at A- (Chart 44).

The issuance of **short-term bonds** (maturities less than 12 months) continued at a slow pace with firms anticipating rate cuts in the months ahead. More broadly, the average weighted maturity at issuance of bonds continued to fall (Chart 45) also highlighting incentives to avoid paying high coupons for longer in anticipation of further policy rate cuts. More than EUR 1.6tn of short-term securities have been issued in 2024, with a slight slowdown in 2H24 (- 4% from 1H24; Chart 46).

Corporate maturity wall until 2028

Even with rate falls, the current interest rate environment continues to test companies' ability to service and roll over their debt. EEA corporates remain exposed to refinancing risk as some of the debt maturing in the near future will need to be refinanced at higher interest rates than in the

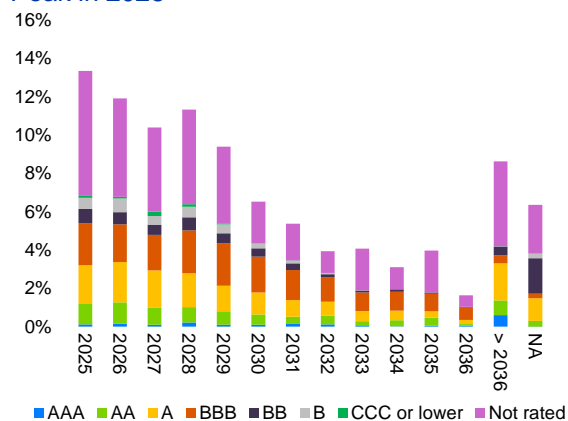
³⁴ See ECB (2024), '[Survey on the access to finance of enterprises in the euro area](#)' – September to October 2024.

³⁵ See also Financial Times (2024), '[The IPO market will take the slow road to recovery](#)', September.

³⁶ See ESMA (2024), '[Report on Trends, Risks and Vulnerabilities](#)', No 2, 2024.

past. Indeed, the **maturity profile** of corporate debt continues to show rather high maturities over the next five years, with a modest peak in 2025.

Chart 40
Outstanding debt by rating and maturity year
Peak in 2025



Note: The distribution of the total outstanding corporate bond debt by rating and year of maturity in percent. NA includes issuance amounts for corporate bonds whose maturity date is not available.
Sources: Refinitiv Eikon, ESMA.

Between 2025 and 2029, about half of the total outstanding amount of EEA corporate bonds is maturing. Concerns remain about the sustainability of corporate debt, especially in the more vulnerable high-yield segment, where the materialisation of a slower-than-expected global growth could prove challenging for companies with high debt levels. Of the corporate debt maturing in the next five years, around 18% is in BBB-rated bonds and 11% in HY.

Securitisation issuance higher than in 2023

According to industry data³⁷, issuance of **securitised products** slowed in the second half of 2024, after the growth of the previous months of the year. In 3Q24, around EUR 48 bn of placed and retained securitised products were issued in Europe, down 28% from 2Q24 (EUR 66.5bn), but still higher than the corresponding quarter of the previous year (EUR 39.5 bn in 3Q23).

Within securitised products, **collateralised loan obligations** issuance decreased from EUR 13.9bn in 2Q24 to EUR 10.6bn in 3Q24. Despite the decline, European CLO issuance continues to be particularly strong in 2024 compared to previous years, driven by demand from investors seeking higher yields.³⁸ This

market trend has also been seen in other countries, such as the US.

The decline in issuance also affected other products, such as CMBS, which fell to EUR 700mn in 3Q24 from EUR 1.4bn in the previous quarter.

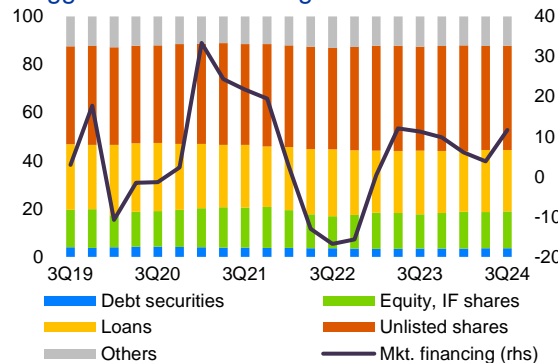
³⁷ See also AFME (2024), [Securitisation Report Q3 2024](#), November.

³⁸ See also Financial Times (2024), ['European CLO issuance hits record rate as investors chase yields'](#), June.

Key indicators

Chart 41

Market financing Sluggish market financing

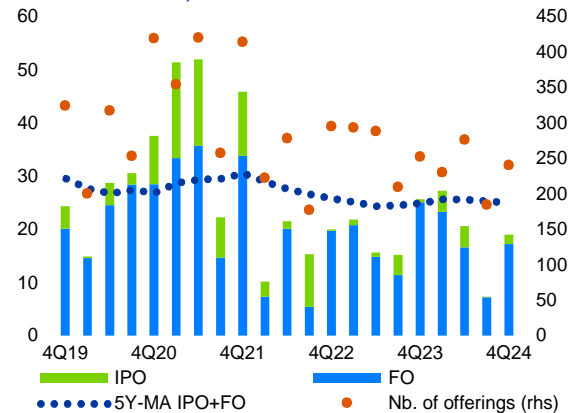


Note: Liabilities of EA non-financial corporations (NFC), by debt type as a share of total liabilities. Others include: financial derivatives and employee stock options; insurance, pensions and standardised guarantee schemes; trade credits and advances of NFC; other accounts receivable/payable. Mkt.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

Sources: ECB, ESMA.

Chart 42

Equity issuance Reduced IPOs, follow-on issuance down

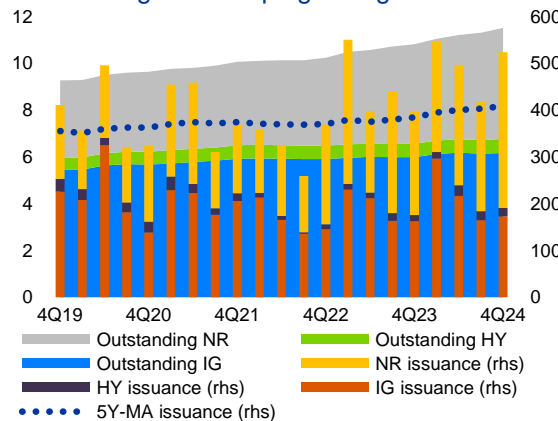


Note: Equity gross issuance in the EEA30 by type, EUR bn, and number of equity offerings. 5Y-MA=five-year moving average of the total value of equity offerings.

Sources: Refinitiv EIKON, ESMA.

Chart 43

Corporate bond issuance and outstanding Outstanding debt keeps growing

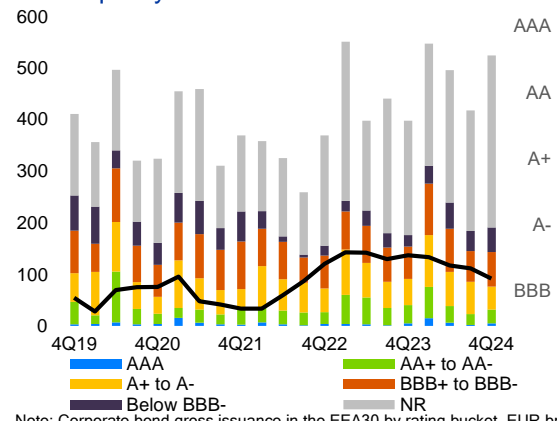


Note: Quarterly investment-grade (rating >= BBB-), high-yield (rating < BBB-) and non-rated corporate bond gross issuance in the EEA30 (rhs), EUR bn, and outstanding amounts, EUR tn. Maturities < 12 months are excluded.

Sources: Refinitiv EIKON, ESMA.

Chart 44

Corporate bond issuance by rating class Credit quality below A-

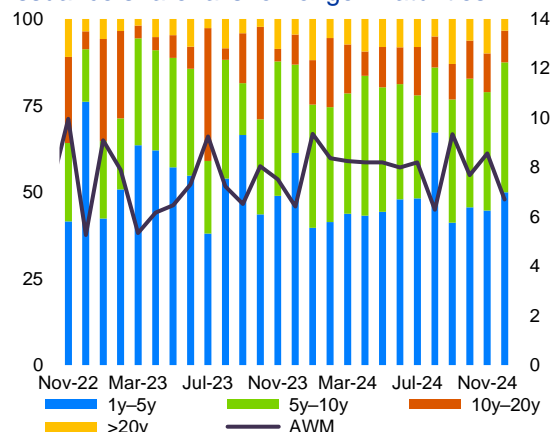


Note: Corporate bond gross issuance in the EEA30 by rating bucket, EUR bn. Avg. rating=weighted average rating computed as a one-year moving average of ratings converted to a numerical scale (AAA=1, AA+=2, etc.) excluding non-rated bonds. Maturities < 12 months are excluded.

Sources: Refinitiv EIKON, ESMA.

Chart 45

Corporate bond issuance by maturity bucket Issuance share falls for longer maturities

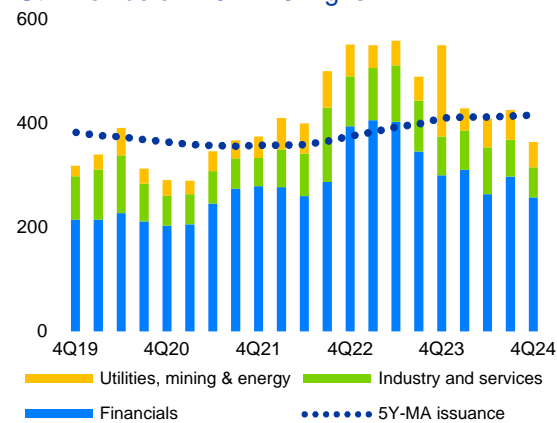


Note: Monthly share of corporate bond issuance by maturity bucket, in % (lhs) and average weighted maturity at issuance (AWM), in years (rhs).

Sources: Refinitiv Eikon, ESMA.

Chart 46

Short-term bond issuance by sector Still well below 2022-23 highs



Note: Short-term corporate debt gross issuance in the EEA30 by sector, EUR bn. Short-term=Maturities < 12 months.

Sources: Refinitiv EIKON, ESMA.

Sustainable finance

Policy uncertainty risks delaying the transition

Global climate policy uncertainty continued to build in the second half of 2024, with headwinds expected from the incoming US administration and the EU focus on reducing the regulatory burden to increase the block's competitiveness.

Recent efforts led to a doubling in global climate finance flows between 2020 and 2023 to USD 1.5 trillion. However, these volumes remain far from the estimated USD 7.4 trillion needed on average each year until 2030 for the 1.5C scenario to remain within reach.³⁹

The latest set of climate scenarios from the Network for Greening the Financial Sector (NGFS) puts the costs of a delayed transition at more than 12% of global GDP by 2050. This compared with less than 9% under the Net Zero scenario by 2050, with chronic physical risks the main source of projected losses⁴⁰ (Textbox 4).

Textbox 4

Portfolio exposures to climate physical risks

The recent series of heavy precipitation, floods and hurricanes around the world highlighted the potential scale of impacts from climate-related hazards on economic activity. Banco d'Espana estimated that the October 2024 floods in the Valencia region would impact Spain's fourth quarter GDP by 0.2 percentage points.⁴¹

In this context, developing an understanding of portfolio exposures to the physical impacts of climate change is important for fund managers to identify and manage in advance the potential risks stemming from climate change. Similarly financial sector authorities will increasingly need to monitor climate-related risks to entities and products within their supervisory remit.

While investment funds' portfolio vulnerabilities to physical risks appear limited given their ability to rebalance portfolios quickly and the short-term nature of their liabilities, some funds may still be exposed to physical risks. A recent ESMA analysis showed that funds in northern Europe tend to be more exposed to companies subject to flood risks, while those in southern Europe are relatively more exposed to the consequences of water supply-and-demand imbalances.⁴²

In Europe, the results of the 'Fit-for-55' climate scenario analysis showed that estimated losses from a climate transition shock (or 'run-on-brown') would have a limited impact on the financial system by 2030.⁴³ When weighed against large

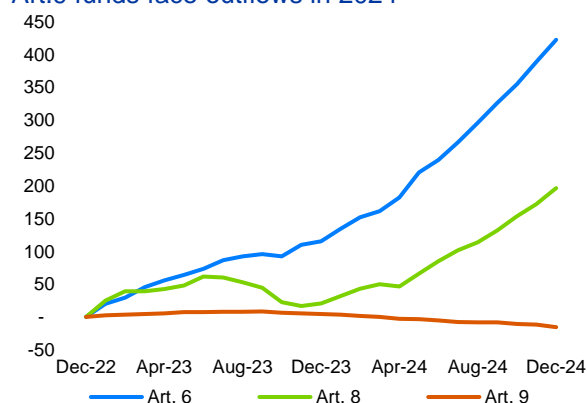
(and growing) expected financial losses from climate physical impacts, the outcome of this exercise highlights the positive trade-off in favour of policy efforts to avoid delaying the transition.

ESG investing slows, as green bonds grow

A renewed focus on the need to consolidate public finances in advanced economies raises questions on governments' ability to finance the transition, when lower momentum in ESG investing suggests reduced investor appetite for 'greener' investments. Net outflows from SFDR Art.9 funds with a sustainable investment objective continued in 2H24 (EUR 10bn; -3% of Art.9 fund AuM, Chart 47). Net inflows into SFDR Art.8 funds (promoting environmental or social characteristics) accelerated (EUR 111bn; +2% of AuM), supported by demand for transition finance products⁴⁴, but remained lower than flows into Art.6 funds without ESG features (EUR 183bn; +4% of AuM). Combined flows into SFDR Art.8 and Art.9 funds were EUR 157 bn in 2024.

Chart 47

Net fund flows by SFDR fund type Art.9 funds face outflows in 2024



Note: Cumulative net flows into EU-domiciled funds (excluding MMFs) by SFDR fund type since December 2022, EUR bn.
Sources: Morningstar, ESMA.

ESG bond markets continued to grow, with the total value of EU ESG bonds outstanding up 17% in 2024 (EUR 2.2tn, Chart 51). This was mainly

³⁹ Climate Policy Initiative, [Global Landscape of Climate Finance 2024](#).

⁴⁰ Network for Greening the Financial Sector, [Climate scenarios for central banks and supervisors – Phase V](#), 13 January 2025.

⁴¹ Reuters, Bank of Spain puts cost of October floods at 0.2%/GDP in fourth quarter, 20 November 2024.

⁴² J. Mazzacurati and N. Mosson (2024). [Assessing portfolio exposure to climate physical risks](#), ESMA TRV Risk Article, 9 October 2024.

⁴³ [ESAs, Fit-for-55 climate scenario analysis](#), 2024

⁴⁴ [ESMA TRV Risk Monitor No.2. 2024](#) (pp.31-32).

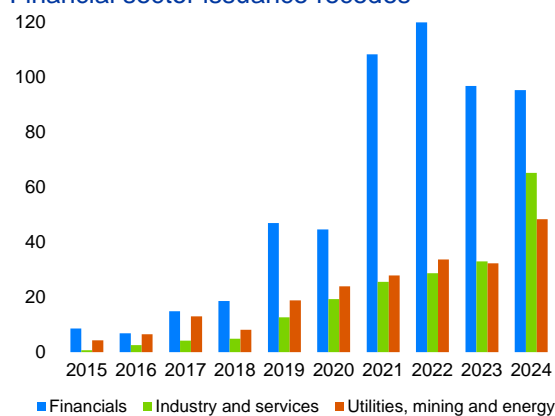
driven by record-high green debt issuance during the first half of the year (Chart 52). Green bond market strength has been underpinned in recent years by non-financial corporate issuance, a remarkable development for a market originally driven by supranational and sovereign issuance, sending positive signals about the greening of the European economy.

Non-financial sector drives green bond market growth

The EU continues to assert its position as a global leader in the green bond market, representing around half of global private sector green bond issuance in 2024. This highlights the growing flow of capital toward environmentally focused projects, driven by investor demand and companies' efforts to become more environmentally sustainable.

While the financial sector (mainly banks) remains a key player in the market, the share of private-sector green bonds issued by financials declined to 46% in 2024 from a peak of 67% in 2022 (Chart 48). Banks' stronghold in the market stems from their reliance on green bond funding to finance green lending to commercial undertakings and households.⁴⁵ However, EU non-financial corporate green bond issuance has increased 74% from 2023, highlighting the strong underlying market momentum.

Chart 48
Annual private sector green bond issuance volumes
Financial sector issuance recedes

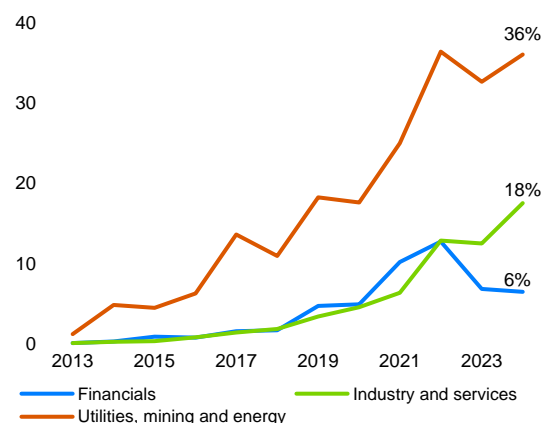


Note: Annual volumes of EU private sector green bond issuance by sector, EUR bn.
Sources: Refinitiv Eikon, ESMA

Companies in energy-related sectors (upstream and downstream, including electricity production) stand at the forefront of non-financial sector issuance. This reflects their critical role in

decarbonising the economy through renewable energy production, energy storage, grid resilience, and other energy efficiency projects. In 2024, a third of the funding raised by EU energy producers and utilities in debt capital markets took the form of green bonds, compared with less than 20% for industrials and services (Chart 49).

Chart 49
Share of green bonds in private sector bond issuance
Non-financial sector issuance accelerates



Note: Annual share of green bonds in total private sector bond issuance from EU-27 domiciled issuers in %, by sector.
Sources: Refinitiv Eikon, ESMA.

Green bond market diversification is also visible in the number of non-financial corporate issuers, which doubled in two years (to 338), while the number of financial sector issuers declined by 7% (to 373).

Green bonds can be used by companies to finance their green capital expenditure (CapEx). EU corporate disclosures under the EU Taxonomy Regulation reveal that utilities display the highest share of Taxonomy-aligned CapEx (62%) – an indicator of a company's future sustainability – followed by the energy (28%) and real estate (27%) sectors, with industrials and services lagging⁴⁶. Greater reliance on green bond funding in these sectors therefore suggests that a broader greening of the EU economy is underway.

The EU Green Bond (EuGB) Regulation will support these developments by enhancing transparency and ensuring alignment of the financed projects with the EU Taxonomy. While the future take-up of the EuGB label is unclear, sectors and issuers with the highest share of green CapEx are best positioned to comply with the requirement to allocate at least 85% of EuGB proceeds to activities aligned with the EU Taxonomy. As part of the new framework, ESMA will supervise registered external reviewers to

⁴⁵ EBA, [Report on green loans and mortgages](#), December 2023.

⁴⁶ Bloomberg, [EU sustainable finance trends 2024](#).

strengthen market integrity and reinforce the credibility of green bond reviews. (Textbox 5).

Textbox 5

Spotlight on Green Bond Second-Party Opinion Providers (SPO providers)

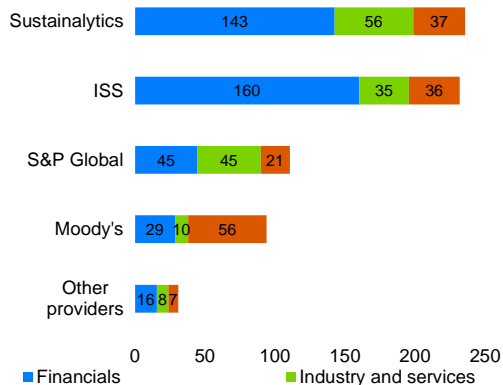
In the context of green bonds, external reviews encompass different services aimed at evaluating the environmental credibility of green bonds. SPOs, which are the most widely used type of review, assess green bond frameworks or issuances and their alignment with established environmental criteria, providing independent assurance to investors.

SPOs have been conducted for 65% of the total private sector green bond volumes, with the share increasing over time. The EU green bond SPO market is dominated by four major providers: Sustainalytics, Institutional Shareholder Services (ISS), S&P Global Ratings, and Moody's. From 2018 to 2022, the total value of issuances reviewed by these providers increased significantly, peaking in 2022 alongside overall green bond issuance trends. Their combined market share accounts for 95% of the total SPO market since inception (Chart 50).

Sustainalytics and ISS lead the market in terms of green bond volumes (although S&P Global leads the market based on the number of issuances), with SPOs conducted for a combined value of over EUR 200bn in EU corporate green bonds. These two providers are particularly active in the financial sector, while non-financial sector issuers account for a greater share of S&P Global and Moody's activities.

Chart 50

EU corporate green bond volumes by SPO provider Top four providers reviewed 95% of volumes



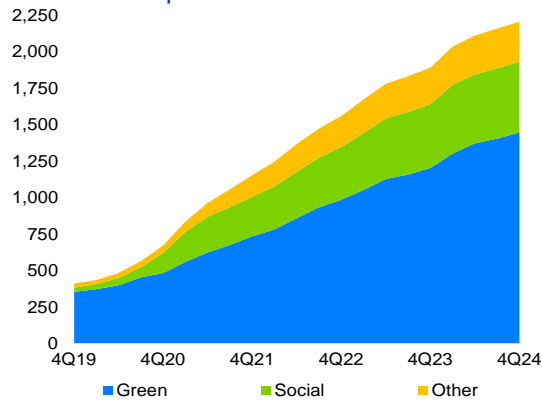
Note: Total value of EU-27 private sector green bonds for which a second party opinion was provided since 2013, EUR bn.
Sources: Refinitiv Eikon, ESMA.

During a transitional period which will run until 21 June 2026, firms can provide external review services for EuGBs after notifying ESMA and providing the information referred to in Art.23(1) of the EuGB Regulation (e.g. number of analysts, methodologies, governance arrangements). As of 31 January 2025, 14 reviewers had notified ESMA and provided the requested documentation. After 21 June 2026, in order to provide external review services, entities will have to formally register with ESMA which, as part of its supervisory mandate, will assess whether a firm meets the conditions to review EuGBs.

Key indicators

Chart 51

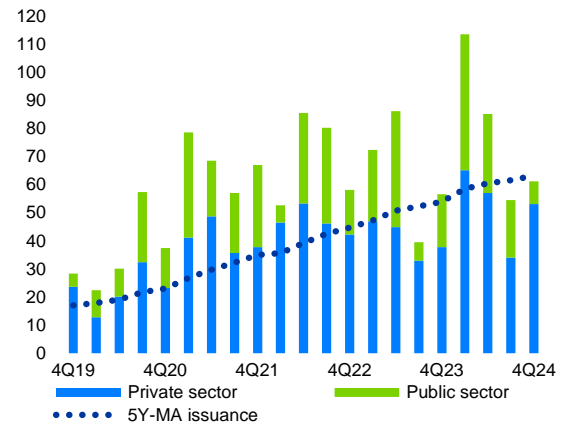
EU ESG bonds outstanding Market size up 17% in 2024



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

Chart 52

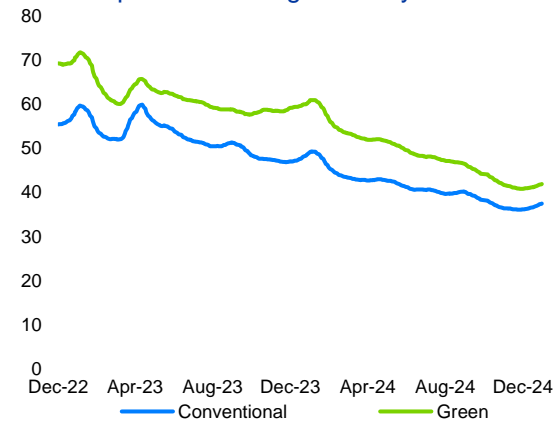
Green bond quarterly issuance Issuance slows in 3Q24



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

Chart 53

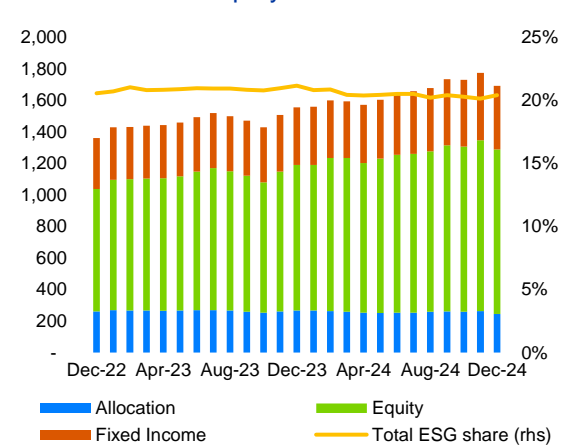
Corporate green bond and conventional bond liquidity Bid-ask spreads converge steadily



Note: One-month moving average of the bid-ask spread of green and conventional bonds from green bond issuers included in the Markit iBoxx EUR Corporate bond index, in bps.
Sources: IHS Markit, ESMA.

Chart 54

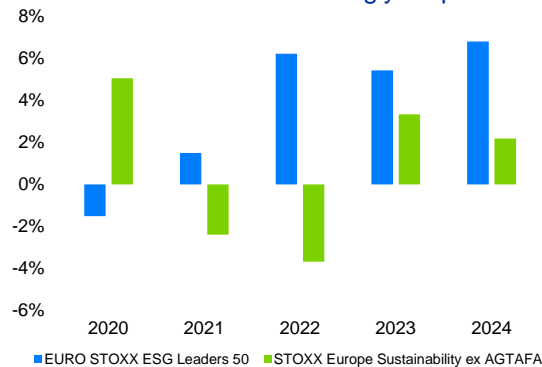
ESG fund assets ESG fund assets up by 10% in 2024



Note: AuM of EU-domiciled ESG funds by fund type, EUR billion, and share of ESG funds in total EU fund assets (right axis), in %.
Sources: Morningstar, ESMA.

Chart 55

ESG vs. broad market index performance Best-in-class ESG index strongly outperforms



Note: Annual returns of the STOXX ESG Leaders 50 index (best-in-class strategy) and STOXX Europe Sustainability excl. Alcohol, Gambling, Tobacco, Armaments & Firearms, and Adult Entertainment (AGTAF, positive screening and exclusion-based strategy) measured as relative difference to the STOXX Europe 600, in percentage points. 2024 data as of end-November.
Sources: Refinitiv Datastream, ESMA.

Chart 56

Emission allowance prices Carbon prices softened in 2H24



Note: Daily settlement price of European Emission Allowances (EUA) on European Energy Exchange spot market, in EUR/tCO2.
Sources: Refinitiv Datastream, ESMA.

Financial innovation

Bitcoin reaches new highs

The re-election of Donald Trump as US president triggered a new surge in crypto prices, on the expectation that his administration would foster a more lenient regulatory approach supportive of wider crypto adoption.⁴⁷ Bitcoin's price rose more than 30% in the week following the elections, and passed the 100,000 USD mark for the first time on 5 December 2024 (Chart 61). Dogecoin, the largest meme coin frequently boosted by Elon Musk (see Textbox 6) soared 144% between 5 and 13 November. Other meme coins also outperformed Bitcoin over the same period. The rally pushed the **total crypto market capitalisation**, of which Bitcoin alone represents 53%, to a new all-time high of above EUR 3.3tn (Chart 62) as of end-December, representing a 42% increase in two months and a 27% increase from the previous high of EUR 2.6tn of November 2021. These developments prompted ESMA to renew its [warning](#) to investors to alert them to the highly speculative and risky nature of many crypto-assets.

The market capitalisation of stablecoins grew steadily to reach EUR 204bn as of end-December 2024 (+34% since June 2024) but remains highly concentrated (Charts 63 and 64). Tether USD alone, the largest stablecoin by far, accounts for close to 65% of the stablecoin market size, although its relative share has decreased in Q4 2024. USD Coin comes second with 21% of the total. Euro-denominated stablecoins are still marginal in size. Several issuers of e-money tokens (EMTs, commonly known as stablecoins), namely Banking Circle⁴⁸, Circle⁴⁹, Membrane Finance⁵⁰, Quantoz payments⁵¹ and SG-Forge⁵² have notified MiCA white papers, following the entry into application of Titles III and IV of the regulation on 1 July 2024.

⁴⁷ Financial Times, 2025. '[Crypto industry dreams of a golden era under Trump](#)', 2 January 2025.

⁴⁸ Banking Circle, 2024. '[Banking Circle launches the first bank-backed MiCA-compliant stablecoin, EURI - Banking Circle](#)', 26 August 2024.

⁴⁹ Circle, 2024. '[Circle is First Global Stablecoin Issuer to Comply with MiCA](#)', 1 July 2024.

⁵⁰ See [Licences - Membrane Finance](#)

⁵¹ Thencrypt.com, 2024. '[Quantoz Launches MiCA-Compliant Stablecoins USDQ and EURQ](#)', 18 November 2024.

Textbox 6

Meme coins expose close ties between crypto and social media

Social media has been a key enabler of the growth of crypto-assets, by contributing to their popularity and rise in prices. The recent boom of Dogecoin and other meme coins, a type of crypto-assets that originate from internet memes and jokes once again exposed this relationship.⁵³

Following his election win on 5 November, Donald Trump announced on 12 November that Elon Musk and Vivek Ramaswamy would lead the newly created Department of Government Efficiency tasked to "slash excess regulations, cut wasteful expenditures, and restructure Federal Agencies".

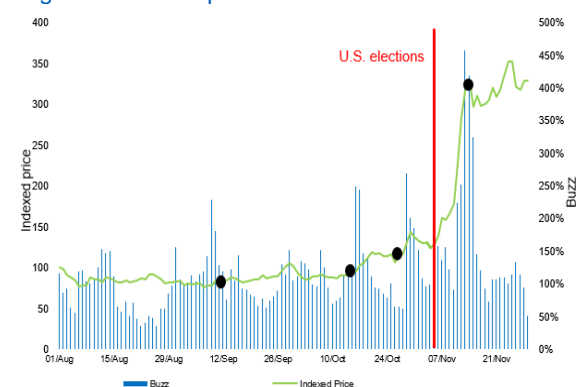
The department abbreviated to DOGE shares the name of the Dogecoin, the largest meme coin with a market capitalisation of above EUR 55bn. Originally created as a joke in 2013, Dogecoin was inspired by the Doge meme created from a viral photo of a Shiba Inu dog. On the same day, Musk tweeted a logo for the DOGE with a cartoon Shiba Inu on it.

Dogecoin's price soared 144% between 5 November and 13 November. Other meme coins saw substantial gains as well. Shiba Inu, initially designed as an imitation of Dogecoin, rose 60%, while PEPE rose 82% over the same period.

Musk's influence on Dogecoin's price is well known – he frequently tweeted about the coin in the past, often causing its price to surge as highlighted in the chart below (Chart 57) – and shows the power of social media to sway investors' behaviour.⁵⁴

Chart 57

Dogecoin indexed price and buzz indicator



Note: On the left axis, indexed price of Dogecoin (price of August 1st =100). On the right axis, the buzz indicator regarding Dogecoin messages on social media. The black dots represent tweets from Elon Musk related to D.O.G.E or Dogecoin.
Sources: Stockpulse, CoinGecko, ESMA.

The growing role of social media and on-line communities in shaping market trends and investors' sentiment is a source of concern for regulators, because of the risks it raises to

⁵² SG-Forge, 2024. '[Societe Generale-Forge elevates the EUR convertible stablecoin to accelerate its distribution and free use](#)', 1 July 2024.

⁵³ An internet meme refers to a cultural item, e.g., an idea or behaviour, that spreads across the Internet primarily through social media platforms. The term 'meme' was originally introduced by Richard Dawkins in 1972 to describe the concept of cultural transmission.

⁵⁴ See for example Blockchain Research Lab, 2022. '[How Elon Musk's Twitter activity moves cryptocurrency markets](#)', 12 January 2022..

investor protection and market integrity.⁵⁵ This concern is exacerbated for meme coins, which typically have no tangible value and are extremely speculative.

Investors' enthusiasm fuelled high **trading volumes**, which increased more than twofold in November (Chart 65). Binance remains the market leader among crypto exchanges with a market share of 39% as of end-December but the ongoing market rally has benefited other exchanges (Chart 66).

The boom in crypto-asset prices supported strong inflows into **US spot Bitcoin ETPs**. Since their launch in January 2024, these ETPs attracted net inflows of EUR 34.3bn, including EUR 16bn in Q4 2024. As of end-December, their combined net asset value totalled EUR 102bn, which is about half the total value of gold ETPs. After a lacklustre debut in July, US spot Ether ETPs started to gain some traction after the US elections and ended the year with EUR 2.6bn in net inflows.

The total value locked (TVL) in Decentralised Finance (DeFi) protocols grew from EUR 90bn in June to almost EUR 114bn as of end-December 2024, in line with the appreciation of crypto-assets. The number of DeFi protocols increases constantly but high concentration prevails, with the largest three protocols, namely Lido, Aave and EigenLayer comprising around 30% of the total TVL.⁵⁶

Tokenisation adoption remains low but appears to be growing. In October 2024, the Financial Stability Board (FSB) published a report on tokenisation highlighting that it did not raise risks to financial stability, owing to its current small size but required monitoring.⁵⁷ The report also noted the potential of tokenisation to offer benefits to the financial system, such as increased efficiency and transparency. In the EU, two DLT-based market infrastructures were recently approved under the DLT Pilot regulation.⁵⁸

ESMA's risk assessment framework scores crypto assets along six dimensions, assigning a current risk level and a related medium-term risk outlook to each (Table 1). Liquidity risk, market risk, internal contagion risk, and operational risk

remain of 'highest' concern in view of the recent market rally. Credit risk remains 'moderate', while external contagion risk to the wider financial system stays 'low', mainly due to crypto assets' relatively small market size and limited interlinkages with traditional markets. However, in this regard, the increasing interest in crypto assets from institutional investors has the potential to increase external contagion risk further.

Table 1
ESMA framework for crypto-asset risks
Medium-high risk with stable outlook

	Level	Outlook
Liquidity	■	→
Market	■	→
Credit	■	↗
Contagion (internal)	■	→
Contagion (external)	■	↑
Operational	■	→

Note: Colours indicate current risk intensity. Coding: green = potential risk; yellow = elevated risk; orange = high risk; red = very high risk. Upward-pointing arrows = increase in risk intensity; downward-pointing arrows = decrease in risk intensity; horizontal arrows = no change foreseen. The outlook refers to the forthcoming half year. The ESMA risk assessment is based on quantitative indicators and analysts' judgement.
Sources: ESMA.

Investment fund exposures to AI companies grow

The recent AI frenzy on financial markets has raised questions around the sustainability of the sector's valuations and its uncertain earnings, as large technology companies with growing stakes in AI-enabling hardware and AI-powered products and services drive stock market gains and AI-branded start-ups increasingly attract funding.⁵⁹ In line with these developments, the portfolio exposure of EU investment funds to equity of companies involved in the development or adoption of AI has been growing significantly since the beginning of 2023, with their weight climbing from 9% to 13% as of 2Q 2024

⁵⁵ For a further analysis of the impact of social media on equity returns, see ESMA, 2024, '[ESMA50-524821-3157 TRV Article - Social media sentiment: Influence on EU equity prices](#)', 3 April 2024. Relatedly, in February 2024, ESMA and National Competent Authorities raised awareness to requirements established by the Market Abuse Regulation (MAR) which apply when posting investment recommendations on social media

⁵⁶ [Source: Defillama](#), ESMA, TVL adjusted for double-counting ⁵⁷ FSB, 2024, '[The financial stability implications of tokenisation](#)', 22 October 2024.

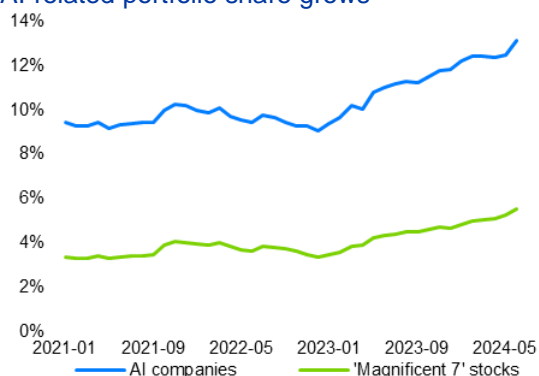
⁵⁷ FSB, 2024, '[The financial stability implications of tokenisation](#)', 22 October 2024.

⁵⁸ For further details on DLT market infrastructures authorised under the EU DLT Pilot regime regulation, see the list published on the [ESMA website](#).

⁵⁹ See Financial Times (2023), [AI frenzy tests Big Tech's newfound cost discipline](#), August, and Reuters (2024), [AI startups ride on investor frenzy to raise billions in 2024](#), October.

(Chart 58).⁶⁰ The stake held by EU funds amounted to EUR 470bn, double the value in 2021.⁶¹ “Magnificent 7” stocks accounted for about 40% of the exposure, reflecting the outsized role of a few high-performing “mega cap” stocks (i.e., stocks with a capitalisation or market value over USD 200bn) in the recent stock market’s AI-fuelled bull run. Positioning themselves at the forefront of technological innovation, these companies have in recent years invested significant resources towards AI development and acquisition of AI expertise.

Chart 58
EU funds’ investment in AI companies
AI-related portfolio share grows



Note: Share of AI companies and of 'Magnificent 7' stocks (as a % of the NAV) in the portfolio of EU equity investment funds. "AI companies" refers to 83 constituents from 7 AI-sector indices. "Magnificent 7" refers to Apple, Microsoft, Amazon, Alphabet, Meta, Nvidia and Tesla.
Sources: Morningstar, ESMA

While financing the blooming sector of AI-enabled innovation allows investors to participate in potentially large economic gains, rising valuations of technology companies may induce outsized exposure to the sector and correlated risk-taking. If these companies face correlated adverse conditions due to the highly uncertain outcomes of investments in AI-driven innovations – be it shifts in expectations, operational setbacks, or regulatory challenges – the impact on fund portfolio valuations could be large. A sector-specific downturn might have broader implications and knock-on effects in less liquid segments, such as the debt and private equity markets.

Quantum computing: impact to come

While AI has been in the spotlight of financial markets for its transformative potential across several industries, quantum computing (QC) might in the future evolve into an equally far-reaching technology. Leveraging the laws of quantum mechanics to multiply computational capacities, QC might revolutionise industries and fields that require significant computing power.

Finance is considered one of the industries likeliest to see the earliest economic impact from QC.⁶² In the financial sector, QC could offer new possibilities by enhancing risk assessment, optimising portfolio management and liquidity, and improving macroeconomic modelling, with further potential applications yet to emerge.⁶³

At the same time, QC poses a serious threat to the financial system due to its expected ability to render some commonly used cryptographic techniques ineffective, which could endanger a range of financial activities, such as online banking, payment transactions and crypto-asset wallets.⁶⁴ In response to this threat, researchers have been developing new cryptographic algorithms designed to withstand cyberattacks from a quantum computer. After an eight-year effort that leveraged the work of global cryptography experts, in August 2024 the US National Institute of Standards and Technology (NIST) released its first set of 'quantum-proof' encryption algorithms.⁶⁵ In the EU, the Quantum Safe Financial Forum aims to coordinate the transition to quantum-safe cryptography in the financial sector.⁶⁶

Although a chip capable of performing commercial applications is not expected to appear before the end of the decade, the past year marked meaningful advances for quantum technologies (QT), for example in the field of quantum error correction – a set of techniques to protect the information stored in quantum bits from errors and decoherence caused by noise. In December 2024, as it released details of a new

⁶⁰ For comparison, the weight of the same AI companies as a share of the MSCI World index grew from 28% to 33%. The set of AI-related companies corresponds to 83 companies that are among the constituents of at least two of the following seven AI-focused market indices: Nasdaq's CTA AI index, WisdomTree's AI & Innovation index, ROBO Global's AI index, Solactive's Generative AI index, Morningstar's Global Next Generation AI index, Index's AI index, and S&P Kensho Global's AI Enablers index.

⁶¹ These data mostly refer to UCITS (96% of the funds in the sample).

⁶² McKinsey Digital (2024), [Quantum Technology Monitor](#), April.

⁶³ BIS (2024), [Quantum computing and the financial system: opportunities and risks](#), October.

⁶⁴ IMF (2021), [Quantum Computing and the Financial System: Spooky Action at a Distance?](#), March; Deloitte, [Quantum computers and the Bitcoin blockchain](#).

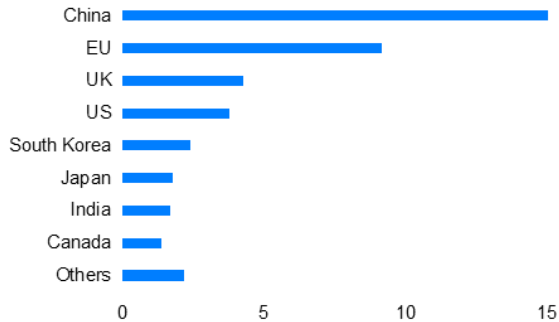
⁶⁵ National Institute of Standards and Technology (2024), [NIST Releases First 3 Finalized Post-Quantum Encryption Standards](#), August.

⁶⁶ Europol (2024), [Quantum Safe Financial Forum](#), May.

quantum processor, Google announced having cleared a key technical hurdle in overcoming the inherent instability of quantum systems, in what some consider a significant milestone to unlocking large-scale quantum applications.⁶⁷

Against this background, public and private sector investment for QT research and development has been gradually gaining traction. Public funding announced by governments was estimated to have reached USD 42bn globally as of end-2023, with China having committed more funds than the EU and the US combined (Chart 59). However, the US leads the QT field in private funding and number of start-ups. EU firms attracted less than 10% of global private funding, compared with over 50% attracted by US firms (Chart 60).

Chart 59
Announced public investment in quantum computing
China leads on government-funded R&D



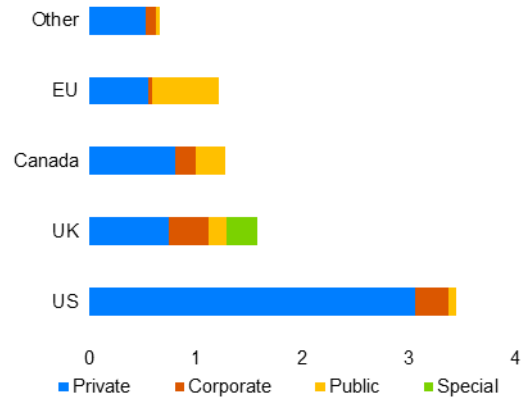
Note: Cumulative announced government investment in quantum computing research and development as of end-2023 (USD bn). "EU" is the sum of Germany (USD 5.2bn), France (USD 2.2bn), Netherlands (USD 1bn), Denmark (USD 0.4bn), Sweden (USD 0.2bn), Austria (USD 0.1bn), Spain (<USD 0.1bn) and Hungary (<USD 0.1bn). "Others" include other countries with less than USD 1bn. Sources: McKinsey Digital, ESMA

Still, investment flows have been uneven, conditioned by the global economic cycle and potential crowding-out effects following the recent enthusiasm garnered by AI. Start-up investment decreased by 27% year-on-year in 2023 to USD 1.7bn, a more moderate reduction than the 38% drop in overall start-up funding over the same period. Investment in QT still lagged far behind the funding raised by generative AI companies, which increased from USD 19.1bn in 2022 to USD 48.4bn in 2023.⁶⁸

If it is able to mobilise the necessary capital, the EU may still develop an internationally competitive QC ecosystem. The US and China hold technological leadership in critical QC

components and materials, with five of the top ten tech companies by QT investment based in the US and four in China.⁶⁹ However, the EU has the highest number of graduates and publications in QT-relevant fields. It also accounts for 44% of the total QT-related patents granted – although US and Chinese companies lead in patent requests, at about half of applications filed globally.⁷⁰

Chart 60
Investment in quantum computing start-ups
EU lags behind on private funding



Note: Total investment in quantum technology start-ups by location and primary investor type, 2001–2023 (USD bn). "Corporate" includes investments from corporations and corporate venture capital in external start-ups. "Special" includes SPACs and other special deal types. Sources: McKinsey Digital, PitchBook, ESMA

⁶⁷ Google (2024), [Making quantum error correction work](#), December; Financial Times (2024), [Scientific breakthrough gives new hope to building quantum computers](#), December.

⁶⁸ McKinsey Digital (2024), [Quantum Technology Monitor](#), April.

⁶⁹ European Commission (2024), [The future of European competitiveness – In-depth analysis and recommendations](#), September.

⁷⁰ McKinsey Digital (2024), [Quantum Technology Monitor](#), April.

Key indicators

Chart 61

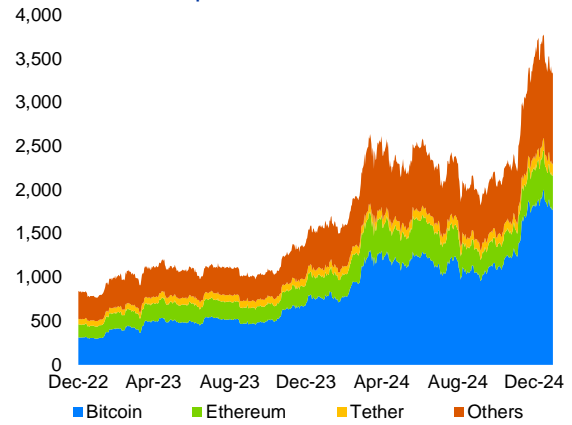
Crypto-assets prices
Bitcoin up 60% in Q4 2024



Note: Prices of selected crypto-assets, EUR thousand.
Sources: Refinitiv Datastream, ESMA.

Chart 62

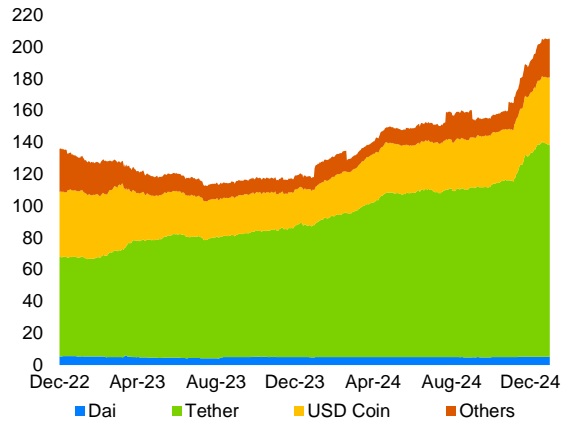
Crypto-assets market capitalisation
Bitcoin alone represents 53% of total



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

Chart 63

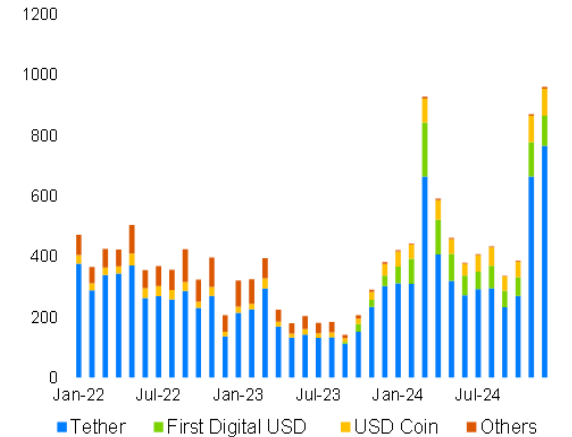
Stablecoins market capitalisation
Tether dominates in market size



Note: Market capitalisation of Dai, Tether, USD Coin and other stablecoins, in EUR bn.
Sources: CoinMarketCap, ESMA.

Chart 64

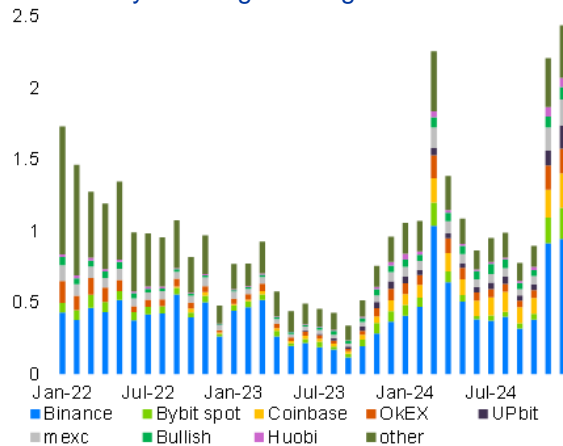
Stablecoins trading volume
Tether concentrates 80% of volumes



Note: Volume traded by stablecoin, in EUR bn (monthly).
Sources: Kaiko, ESMA.

Chart 65

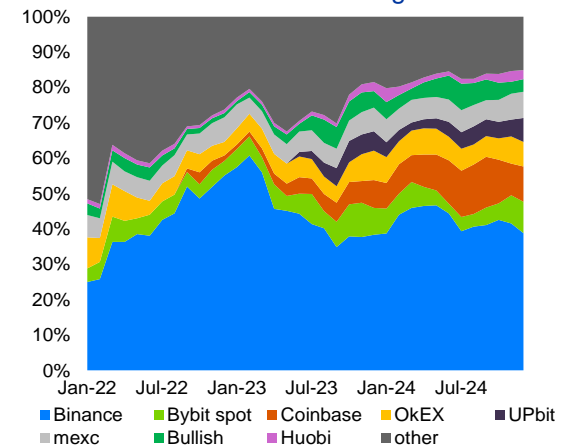
Crypto-assets trading volume
Market rally fuels high trading volumes



Note: Volume traded by exchange, in EUR tn (monthly)
Sources: Kaiko, ESMA

Chart 66

Share of exchanges in crypto-assets trading volumes
Binance's market share receding at 39%



Note: Share of volume traded by exchange, in EUR tn (monthly).
Sources: Kaiko, ESMA.

Annexes

TRV Statistical Annex

In addition to the statistics presented in the risk monitoring and risk analysis sections, we provide extensive and up-to-date charts (referred to in this report with an A prefix) and tables with key data on the markets under ESMA's remit in the TRV Statistical Annex, which is published jointly with the TRV and can be accessed on ESMA's website. Charts with an A prefix are in the Statistical Annex. (<https://www.esma.europa.eu/esmas-activities/risk-analysis/risk-monitoring>).

List of abbreviations

1H(Q)23	first half (quarter) of 2023
1Y-MA	1-year moving average
2H(Q)22	second half (quarter) of 2023
ABS	asset-backed securities
AI	artificial intelligence
AIF	alternative Investment Fund
AIFMD	Alternative Investment Fund Managers directive
AuM	assets under management
BTC	bitcoin
BF	Bond fund
bp	basis point
CBI	Central Bank of Ireland
CCP	central counterparty
CDO	collateralised debt obligation
CDS	credit default swap
CFD	contract for differences
CISS	composite indicator of systemic stress
CLO	collateralised loan obligation
CNAV	constant net asset value
CMBS	commercial mortgage-backed security
CRA	credit rating agency
CRE	commercial real estate
CSD	central securities depository
CSDR	Central Securities Depositories Regulation
DeFi	decentralised finance
DLT	distributed ledger technology
EA	euro area
ECB	European Central Bank
EEA	European Economic Area
ESG	environmental, social and governance
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
ETD	exchange-traded derivative
ETF	Exchange-traded fund
ETH	Ether
ETP	exchange-traded product
EU	European Union
GDP	gross domestic product
GFC	Global Financial Crisis
HY	high yield
IG	investment grade
IMF	International Monetary Fund
IPO	initial public offering
LDI	liability-driven investment
LVNAV	Low volatility net asset value
MCM	market correction mechanism
ML	machine learning
MMF	money market fund
NAV	net asset value
NCA	national competent authority
NFC	non-financial corporation
OTC	over the counter
PE	price-to-earnings
pp	percentage point

RE	real estate
rhs	right hand side axis
RMBS	residential mortgage-backed security
RRE	residential real estate
SEC	Securities and Exchange Commission
SFDR	sustainable finance disclosure regulation
SMEs	small and medium-sized enterprises
UCITS	undertakings for collective investment in transferable securities
VNAV	variable net asset value
WAL	weighted average life
WAM	weighted average maturity
YTD	year to date

Currencies and countries abbreviated in accordance with ISO standards.

