# Credit Strategy - Europe

# Calmer markets, better volumes

**Credit Analysis**

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Credit Strategy
Europe

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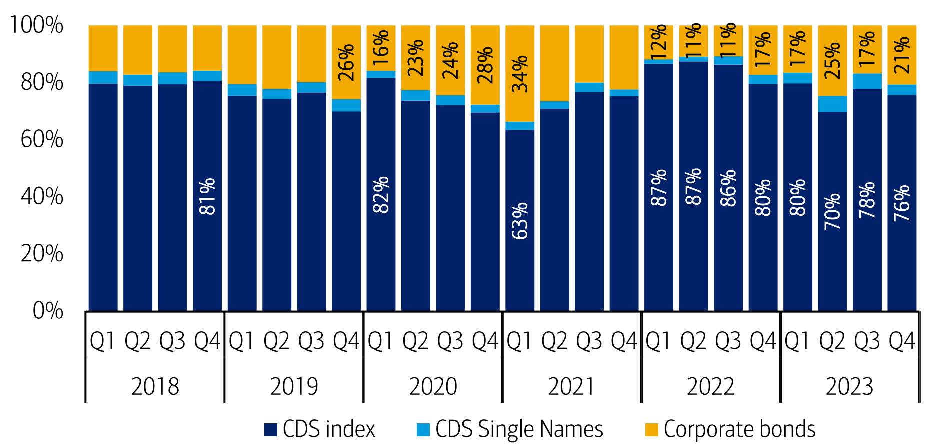
## Q4'23 liquidity – better for bonds, but beware of shocks

In a world of lower "risk-free" rates, demand for credit has rejuvenated. This has been a tailwind for bond market liquidity over the past couple of quarters. We think this trend should continue in the following quarters as long as the ECB delivers the first rate cut in June and guides that this will not be the end of the cutting cycle. However, if inflation disappoints and does not head as low as expected, we see rates bouncing higher and thus bond market liquidity will likely be negatively impacted.

## CDS indices to the rescue

But when bond market liquidity gets more challenging, we think that credit market participants will be able to find a safe harbour in the form of CDS index trading. In periods of volatility, either on the upside or the downside, we expect to see a resurgence of macro product trading. CDS indices and CDS index options are the "go-to" products in periods of high market volatility. Credit investors gravitate to macro instruments to source stronger liquidity characteristics. Note also that while transaction costs in the bond market have deteriorated in general over the past few years, this has not been the case in the CDS index market.

**Exhibit 1: Bond trading share of total volumes increased in Q4 2023**
Trading volumes per product as a % of total volumes. CDS indices remain the go-to product to trade credit.




**Source:** DTCC, Bloomberg. Only European CDS indices and single-name CDS. We filter via the TAGG page: only for Euro and GBP-denominated corporate bonds reported under Mifid

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## Bond market liquidity improved in 2023

Since early 2021, we have experienced deteriorating bond market liquidity metrics. Transaction costs have been on the ascent, while turnover metrics have broadly declined. However, a lower rates vol backdrop helped in 2023, and bond market liquidity metrics stabilised/improved in some places in Q4. While turnover metrics rose in H2 2023, average trade sizes declined.

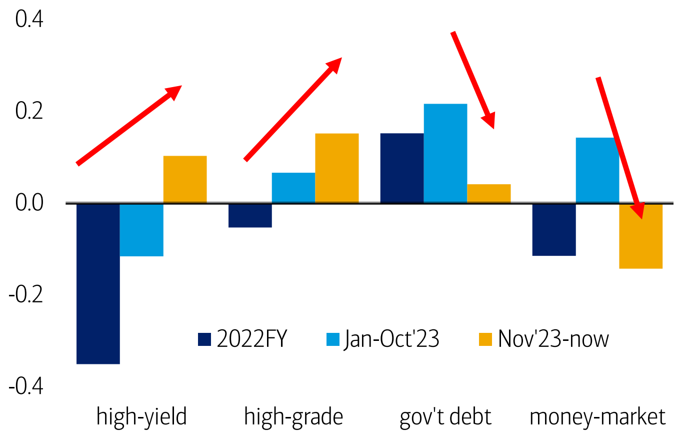
# Contents

# Credit market liquidity update: Q4 2023

When market volatility spikes, macro credit products become the vehicle to trade credit risk. But when markets rally, spreads tighten and volatility subsides, corporate bonds exhibit better liquidity characteristics than during periods of stress. While 2022 was characterised by significant volatility on the downside, 2023 saw better days and positive returns for investors. Only very few instances of "bear" market trends were observed.

**Exhibit 2: In 2022 and up to October last year, investors gravitated to "safer" pockets of the fixed income world.**

However, this has changed drastically since November and flows have picked up materially in credit space.




**Source:** EPFR Global. Median weekly flows

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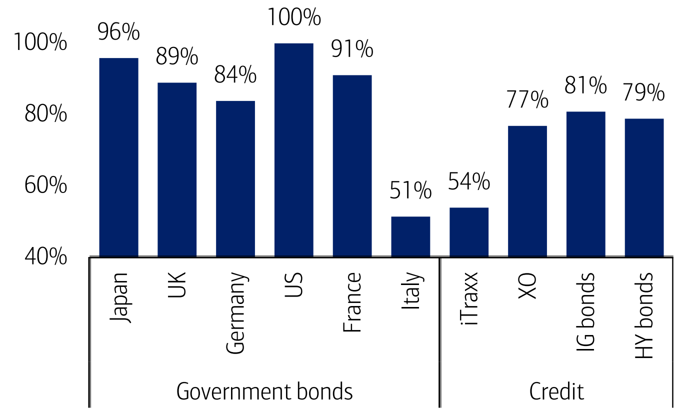
**Exhibit 3: Liquidity metrics across the fixed income world**

Government bond liquidity stress metrics close to record highs. Similar story for the corporate bond market as bid/offer costs currently sit at high level vs history. CDS indices b/o at lower levels in relative terms vs bonds.




**Source:** ICE Data Indices, LLC, Bloomberg. We use the GVLQ indices for the sovereign bond market. We use the ER00 and HE00 indices for the corporate bond market for bid/offer spreads. Data since 2014. Based on 20-day rolling averages. We present percentile rankings. The higher the %-ile the higher the metric sits in the respective time series distribution.

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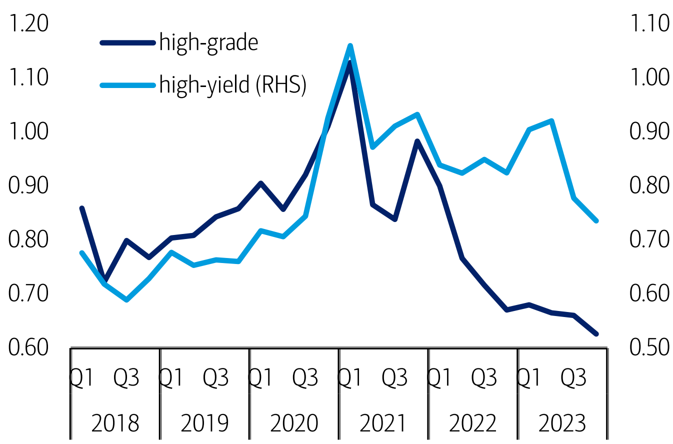
As markets rebounded strongly on the back of less hawkish rhetoric from policymakers, and lower yields in Q4 last year, flows into credit have improved notably. In a world of lower market volatility and strong inflows in November and December corporate bond trading trends improved (bond turnover was up notably in Q4).

**Exhibit 4: The rise of portfolio trades and the impact on credit trading**

Lower average trade sizes in IG space as portfolio trading is increasing, over the past few years.




**Source:** Bloomberg: TAGG page. In Euro millions. Average trade size

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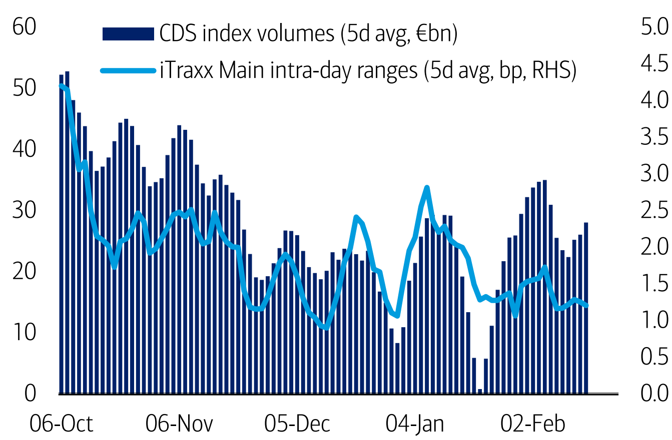
**Exhibit 5: When market vol rises CDS indices become the vehicle to trade credit**

Intra-day trading ranges vs. daily volumes for the entire CDS index market




**Source:** Bloomberg. SDR page. Aggregate market volumes for all series trades across CDX IG, CDX HY, iTraxx Main, Crossover, Senior and Subordinated Financials CDS indices

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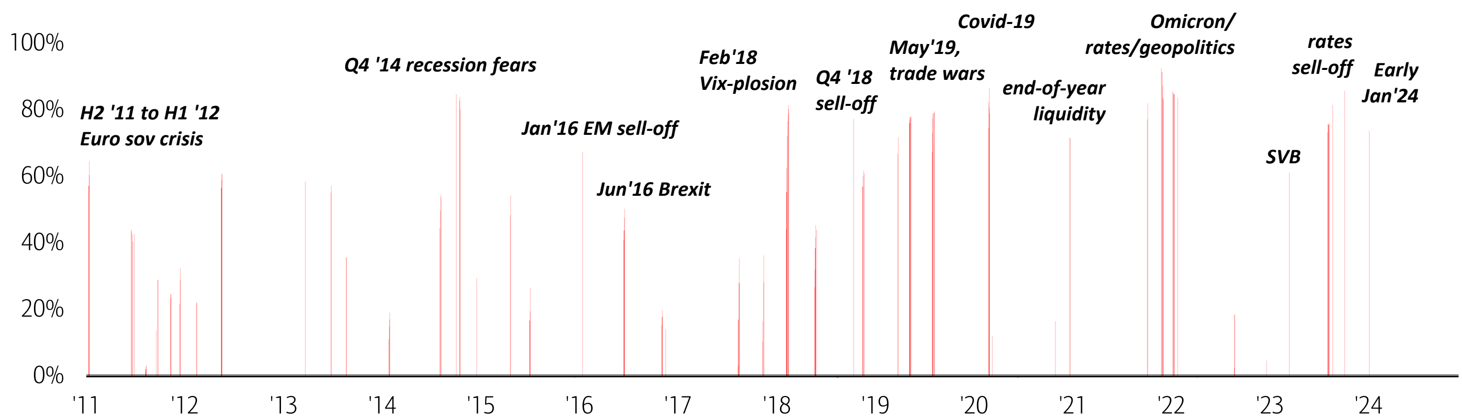
One key theme remained consistent in 2023: lower market volatility was a tailwind for corporate bond market liquidity. During the year, some bond market liquidity metrics improved notably; turnover metrics increased in most of the quarters. However, on the flipside, transaction costs have risen over the past years per unit of spread in high-yield markets. For high-grade bonds, the trend has stabilised somewhat in 2023.

In synthetics, amid lower market volatility over the past year, volumes have declined across CDS indices and CDS index options. However, we have continued to see strong volumes during periods of higher market volatility (exhibit 5).

## Navigating an increasingly fragile world

Fragility has been a key feature of credit market behaviour in recent years. The main cause has been central banks' artificial suppression of volatility, leading to a misallocation of risk capital. Market moves at the start of this year, and large intra-day ranges justify our thesis that fragility is here to stay. The currently tight valuations in some pockets within credit justify caution.

**Exhibit 6: Credit investors have been rushing to "hedge" tail risks over in periods of stress**
Our CDS index options market measure for credit market fragility shows the need for tail convex hedges




**Source:** BofA Global Research.
We measure 5-day moves for the iTraxx Main 3m ATM vol vs. moves over the same 5-day period for the iTraxx Main 3M put-call skew (120-80% of the Fwd). We then calculate the 50-day rolling correlation between these two time series. We only present correlations when 5-day implied vol moves are higher than 5 vol points and implied vol skews steepen by at least 1vol point over the same period.

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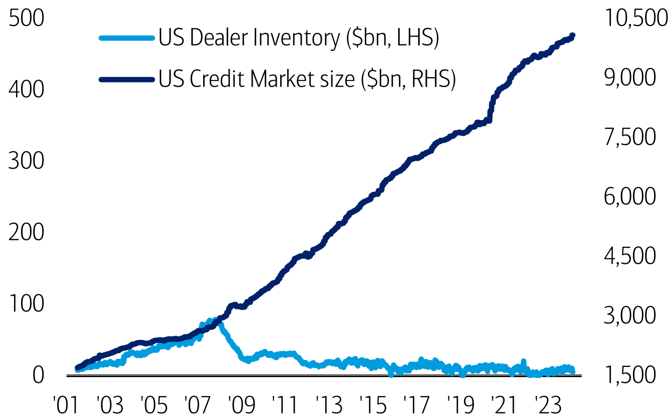
### CDS market likely exposed to more volatility

We think as the CDS market is becoming the vehicle to de-risk rapidly and reposition in beta terms, bond market liquidity can be "supported" in periods characterised by low vol. However, in periods of market stress, while positioning has become more "sticky" in bond land, thanks to CDS indices been used as "liquidity hedges", we think that the CDS market will be exposed to more downside (in terms of positioning drawdowns), but it should also see most of the volumes going through.

### Challenging liquidity conditions for bonds

This gravitation to macro products when vol spikes is a natural evolution of the credit market. It is not only market uncertainty but also the stock of assets out there that is increasing the risk of drawdowns and creating a more challenging liquidity environment in the bond market. As well as growing faster than dealers' ability to provide liquidity (as depicted by declining dealer inventories vs increased market size – exhibit 7), the fixed income market is growing much faster than the underlying economy (exhibit 8).

**Exhibit 7: The "buy-side" vs. "sell-side" imbalance after the GFC**
While the credit market has been growing, dealer inventories are way down since the GFC




**Source:** BofA Global Research; Bloomberg, The US market size is the sum of the $ IG (C0A0) and HY (H0A0) cash indices face value

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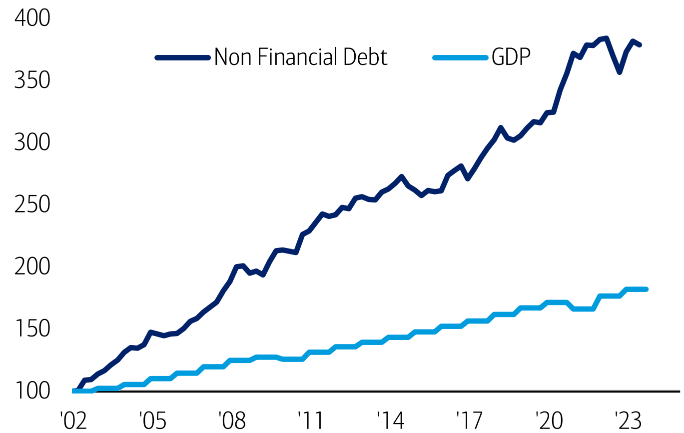
**Exhibit 8: Growth of global non-financial debt vs GDP**
Debt stock has increased meaningfully over the past two decades, while GDP has grown much more moderately




**Source:** BIS, Bloomberg. For GDP we use the WRGDWRLD Index

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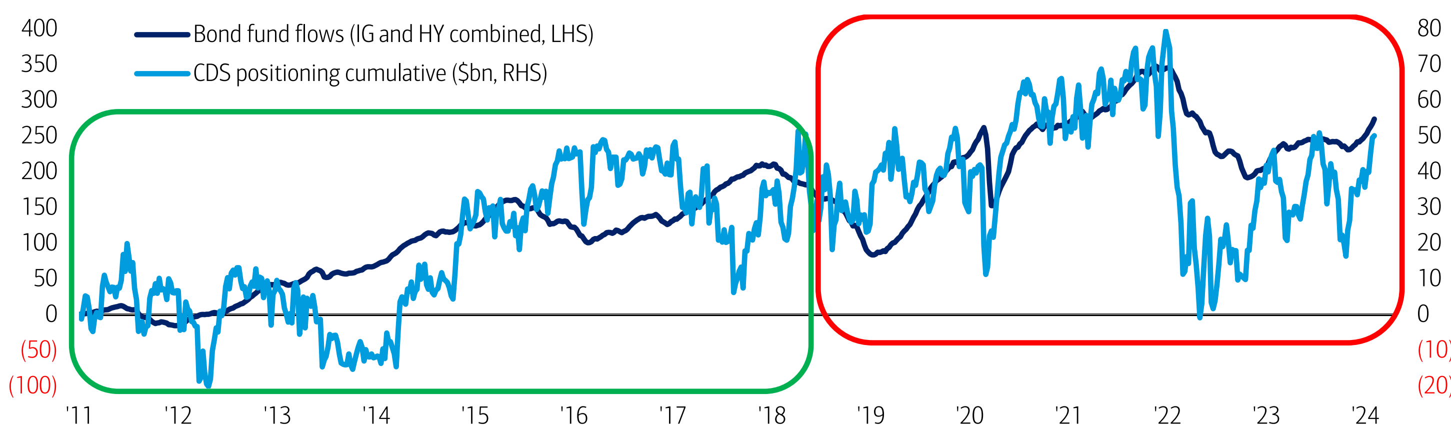
## Bond fragility feeding into CDS market fragility

In a world of growing buy-side assets but lower street liquidity, sharp corrections are more common, especially in periods of market stress and macro uncertainty. Dealer inventories of corporate bonds are clearly down on where they were in 2007, but banks also appear nimbler in managing their mark-to-market risks and overall exposures in their securities portfolios. With absolute transaction costs in the bond market deteriorating significantly during market shocks, investors have resorted to the CDS index and CDS index option markets. As a result of these liquidity headwinds in the underlying bond market, there have been some big changes in the way credit investors use the CDS index market over the past few years.

**Exhibit 9: CDS index and bond market flows trends have become more correlated over the past five/six years**
Bond and CDS market flows are more correlated nowadays, as investors have also been using the CDS index market as a liquid long in the market. This has increased CDS positioning "drawdowns" when bond market fragility shocks occur




**Source:** EPFR, DTCC, ICE. We present weekly cumulative flows into IG and HY European domiciled funds ($bn) vs. weekly cumulative positioning changes in iTraxx Main, XO and Senior Financials CDS indices across all series. A move higher in positioning for CDS indicates investors (non-dealers) have added risk (sold protection) on net basis across all CDS index series.

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Traditionally, the CDS index market has been the instrument of choice to hedge downside risks. However, against a more challenging liquidity backdrop over the past few years in corporate bondland and amid the need to add a "liquidity" hedge to their long corporate bond portfolios, credit investors have been using the CDS index market as a vehicle to add longs. Sizeable long risk positions have been added over the past almost six years by investors looking for ways to improve the liquidity characteristics of traditionally long-only corporate bond portfolios. However, such a structural shift in the way a traditional hedging product is used has profound market implications.

### Large drawdows in CDS index market positioning

In exhibit 9, we compare fund flows data into IG and HY bond funds (combined, Europe-domiciled funds as presented in our ***Follow the Flow*** reports, latest report link here) with positioning trends in the CDS index market (we combine positioning in the iTraxx Main, Crossover and Senior Fins CDS indices, across all series).

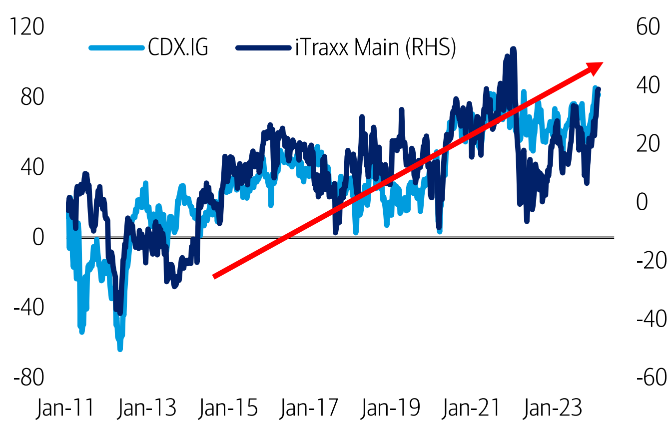
- Up to six or so years ago, CDS index trading positioning typically exhibited a lower (or even negative) correlation to flows into bond funds (exhibit 9, green box).
- However, positioning trends have been almost identical in the two markets since early 2018 – in periods when longs were added in bond land, the same was observed in the synthetics space (exhibit 9, red box).

> The one trend that has become even more apparent over the past couple of years is the large drawdown in positioning in the CDS index market during periods of market stress. This was particularly the case in 2022, but also in March and October 2023, to a large extent, where the positioning reduction was much more pronounced in the CDS index market than the bond market.

### CDS index market liquidity acts a shield from risk of large drawdowns

In our opinion, the CDS index market's superior liquidity (vs. corporate bonds) has acted as a "shield" against the risk of large positioning drawdowns and risk reduction in the underlying bond market. This has made the bond market relatively more resilient. However, it has also resulted in sudden and sizeable CDS index positioning "shocks" that we think will remain a more "permanent" feature of the market.

**Exhibit 10: As investors have started adding "liquidity" hedges…**
…via the CDS index market (by going long risk via CDS indices)…




**Source:** DTCC. Positioning across all series in $bn

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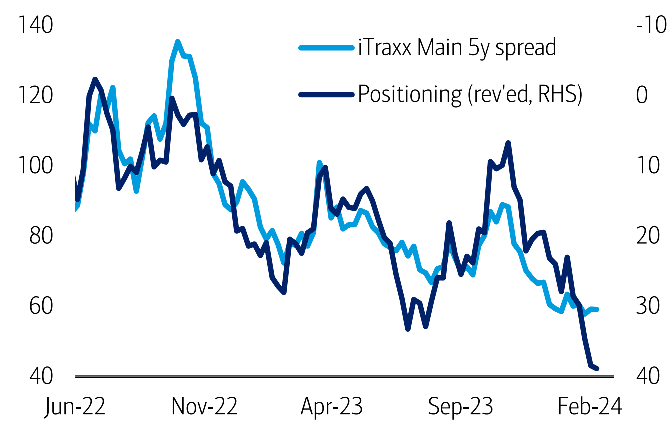
**Exhibit 11: More risk addition at the tights, adds fragility risks in credit**
Investors have gone longer risk via CDS despite the tight valuations amid reach for "liquid" longs




**Source:** Bloomberg, DTCC. Positioning across all series in $bn

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**When credit investors need to de-risk their bond portfolios, they are likely to resort first to the CDS index market (either by selling their long risk positions, or by simply adding shorts via the CDS index or the options market). Such a market reaction would expose these longs, but also significantly increase trading volumes in the synthetics space.**

# How to trade credit

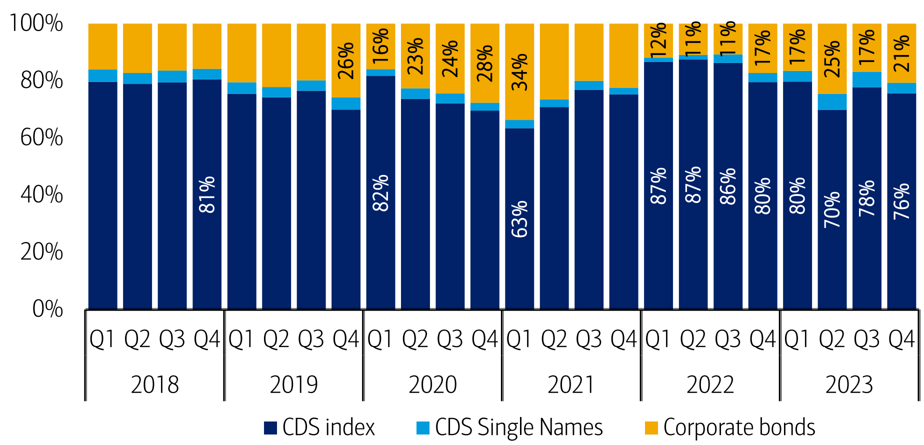
There are four key ways to trade credit: investors can either use cash or synthetics in a single-name format or via macro plays. So the key pillars of trading credit can be split between corporate bonds and single-name CDS on a name-by-name basis, and ETFs, TRS and CDS indices on the macro side. In exhibit 12 we present the relative volumes traded via CDS indices and CDS single-name referenced contracts but also via the corporate bond market.

We highlight the following observations:

- Typically, in past years, the largest proportion of volumes has gone through the CDS index market at the expense of single-name CDS and the corporate bond market. This can be attributed primarily to the need to trade more liquid, scalable and "cheaper" (in terms of transaction costs) instruments.
- Corporate bond volumes – as a percentage of overall credit market trading volumes – improved and actually peaked in Q1 2021, amid strong inflows into credit, but most importantly due to very low market volatility levels. This was in contrast to the trend in Q1 2020, when volumes declined (vs. the CDS index market) due to the unprecedented market shock due to Covid-19.

**Exhibit 12: Pick and choose**

Trading volumes per product as a % of total volumes. Splitting the market between CDS indices, single-name CDS and corporate bond volumes. Bond trading share of total volumes increased in Q4.




**Source:** DTCC, Bloomberg. Only European CDS indices and single-name CDS. We filter via the TAGG page: only for Euro and GBP-denominated corporate bonds reported under Mifid

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- The market sell-off in 2022 was detrimental to the corporate bond market, more than ever before, with liquidity becoming more challenging, especially in the first three quarters of the year. The need for scalable and lower transaction-cost instruments to trade credit pushed investors into the CDS index market, to levels never seen before. Lower market vol since middle of 2022 meant bond market share increased again, while CDS index market share declined.
- Volumes into the bond market (vis-à-vis the CDS market) have been improving notably over the past five quarters. In a world of lower market volatility, this is a boost for trading in corporate bonds. We think that should the ECB deliver rate cuts this year and market vol remains at current levels, we think trading in corporate bonds will keep up the recent good momentum.
- Amid lower idiosyncratic risk, we have seen smaller volumes going through the single-name CDS market over the past few years. A more macro-driven market on the back of years of QE has suppressed the need for single-name hedging. However,

the trend has improved over the past year or so. Macroeconomic headwinds and higher funding costs support a rising idiosyncratic risk backdrop, and that ultimately has improved single-name CDS liquidity (relative to recent historical trends) as investors need to hedge against higher default risk.

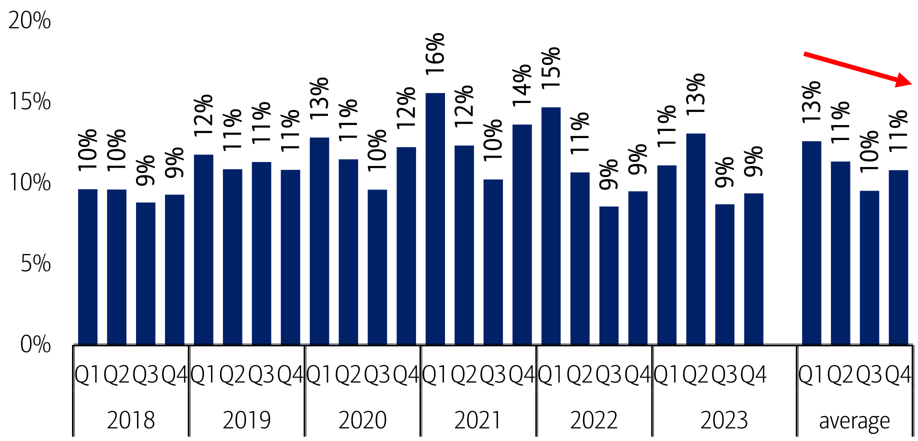
# The state of credit bond market liquidity

**Bond market liquidity has been challenging in the post-GFC era. However, liquidity trends seemed to improve post material central bank-driven support. Tighter credit spreads and lower market uncertainty have always been a tailwind for risk assets liquidity. The trend improvement slowed notably in 2022 though, amid higher market volatility and as central banks across the globe became much less accommodative. 2023 has been a better year though.**

### Q4 2023 - Better turnover; smaller trading tickets

Turnover metrics (trading volumes vs. market size) and average trade ticket sizes (trade volumes vs. trade counts) peaked in early 2021 but declined consistently in 2022. However, trends were generally more supportive for turnover metrics in 2023, as market volatility subsided and inflows into credit improved especially in Q4 last year. On the flipside, we have seen average trade sizes declining QoQ both in Q3 and Q4 2023 for high-grade and high-yield corporate bonds. In the case of IG bonds, we reckon the portfolio trading boom is justifying smaller trade sizes. For HY markets, amid very tight valuations, we think high-yield investors want to transact into smaller clips to find best execution and thus lower the cost per unit of spread.

**Exhibit 13: Turnover in the corporate bond market has improved over the past quarter**
Ratio of corporate trading volumes vs. size of the euro-denominated IG and HY credit market




**Source:** Bloomberg. Based on the TAGG page: including primary and secondary market trading volumes. Diving by the market value of ER00 and HE00 indices

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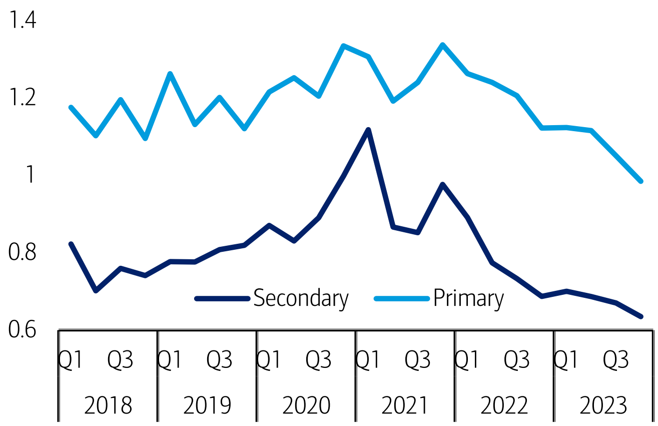
Lots of ink has been spilled explaining challenging corporate bond market liquidity. We use data from the Bloomberg TAGG[1] page that capture corporate bond volumes and trade counts in Europe.

[1] For Exhibits 11 to 17, we use data from the TAGG page in Bloomberg. We use quarterly aggregated data for corporate bonds under MIFID that satisfy the following criteria: Euro-denominated bonds that have featured in the ER00 and HE00 bond indices and quarterly volumes that do not exceed the amount issued under that bond ISIN. We exclude trading volumes data for newly issued bonds (issue date needs to be at least 2 quarters away [183 days] from the end of the quarter the ISIN features in the quarterly data set for its trading volumes to be included in our analysis, though these are included in Exhibits 11 to 13). We also exclude any quarterly data for a bond the last year before it is called, or the maturity date or the next call date (a minimum of five quarters [458 days] to the end of the quarter so that quarterly data are included in our analysis). We do that in order to exclude data related to trading out of bonds due to benchmarking rules (bonds drop one year before maturity/call date). We apply these filters in order to capture only the core secondary trading activity, with no outliers or any primary issuance-related data. We allocate bonds to high-grade or high-yield based on their credit ratings on issue-date.

The relative improvement in turnover metrics up to early 2021 can be attributed to the ECB's unprecedented pace of buying fixed-income instruments, which ultimately stabilised the market quickly enough to "restore" market confidence and assuage illiquidity fears. Most importantly, however, the corporate bond market has been helped not by the buying of corporate debt, **but by the "domino effect" from buying public securities (i.e. sovereign bonds) and the compression in rates market volatility.**

**Exhibit 14: The average trade size is notably higher in the primary market vs. secondary market**
Secondary market liquidity has deteriorated notably over the past couple of years vs the primary market. Trends seemed to stabilise in H1 this year.




**Source:** Bloomberg: TAGG page. In Euro millions
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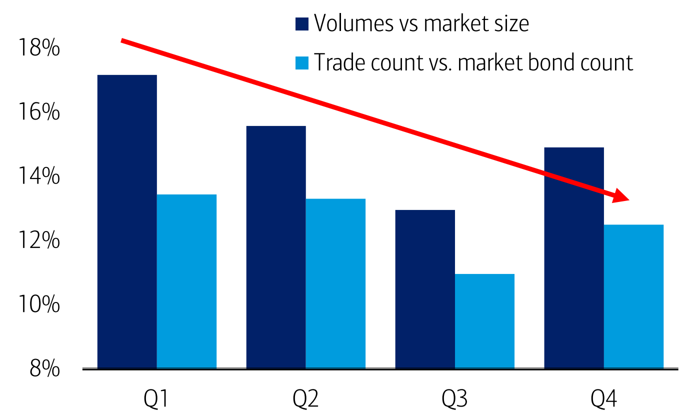
**Exhibit 15: Liquidity metrics tend to deteriorate during the course of the year**
Q1 tends to be the quarter with by far the strongest turnover metrics (volumes or trade counts, vs. market)




**Source:** Bloomberg: TAGG page. Data capture both secondary and primary market activity
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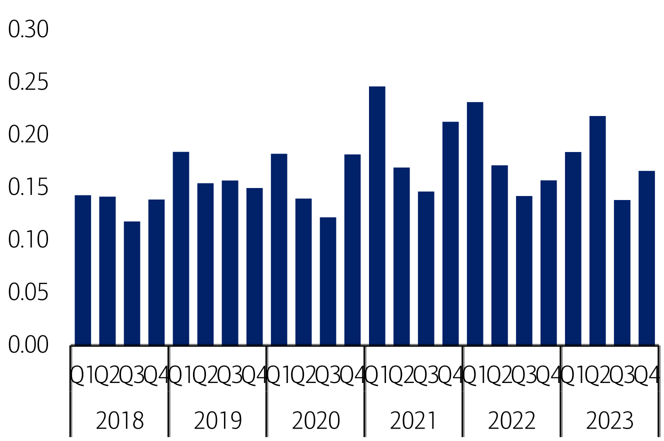
### 2023 trends generally improved for market turnover

However, in 2022, corporate bond turnover metrics (trading volumes vs. market size) declined, as an increasingly lower proportion of the available stock was traded. This was a direct consequence of the market weakness and particularly the material stress that hit credit markets. However, the trend moderated and actually improved marginally in the later parts of the year, as risk assets stabilised and started to rebound. In 2023, trends broadly improved for market turnover.

**Exhibit 16: Trade volumes as a share of the market increased till 2021, but then declined, before improving in the past year**
Ratio of Traded Volume over size of market captured by the dataset




**Source:** Bloomberg. Ratio of trading volumes vs. size of market captured by the dataset. We present the average of the turnover metric for Euro IG and HY corporate bond related data.
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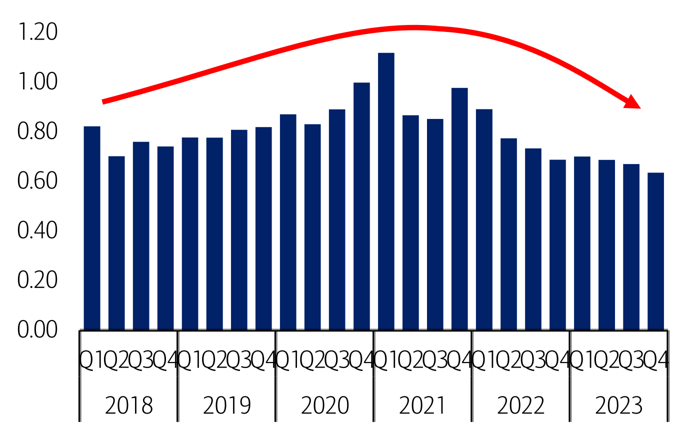
**Exhibit 17: Smaller trade ticket size since Q1 2021**
The ratio of Trading Volumes over Trade count (in EUR million) has been in constant decline since early 2021.




**Source:** Bloomberg. Ratio of trading volumes vs. trade counts captured by the dataset
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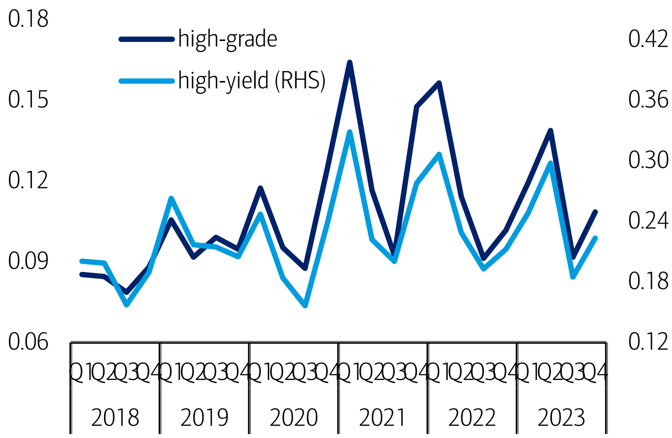
**Liquidity worsens as the year progresses – Q1 has strongest turnover metrics**
Our work shows that liquidity tends to deteriorate during the course of the year (exhibit 15). This has been a consistent pattern for years: Q1 exhibits the strongest turnover metrics, while every quarter thereafter sees a smaller proportion of the market trading. Typically, Q3 has the worst liquidity metrics due to the summer lull.

We also find that the average ticket size in the credit space (primary and secondary market activity) has been moving lower since early 2021. Most recent data for Q3 and Q4 2023 show that the trend continues to point to the downside.

**Exhibit 18: Turnover metrics: overall fewer bonds traded over the past 3 years. However Q4'23 figures show a decent rebound on a YoY basis.**
High-yield bonds have slightly underperformed their high-grade counterparts in turnover metrics in the past couple of years




**Source:** Bloomberg. Ratio of trading volumes vs. size of market captured by the dataset
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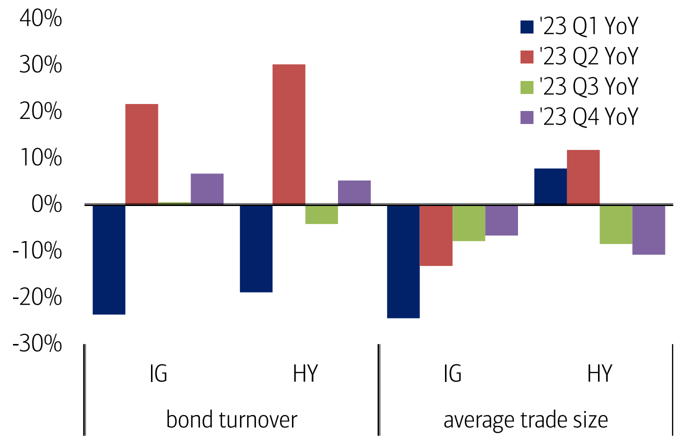
**Exhibit 19: Turnover trends have broadly improved in Q4 2023**
Bond turnover (volumes vs. market size) have improved in Q4 2023. However, average trade size (trade volumes vs. trade counts) has deteriorated YoY in Q3 and Q4 2023




**Source:** Bloomberg. TAGG page
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## The price to pay to move a bond

**Absolute bid/offer costs increased rapidly during the Covid-19-driven sell-off, but also during the 2022 widening due to rates/geopolitical uncertainty. Transaction costs per unit of spread have been rising moderately in the high-grade space, but by much more for high-yield bonds over the past decade.**

In this section, we focus on bid/offer costs across the corporate bond market. Our universe spans euro-denominated IG and HY bonds that feature in the ER00 and HE00 corporate bond indices. We do the same for the high-grade sterling market (UR00 index).

**Transactions costs deteriorate in the Euro-denominated corporate bond market**
In exhibit 20, we present the absolute bid/offer cost across the euro-denominated IG market, but also the b/o cost normalised by the underlying bond spread (b/o per unit of spread). Until the later months of 2021, absolute market transaction costs had been recovering strongly from the Covid-19-driven sell-off. However, a series of headwinds – from the Omicron variant in late 2021, to rates market shocks and geopolitical uncertainty in 2022, and the banking sector stress in March 2023 – means that transaction (bid/offer) costs have increased notably from the mid-/late-2021 lows. 2023 was a better year though, as bid/offer costs to trade high-quality corporate bonds naturally moderated amid tighter spreads. However, transaction costs per unit of market spread remained relatively elevated across the entire year.

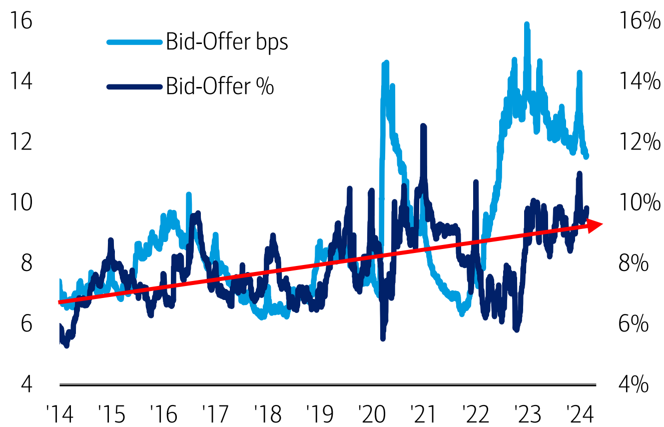
In the euro-denominated IG but especially the HY market, the b/o cost per unit of spread has been trending higher (exhibits 20 and 21). Over the past decade, average HY bid/offer spreads have broadly "underperformed" the underlying market spread level, leaving the transaction cost normalised for the market spread level much worse off.

**£-denominated high-grade credit market worsening over the past year**

In the £-denominated high-grade credit market, we have seen a worsening trend over the past year or so and since the market turmoil in the Gilt market in late 2022. While absolute transaction costs have improved amid tighter overall market spreads, the pace has been much slower than that of the market spread rally. That pushed bid/offer costs per unit of spread much higher in 2023 (exhibit 22). However, it seems that overall the sterling market has held up a bit better over the past decade in terms of trends vs its euro equivalents.

**Exhibit 20: The price to pay to move a bond in the € IG market**

Absolute transaction costs have moved lower over the past year




**Source:** Bloomberg; notional weighted, ER00

Our universe spans across around 4200 €-denominated bonds that feature in the ER00 bond index. We present the absolute level of bid/offer cost across the high grade market but also the bid/offer cost normalized (divided) by the underlying corporate bond spread.

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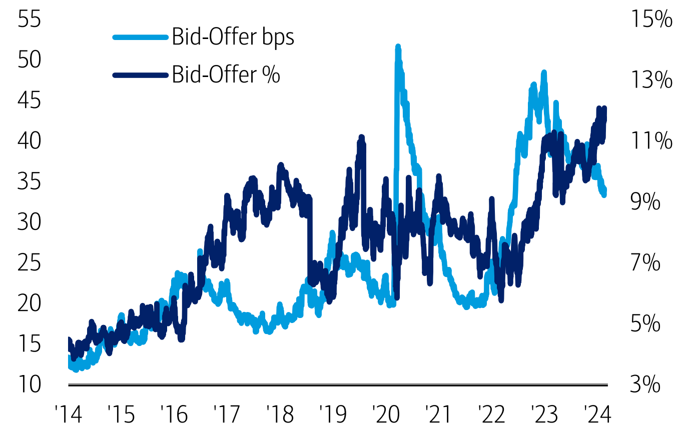
**Exhibit 21: The price to pay to move a bond in the € HY market**

The b/o spread per unit of Euro-HY spread has increased considerably over the past decade




**Source:** Bloomberg; notional weighted, HE00

Our universe spans across around 700 €-denominated bonds that feature in the HE00 bond index. We present the absolute level of bid/offer cost across the high yield market but also the bid/offer cost normalized (divided) by the underlying corporate bond spread.

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**Exhibit 22: The price to pay to move a bond in the sterling IG market**

Transaction costs per-unit-of-spread have increased over the past year and since late 2022.


**Source:** BofA Global Research; Bloomberg; notional weighted, UR00

Our universe spans across around 950 £-denominated bonds that feature in the UR00 bond index. We present the absolute level of bid/offer cost across the IG sterling market but also the bid/offer cost normalized (divided) by the underlying corporate bond spread.

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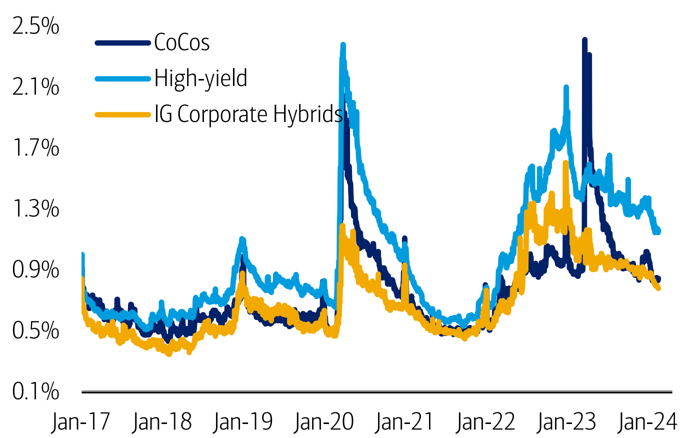
**Exhibit 23: Transaction costs in beta land**

B/o costs compressed in 2023, but not to early 2022 levels and before the rates market sell-off. HY bonds tend to trade at higher transaction costs levels.

*We present the Bid-Offer as a % of the price of each bond*




**Source:** BofA Global Research; Bloomberg; ICE, HE00, COCO, GNEC indices.

Only Euro-denominated bonds

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**Transactions costs steeper in HY bonds vs subordinated debt**
Finally, we look at the beta space. Bid/offer transaction costs across all the beta pockets under our microscope (IG corporate hybrids, HY bonds and bank subs, euro-denominated debt only) recovered to pre-Covid-crisis levels during 2021. However, market weakness in 2022 on the back of much higher rates, pushed transaction costs higher (exhibit 23). Note, the 2023 banking sector shock had a notable impact on transaction costs (though that did not last too long) in the AT1 market. In 2023, it seems that high-yield bond transaction costs did not improve to the same extent as those for corporate hybrids or AT1 bonds.

# Liquidity trends in the synthetics world

**CDS indices and CDS index options remain the "go-to" products in periods of high market volatility.** Credit investors gravitate to macro credit instruments to source stronger liquidity characteristics. Higher trade volumes and tighter transaction costs, on top of countercyclical behaviour, are features that make the synthetics macro market the place to source "liquidity" and "convexity" hedges (via options).

During the Covid-19 crisis in Q1 2020, but also the market sell-off in early 2022 on the back of rates market and geopolitical risk-driven uncertainty, volumes in the CDS index space rose materially. Q1 2020 and Q1 2022 CDS index volumes were around 85% and 210% higher vs. quarterly averages (up to those points in time), respectively. Similarly, CDS index option trading was up 66% and 67% vs. average quarterly trading since 2013, for Q1 2020 and Q1 2022 (up to those points in time), respectively. In a more macro-driven market, credit investors have increasingly focused on trading credit index-related products to manage risk and access liquidity.

However, volumes have fallen in periods of lower market volatility and a more stable macroeconomic environment. So far this year liquidity trends in the CDS index and CDS index options space have declined, as expected in a world of lower market volatility. However, March 2023 showed that in periods of market stress (banking sector jitters) the product is the "saviour" for the credit market to hedge directionality risks and manage betas.

## CDS indices – your market *liquidity* hedge

Credit investors (that are able to use CDS in their portfolios) prefer to manage part of their directional risk via CDS indices. This is predominantly due to better liquidity (vs. single-name CDS and bonds), which is reflected in much tighter bid/offer spreads. **In that form the CDS index performs as a "liquidity hedge" for bond portfolios.**

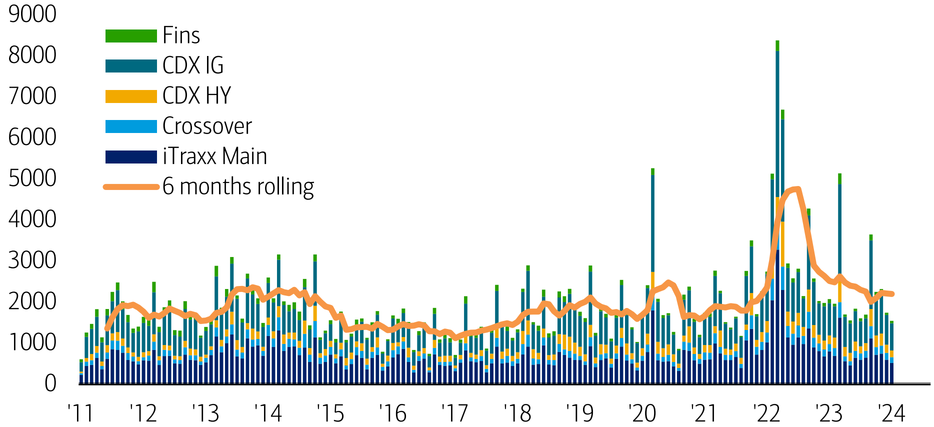
Credit investors have been embracing CDS indices as a market risk management tool, to manage their portfolio beta. CDS indices benefit from higher liquidity, both in the form of higher traded notionals but also notably tighter bid/offer transaction costs.

> The benefit of adding CDS indices to credit portfolios for risk management purposes is significant, in our view. Adding CDS indices to the toolbox allows investors to turn the boat faster and more efficiently amid elevated market volatility – on the upside but also on the downside. A CDS index performs as an effective "liquidity hedge" when added to corporate bond portfolios.

Credit accounts are looking for liquidity and scalability via CDS indices as the cash bond market tends to exhibit less liquidity when volatility rises. **We could say that CDS indices nicely complement the cash bond market, as their liquidity is actually countercyclical.** We find that liquidity in CDS indices is positively correlated to market volatility. When the market becomes more volatile, on the upside but also on the downside, credit accounts resort to trading CDS indices to manage risk and betas, increasing volumes traded via the CDS index product.

**Exhibit 24: Volumes in the CDS index market increased materially in early 2020 (on the back of the vol spike during the initial shock from Covid) and early 2022 (amid the recent central bank-driven uncertainty shock). Banking stress rose in later parts of Q1-23 with volumes rising notably again.**

When markets are volatile volumes tend to increase. Volumes more than tripled in Q1'22 vs. past quarterly averages. But as markets rallied in the later parts of the year and 2023, index trading volumes declined.




**Source:** DTCC. Trading volume nationals in $bn.

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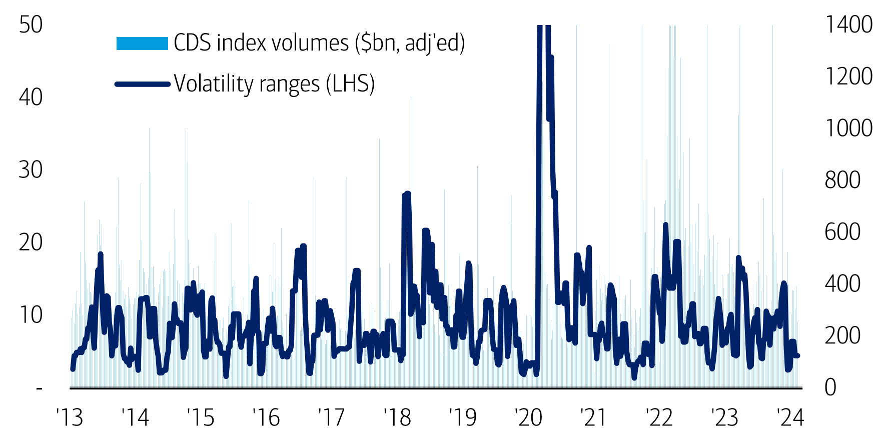
## Markets shocks: credit investors resort to trading risk via the CDS index market

In exhibit 25 we present the countercyclical relationship between CDS index trading volumes and market volatility. We show the weekly volumes across the CDS index market (beta-adjusted across European indices based on running spread) vs. the 3M fixed maturity implied vol ranges (over a six-week rolling moving average) as a measure of vol-of-vol in the market (we use iTraxx Main volatility data). The higher (lower) the vol-of-vol and thus the shock (irrespective of the direction), the higher (lower) the volumes traded in the CDS index market. When market shocks materialise, credit investors resort to trading risk via the CDS index market.

**Exhibit 25: CDS index trading volumes multiply when there is a significant rise in market volatility, providing a trading "safe haven" for credit investors**

CDS indices exhibit counter-cyclical behaviour vs. market volatility, thus providing a liquidity haven for credit market investors




**Source:** BofA Global Research; DTCC; CDS index volumes refer to iTraxx Main, XO and Senior Fins (all series) CDS indices, on a weekly basis. We aggregate based on the respective index spread level vs that of iTraxx Main; i.e. beta adjusted

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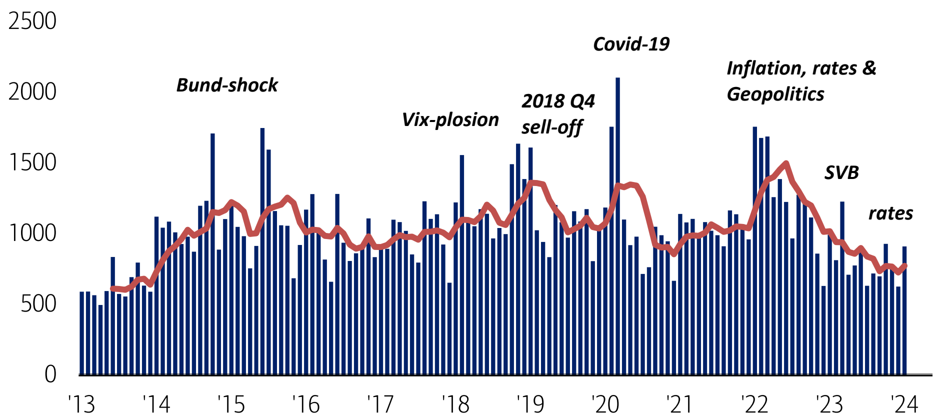
**Countercyclical liquidity should be a key feature for a hedging instrument, we think. When liquidity becomes more challenging in bonds during sharp market moves either up or down, it is highly beneficial to use another product as a "liquidity hedge". In simple terms, CDS index market depth improves when credit investors really need it the most.**

## CDS index options and the need for convexity hedges

Over the past decade, the CDS index options market has strengthened due to an increasing number of risk managers looking for convex downside protection hedges. The reason for this is simple: when investors look to short credit via the CDS index market, most of the time they face a negative carry-and-roll profile that becomes painful especially when markets are grinding tighter.

**Exhibit 26: Credit index options market has seen strong trading during periods of market stress**
The Covid-19 initial sell-off and the early 2022 inflation scare are the periods when the CDS index options market saw the highest trading activity over the past 10 years




**Source:** Bloomberg SDR page; Number of unique options trades across five CDS indices (iTraxx Main, XO, Senior Fins, CDX IG and CDX HY). Note the analysis is underestimating the overall market trade counts as it is not capturing trades where a non US counterpart is involved.
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**However, the CDS index options market offers downside hedging, at a predetermined cost (paid at inception of a trade). This gives credit investors a payoff profile, which is what a real hedge should offer: predetermined cost and positive downside convexity** (in the case of a put/payer option for instance).

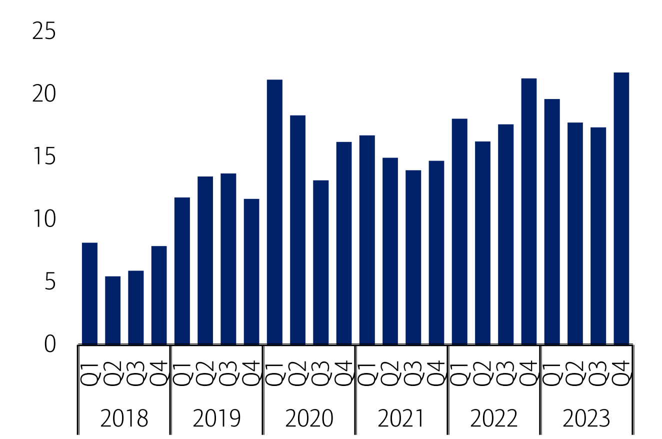
The need for convexity hedges typically intensifies in period of stress as investors rush to own convexity hedges. We think that such need should a structural one and not implemented solely in periods of stress. We note that when spreads are tight and implied vols are low, the cost to own downside hedges declined notably and thus present a great way to insulate portfolios against downside risks. We think investors should keep looking for liquid ways to protect their bond portfolios against sharp and sizeable downside risks, amid challenging bond market liquidity when market stress arises. Note the significant rise in trading during periods of market stress amid a growing appetite for sourcing tail risk hedges.

Over the past year, there has been a decline in the liquidity trends for the option market, as market volatility has subsided, while a dovish shift from central banks has reduced the need for tail hedges. Though during the SVB debacle, trade counts increased notably once again in the CDS index options market.

## More reliance on IG & HY market allocation via ETFs

We also see more reliance on IG and HY market allocation via the ETF market. There is a notable increase in the AUM share of ETFs vs. the entire market. Note, also, that the credit market has been closing the gap – though still notable – on the use of ETFs vs. the levels seen in the equity market (see report: Credit Strategy - Europe: Credit market liquidity – 2023 edition, 21 December 2023).

**Exhibit 27: Euro corporate bond ETF market trading volumes have grown considerably over the past six years**
We track flows data across a large number of Euro corporate bond ETFs




**Source:** Bloomberg. Based on daily fund flows (we use the absolute value of the FUND_FLOW field). Using a large set of Euro ETFs

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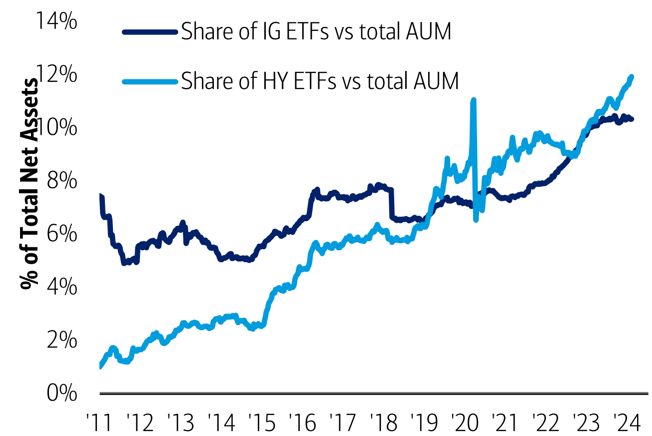
**Exhibit 28: Higher reliance on IG/HY markets allocation via ETFs**
Around 12% of the Euro-domiciled HY funds (AUM) are ETFs




**Source:** EPFR Global

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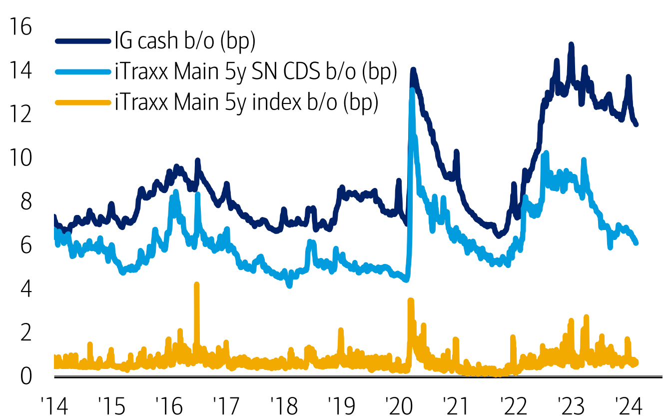
# Transactions costs monitor

## CDS over Bonds

During the Q1'20 and Q1'22 market sell-offs, transaction costs increased notably in both the CDS and corporate bond markets. While both credit instruments' bid/offer (b/o) costs were affected by the Covid-19 market shock, transaction costs normalised quickly in the CDS index space. We saw a similar market reaction during market weakness in 2022, driven by rates and geopolitics, but also in 2023. Macro instruments behaved better in terms of b/o cost deterioration and the subsequent speed/extent of recovery.

**Exhibit 29: The different layers of IG credit market liquidity**
Bid/offer cost for IG cash bonds, iTraxx Main and single-name CDS (bp)




**Source:** BofA Global Research; Bloomberg

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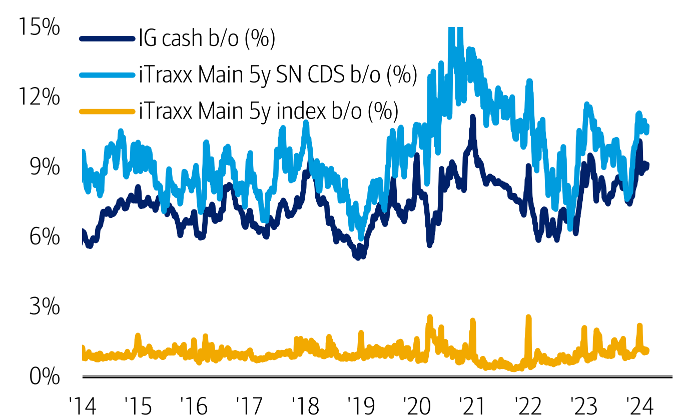
**Exhibit 30: The different layers of IG credit market liquidity**
Bid/offer cost for IG cash bonds, Main and single-name CDS (% of spread)




**Source:** BofA Global Research; Bloomberg; normalised vs. index level

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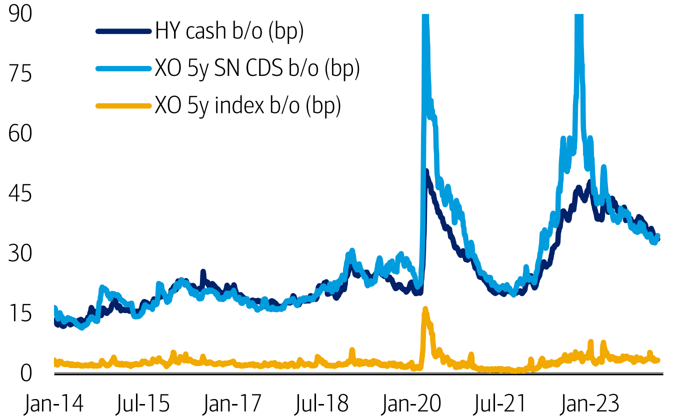
In the **high-grade space,** the 2022 market sell-off had a more pronounced effect on bid/offer (b/o) in bond and single-name CDS land than in the CDS index market (exhibit 29). We also find that bid/offer costs have been broadly higher in the single-name CDS space vs. bonds, when normalised to the underlying market spread level (exhibit 30). In 2023, IG bond b/o costs deteriorated for the level of market spreads as spreads have rallied notably.

**Exhibit 31: The different layers of HY credit market liquidity**
Bid/offer cost for HY bonds, CDS index (XO) and single-name CDS (bp)




**Source:** BofA Global Research; Bloomberg

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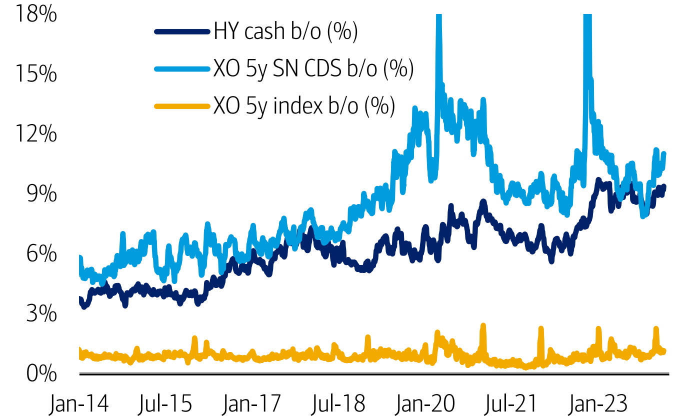
**Exhibit 32: The different layers of HY credit market liquidity**
Bid/offer cost for HY bonds, CDS index (XO) and SN CDS (% of spread)




**Source:** BofA Global Research; Bloomberg; normalised vs. index level

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In the **high-yield market**, the b/o costs in the corporate bond and the single-name CDS markets are broadly similar (exhibit 29). However, when looking at the same metric normalised vs. the underlying spread level (b/o per unit of the underlying spread), the single-name CDS market b/o is notably more punitive (exhibit 30). This has been the case since 2018 as the b/o cost has increased vs the underlying market. However, transaction costs (per unit of spread) in the single-name HY CDS market have got closer to those in the HY bond market over the past year or so, though there is still a small gap.

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