



**Quarterly update on
macro, real estate and
healthcare RE**

February 2023

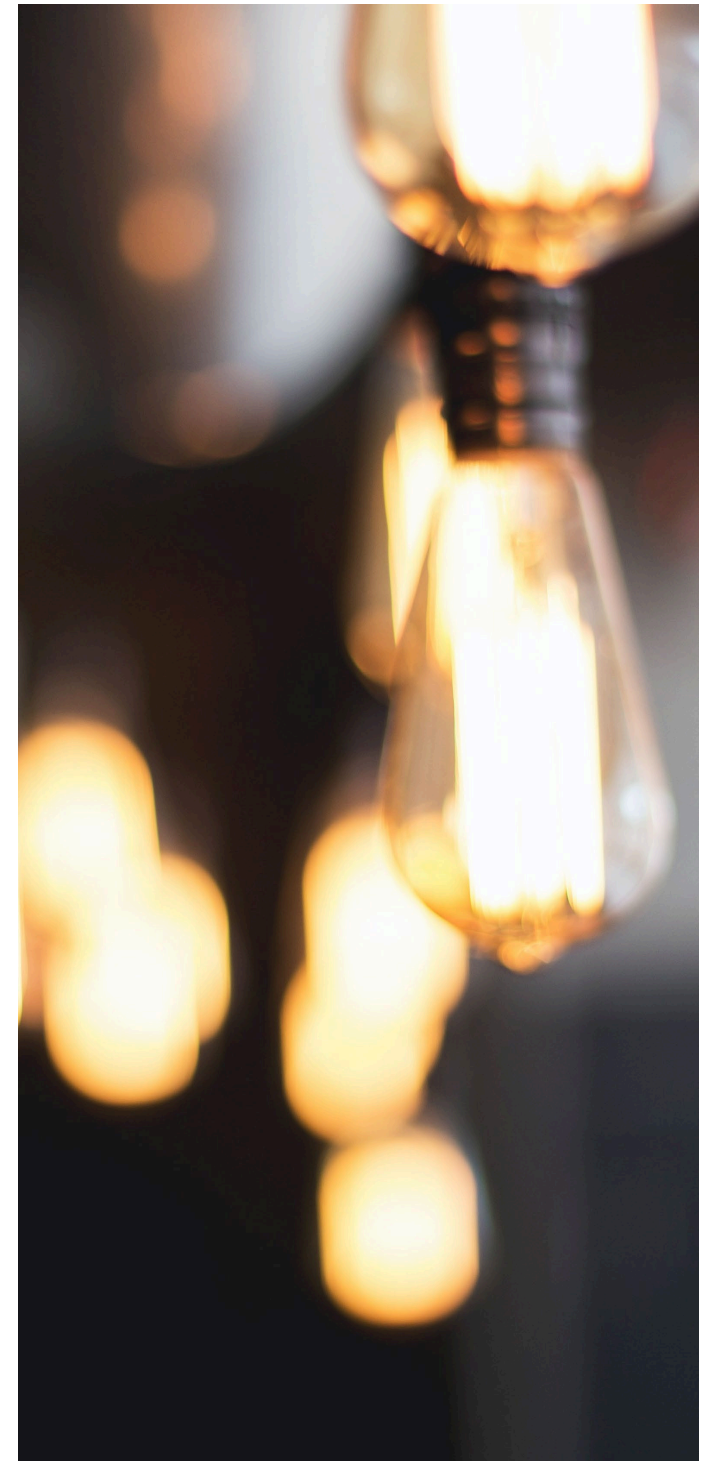
Q1 2023 update



Executive Summary Macro

Optimism about soft landing despite some key challenges

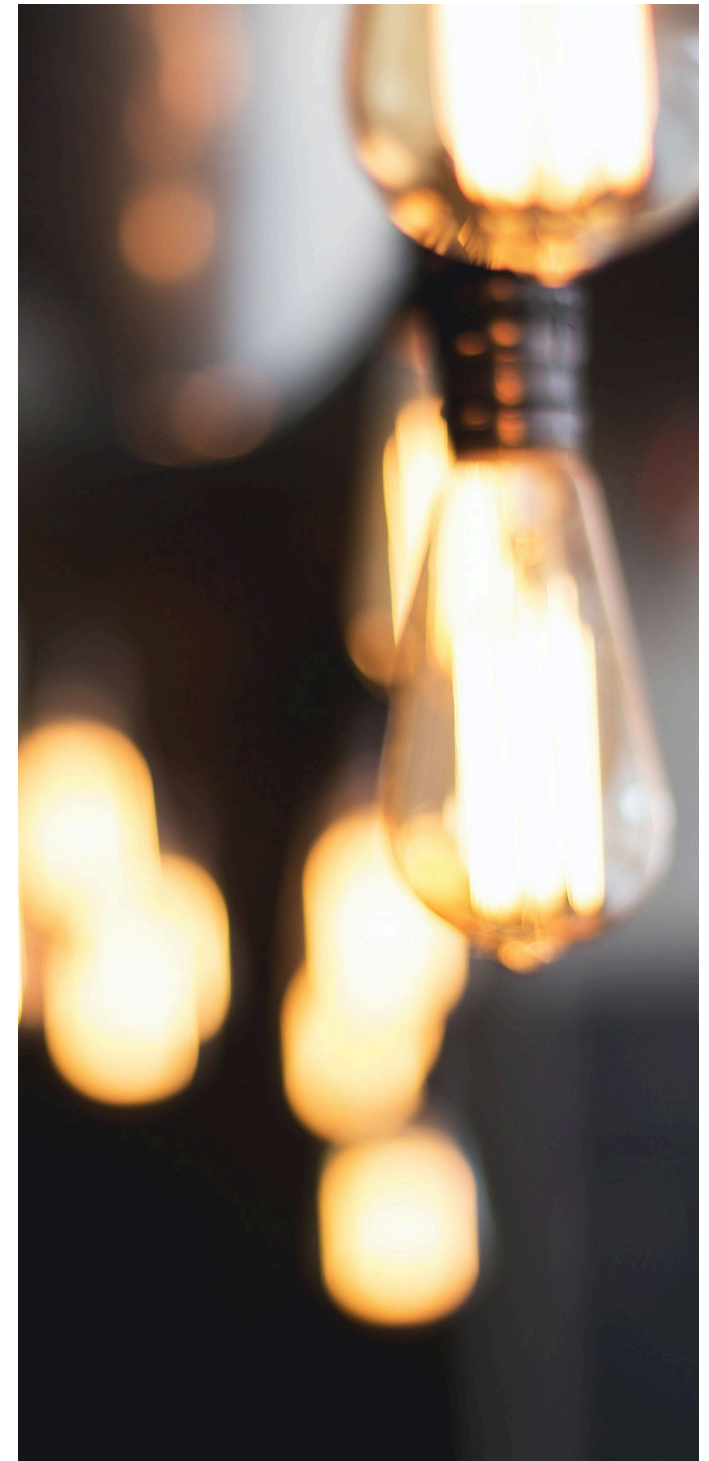
- From the current perspective the turmoil in the UK government bonds in October marked the most negative moment in financial markets in the recent downturn so far. Since then, equity and bond markets have staged a spectacular rally globally.
- The improvement in economic sentiment was first driven by milder weather in November which was followed by relatively mild winter months as well. Natural gas prices fell sharply since inventory levels have remained far above the seasonal average. Inflation improved dramatically in the US, but also several countries in Europe followed suit.
- Economic growth is slowing down, but forward-looking economic indicators have rebounded, so the widely expected recession for 2023 might be milder than feared or is postponed to later this year.
- Headline inflation declined most strongly in the Netherlands, while UK and German inflation continued to lag. We project more declines in headline inflation but there won't be a flatline. As, especially in Germany, other inflation components (such as food) are now the key drivers, we would still reject current market views of an anticipated gradual inflation decline towards central banks' inflation targets.
- Still, we expect somewhat lower inflation (especially in the UK and Germany) than the current consensus of economists for 2023, but structural inflation drivers might bring a resurgence of inflation later this decade.
- The ECB deposit rate is now at 2.5% (refi rate at 3.0%) and the BoE base rate is at 4.0%. EUR 5y swap interest rates have remained slightly below 3%. GBP rates have strongly rallied since October and are currently even below the rate in EUR.
- Both (GBP and EUR) curves are inverted, and markets are pricing in substantial rate cuts for 2024. We disagree with this view and expect a higher for longer, even if we might see some rate cuts in the second half of 2024.



Executive Summary Property

Q4 2022 weakest quarter since GFC

- Despite some improvements in general financial markets and inflationary trends, Q4 was the most challenging quarter for European real estate markets last year. It was also one of the weakest quarters since the GFC in terms of performance. We estimate a negative capital return of 4.5% for the INREV fund level index for pan-European portfolios in Q4 2022. Real estate valuations corrected across all three countries in focus for both health care and core real estate sectors;
- The most important factors behind the correction were the sharp increase in financing costs on the one hand and the denominator effect on the other. To achieve the same returns with higher financing costs of 250-300 bps, real estate yields needed to adjust.
- At the same time, investors suffered sharp losses on financial assets (both bonds and stocks). This meant that the real estate quota in institutional portfolios increased substantially. For some investors who already had high real estate allocations before the inflationary surge, the real estate quotas rose above the maximal risk limits. So, redemptions in open-ended structures followed or plans to allocate further capital to real estate were canceled.
- Core real estate yields increased by 50-150 basis points in 2022. While the yield adjustment differed between sectors and locations, also healthcare real estate properties were affected. As typical in such situations bid-ask spreads increased and this led to a sharp decline in transaction volumes in Q4 2022.
- On the buoyant side rental markets continued to remain healthy. Market rents have positively reacted to higher inflation, demonstrating the inflation protection characteristics of real estate cash flows. Unfortunately, rental markets are expected to cool down in 2023, as the economies are slowing. In addition, further increases in cap rates are in the cards.
- Q1 2023 is likely to prove equally challenging as Q4 2022. In H2 2023 attractive opportunities might open up, as interest rates are expected to stabilize on higher levels.

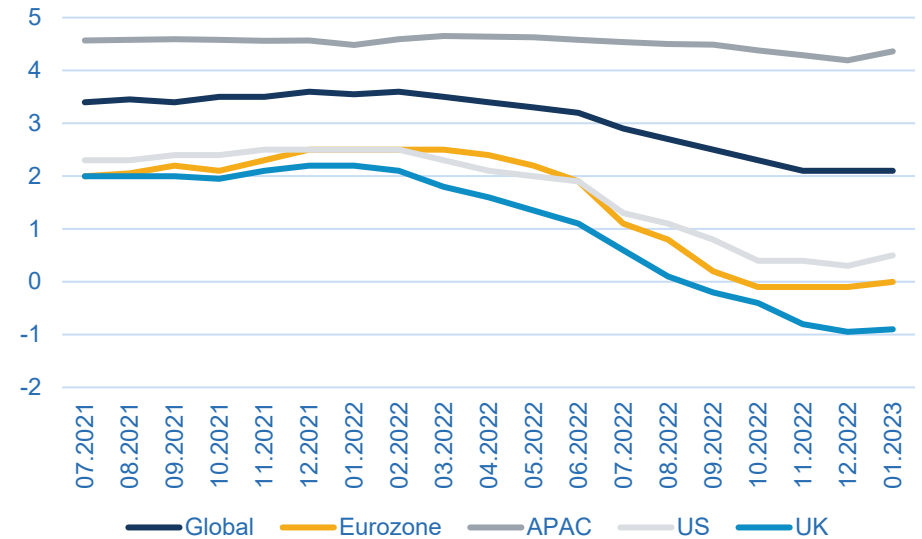


Macroeconomic and financial market update

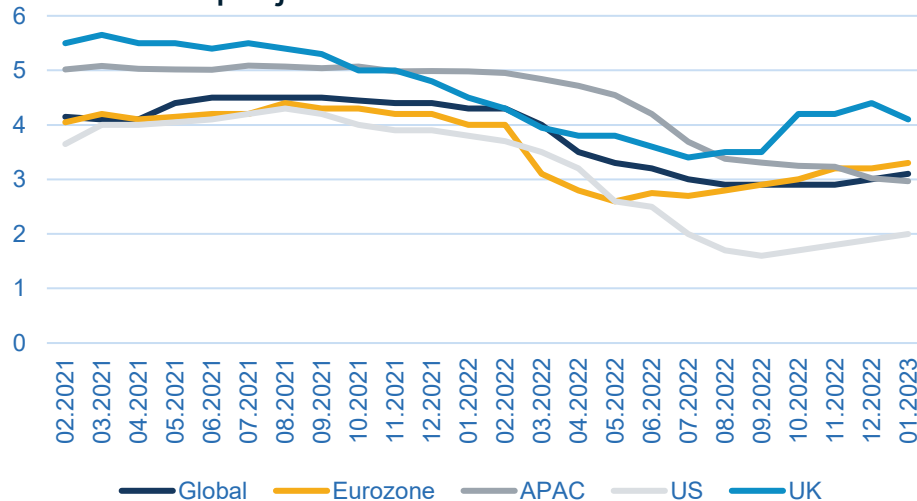
Global economy: Hopes for a soft landing

- Better economic data and progress in bringing down inflation have created optimism about the global economy. The current consensus is that it be on track for a soft-landing scenario.
- 2022 economic growth is on track to be better than initially feared. The UK economy is estimated to have expanded above 4% and the Eurozone >3.3%.
- A further slowdown is expected for 2023 GDP. However, economists have started to revise growth projections upwards. We would expect additional upward revisions in the coming weeks. That is likely to bring 2023 Eurozone GDP growth projections back to the positive area
- Further recovery is expected for 2024. Despite this awakened optimism, there are plenty of underlying economic risks ahead

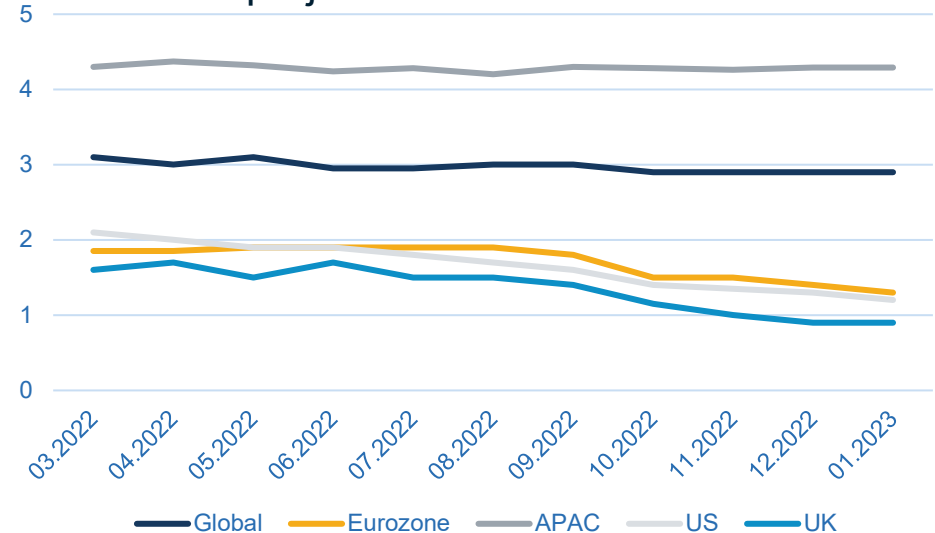
Consensus projection of **2023 real GDP** rates



Consensus projection of **2022 real GDP** rates



Consensus projection of **2024 real GDP** rates



UK: Some improvements since the October fiasco

- UK GDP growth was at 0% QoQ in Q4 2022 after a decline of -0.2% in Q3 2022. The YoY growth rate slowed from 8.7% to 0.4% from Q1 2022 to Q4 2022. Despite the quick deceleration of its dynamics, economic growth is somewhat better than feared, and 2022 real GDP growth is at a rate of 4.1%.
- 2023E GDP growth is still estimated at -0.9%. However, economists started with upward revisions, and we anticipate that the negative number will also prove somewhat better than feared. Still, 2023 is on course to remain one of the weakest years in terms of economic growth since WW2.
- Inflation has also improved thanks to milder weather that has brought down energy prices. 2022 CPI inflation printed at 9.1% and RPI inflation is estimated at 11.6%. BoE has continued to increase the base rate. At the end of January 2023, it was at 4%, while the yield level of long-term UK government bonds was at 3%. In general, monetary conditions have loosened despite a higher level of short-term interest rates. The reason behind this is that market participants expect interest rates to peak in 2023 and are pricing some aggressive cuts down the road.

United Kingdom		Browse		Private		Official		Probability of Recession 90.0%			
		Actual/ Forecasts									
Indicator		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Economic Activity											
Real GDP (YoY%)		2.4	2.2	2.5	1.7	1.6	-11.0	8.5	4.1	-0.9	0.9
- Household Consump...		3.2	3.8	1.9	2.1	1.0	-12.9	6.3	4.8	-1.1	0.8
- Government Spendi...		1.7						14.5	1.6	1.5	1.3
- Gross Fixed Invest...		6.5	4.9	3.5	-0.2	1.9	-10.5	6.1	5.4	-1.4	0.5
- Exports (YoY%)		4.0	3.2	6.8	3.1	1.7	-12.1	2.2	9.7	3.1	1.9
- Imports (YoY%)		5.0	4.0	3.3	3.3	2.6	-16.0	6.2	12.0	-2.1	1.9
Manufacturing Productio...								6.6	-4.3	-1.2	0.6
Price Indices											
CPI (YoY%)		0.0	0.7	2.7	2.5	1.8	0.9	2.6	9.1	7.0	2.5
RPI (yoy%)		1.0	1.7	3.6	3.4	2.6	1.5	4.0	11.6	9.5	3.8
Labor Market											
Unemployment (%)		5.4	4.9	4.4	4.1	3.8	4.5	4.6	3.7	4.5	4.7
External Balance											
Curr. Act. (% of GDP)		-5.1	-5.5	-3.6	-4.1	-2.8	-3.2	-1.5	-5.1	-4.2	-3.6
Fiscal Balance											
Budget (FY, % of GDP)	*	-4.5	-3.3	-2.6	-2.4	-2.3	-12.8	-7.3	-6.7	-5.4	-3.7
Interest Rates											
Central Bank Rate (%)		0.50	0.25	0.50	0.75	0.75	0.10	0.25	3.50	4.15	3.30
3-Month Rate (%)		0.59	0.37	0.52	0.91	0.79	0.03	0.26	3.87	3.86	3.26
2-Year Note (%)		0.65	0.04	0.43	0.74	0.53	-0.17	0.66	3.53	2.97	2.52
10-Year Note (%)		1.96	1.24	1.19	1.27	0.82	0.19	0.97	3.66	3.20	3.18

Source: Bloomberg, Macro Real Estate AG

Germany: Milder weather comes as a relief

- GDP growth declined by 0.2% QoQ and grew by 1.1% YoY in Q4 2022. However, the more important news was the surprisingly strong rebound of forward-looking indicators, such as the IFO and ZEW expectations. One key driver of the improvement is the milder winter. This has substantially brought down energy and electricity costs. Additionally, the reopening of China is also a positive factor for export-oriented Germany.
- Further CPI inflation improved, but 2022 inflation was still relatively high with an estimated rate of 8.7% in January.
- The consensus continuously expects negative GDP growth for 2023, although this number is expected to be revised upwards in the coming weeks. However, the higher interest rates weigh on consumer expenditures and investments. And overall, we expect 2023 to remain a challenging year for the German economy.

Germany										
	Browse									
	Private					Official				
	Actual / Forecasts					Probability of Recession 77.5%				
Indicator	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Economic Activity										
Real GDP (yoy%)	1.5	2.2	2.7	1.0	1.1	-3.7	2.6	1.9	-0.4	1.3
Private Consumption ...	1.9	2.4	1.4	1.5	1.6	-5.7	0.4	4.6	0.0	1.1
Government Spending...	2.9	4.0	1.7	0.8	2.6	4.0	3.8	1.1	1.0	1.4
Private Investment (...)	1.7	3.8	2.6	3.4	1.9	-2.3	1.2	0.2	-0.5	2.3
Exports (yoy%)	5.4	2.5	4.9	2.2	1.3	-9.3	9.7	3.2	1.2	2.5
Imports (yoy%)	5.8	4.5	5.2	4.0	2.9	-8.5	9.0	6.7	2.1	3.0
Industrial Production (YoY...)	0.9	1.5	3.1	1.0	-2.3	-7.6	4.3	-0.2	-0.5	2.3
Price Indices										
CPI (yoy%)	0.7	0.4	1.7	1.9	1.4	0.4	3.2	8.6	6.6	2.9
Labor Market										
Unemployment (Bundesba...)	6.4	6.1	5.7	5.2	5.0	5.9	5.7	5.3	5.6	5.4
External Balance										
Curr. Acct. (% of GDP)	8.4	8.4	8.0	7.3	7.0		6.7	3.6	4.2	4.2
Fiscal Balance										
Budget (% of GDP)	1.0	1.2	1.3	1.9	1.5	-4.3	-3.7	-2.6	-2.8	-2.0
Interest Rates										
Central Bank Rate (%)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.50	3.50	3.00
3-Month Rate (%)	-0.13	-0.32	-0.33	-0.31	-0.38	-0.55	-0.57	2.13	3.13	2.38
2-Year Note (%)	-0.35	-0.80	-0.64	-0.62	-0.61	-0.72	-0.64	2.74	2.15	1.90
10-Year Note (%)	0.63	0.20	0.42	0.24	-0.19	-0.57	-0.18	2.56	2.10	2.15

Source: Bloomberg, Macro Real Estate AG

The Netherlands: Strong declines in inflation

- The slowdown in the real GDP growth of the Dutch economy continues to lag the trend in the Eurozone. Q4 2022 GDP YoY growth is estimated at 2.5% for the whole year 2022 at 4.3%.
- Although 2023 real GDP growth is expected to outperform the Eurozone with a projected annual growth rate of 0.5%, Q2 and Q3 YoY real GDP growth is expected to dip into negative territory before recovering in Q4.
- Also, for the Netherlands, the substantial decline of inflation came as a relief. YoY inflation has reached a peak in September at 14.5%. Since then, it halved and in January it was only 7.6%. The lion's share of the decline in inflation came from the volatile energy components. Due to a stronger weight of energy in Dutch CPI basket the CPI prints were more volatile in the Netherlands than in other core European countries.

Netherlands		Browse		● Private ● Official		Actual / Forecasts				
Indicator	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Economic Activity										
Real GDP (YoY%)	2.0	2.2	2.9	2.4	2.0	-3.9	4.9	4.3	0.5	1.3
Household Consumpti...	2.0	1.1	2.1	2.2	0.9	-6.4	3.6	5.8	-0.2	1.1
Gross Fixed Investme...	29.0	-7.3	4.2	3.6	6.2	-2.6	3.2	4.1	-0.2	2.1
Industrial Production (YoY...)										
Price Indices										
CPI (YoY%)	0.6	0.3	1.4	1.7	2.6	1.3	2.7	10.0	5.8	2.6
Labor Market										
Unemployment (Dutch Stat...	6.9	7.0	5.9	4.9	4.4	4.9	4.2	3.6	4.2	4.5
External Balance										
Curr. Acct. (% of GDP)	5.2	7.1	8.9				9.7	6.9	7.0	7.3
Fiscal Balance										
Budget (% of GDP)	-1.9	0.1	1.4	1.5	1.8	-3.7	-2.6	-1.1	-2.7	-2.4
Interest Rates										
Central Bank Rate (%)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.50	3.50	3.00
3-Month Rate (%)	-0.13	-0.32	-0.33	-0.31	-0.38	-0.55	-0.57	2.13	3.13	2.38
2-Year Note (%)	-0.37	-0.74	-0.67	-0.68	-0.57	-0.70	-0.69	2.89		
10-Year Note (%)	0.79	0.36	0.53	0.39	-0.05	-0.48	-0.03	2.90		

Inflation framework

Drivers of inflation

We downgraded fiscal and monetary stance from inflationary to neutral

	Factor: Cyclical or structural	2001-2019	Current inflationary pressure	Explanations
Global labor supply	Structural/ Cyclical	Green	Red	<ul style="list-style-type: none"> Tight labor supply and demographics worsens
Supply chains	Structural/ Cyclical	Green	Orange	<ul style="list-style-type: none"> Supply chain issues are easing short term. Midterm rearrangement of supply chains remains an issue
Technological change	Structural	Green	Green	<ul style="list-style-type: none"> Structural deflationary force
ESG Policies	Structural	White	Red	<ul style="list-style-type: none"> ESG initiatives lead to higher costs
Business cycle	Cyclical	Green	Orange	<ul style="list-style-type: none"> Labor market tight but business cycle is cooling down
Debt load	Structural	Green	Green	<ul style="list-style-type: none"> High debt load and sharply higher interest rates
Fiscal and monetary stance	Structural	Green	Orange	<ul style="list-style-type: none"> Rate have moved to neutral for Europe
Asset prices	Structural	Green	Orange	<ul style="list-style-type: none"> Lower equity and debt prices have corrected, no major asset bubble has burst yet (beyond crypto)
Synthesis		Green	Red	<ul style="list-style-type: none"> Currently inflationary forces prevail

Cyclical: 6-18 months impact

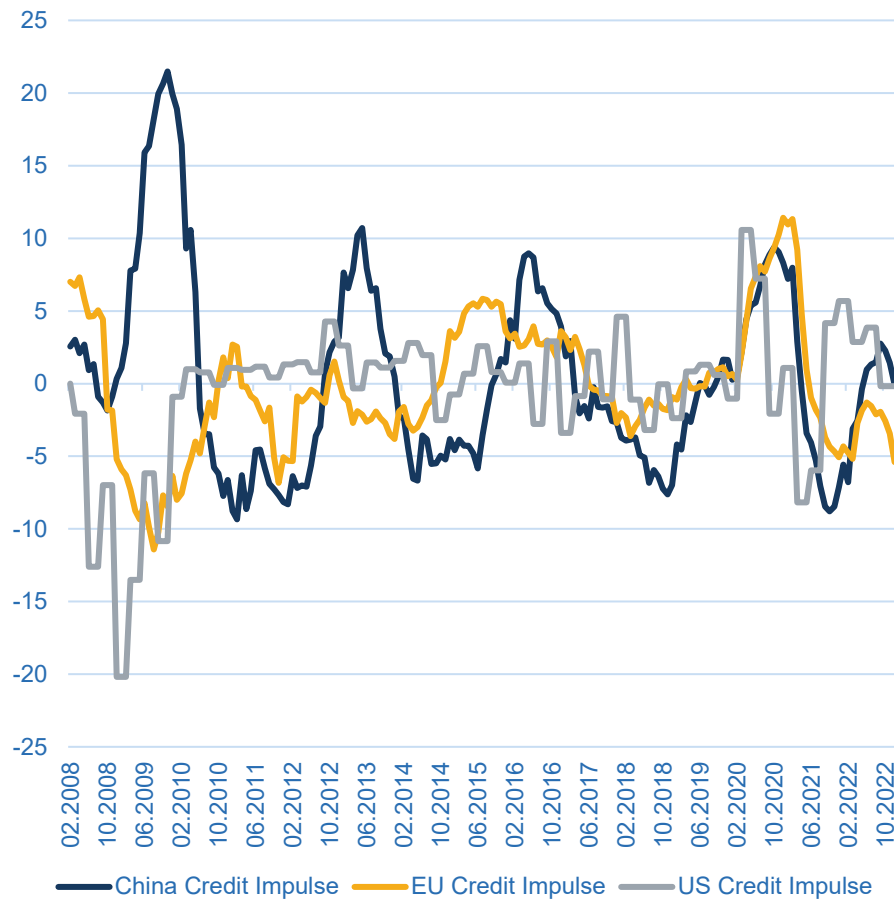
Structural: 2-5 years impact

Green: disinflationary, **Red:** inflationary pressure

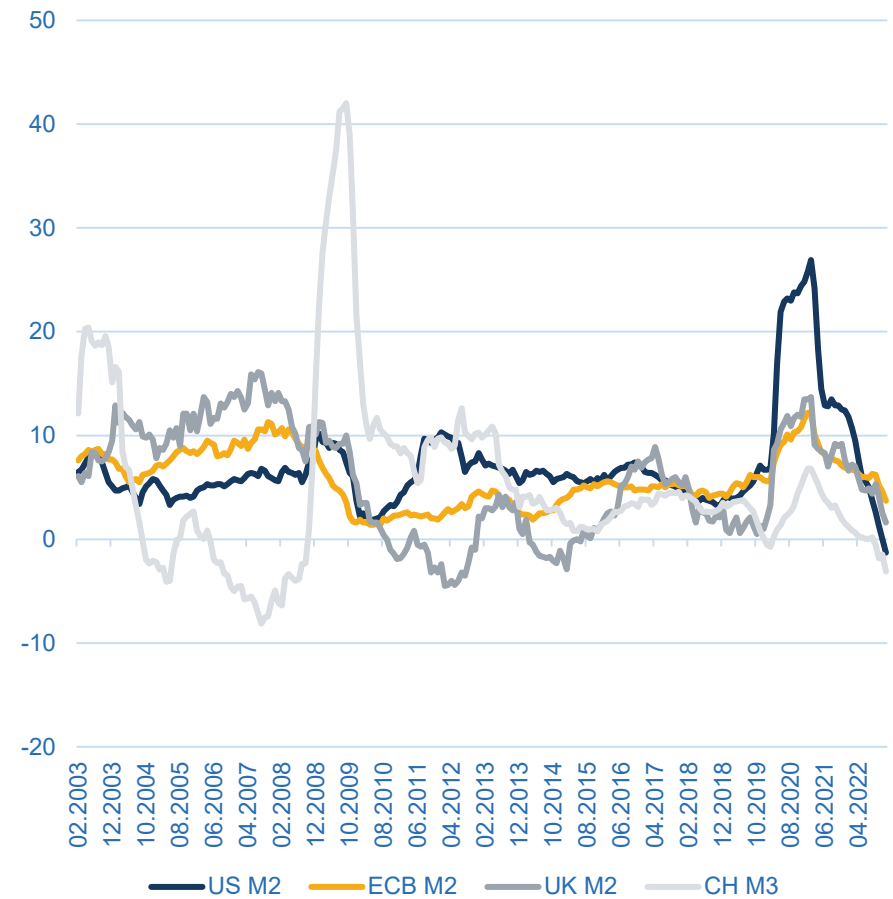
Credit impulses and money growth

Going to disinflationary effects

Credit Impulse Indices YoY change



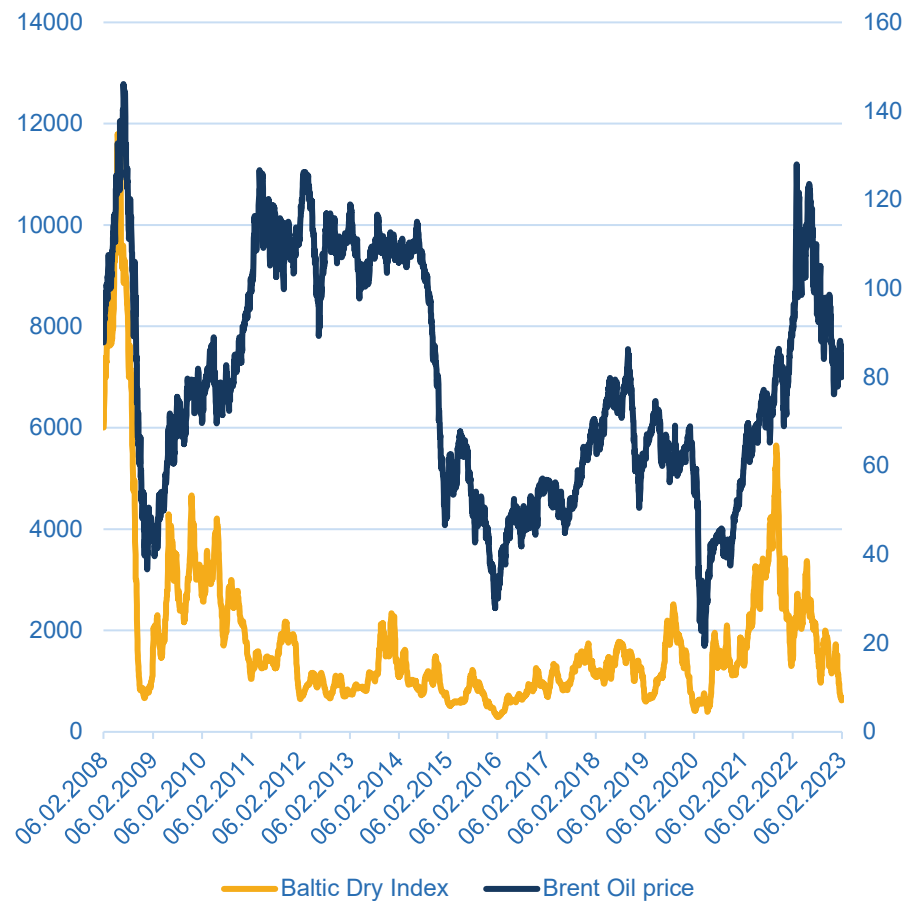
M2 growth rates in %



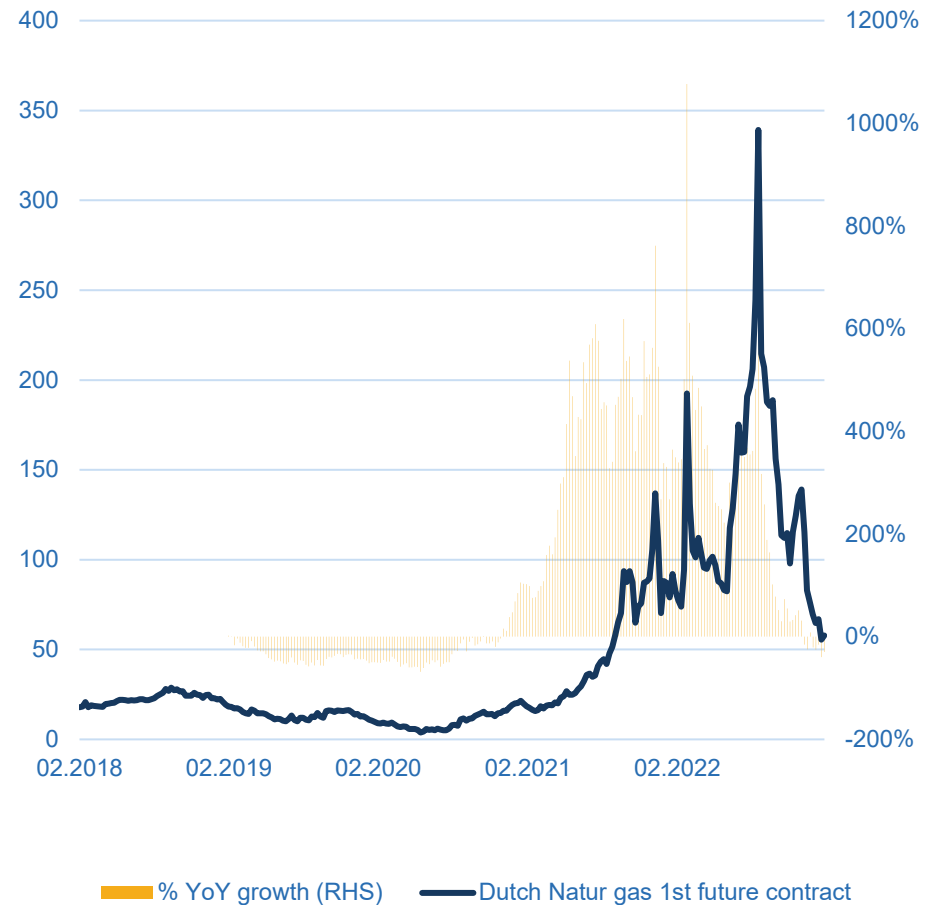
Baltic dry, oil and gas prices

Current oversupply of natural gas impacted gas prices

Brent oil vs Baltic dry index



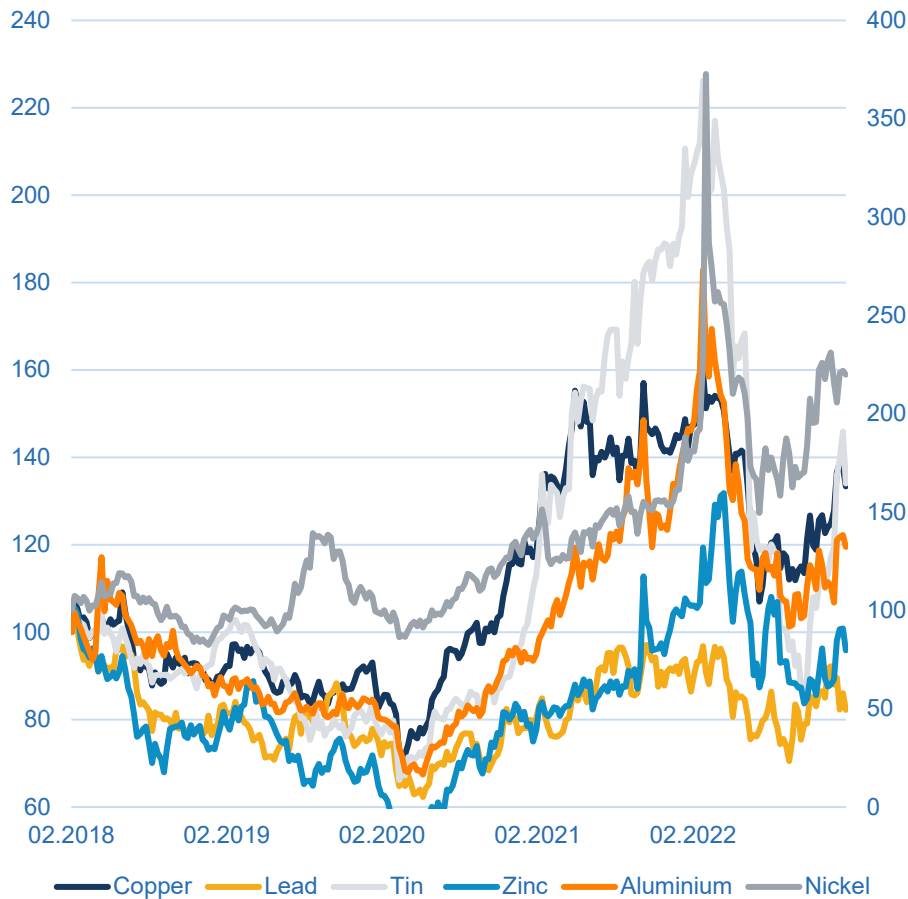
Natural gas prices (Dutch)



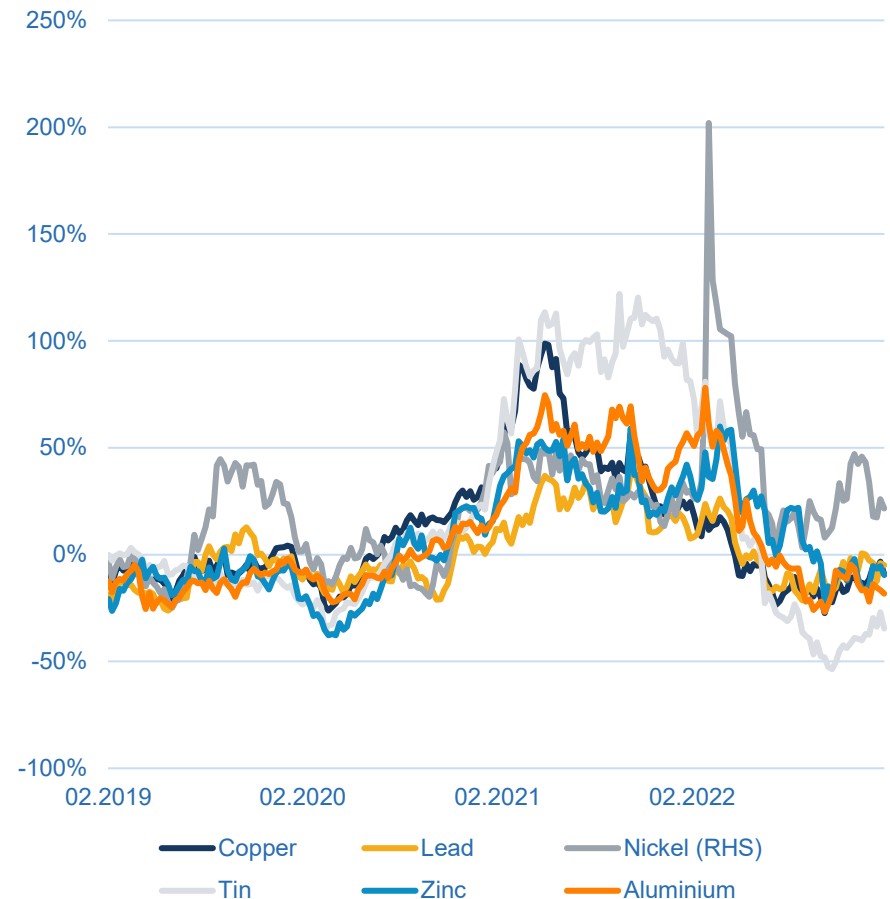
LME base metals

Negative YoY growth of most commodity prices

LME Base metals prices (indexed -5y)



LME base metals YoY growth rates



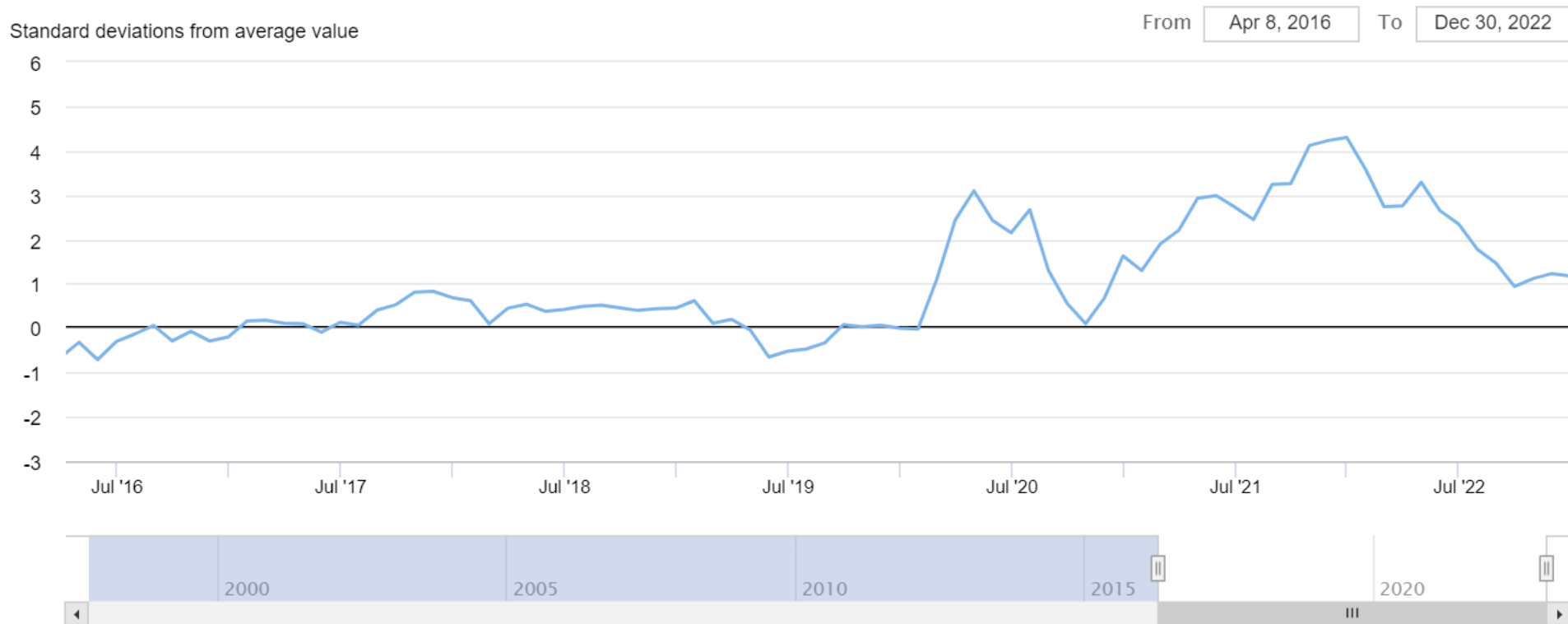
FED NY's Global Supply Chain Index

Stabilisation in recent months

Global Supply Chain Pressure Index (GSCPI)

Latest Update December 2022

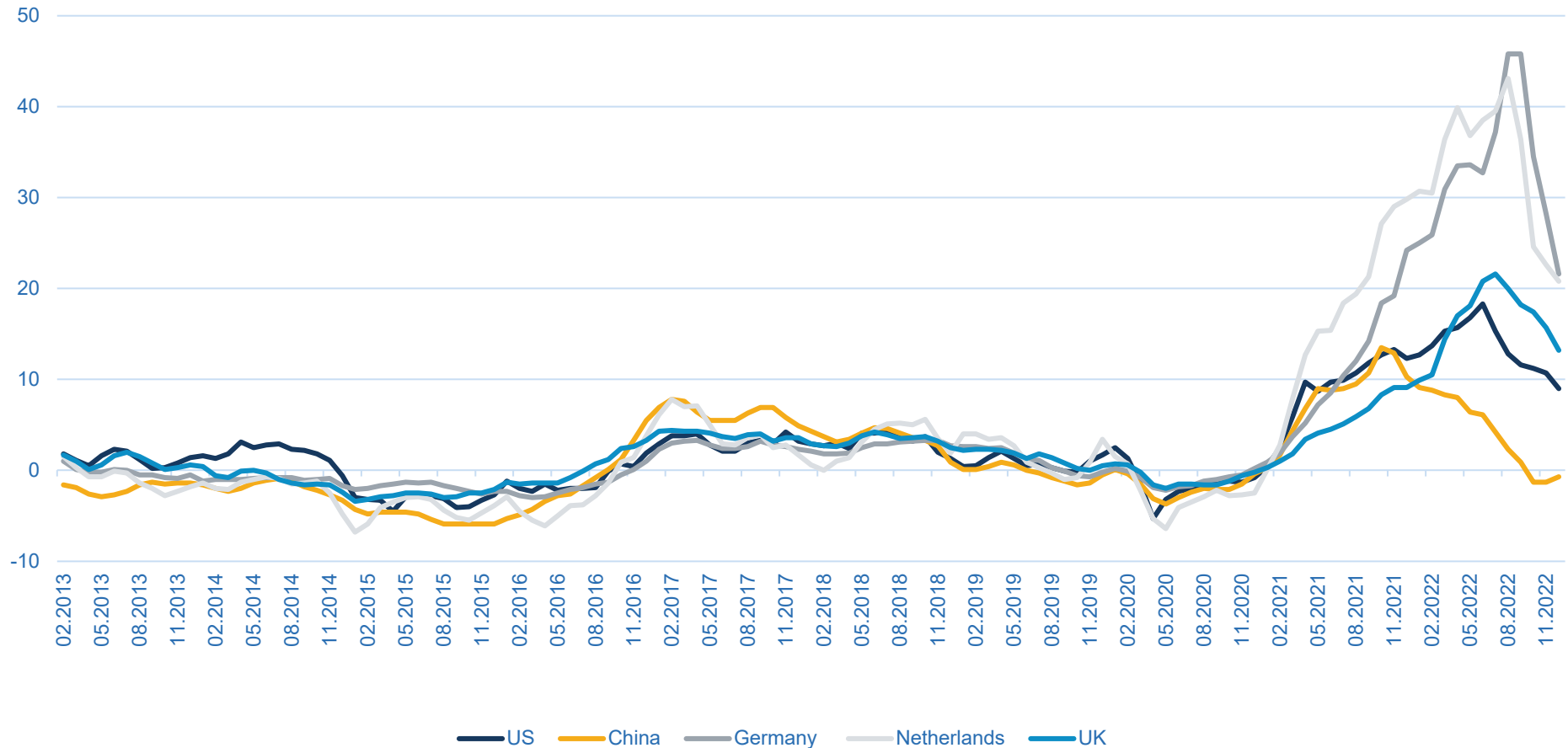
Enter a date range to see monthly estimates or use the slider below to view a specific date range.



Producer Prices

PPI growth falling of a cliff

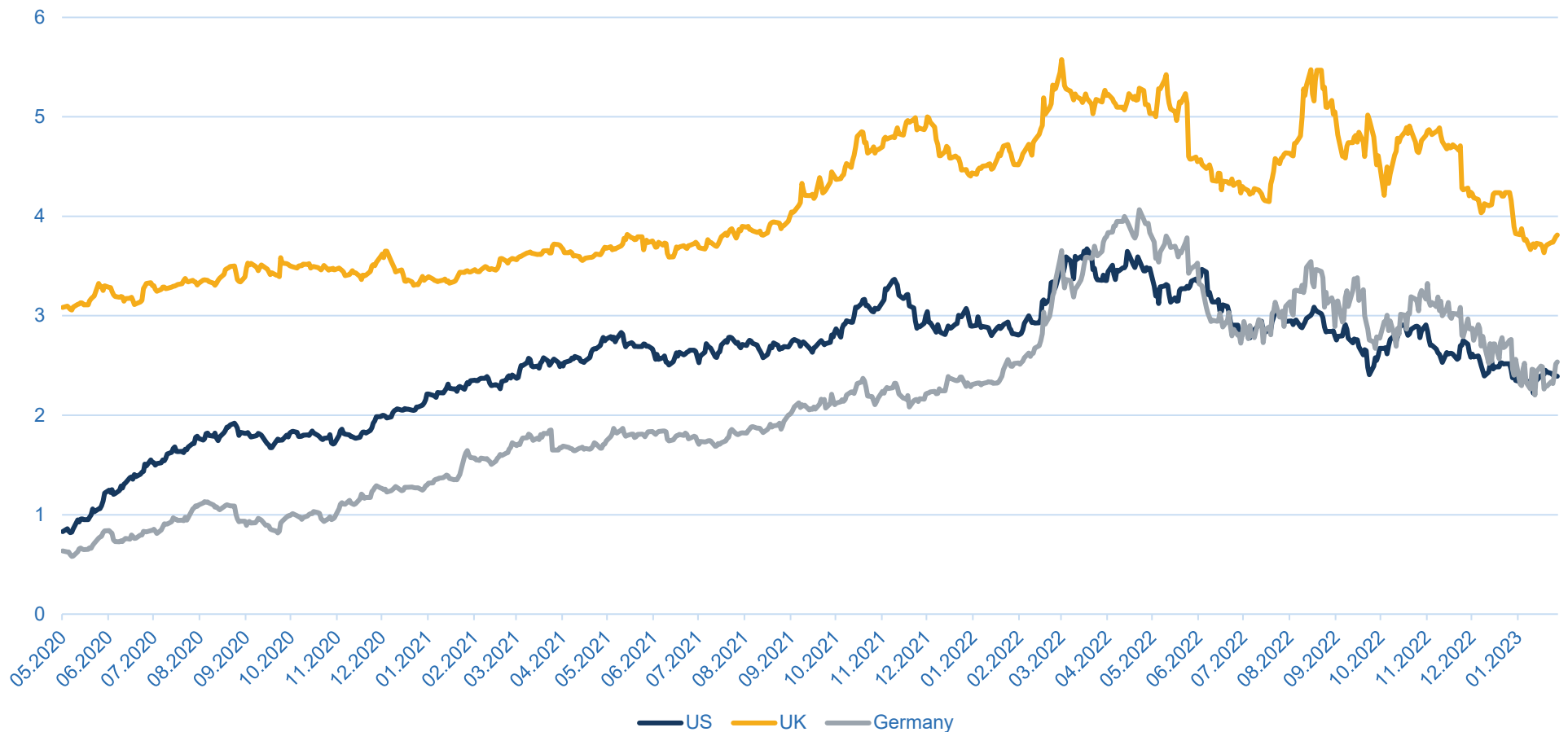
Producer Prices Final Goods in % YoY



5y market inflation expectations

Substantial easing of inflation expectations

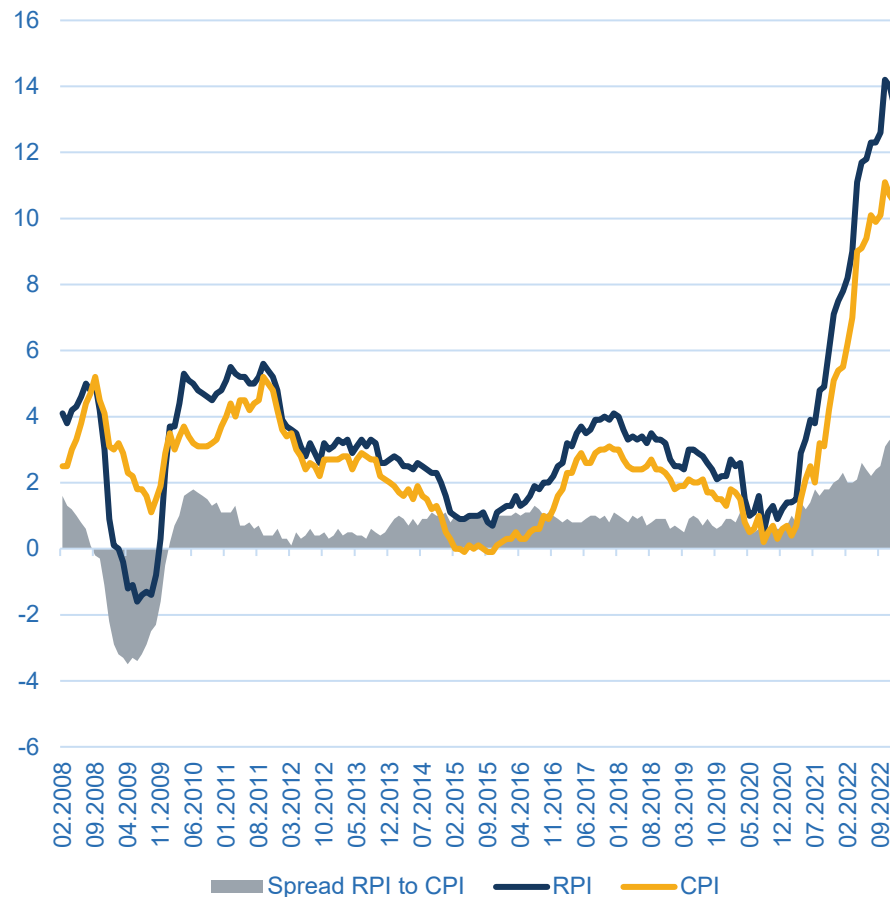
5y inflation expectations derived from inflation swaps in %



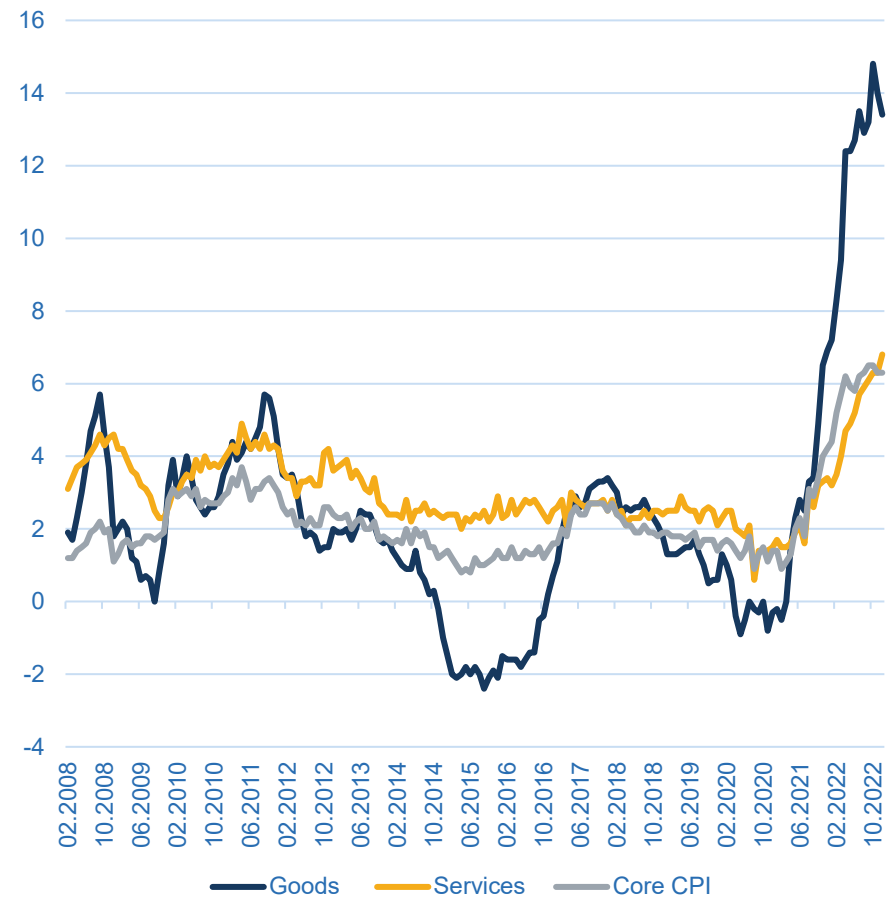
UK inflation indices

Service inflation has accelerated while headline rates are slowing

YoY UK inflation rates in %



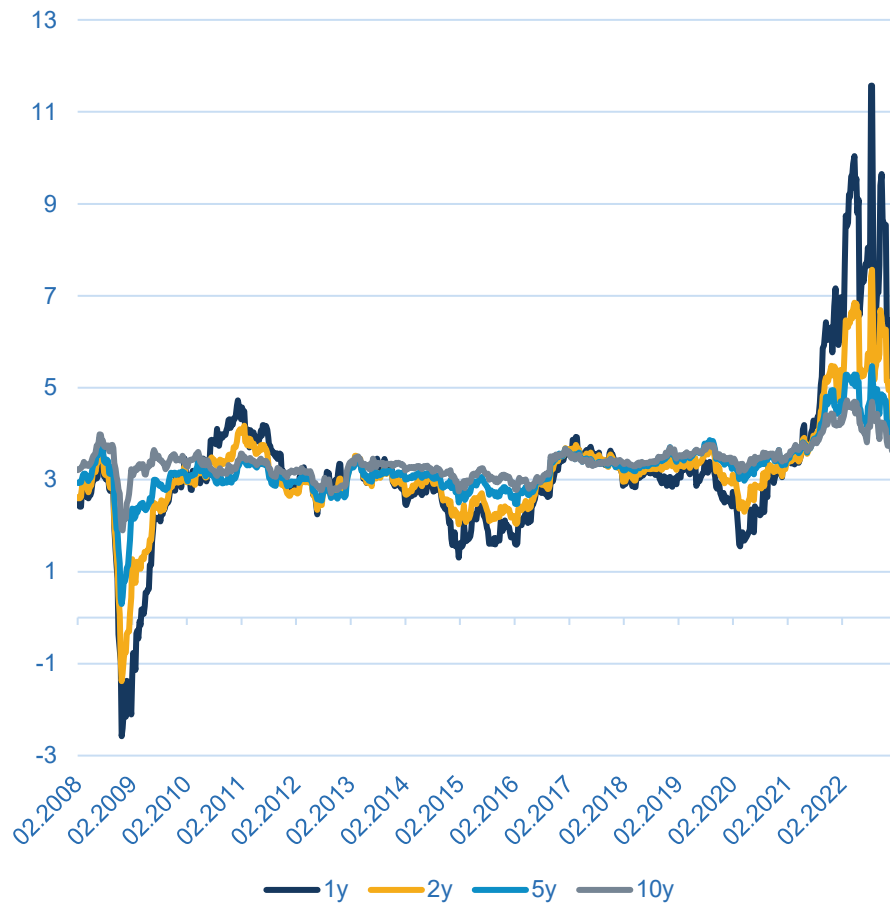
Other UK inflation rates in % YoY



UK inflation swaps

Inflation expectations have come down

Inflation expectations derived from swaps in % (RPI)



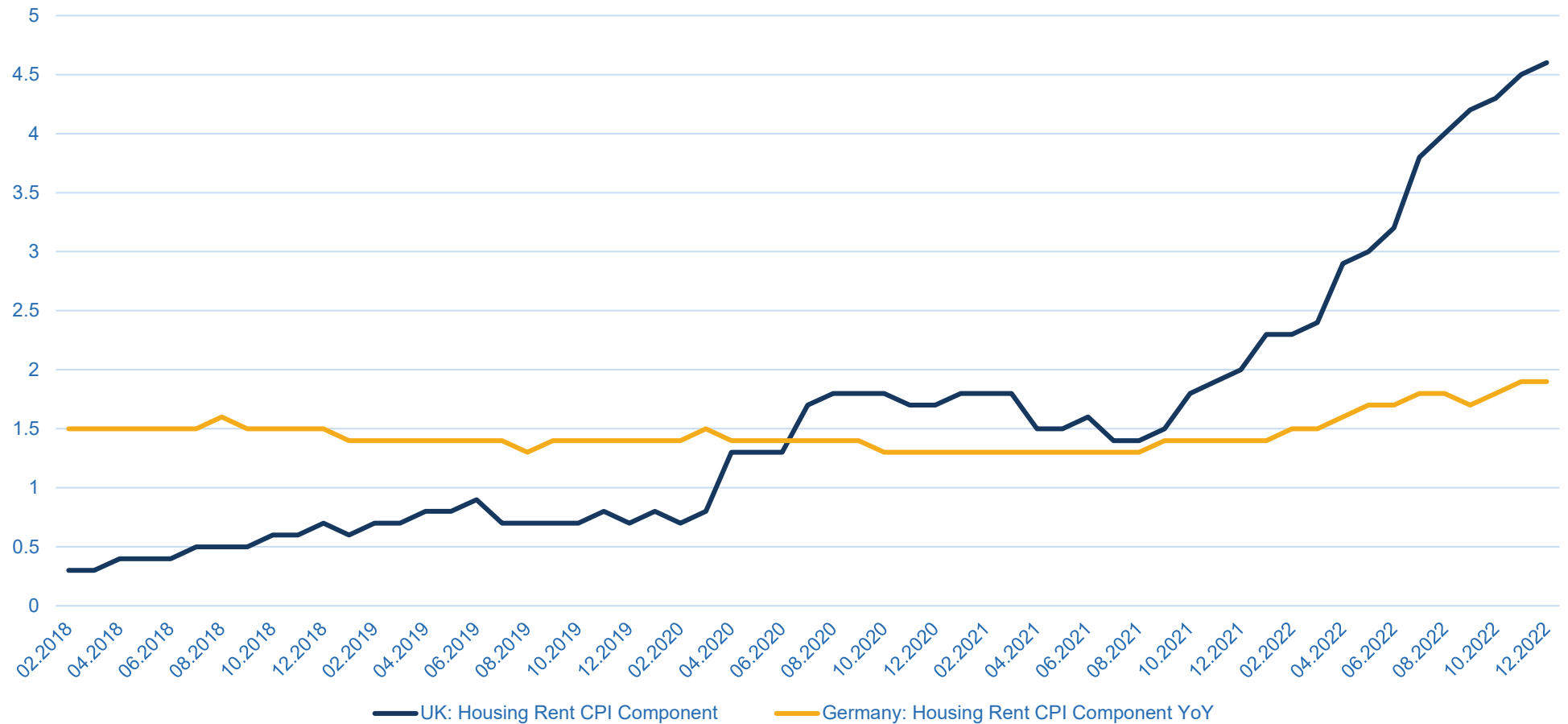
Gap between 10y and 2y market expectations in %



Growth in UK housing rents accelerate

Stronger reaction than in Germany

YoY growth

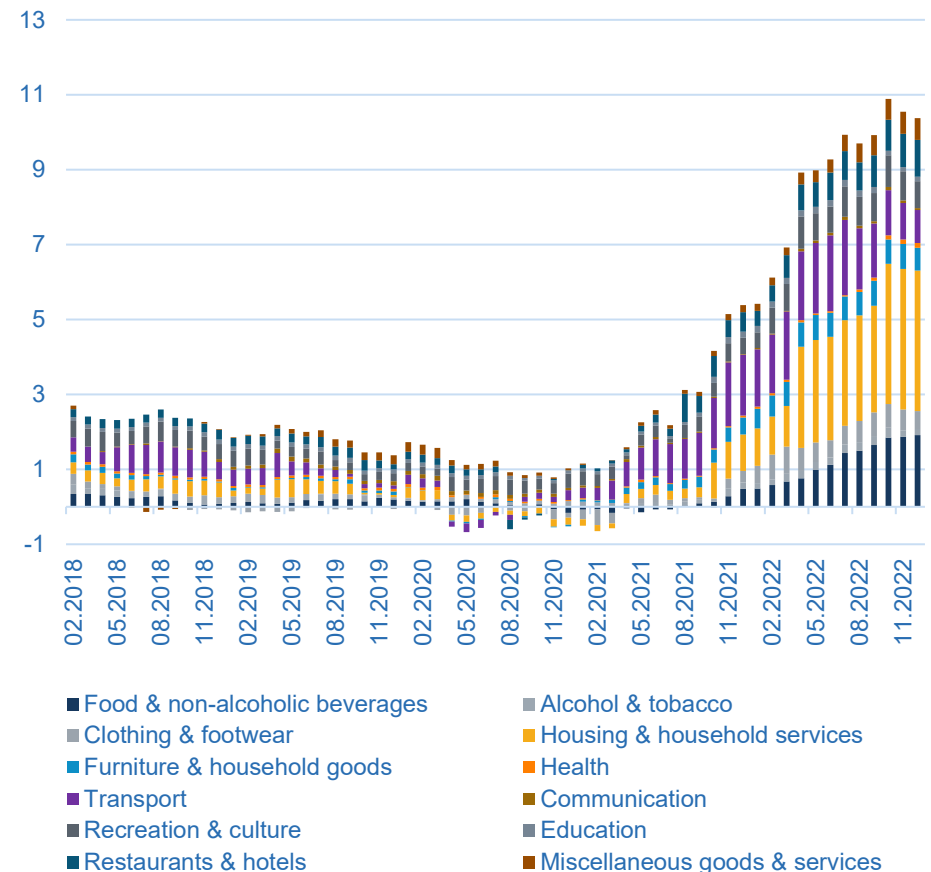


Decomposition of UK CPI growth YoY

Inflationary rates seemed to have peaked

- Inflationary pressures are still high, but the dynamics are improving. Inflation should slow from here
- Housing-related cost inflation remains the biggest driver of inflation and contributes to 3.8% percentage points of current inflation
- Though energy prices have peaked energy-related components still were up in Dec by 88% YoY. This component should sharply come down in the following months
- Food inflation, and price increases for restaurants and hotels continue to accelerate
- YoY inflation for the transportation, communication, clothing components are now slowing

Decomposition of CPI YoY growth in %



UK Inflation Outlook

Higher forecasts due to front loaded effects

	2021E	2022E	2023E	2024E	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	10y average projected (2023-2032) p.a.	2010-2020 p.a.
RPI Forecasts														
Economists			9.5	3.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.7	
Market			3.6	3.9	3.9	3.9	3.8	3.8	3.9	3.4	3.4	3.4	3.7	
Macro Real Estate			6.5	3.1	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.8	
Synthesis	4.0	11.6	6.5	3.6	3.3	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.7	2.4
CPI Forecasts														
Economists			7.0	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	
Market			2.1	3.1	3.1	3.1	3.0	3.0	3.1	2.7	2.6	2.6	2.9	
Macro Real Estate			5.0	2.3	2.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.0	
Synthesis	2.6	9.1	4.7	2.6	2.6	2.7	2.6	2.6	2.7	2.5	2.5	2.5	2.8	2.1
Assumed spread between RPI and CPI			1.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.6

UK Inflation Outlook

Downside in the coming months to inflation rates

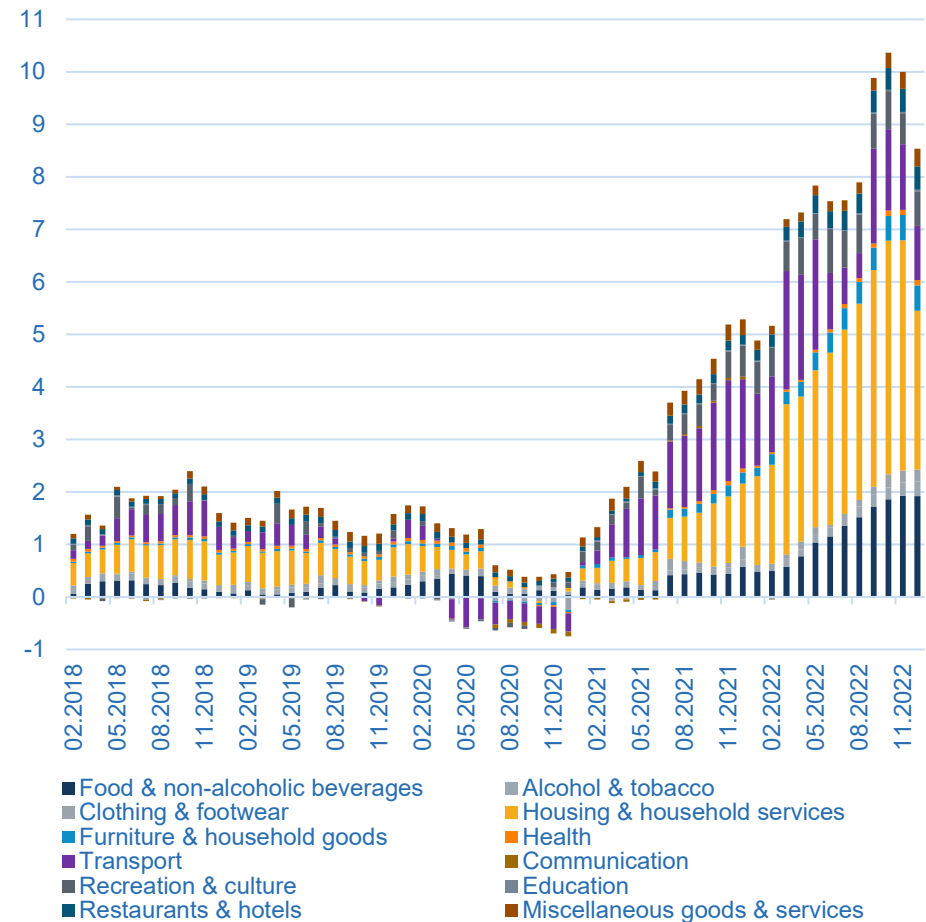
- Inflation has stabilized in the UK and has slightly come down. However, the decline in inflation hasn't been as pronounced as in some other European countries or in the US and we would expect some more declines in the coming months.
- Interestingly, the substantial deviations seen last year in inflation swap markets between shorter and longer-term maturities have mainly been priced out. Swaps see an average RPI inflation of 3.9% p.a. and 3.4% for one to ten years.
- For 2023, there is a large gap between swap pricing and Consensus economists forecast. While the consensus of economists still projects a 7% CPI inflation for 2023, the market expects a 3.8% inflation. Macro Real Estate has left the inflation forecast for next year at 5.0% (same forecast as we did in November 2022). Also, for 2024 we think that inflation is slowing down further.
- Over a 10y period Macro Real Estate forecasts higher inflation than the Economist consensus and the implied inflation from inflation swaps but the differences are rather small

Decomposition of German CPI growth YoY

Only energy related components with weaker trends

- Inflation declined in recent months but remains at relatively high levels. The December headline inflation showed an increase of 8.6% YoY (Jan preliminary estimate shows an 8.7% inflation YoY). However, core YoY inflation continued to increase and was in December at 5.2%
- The still most vital inflationary pressures are recorded in the food sector at 19.8%. Alcoholic beverages and restaurants and hotels are still the sectors where we see increased pressure
- On the positive side, the energy-related components of housing and transportation have seen a trend toward lower pressures (although housing & household services remain with a contribution of 3% to the inflation still the biggest driver of YoY inflation)

Decomposition of CPI YoY growth in %



Food prices are still rising at 20% p.a.

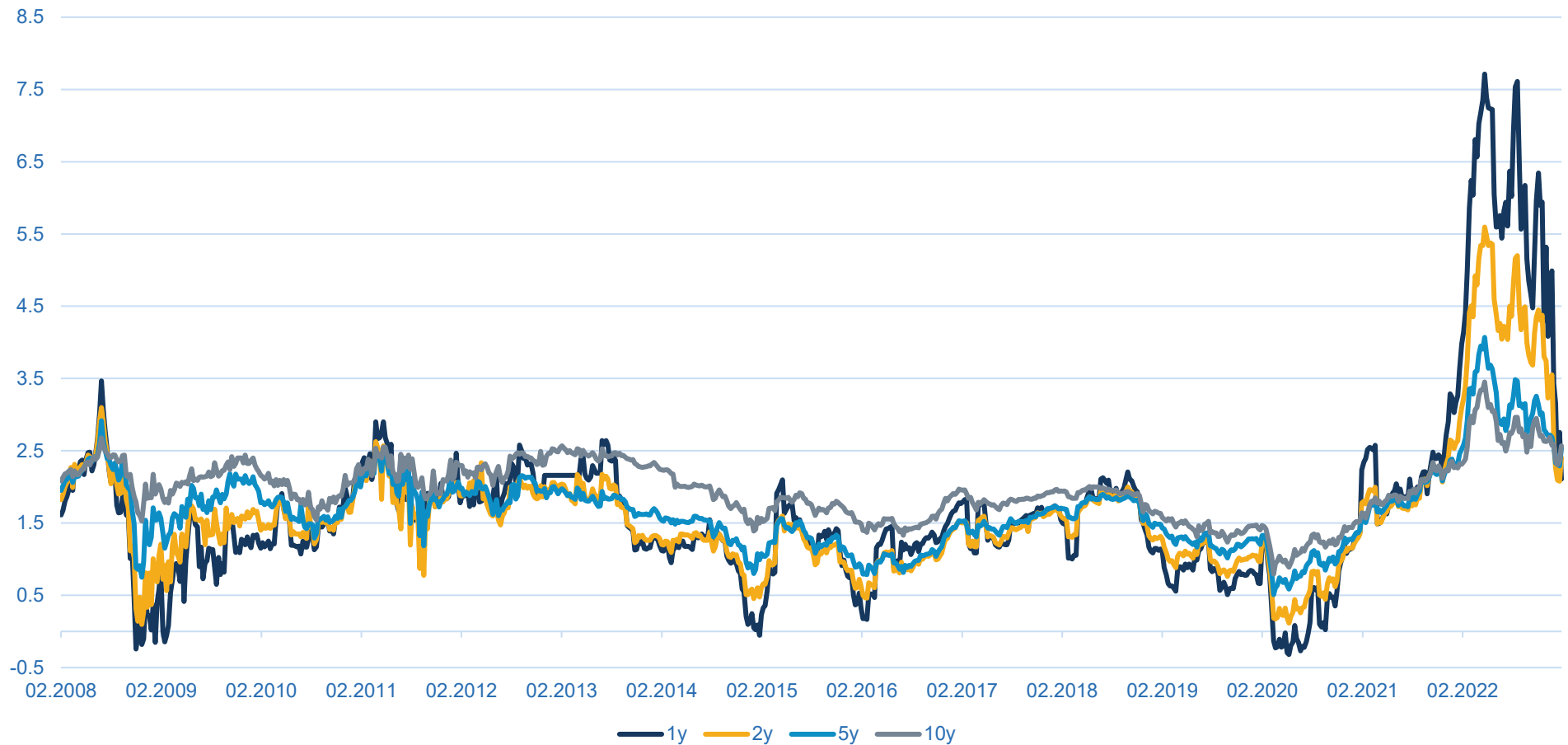
It demonstrates that also not-energy related components are seeing high inflation

Range	Aug 2022 - Dec 2022	Source	German Federal Statistical Office			
Frequency	Monthly	Transformation	YoY% NSA			
1) Product	1) By State					
	Ticker	Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022
[-] Consumer Prices	GRCP20YY I...	8.6	10.0	10.4	10.0	7.9
[-] Food and Nonalcoholic Beverages	GRCP2FY I...	19.8	19.9	19.2	17.7	15.7
[-] Food	GRCPH11Y I...	20.7	21.1	20.3	18.7	16.6
Bread and Cereals	GRCPH1AY I...	21.5	21.1	19.8	18.5	17.1
Meat	GRCP1AUY I...	19.1	19.8	19.3	19.5	18.6
Fish	GRCPH1CY I...	19.3	18.1	16.7	16.7	14.2
Milk, Cheese and Eggs	GRCPH1DY I...	34.8	34.0	28.9	29.1	26.8
Oils and Fats	GRCPH1EY I...	40.3	41.5	49.7	49.0	44.5
Fruit	GRCPH1FY I...	4.7	6.0	6.2	6.2	4.3
Vegetables	GRCPH1GY I...	17.0	20.1	23.1	14.8	9.7
Sugar, Jam, Syrups, Chocolate an...	GRCPH1HY I...	63.0	48.5	42.4	1.6	2.2
Food Products NEC	GRCPH1IY I...	19.9	18.9	16.8	14.3	12.9
[-] Nonalcoholic Beverages	GRCPH12Y I...	12.6	12.1	11.5	10.3	9.4
Coffee, Tea and Cocoa	GRCPH1JY I...	15.7	15.4	15.6	16.5	15.9
Mineral Waters, Soft Drinks, and V...	GRCPH1KY I...	11.1	10.5	9.5	7.5	6.4
[-] Alcoholic beverages and tobacco	GRCP2ALY In...	7.5	6.7	6.0	6.1	5.5
[-] Alcoholic Beverages	GRCPH21Y I...	8.2	7.9	8.1	7.7	6.3
Spirits	GRCPH2AY I...	5.5	5.0	5.0	4.2	3.8
Wine	GRCPH2BY I...	8.2	8.3	7.6	7.4	7.2
Beer	GRCPH2CY I...	9.7	8.9	10.2	10.1	6.7
Alcoholic Soft Drinks	GRCPH2EY I...	6.0	6.0	5.9	5.8	5.1
Tobacco	GRCPH22Y I...	7.6	7.8	5.7	6.4	6.5

Market inflation expectations for Germany

Inflation expectation have substantially declined in recent weeks

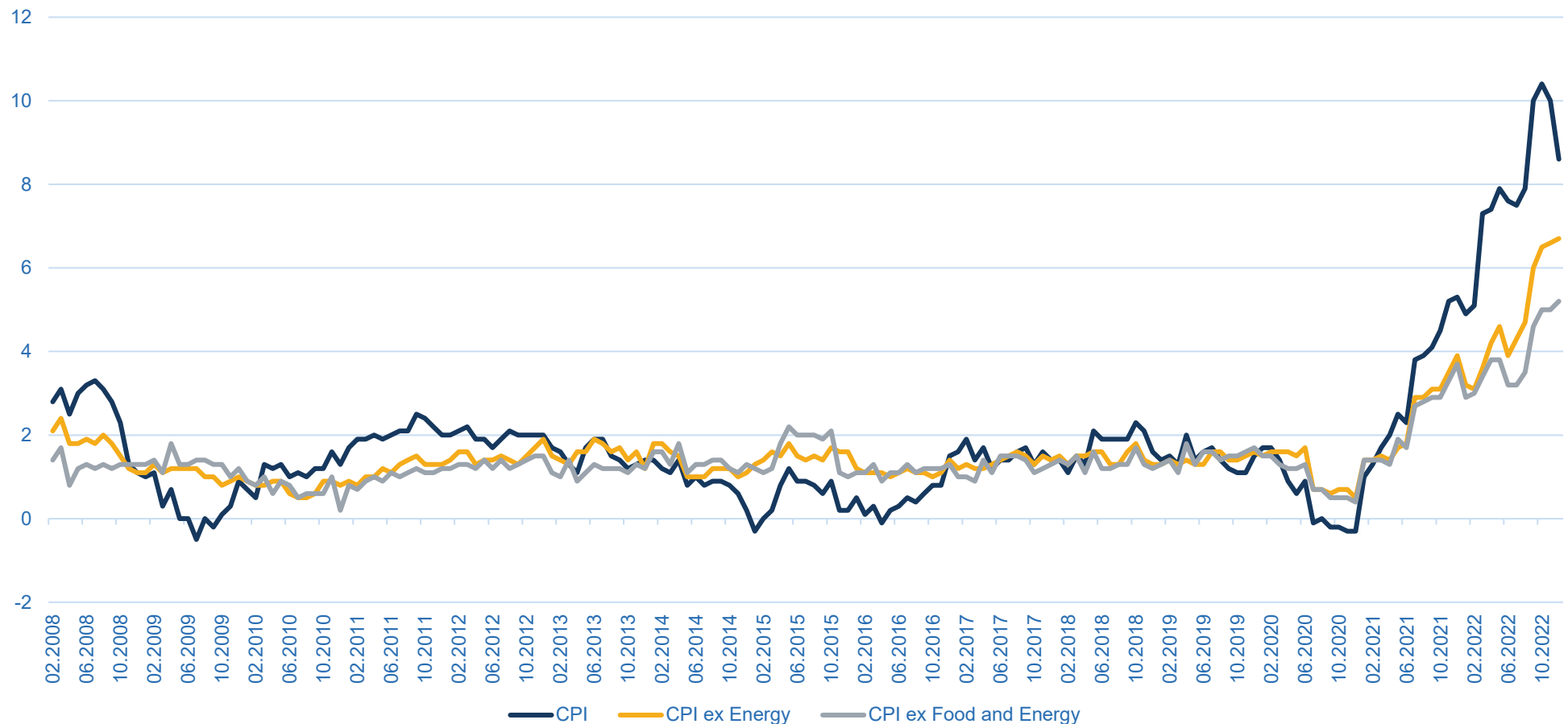
Inflation expectations derived from inflation swaps contracts in %



Germany CPI aggregates

Volatile inflation expectations, starting to stabilized at elevated levels (3.3% p.a. for 5y)

In % YoY



German CPI Outlook

Sharp differences of expectations between financial markets and economists

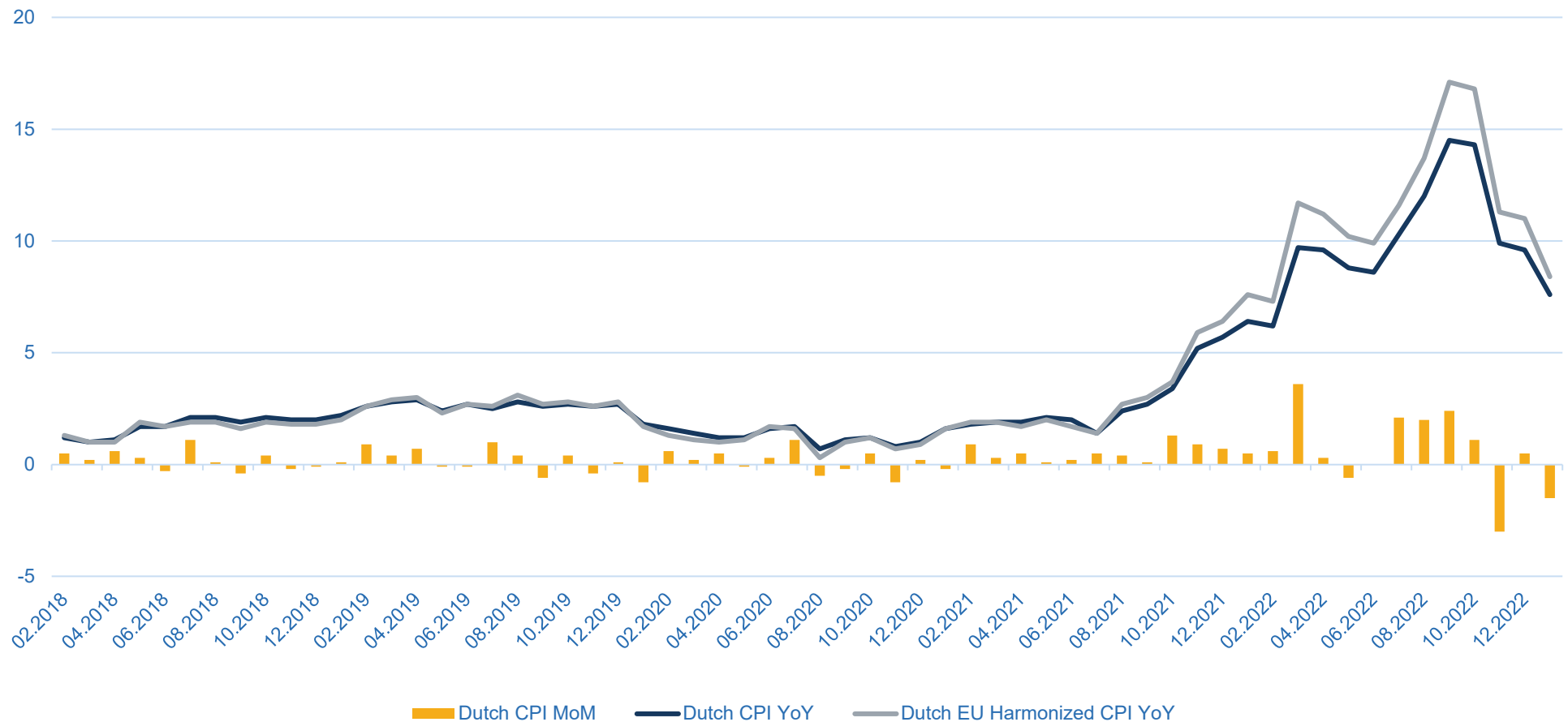
	2021E	2022E	2023E	2024E	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	10y average projected p.a	2010-2020 p.a.
Economists			6.6	2.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6	
Market			2.1	2.7	2.8	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
Macro Real Estate			5.5	2.5	2.5	2.8	4.0	2.6	2.6	2.6	2.6	2.6	3.0	
Synthesis	3.2	8.6	4.7	2.7	2.5	2.5	2.9	2.4	2.4	2.4	2.4	2.4	2.7	1.3

- Inflation is trending downwards mainly due to lower energy costs. But food inflation continues to remain elevated at around 20% YoY, while core inflation is increasing. Still, we believe the trend is somewhat lower as electricity prices have declined.
- Neither the consensus of economist projection nor Macro Real Estate projections have moved much since our last forecast round. Macro Real Estate is somewhat more optimistic in the short-term, but we pencil in a resurgence of inflation later this decade.
- The inflation swap markets is the most optimistic on inflation short term and even sees for 2023 a decline of inflation towards ECB's inflation goal. As the economist consensus inflation projection is typically lagging, we would expect that the consensus will move towards Macro Real Estate estimation for this year projects. Still, we would push back against the market expectations which we currently see as too optimistic.

Dutch CPI YoY growth

After substantial upside now substantial downside surprises

CPI growth rates in %



The Netherlands CPI Outlook

Upward revisions of inflation forecasts

	2021E	2022E	2023E	2024E	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	10y average projected	2010-2020
Economists			5.8	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	
Macro Real Estate			5.5	2.1	2.2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.7	
Synthesis	2.3	10.0	5.7	2.4	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	1.6

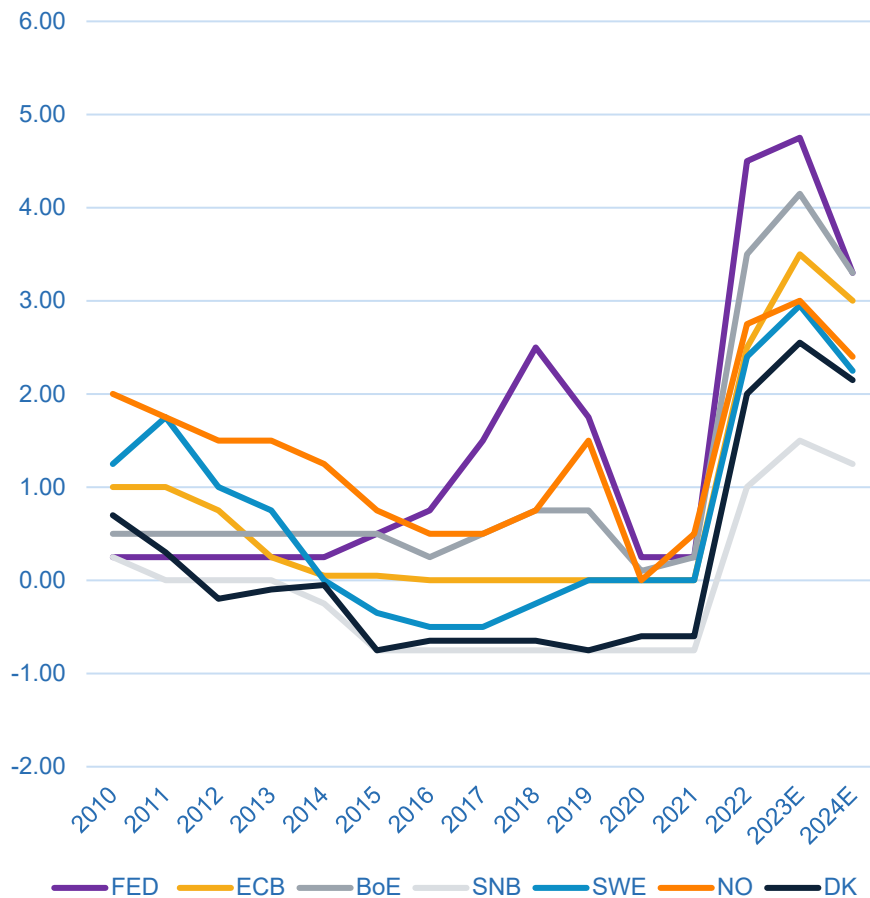
- Dutch CPI recorded a spectacular turnaround in late 2022 with a strong MoM negative print of -3.0% in November. So, it ended the year with a YoY inflation of 10% (Macro Real Estate projected 13% for the year) Also the January inflation print MoM was sharply negative bringing down inflation to 7.6%. The move was primarily driven by the volatile energy components and is also driven by the mild winter.
- The momentum supports now further downside pressures. We lowered our estimate for this year to 5.5% and consensus projections have also declined recently.
- As there are no Dutch inflation linked bonds or swaps, we have weighted economist's consensus with 2/3, as we prefer to limit Macro Real Estate forecasts to 1/3.

Interest rates

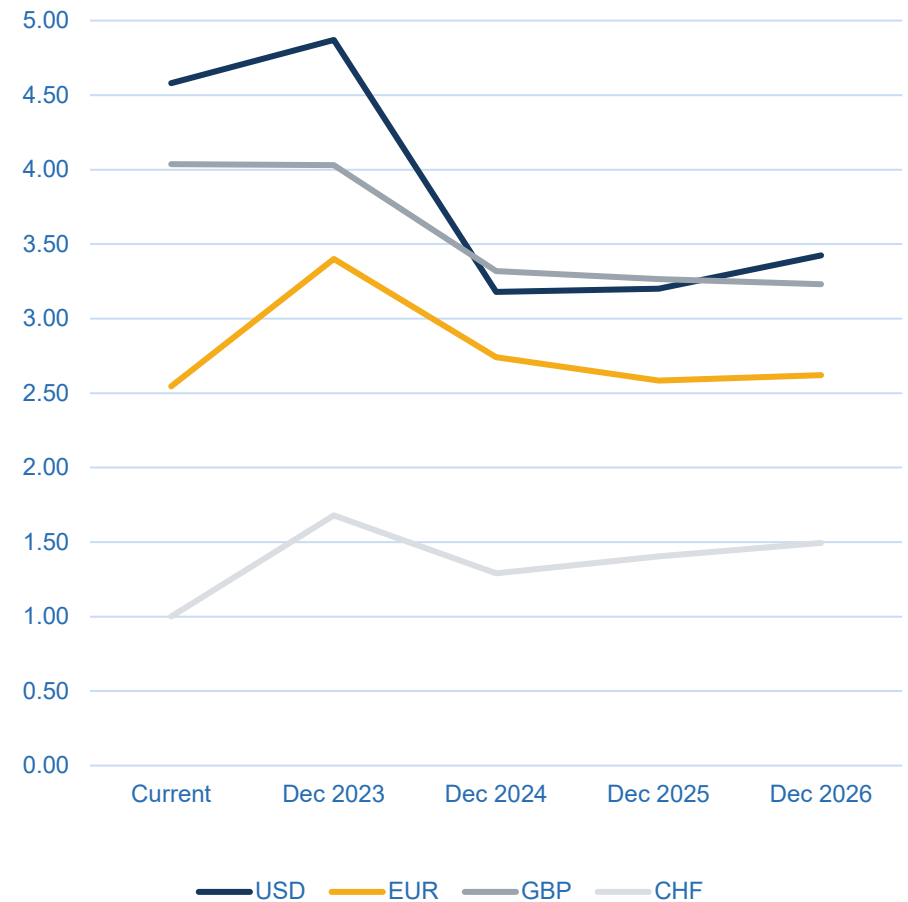
3m interest rate expectations

Substantial rate cuts expected in 2024

Policy rates with economists projections



3M money market futures expectations (for US fed funds future used)



5y swap interest rates

Somewhat lower swap rates over recent months

Interest 5y swap rates in% (long term chart)



Interest 5y swap rates in% (last 12 months)

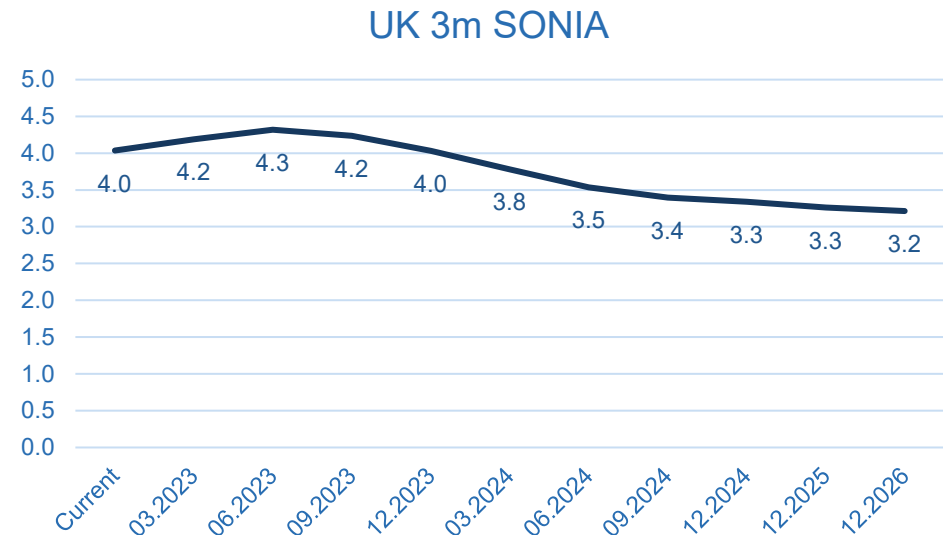


Markets and economist's projections

GBP yields and rate forecasts

	Economist projections			
	End 2021	Current	End 2023	End 2024
UK base rate	0.25	4.00	4.15	3.30
UK 3m SONIA	0.338	4.04	3.86	3.26
2y government bond	0.69	3.45	2.97	2.52
10y government bond	0.99	3.24	3.2	3.18

	Swap rate to Sonia		Forward swap pricing		
	Current	from 3M	from 1y	from 2y	from 3y
1y	4.26	4.19	3.62	3.30	3.20
2y	3.94	3.84	3.46	3.25	3.15
5y	3.52	3.46	3.26	3.13	3.08
10y	3.32	3.30	3.20	3.16	3.15



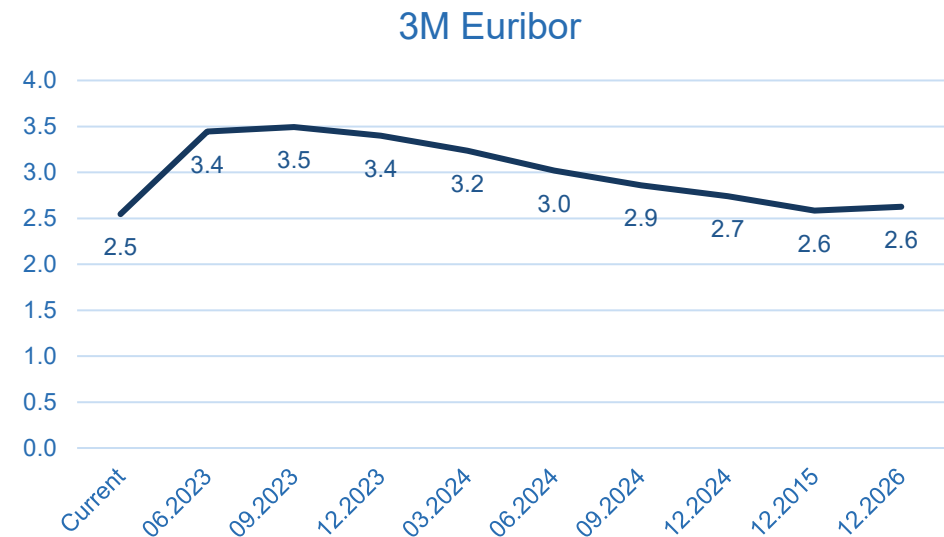
- Economist are forecasting 3m rates, 2y and 10y government bond rates
- 3m money market future rates on the chart on the right
- Forward swap pricing indicate what financial markets price for swap markets

Markets and economist's projections

EUR yields and rate forecasts

in %	Economist projections			
	end 2021	Current	End 2023	End 2024
3m Euribor	-0.56	2.55	2.91	2.32
2y government bond	-0.62	2.62	2.04	1.70
10y government bond	-0.17	2.30	2.06	2.05

Swap rate to 3m Euribor	Forward swap pricing				
	Current	from 3M	from 1y	from 2y	from 3y
1y	3.37	3.31	2.90	2.46	2.34
2y	3.28	3.03	2.68	2.40	2.36
5y	2.92	2.66	2.50	2.41	2.43
10y	2.87	2.63	2.58	2.56	2.59



- Economist are forecasting 3m rates, 2y and 10y government bond rates
- 3m money market future rates on the chart on the right
- Forward swap pricing indicate what financial markets price for swap markets

Interest rate outlook

Macro Real Estate comments

- The bond and interest rate futures market have calmed down somewhat. Central banks are now in an advanced stage of their hiking cycle. The ECB moved its deposit rate to 2.5% and the BoE its base rate to 4.0%.
- The Euribor 3m curve now expects the terminal rate to be at 3.5% in Q3 2023 and somewhat decline thereafter. The GBP short-term rate terminal is at 4.3%, meaning another rate hike is priced in
- For 5y real estate financing contracts the 5y swap rates remain an important variable. They are still below 3% but have strongly declined for GBP and are now below the rate for EUR. In October, the latter was still above 5%.
- Macro Real Estate believes that currently, financial markets are still a bit too optimistic in assuming an easy further inflationary decline. Our analysis and projections on inflation above show that there might be some road bumps ahead and additional volatility and higher long-term rates in the coming quarters.
- We continue to reject the view of financial markets that rate cuts might happen in 2023 and see somewhat higher short-term inflation than inflation swap markets

European core real estate markets

European real estate transaction update

Transactions by Property Type (Europe)				
	Q3 2022	Q4 2022	Q4 2022 TTM	TTM change vs Q4 2021
Office	25.0	18.1	96.1	-15%
Industrial	14.7	9.4	57.7	-8%
Retail	8.3	9.5	43.2	+20%
Hotel	3.4	4.6	16.1	-9%
Apartments	11.3	12.1	59.7	-46%
Seniors Housing & Care	2.1	2.0	9.8	-14%
Grand Total	68.4	62.8	305.2	-18%

- 2022 volumes fell by 18% vs. 2021. Q4 2022 was down by 58% YoY. Thus, a very weak final quarter was the reason for the annual decline while the numbers for the first three quarters were still up
- Residential, particularly in Germany, saw the most substantial decline in transaction activity
- The healthcare sector recorded limited declines in transaction volumes

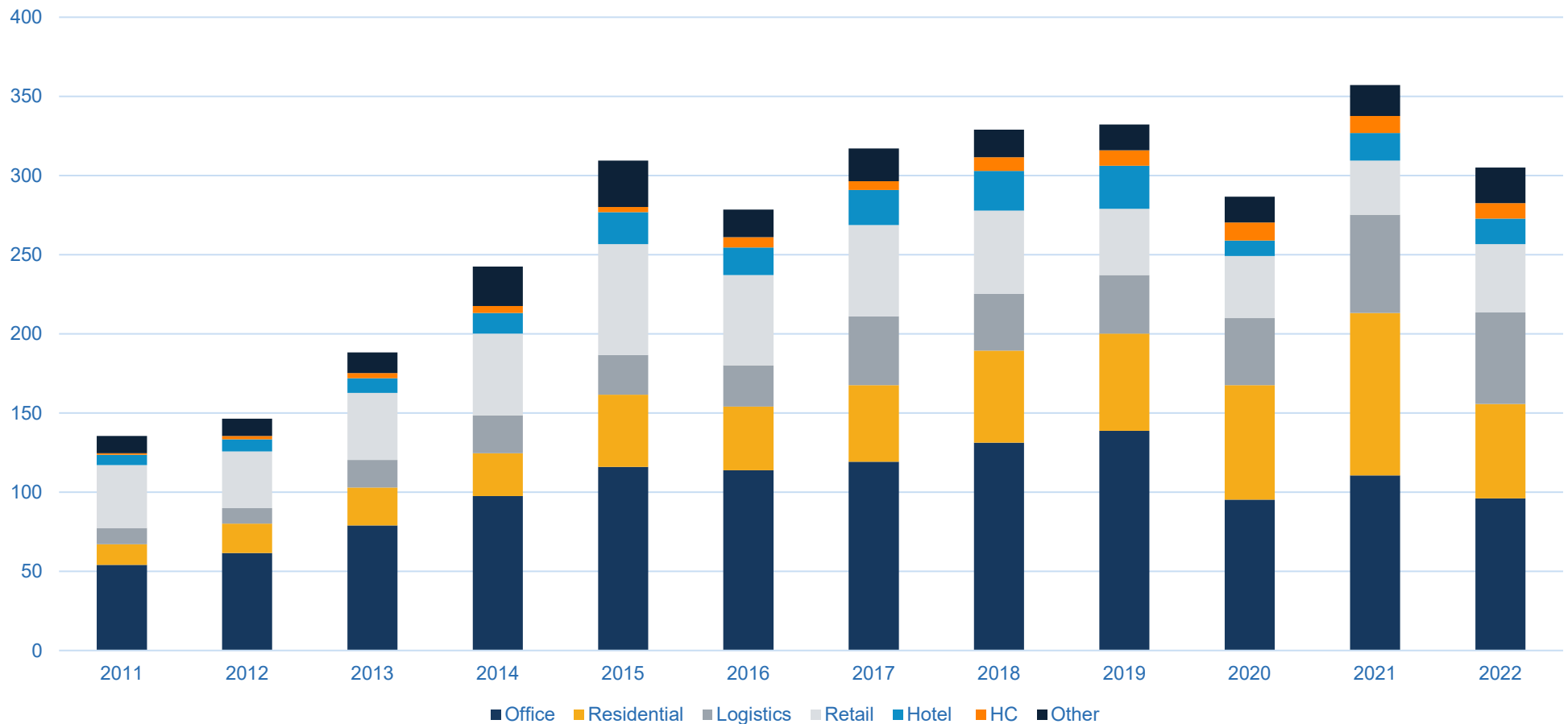
	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
United Kingdom	12.5	17.7	15.4	25.8	19.7	16.8	12.7	11.6
Germany	14.9	17.0	26.8	48.9	23.9	11.6	15.9	13.6
France	4.9	5.2	6.0	10.9	5.3	7.2	8.9	6.7
Sweden	2.4	5.0	6.1	9.0	3.1	4.7	2.4	5.0
Spain	1.6	3.5	3.0	3.9	4.3	5.4	4.3	3.0
Netherlands	2.1	2.4	6.1	6.9	3.6	3.7	3.8	4.4
Poland	1.1	1.2	1.3	2.2	1.7	1.2	1.4	1.5
Italy	0.6	2.0	2.3	5.0	3.3	3.1	3.0	1.6
Belgium	0.5	0.6	1.0	2.0	0.9	1.9	4.3	1.4
Romania	0.1	0.2	0.3	0.3	0.1	0.3	0.3	0.6

- Transaction activity has slowed substantially in the three biggest countries.
- Germany Q4 2022 transaction data was down by 72% YoY
- Sweden has rebounded in Q4 2022 together with the Netherlands, which had experienced a series of slow quarters
- Romania still bucks the trend and saw a record transaction activity

Evolution of transaction volumes over time

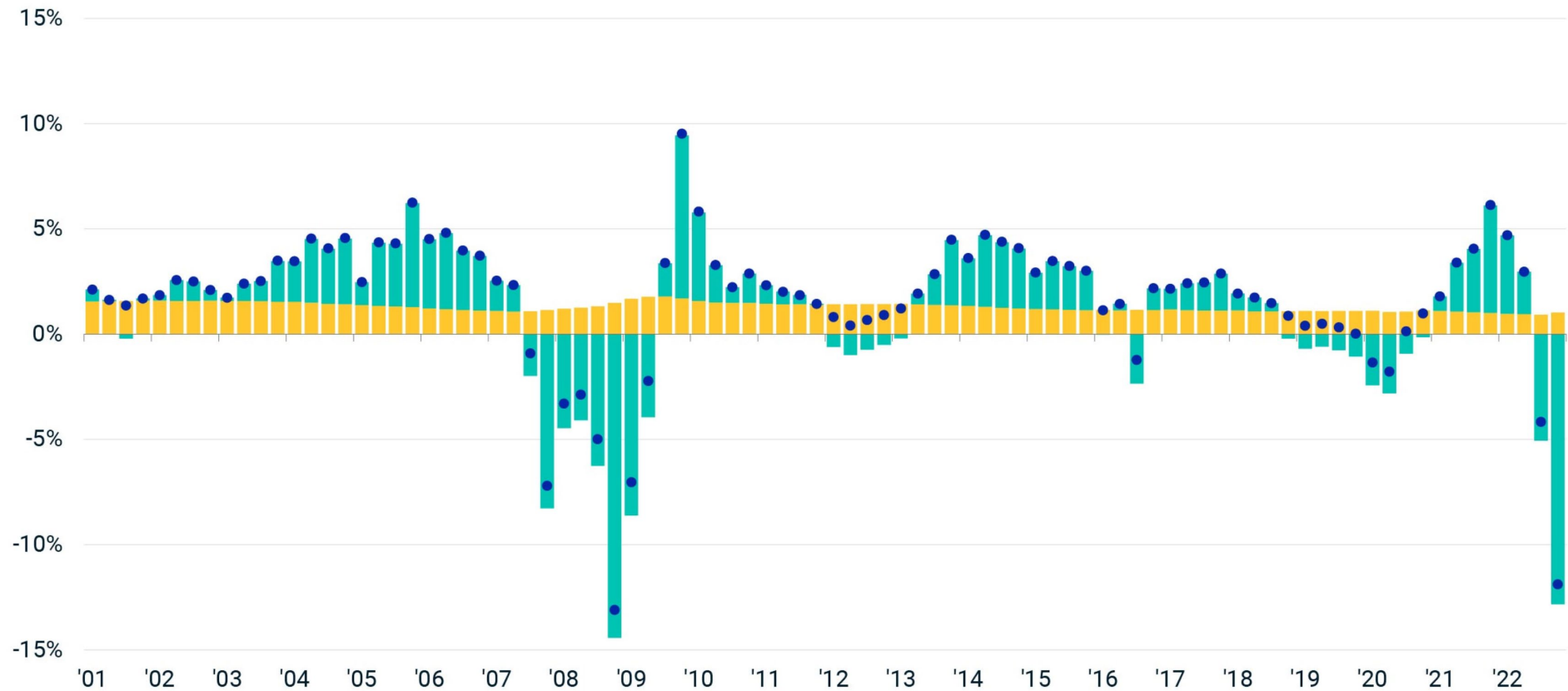
Decline of transaction volumes of 18% in 2022 vs. 2021

Transaction volumes in bn EUR



UK 2022 total returns at -12%

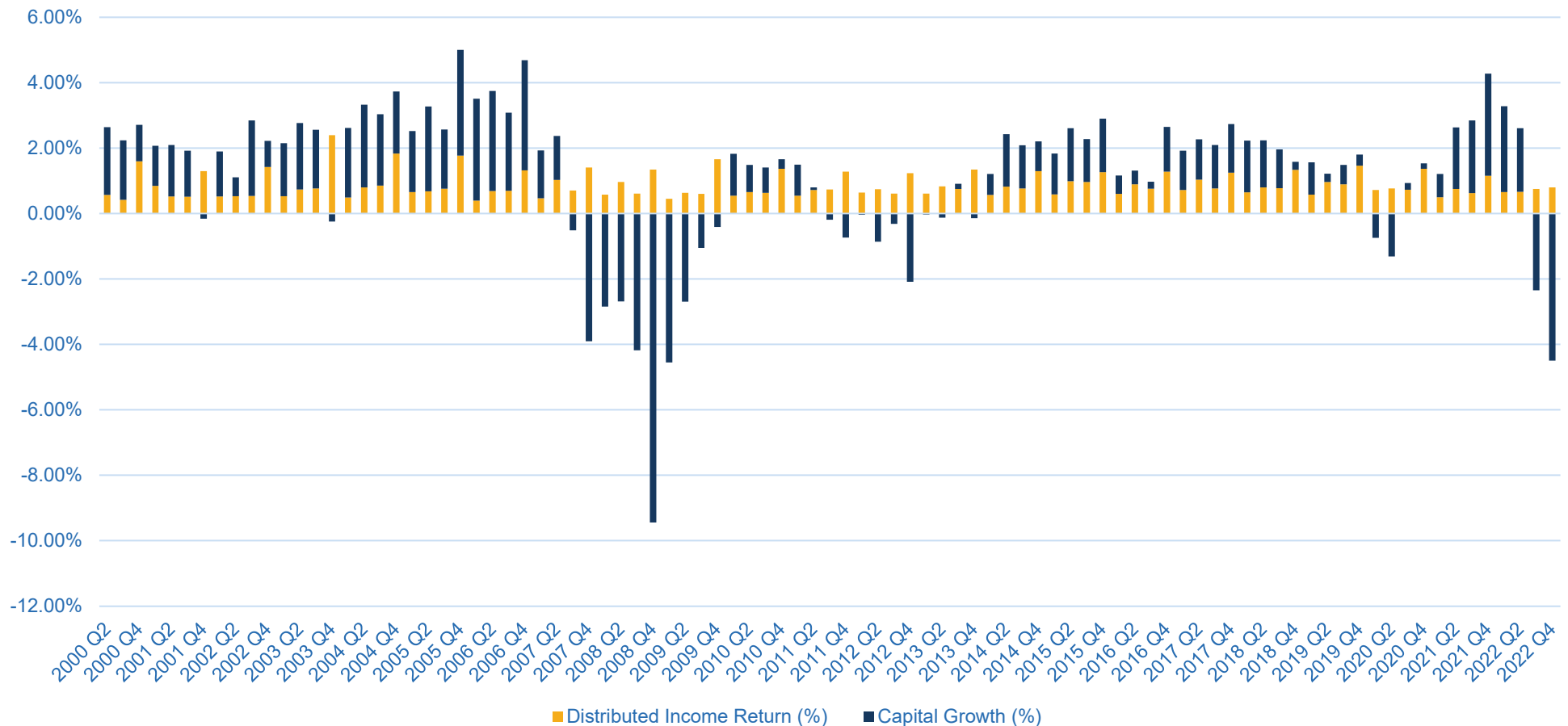
Q4 2022 the second most negative quarter since GFC, industrial -26% in H2 2022



INREV pan European fund-level index

Macro Real Estate estimates an average hit to values of 4.5% in Q4 2022

Quarterly returns (Q4 2022 only MRE estimate)

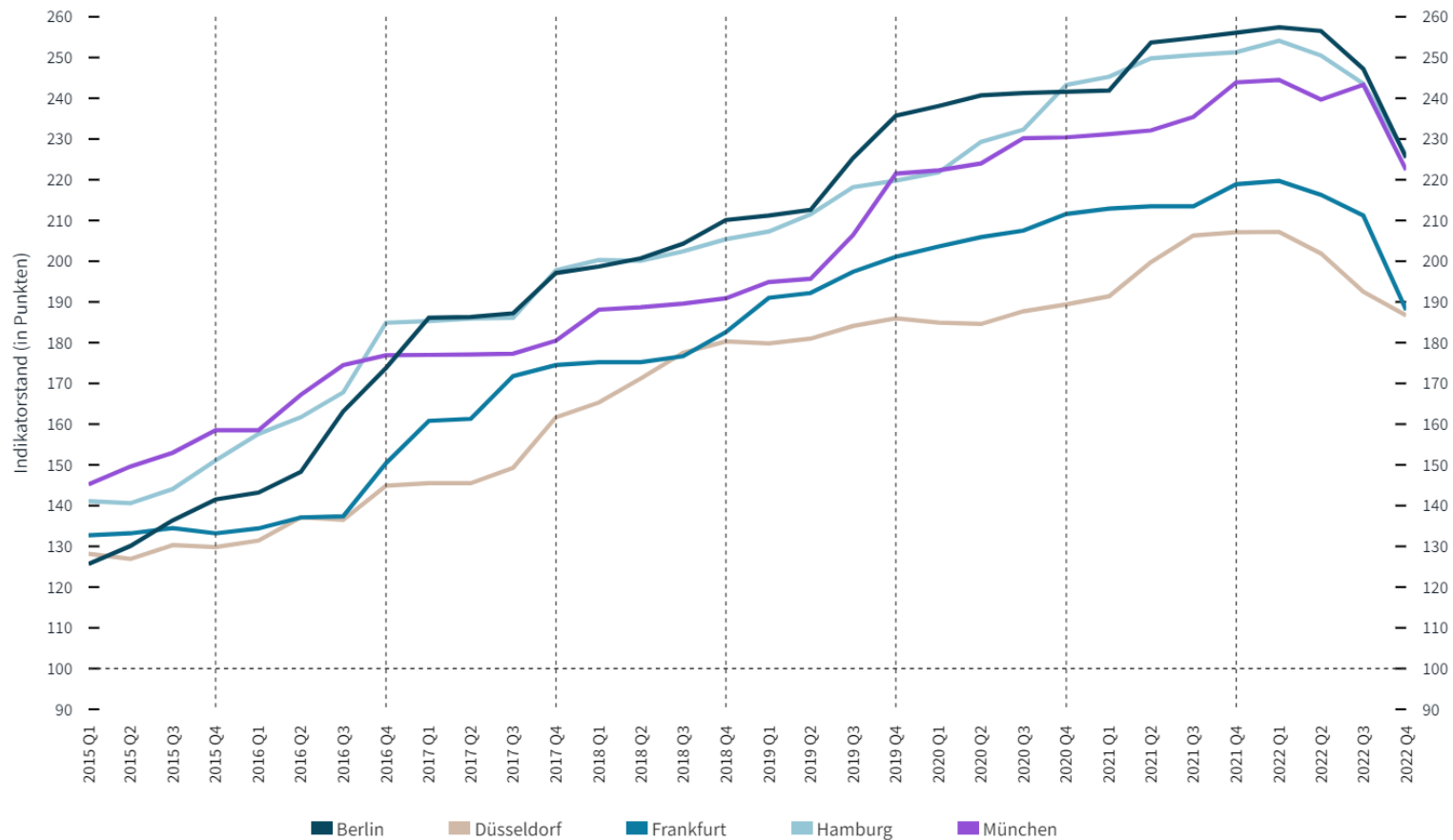


JLL-Victor Index: German office values

Correction has started

Q1 2015 bis Q4 2022

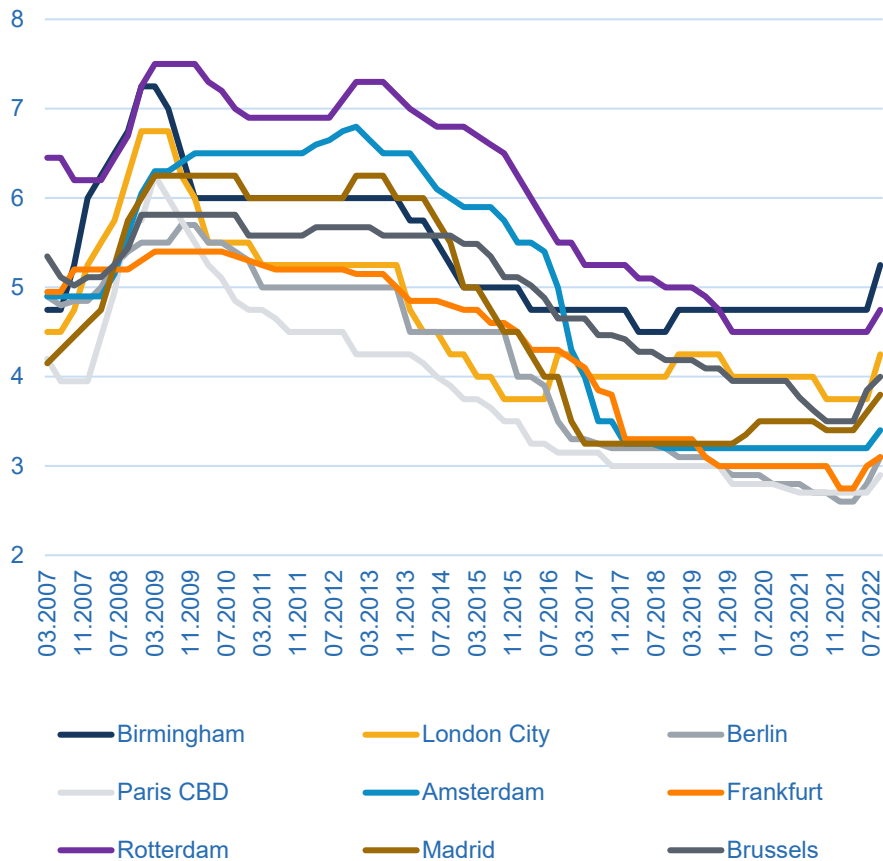
Valuation Performance Indicator



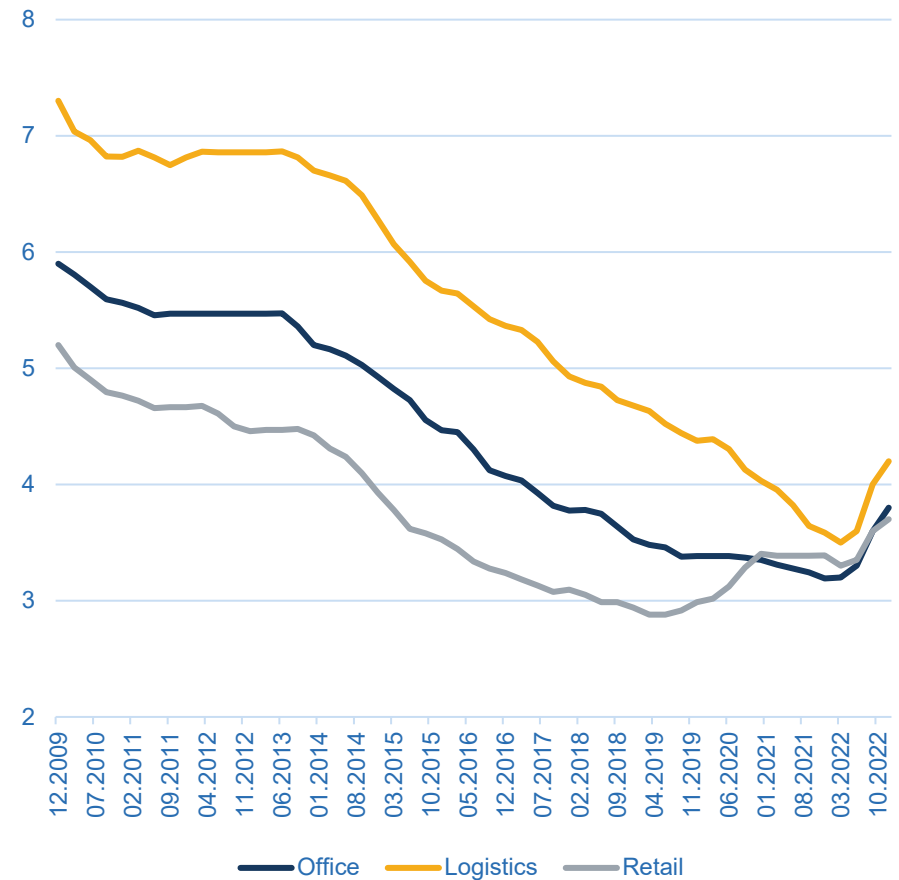
Substantial increases in real estate yields

European prime logistics net yields back above 4%

Prime net office yields in %



Pan European net yields in %



Source: Various brokers, Macro Real Estate Last datapoint: Q4 2022

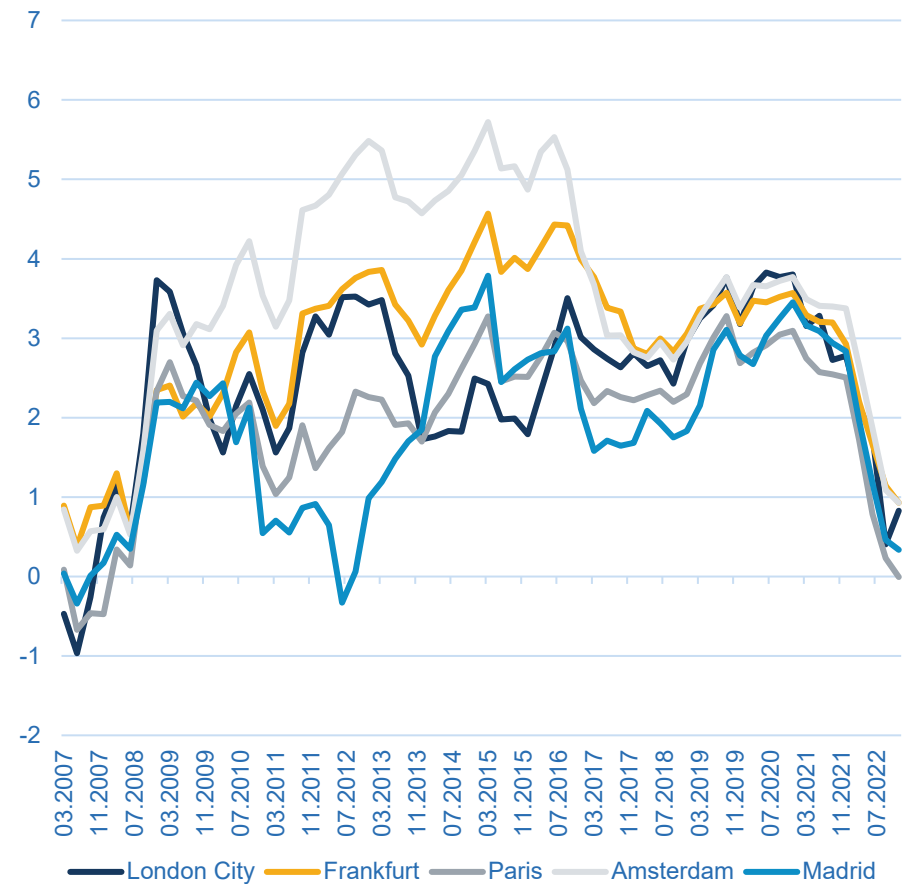
Spreads vs financing costs and government bonds

Negative carry vs financing costs

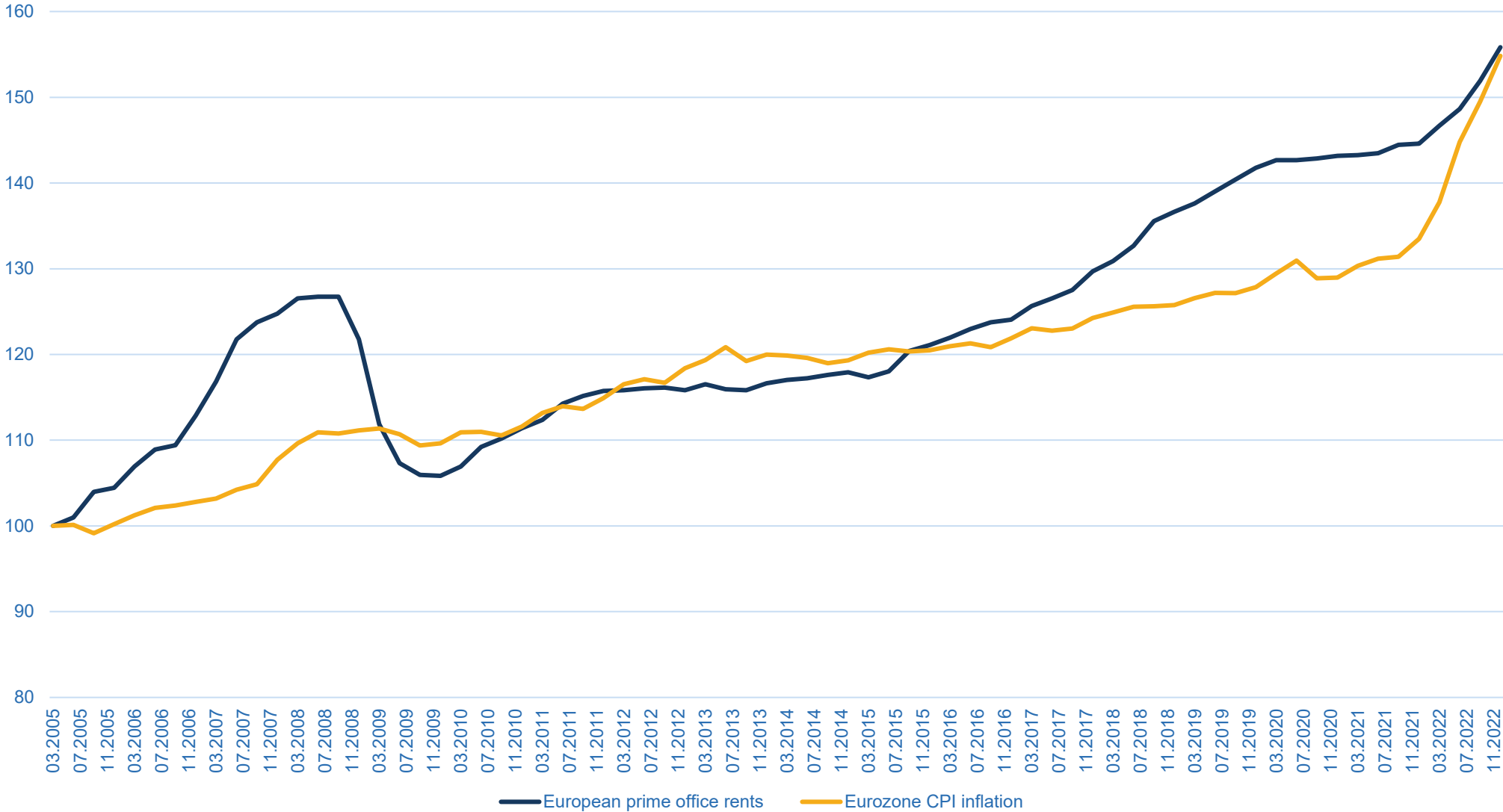
Prime office yields vs government bond yields in %



Office yield spreads vs 10y government bonds



European office rents and EUR inflation

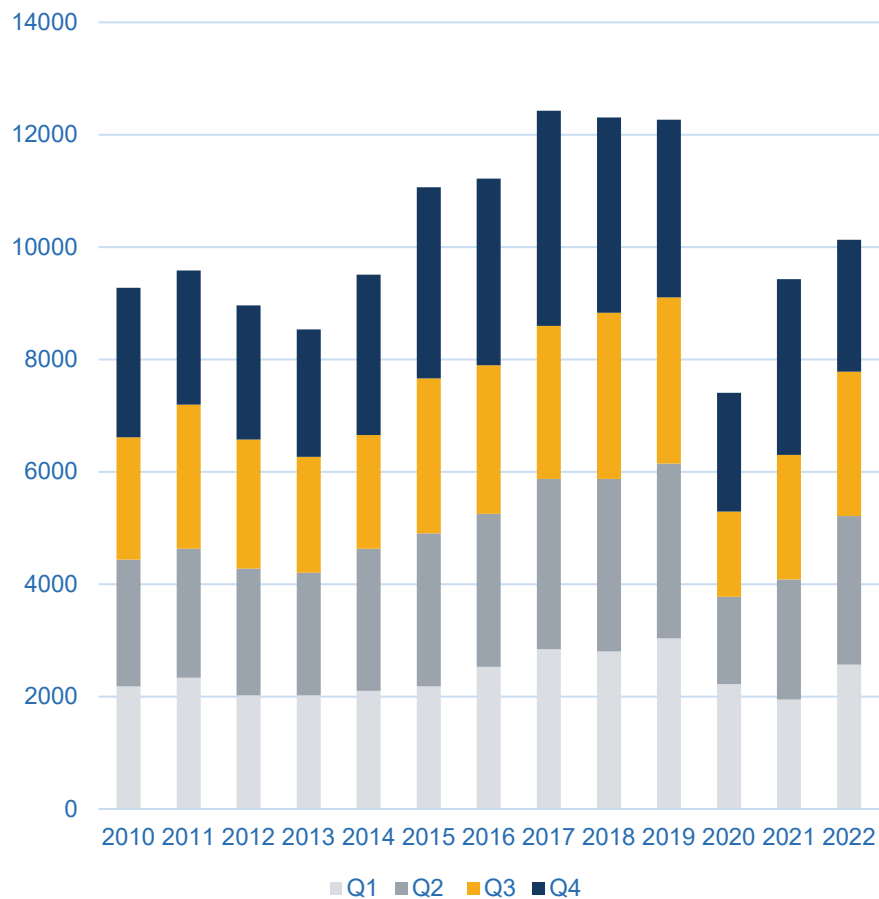


Source: JLL, Macro Real Estate Last datapoint: Q3 2022

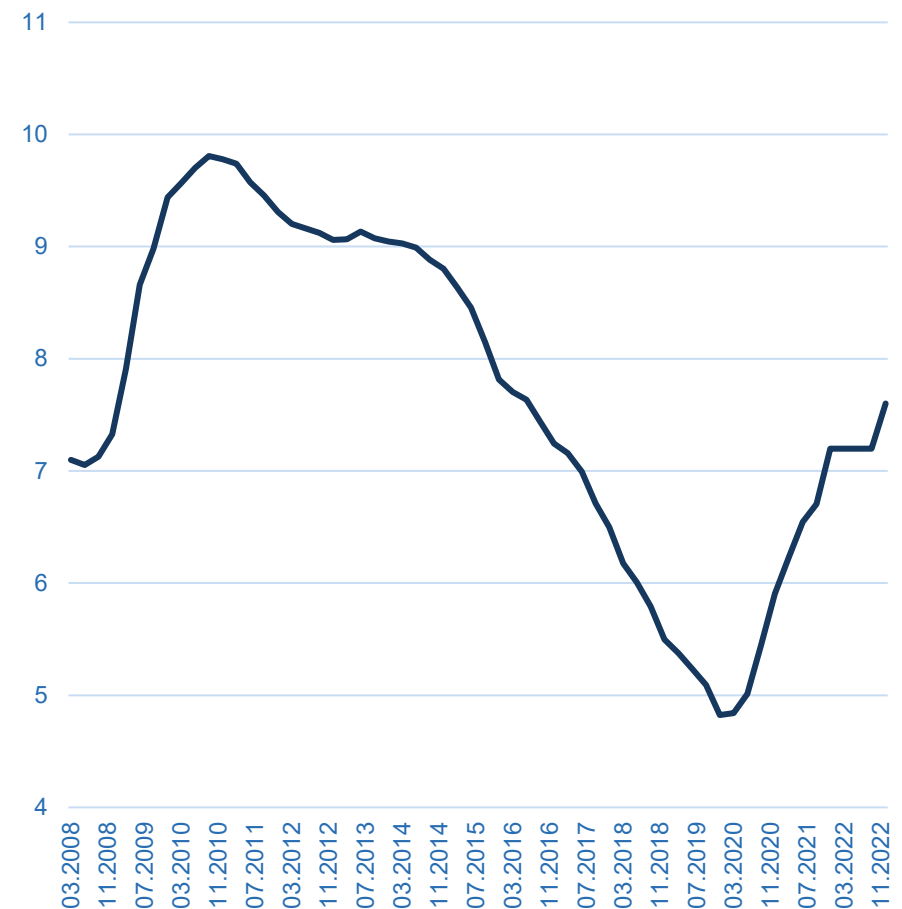
Pan-european office leasing trends

Higher take-up and vacancy rates

Take-up in thousands of sqm



Aggregate office vacancy rates for Europe in %

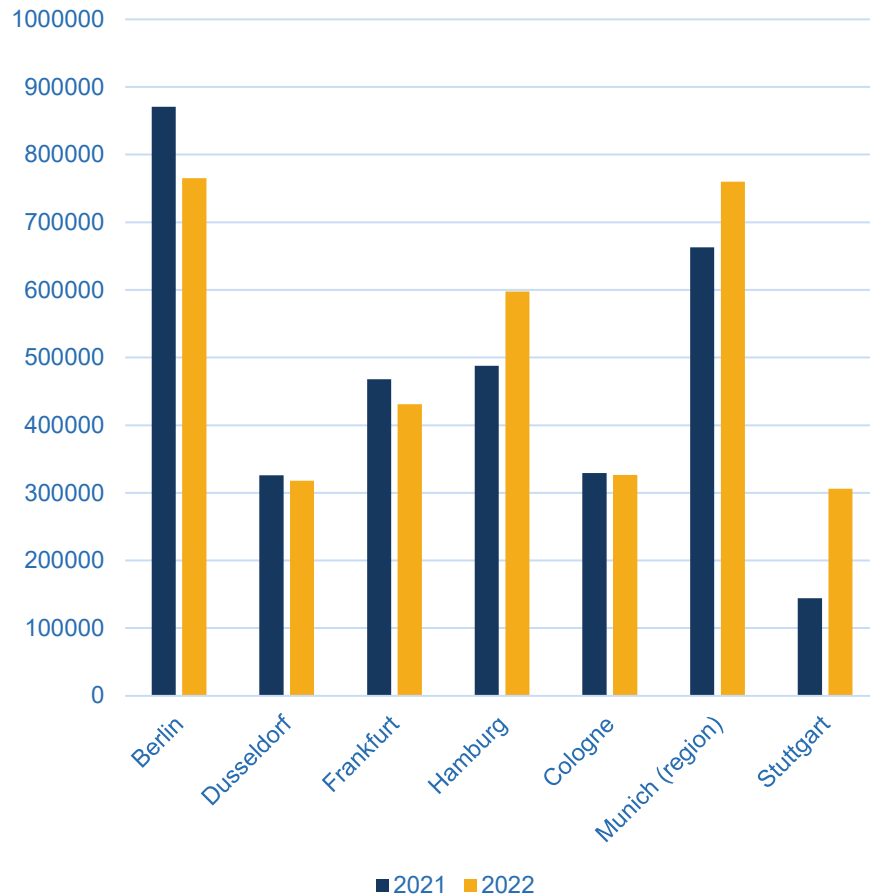


Source: JLL, Macro Real Estate Last datapoint: Q4 2022

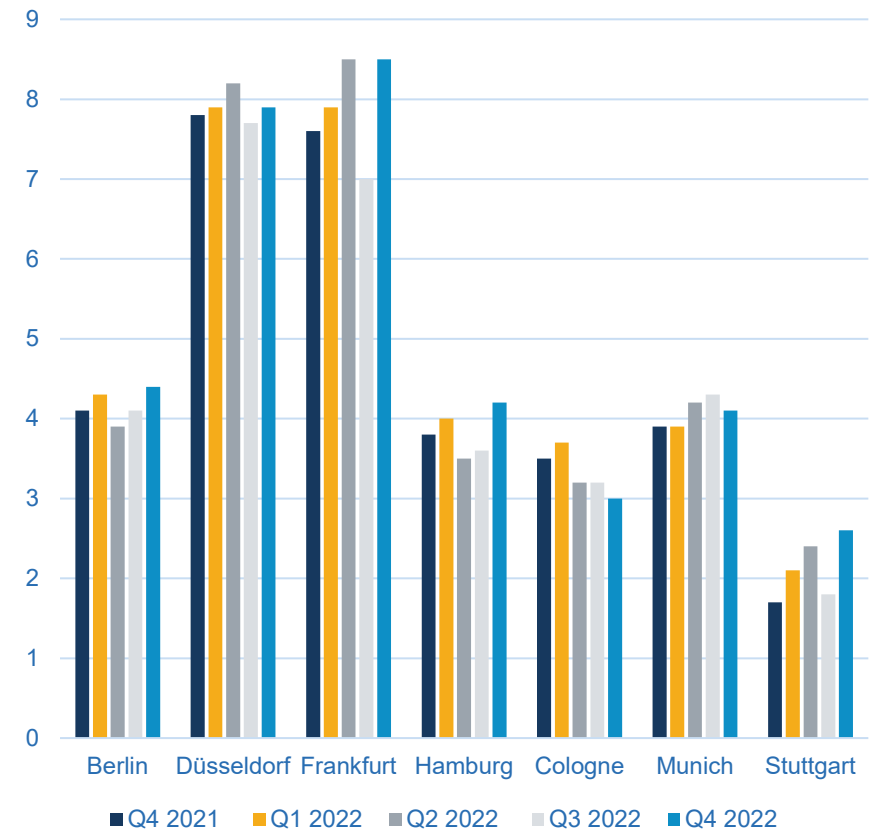
2022 was a good year for German office demand

Solid take-up trends and stable vacancies

Office space take-up in thousand sqm

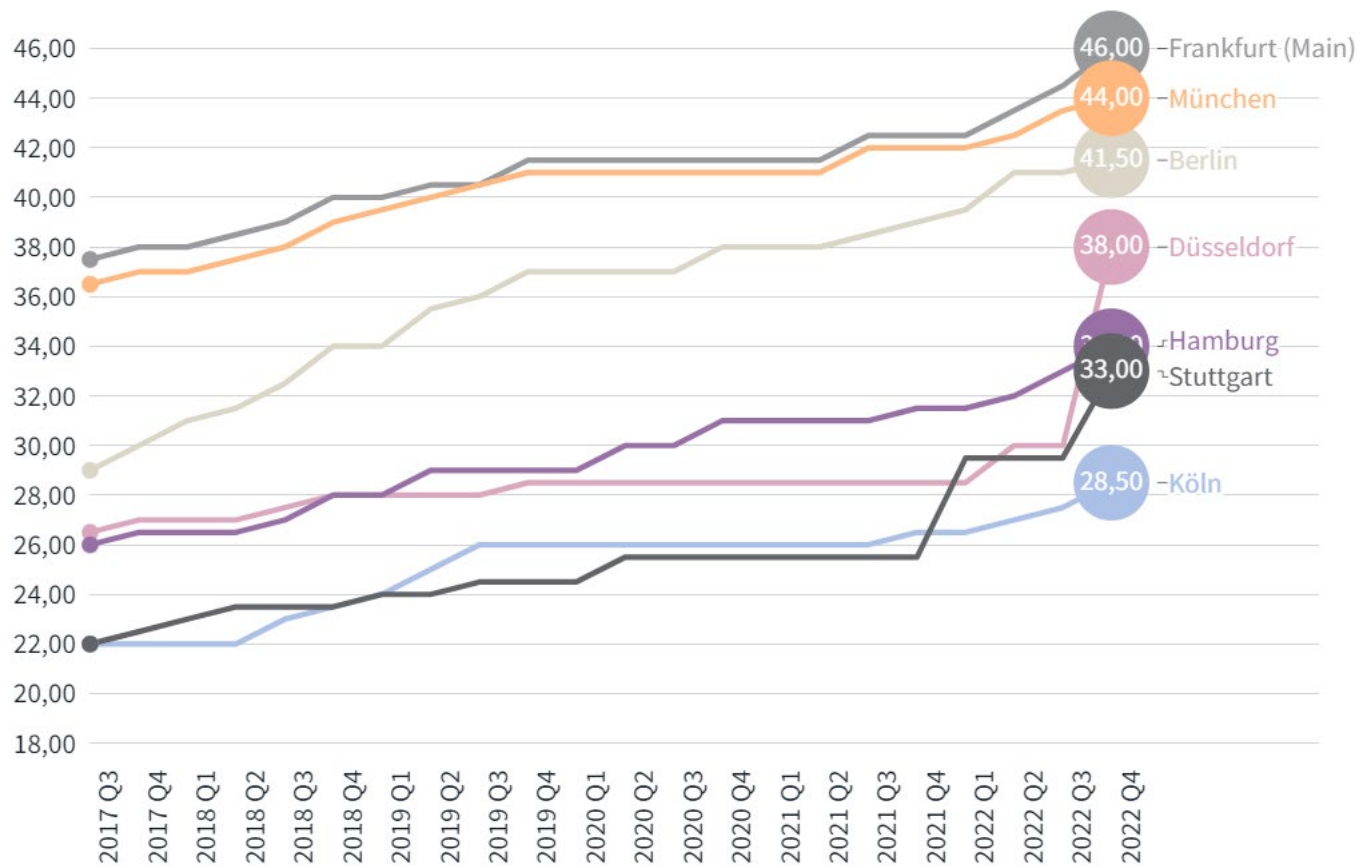


Vacancy rates in % (bars)



Prime office rents have increased

€/m²/Monat

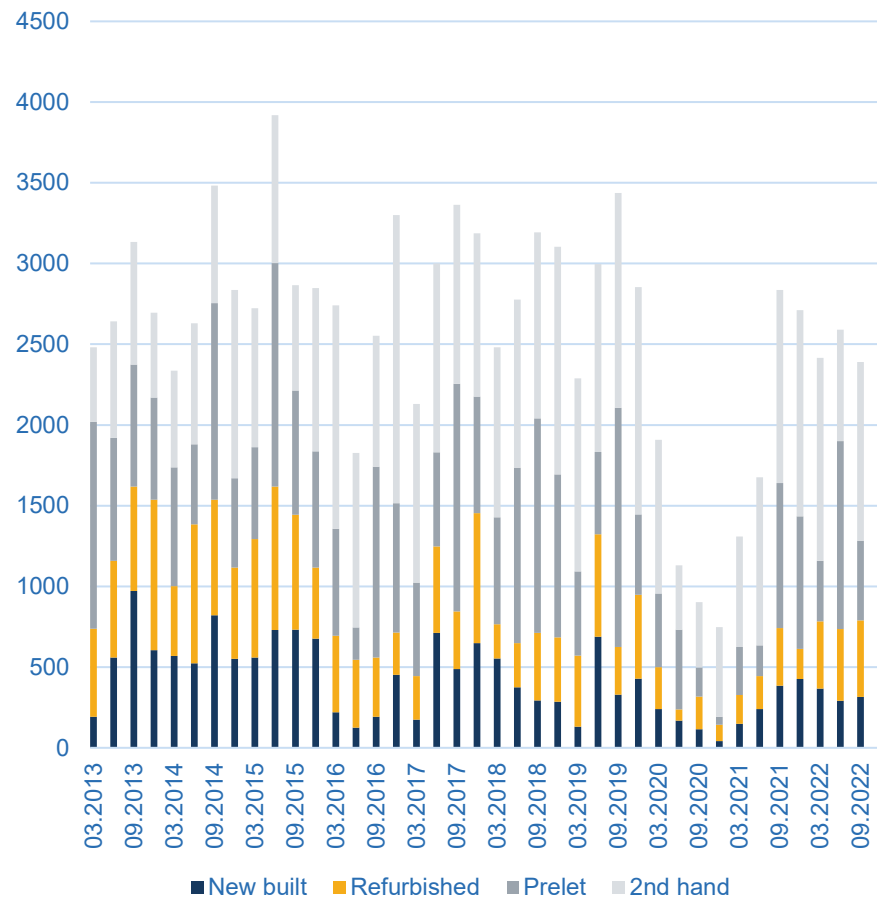


Stand: Januar 2023; Quelle: JLL

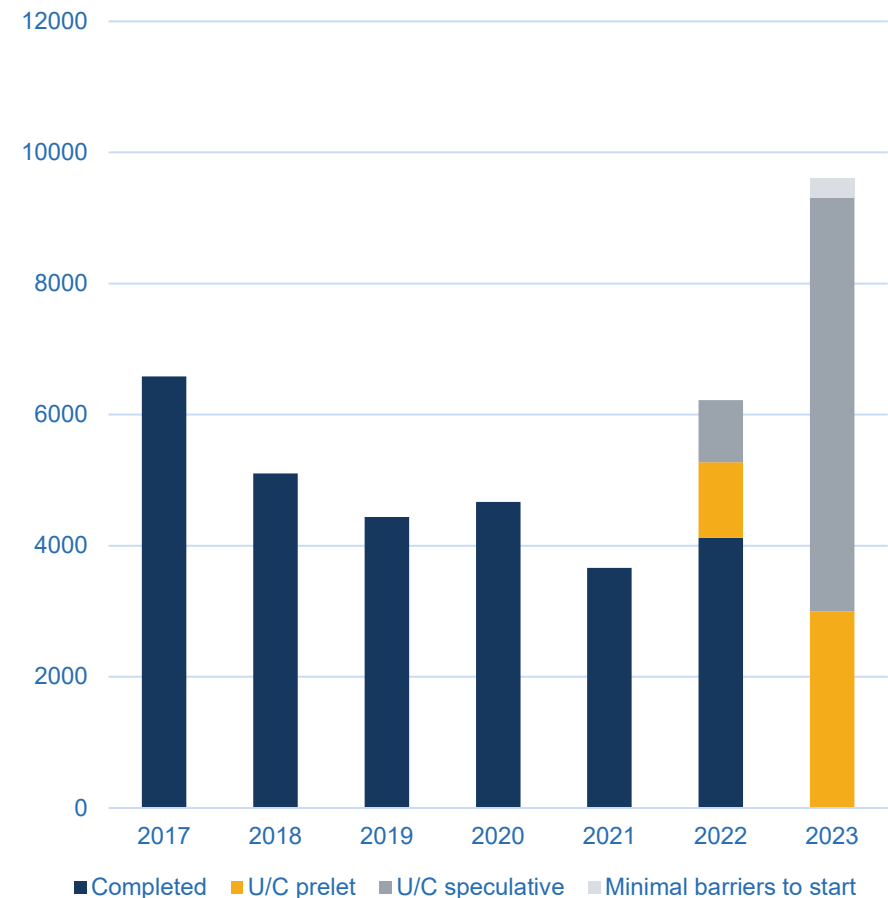
London office market 1/2

Weaker Q4 and heavy supply pipeline for 2023

Central London take-up in thousand SF



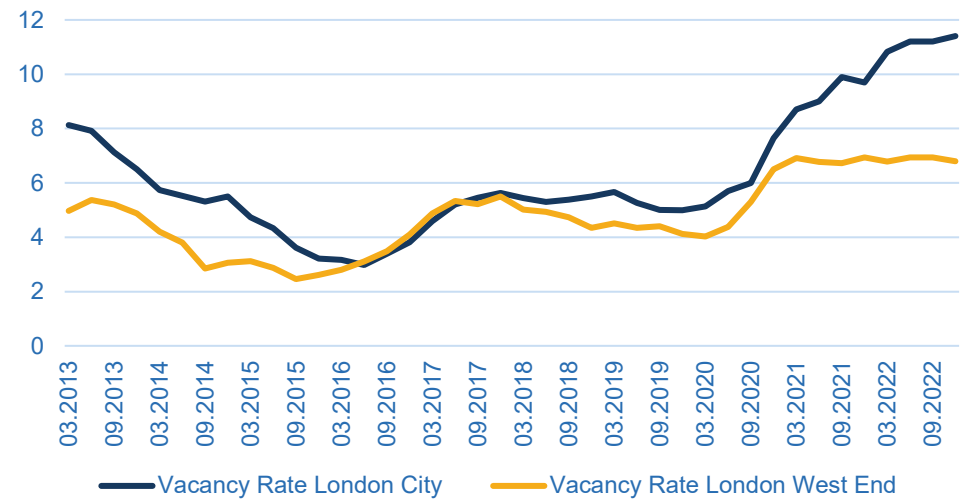
Central London new office space additions in thousand SF



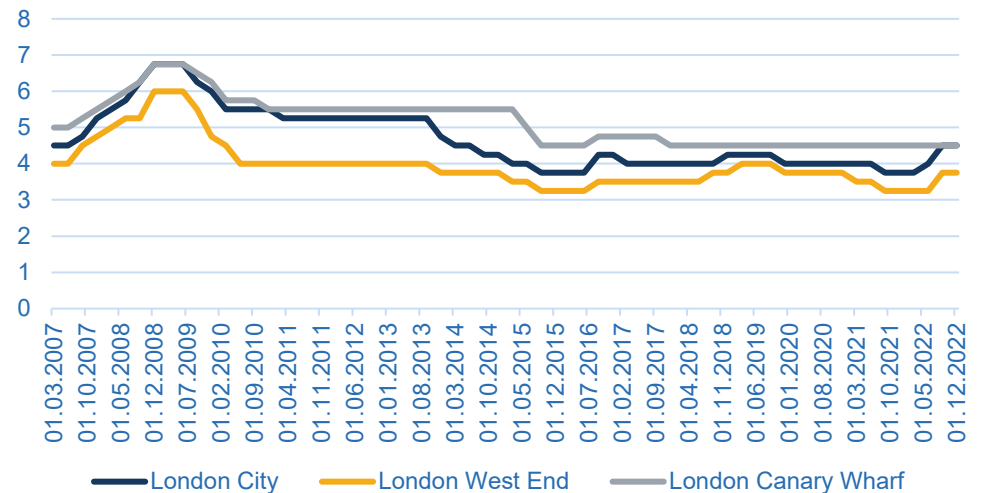
London office market 2/2

- Take-up was solid in Q4 2022, however activity slowed for the second consecutive quarter, as the challenging economy started to impact on business sentiment. Take up reached just over 2.1 million sq ft.
- At the same time office vacancy continue to remain high, together with the space available to rent. Demand is geared towards modern, ESG-compliant, flexible office space
- The Westend submarket is still the preferred submarket. Sharp difference in vacancy trend between city and West End
- The supply outlook is quite heavy for 2023 but should lighten onwards
- Political turmoil affected investment activity. An estimate of £1.5 billion of transactions were aborted or withdrawn in Q4. Annual volume was still up by 5% (£13.6 billion)
- Prime yields remain at the same level as in Q3 2022, maybe also a consequence of the lower trading volume.
- The challenging economic environment, especially the inflation and interest rate outlook, suggests that yields might move out further

Office vacancy rate in %



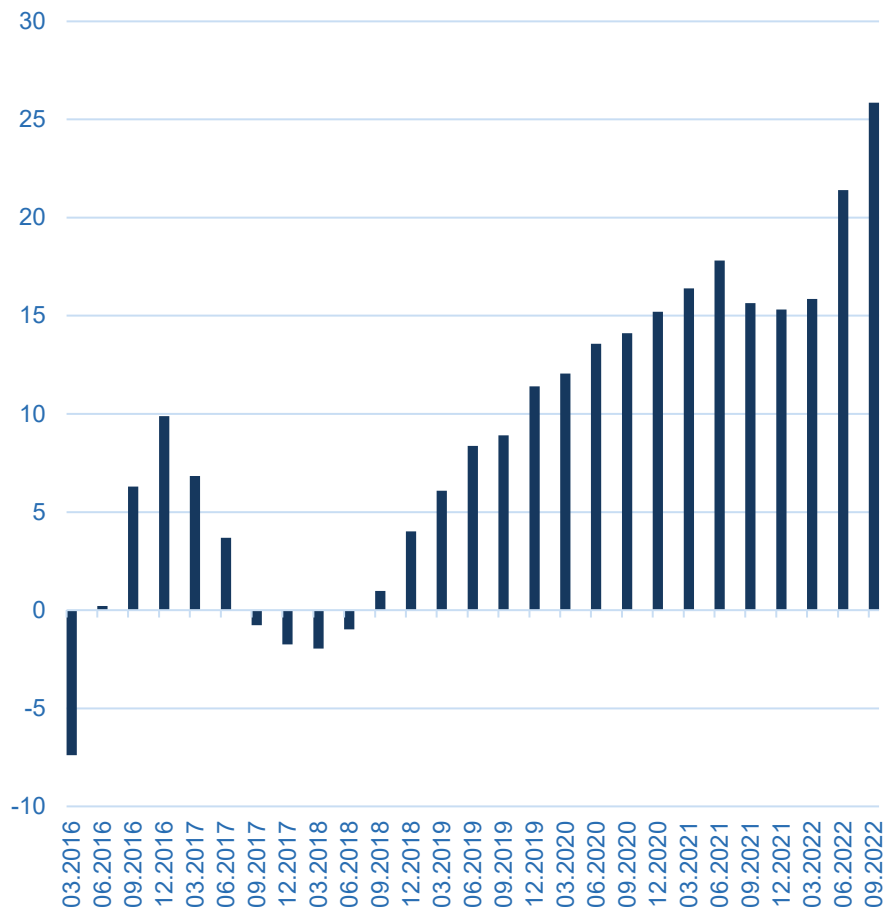
Prime net office yields in %



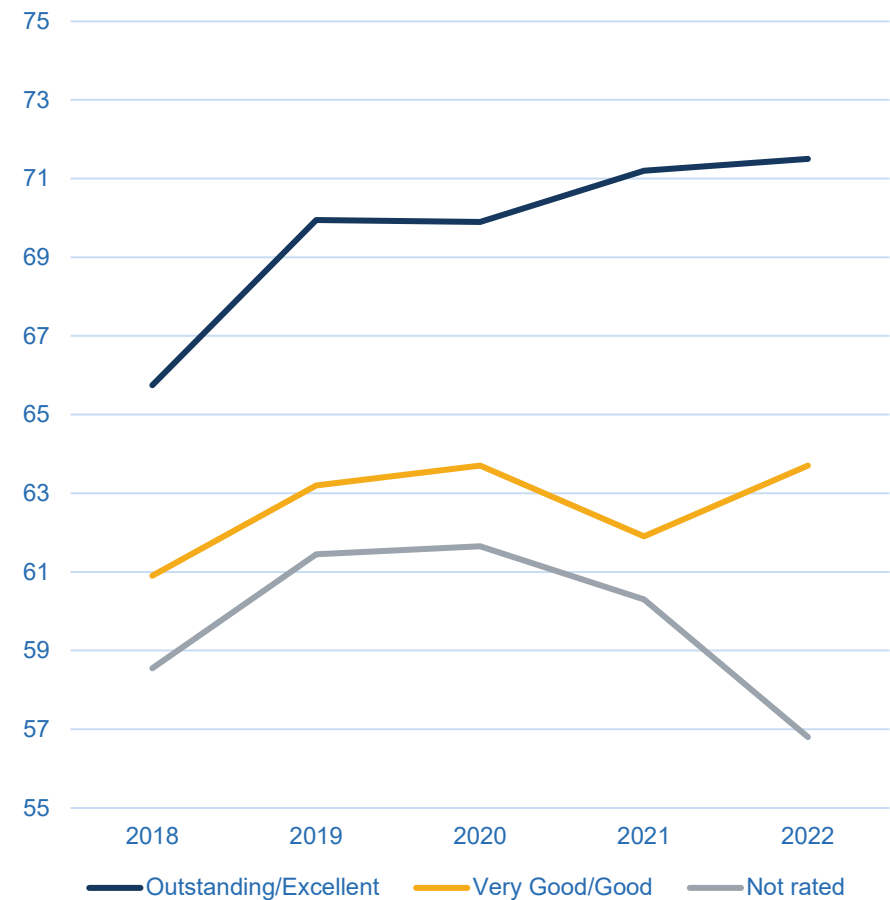
A divided property market

Greener properties command a premium

Modeled sale price gap in % between London Grade A offices with an environmental rating and those without one

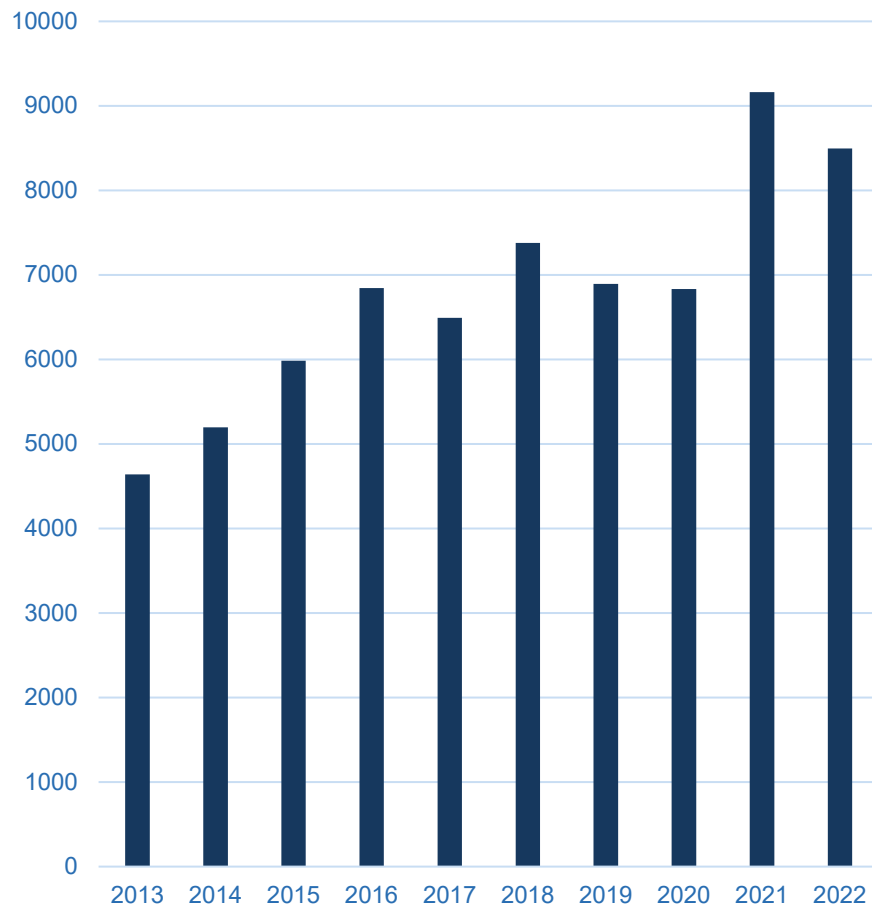


City of London office rent psf, by BREEM rating

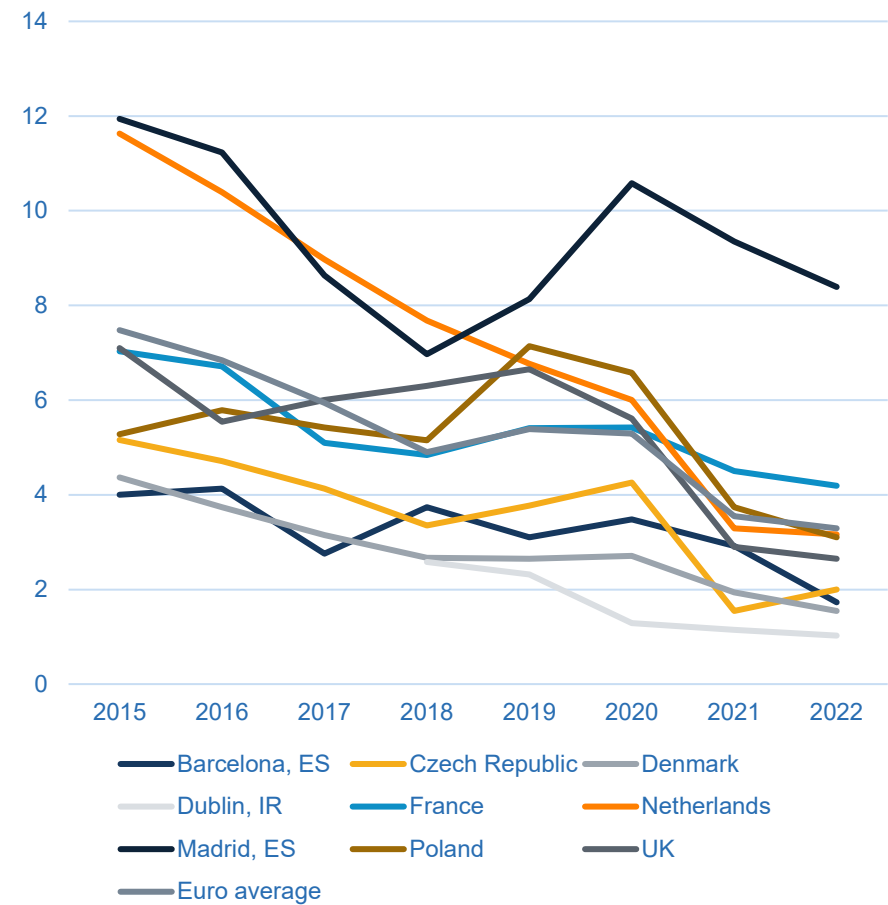


Logistics rental market still going strong

Germany logistics take-up in '000 sqm



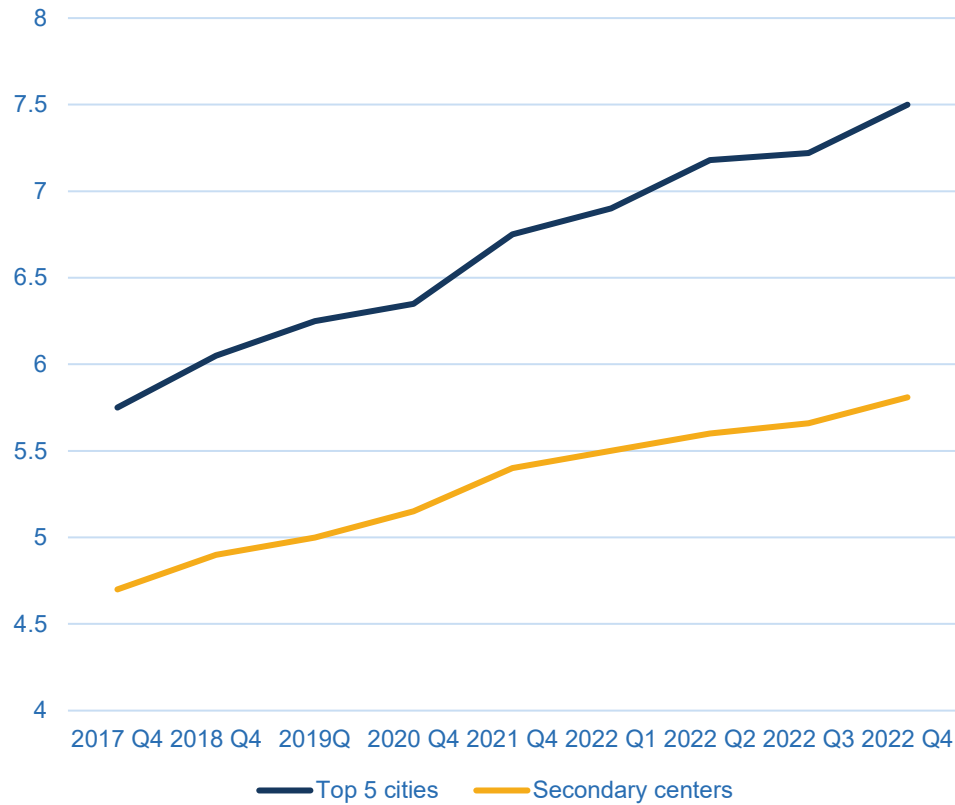
Logistics vacancy rates



Logistics rents

Top rents with a growth of 10% in Germany in 2022

Prime logistics rent in Germany in EUR psm

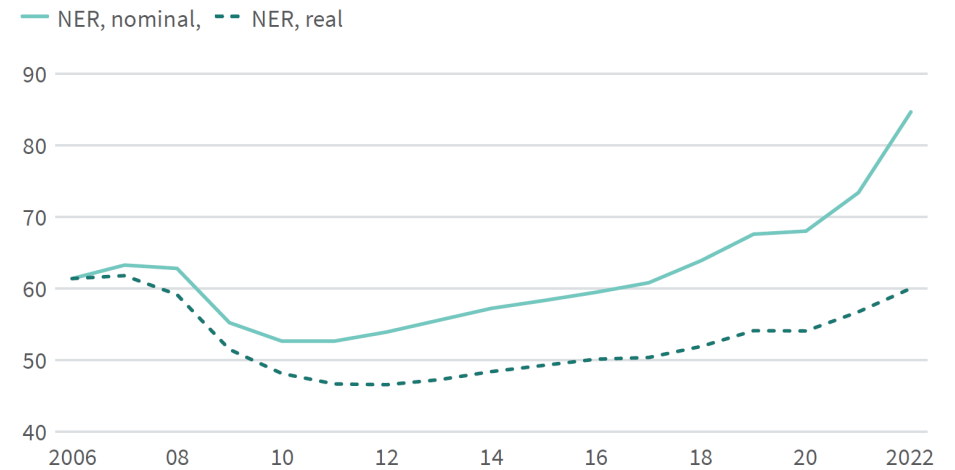


Source: CBRE, JLL, Prologis, Macro Real Estate AG

European logistics rent index

NET EFFECTIVE MARKET RATE, EUROPE¹

€/sqm/yr



Source: IMF, Prologis Research, CBRE, Gerald Eve, Fraunhofer & JLL.

Note: weighted by estimates of market NOI.

Rental and capital markets

Comments

- Investment transaction markets cooled off across Europe. There was no year-end rush to conclude deals last year, as transaction levels plunged in Q4. The big liquid markets such as UK, Germany, and France were most affected. In Germany Q4 2022 transaction volumes were down by 72% vs. Q4 2021.
- It was also a frail year for residential real estate transactions, particularly in Germany. Surprisingly, retail fared best through the inflationary crisis so far in both terms of the decline of transaction volumes as well as cap rate decompression.
- The higher financing costs also brought along a repricing of cap rates. While swap rate rose by 250-300 bps in 2022, real estate cap rates have increased between 50-150 bps depending on the market and sector. UK logistics was one the worst hit sectors since cap rates repriced by more than 150bps. But also, the low-yielding German residential transactions with net yields <3% have disappeared.
- Mark-to-market impact of the repricing is between 15% and 25% depending on the market, so far. Also, revaluations of portfolios have started. The UK MSCI IPD index printed -12% total returns in 2022. We estimate that the INREV fund level index shows an average decline of NAVs of roughly 7% in H2 2022.
- Driven by an economic recovery, rental markets have had a decent year. Prime office and logistics rents have increased together with residential real estate rents. So, market rents seem to react positively to higher inflation levels and demonstrate their inflation protection qualities. But there are also some question marks especially for the office rental markets, as in some markets such as London also the level of vacancies is increasing
- 2023 is expected to start on a somewhat cautious note. More repricing of yields is in the cards together with further rate hikes. Valuations will be also less supported by rental markets, as the latter is also expected to cool down because of weaker economic growth.

Health Care Real Estate









Key health care transactions

Repricing in Q4 led by UK and Germany

Prime net investment yields for care homes

	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Ireland	5.25%	5.10%	5.00%	5.00%	5.00%	5.00%	5.00%	5.10%
UK	4.25%	4.25%	4.00%	4.00%	4.00%	4.00%	4.25%	5.00%
Belgium	4.25%	4.25%	4.00%	4.00%	4.00%	4.10%	4.25%	4.25%
France	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.10%
Germany	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	4.00%	4.40%
Netherlands	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.25%	4.30%

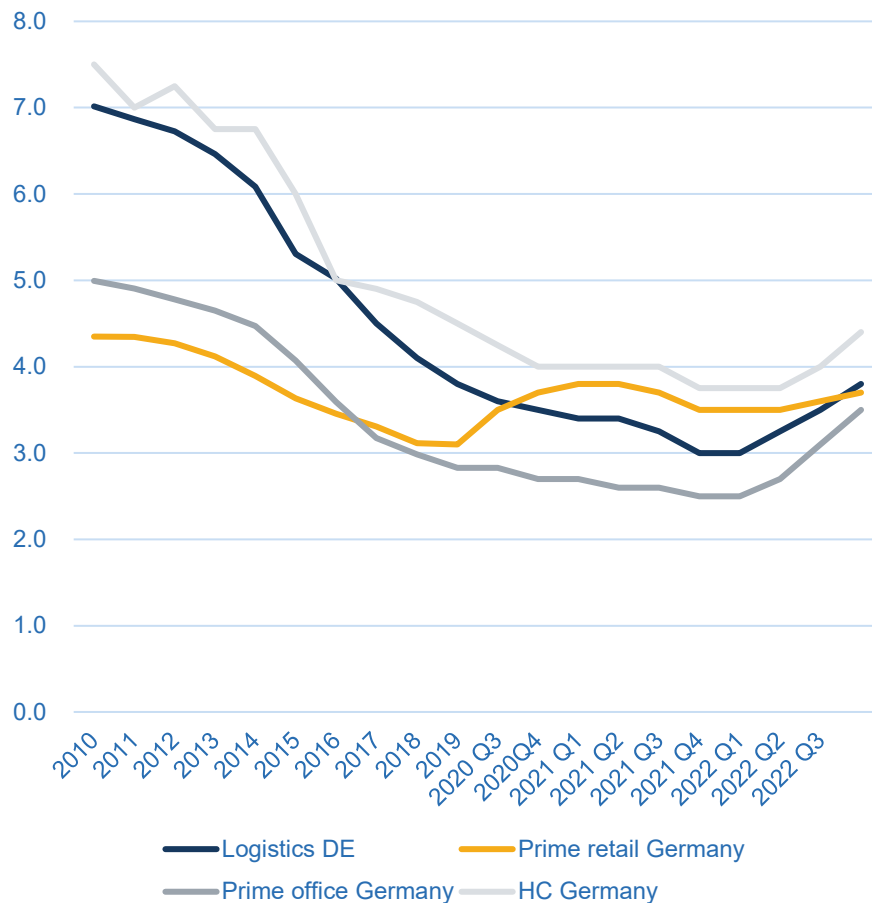
Major health care transactions in Q4 2022

Country	Transaction Name	Date	Price category	Vendor	Purchaser
 United Kingdom	How Wood Retirement Community	Nov-22	€100m - €249m	Elysian Residences	Senior Living Investment Partners
Country	Transaction Name	Date	Price category	Vendor	Purchaser
 Germany	Care Home Portfolio (4 assets)	Oct-22	€50m - €99m	Confidential	Cofinimmo
 Germany	Care Home Chemnitz	Oct-22	<€25m	Theed	Primonial
 Germany	Care Home Leipzig	Nov-22	<€25m	Wincon Immobilien	Swiss Life
Country	Transaction Name	Date	Price category	Vendor	Purchaser
 Netherlands	Netherlands Integrated Retirement Community (124 beds)	Oct-22	€100m - €249m	Rosewood Group	Pierval Santé
 Netherlands	Four Asset Portfolio Netherlands	Dec-22	€25m - €49m	Rubens Capital Partners	DWS
 Netherlands	De Meentehof	Nov-22	€25m - €49m	Omnia Wonen	Woonzorg Nederland
 Netherlands	Het Wezeveld	Oct-22	<€25m	Green Real Estate	Cofinimmo

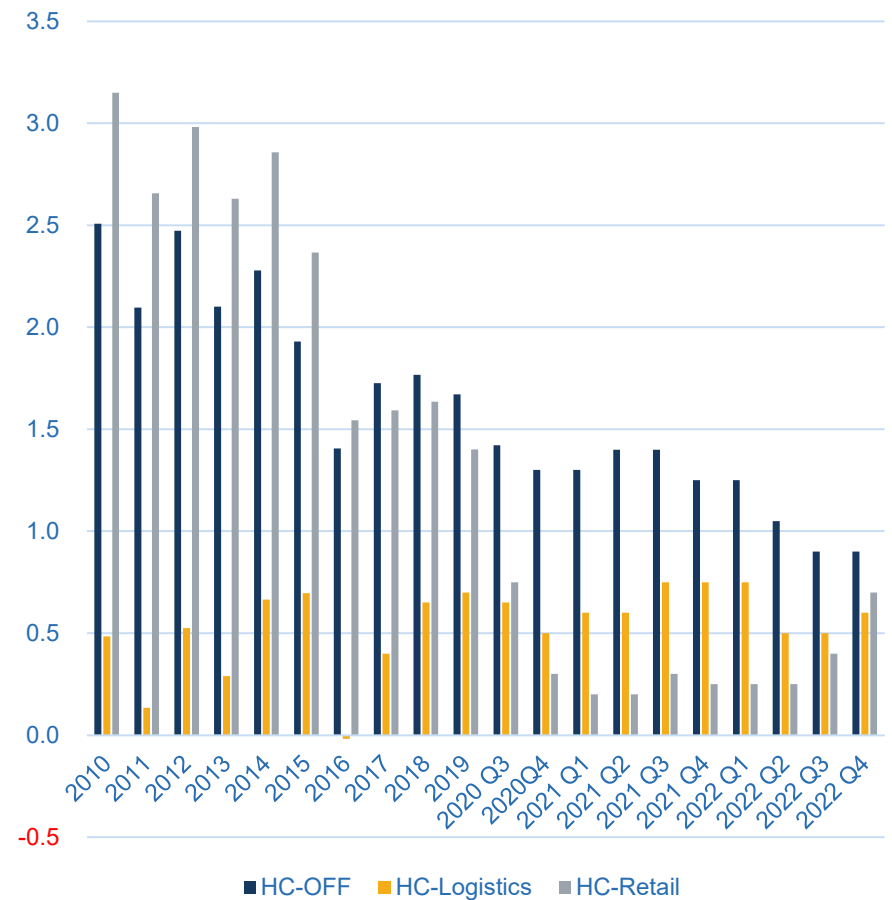
Germany HC

HC yields rise to highest level since pandemics

Net initial yields for prime properties in %



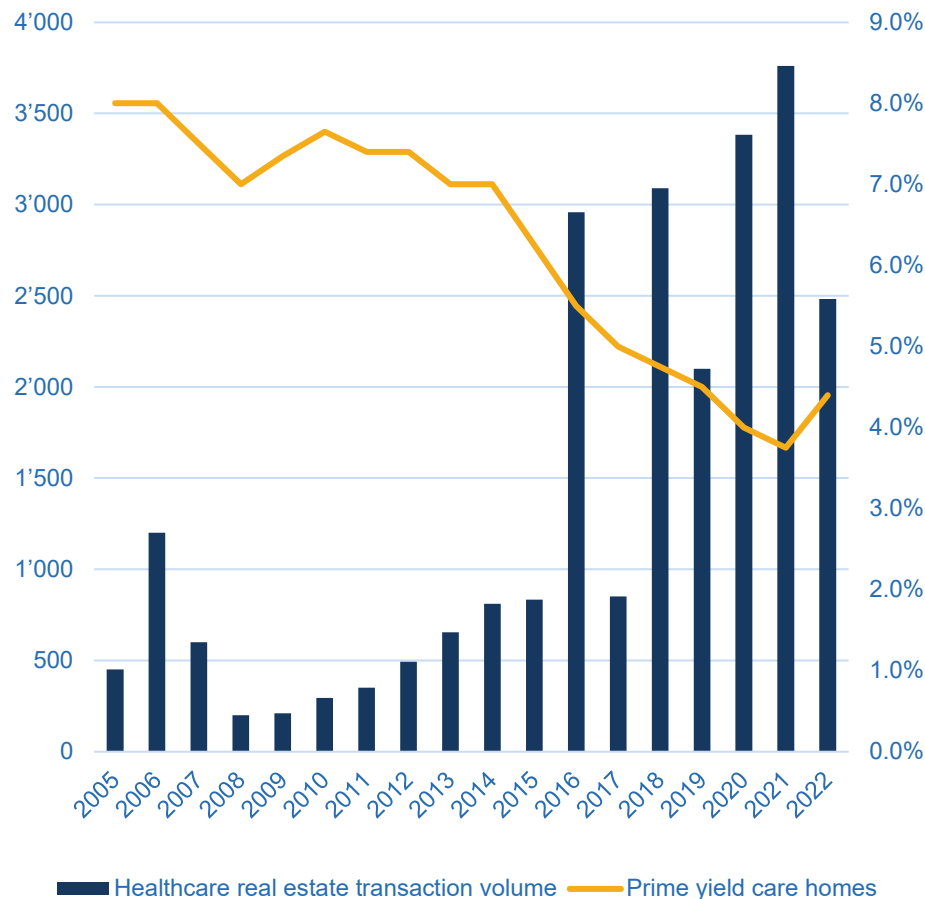
Risk premia for German health care vs other sectors in %



Germany HC

Transaction volumes somewhat weaker

Health care transaction volumes in mn EUR and prime yields (Full year figures)

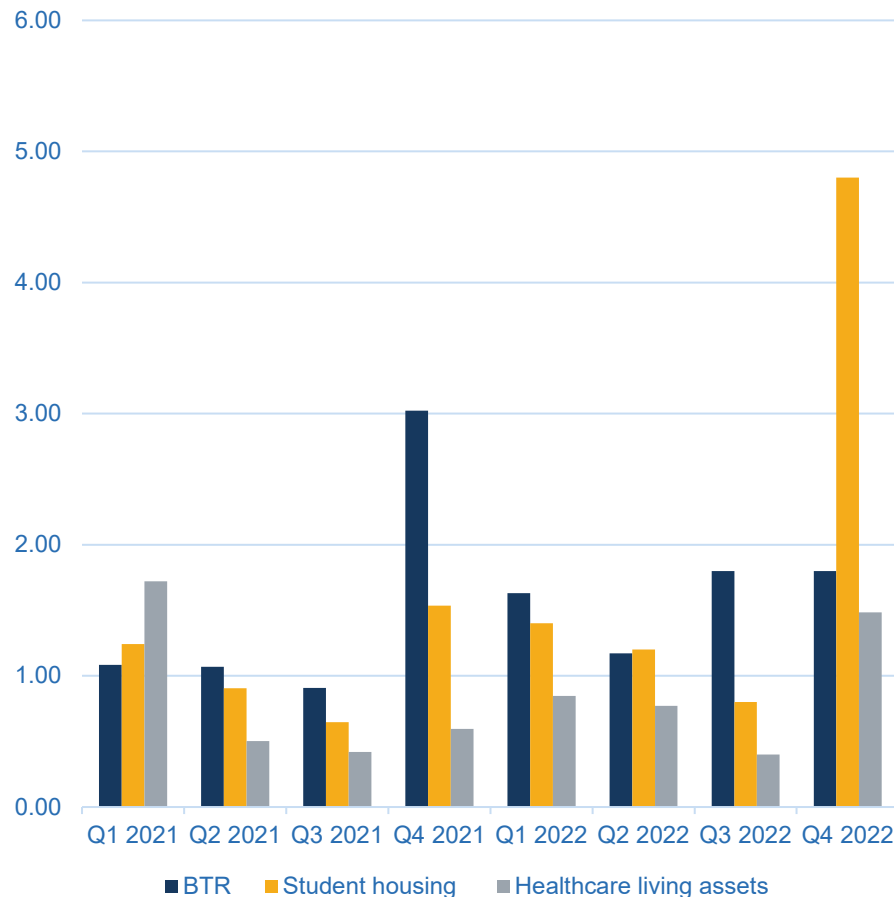


- Transaction volumes fell roughly by one-third in 2022 and only amounted to 2.8bn EUR. The decline of transaction activity YoY was mainly driven by a relatively very weak Q4 2022
- Currently there are increasingly high bid-ask spreads, as the price expectations of buyers and sellers strongly deviate
- CBRE indicates that net prime yields have increased in Q4 to 4.4% from 4.0% in Q3 2022
- Care homes remained the most sought subsegment with 50% of transaction volume. Medical offices with roughly 525mn EUR of transactions

UK: Alternative sector with a strong Q4

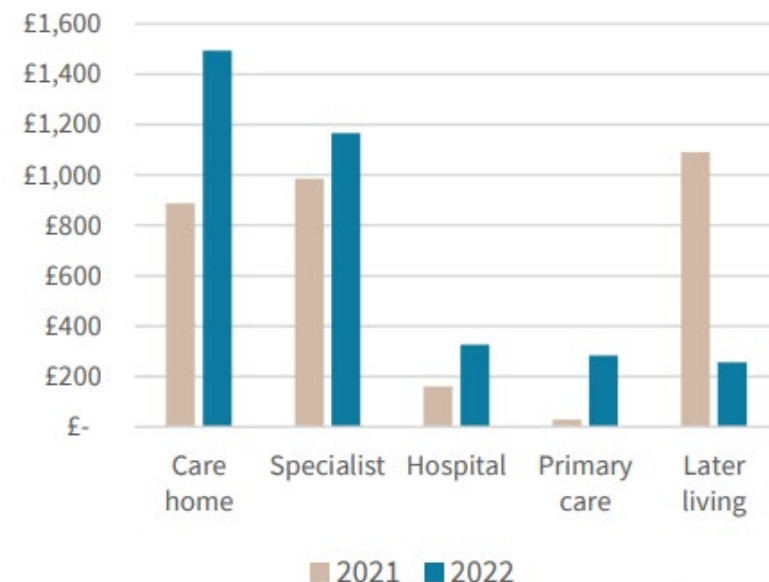
Student housing deal by GIC and Greystar set a new record

Alternative living transactions volumes in bn GBP



- The alternative sector volume was heavily influenced by one large student housing deal. Greystar and Singaporean sovereign wealth fund GIC set new records with the acquisition of Student Roost. The deal included a portfolio of 23,000 beds and a development pipeline of 3,000 beds. (platform of 600 employees)
- Q4 2022 was the strongest quarter for healthcare. This sector contrasted with student housing and BTR dominated by domestic buyers.
- Later living with a substantial decline in volumes but the other sectors have recorded higher volumes in 2022

HC Transaction volumes breakdown

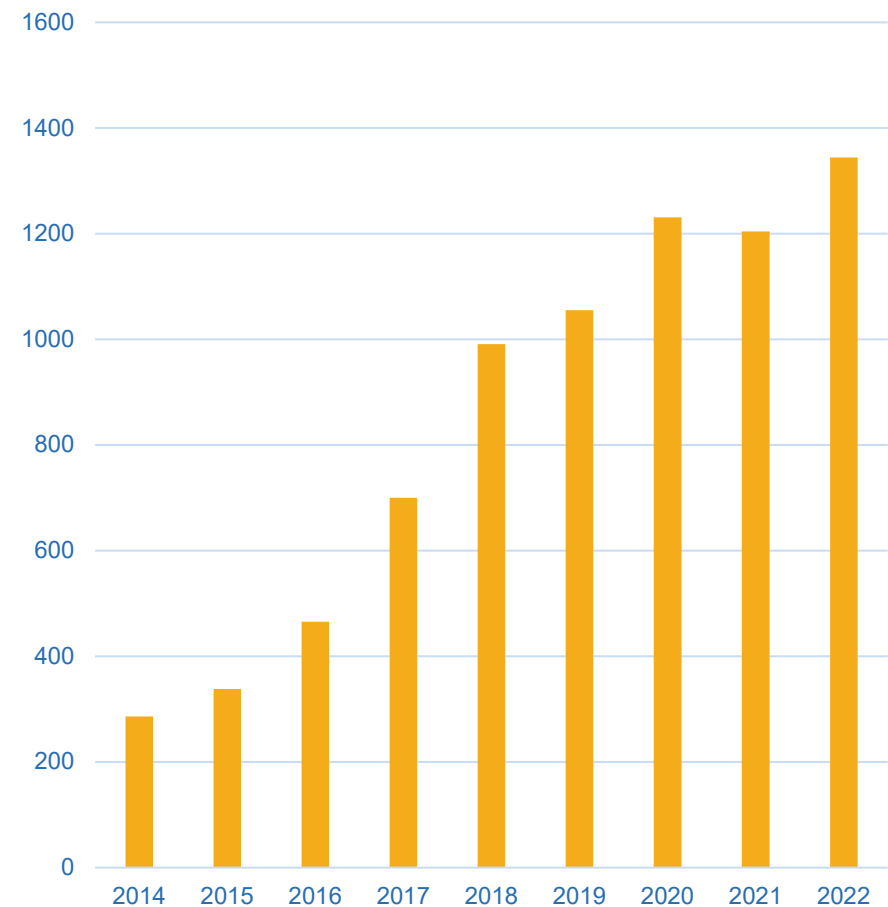


Netherlands HC

Healthcare transaction volumes reach a record in 2023

- Dutch healthcare transaction volumes bucked the trend of declining volumes elsewhere in Europe and have reached a new all-time annual record with 1.3bn EUR of investments
- By far the most significant portion of the transaction volume comprised care homes (88%); the remainder consisted of first- and second-line healthcare properties. The proportion of new-build transactions remained stable.
- Institutional investors remained the biggest group investing 482mn in Dutch healthcare. This is 85% more than in 2021
- Foreign interest abated considering rising financing costs, also listed players were less active
- Yields have also increased in the Netherlands, Prime yields increased over the year by 30bps (source: JLL)

Healthcare transaction volume in mn EUR



Healthcare markets

Our assessment

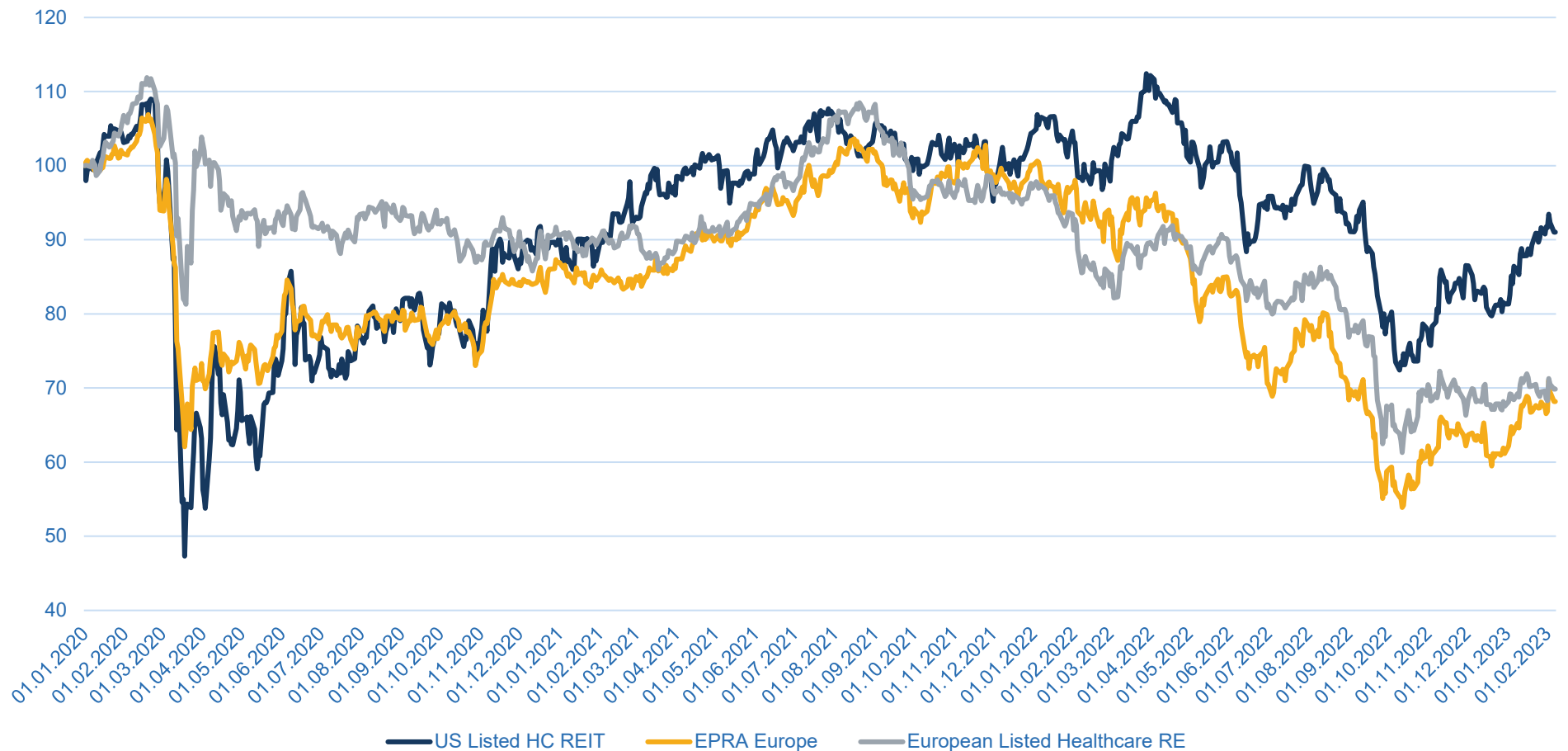
- European healthcare transaction volumes slowed in 2022 but less than the general market trend. Compared to 2021 they declined by 14%.
- German markets have weakened substantially. In contrast, Dutch volumes saw a record volume. Also, the UK market saw some deals with a decent transaction volume in Q4 2022 compared to weak real estate capital markets. Both the Dutch and UK transaction market was dominated by local or domestic players
- The repricing of healthcare assets has also accelerated in Q4 2022. Prime German and UK healthcare yields that used to be sub 4% in H1 2022 are now trading around 4.5-5.0%.
- Due to higher yield levels before the repricing, the mark-to-market impact on healthcare assets in 2022 was not as harmful as for low-yielding core real estate transactions. However, another 50 bps of yield increase at least also looks likely for this sector, as there is a further expected repricing of core assets.
- Structural trends and inflation indexation features continue to underpin healthcare real estate investments over the midterm

Listed RE markets with focus on health care

Listed market pricing

European listed HC shows its defensive nature

Listed total return indices (index 1.1.2020=100)



Listed European HC REITs

Good start into 2023 by most names

Ticker	Short Name	Last Price	Last	%1M	%3M	%YTD	%1YR	3 Year Annual	Mkt Cap ↓	Real Estate Inve:	EPRA Net Init Yld	Dvd Ind Yld - Gri	Prem / Disc to N NOI - 1 Yr Growt	Curncy
AED	d AEDIFICA		81.85	+3.61%	+4.53%	+7.98%	-10.89%	-10.1662	3262.15	4936.944		2.3036	4.347	43.514 EUR
COFB	d COFINIMMO		86.9	-2.36%	-4.6%	+3.82%	-21.99%	-12.2812	2857.07	5789.497	5.200	7.1346	-21.676	14.297 EUR
AGR	d ASSURA PLC		54.95	-.45%	-2.14%	+7.3%	-11.87%	-7.8076	1626.85	2755.700	4.420	5.6779	-8.721	12.418 GBp
PHP	d PRIMARY HEALTH			+1.78%	+3.35%	+3.16%	-15.58%	-6.5332	1527.61	2795.900	4.640	5.7305	-3.381	13.822 GBp
CPINV	d CARE PROPERTY IN		14.60	-7.22%	-8.76%	-2.62%	-33.42%	-17.8352	540.04	718.032	4.870	6.5162	-21.381	EUR
THRL	d TARGET HEALTHCAR			+2.44%	-3.78%	+4.74%	-25.13%	-6.5972	521.00	857.691	5.820	8.0476	-25.466	GBp
IHR	d IMPACT HEALTHCAR		105.20	+1.35%	+3.8%	+1.9%	-8.52%	4.2872	435.92	437.635	6.710	6.2167	-9.381	19.344 GBp
CSH	d CIVITAS SOCIAL H		58.80	-6.52%	-2.65%	-6.81%	-37.45%	-10.4141	356.56	945.237		9.6939	-48.798	5.557 GBp
SOHO	d TRIPLE POINT SOC			-15.56%	-24.67%	-16.80%	-44.44%	-14.7978	205.42	641.293	5.200	10.5784	-54.383	17.585 GBp

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