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Term spread effects on the International Real Estate Index

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1. Introduction

Term spreads have risen in multiple regions around the globe, as long-term sovereign yields soared amid rising (expected and actual) inflation but central banks took longer to raise short-term interest rates. The impact of this on international real estate has mostly been positive over the past two-and-a-half years. More precisely, the iSTOXX® Developed and Emerging Markets ex USA PK VN Index (the "Int'l Real Estate Index") was positively impacted by the overall upward trend in term spreads in the US, the UK, Japan (JP) and Europe (EU) between 2019 and 2022.

There are two opposing forces that impact the real estate market in a rising rate environment: On the one hand, rental property values increase because fewer people may qualify for mortgages and therefore their only alternative is to rent. On the other hand, higher borrowing costs shrink demand for real estate, resulting in a decline in property values.

However, mortgage rates had been at historically low levels for a number of years previously, and the impact of the recent rise in borrowing costs may therefore not have been substantial. In addition, real estate supply shortages and increased social mobility during the COVID-19 years have overheated the real estate market.

The market's prospects may change in the immediate future, however, as it may be faced with slower economic growth due to aggressive monetary tightening and geopolitical concerns. This may dampen demand for both renting and buying properties.

The interaction of these forces is reflected in a real estate portfolio's sensitivity to changes in term spreads.

This study is a follow-up to the one undertaken in the paper entitled "The International Real Estate Index – A hedge against expected inflation". It examines the effects that term spread moves have had on the index since its inception[1], and how the index may be impacted by future changes in term spreads.

2. The Int'l Real Estate Index's sensitivity and benefits from term spread moves 2019 – 2022[2]

The EU, UK, JP and US term spread[3] factors in Axioma's Macroeconomic Projection Model capture the daily changes in term spreads in these four regions. The Int'l Real Estate Index has seen negative average exposures to the EU, UK and JP term spread factors and a slightly positive average exposure to the US term spread factor between 2019 and 2022.[4] This means that the index is expected to benefit from a steepening yield curve in the US, but flattening curves in the other regions.

Figure 1 shows the ranges of daily exposures to EU, UK, JP and US term spread factors between February 2019 and May 2022, with the horizontal lines in the boxes representing the median and "x" marking the means.

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[1] The inception date for the Int'l Real Estate Index is February 6, 2019.

[2] We would like to thank our colleague Twinkle Singh for her help on this study, and especially on the data front.

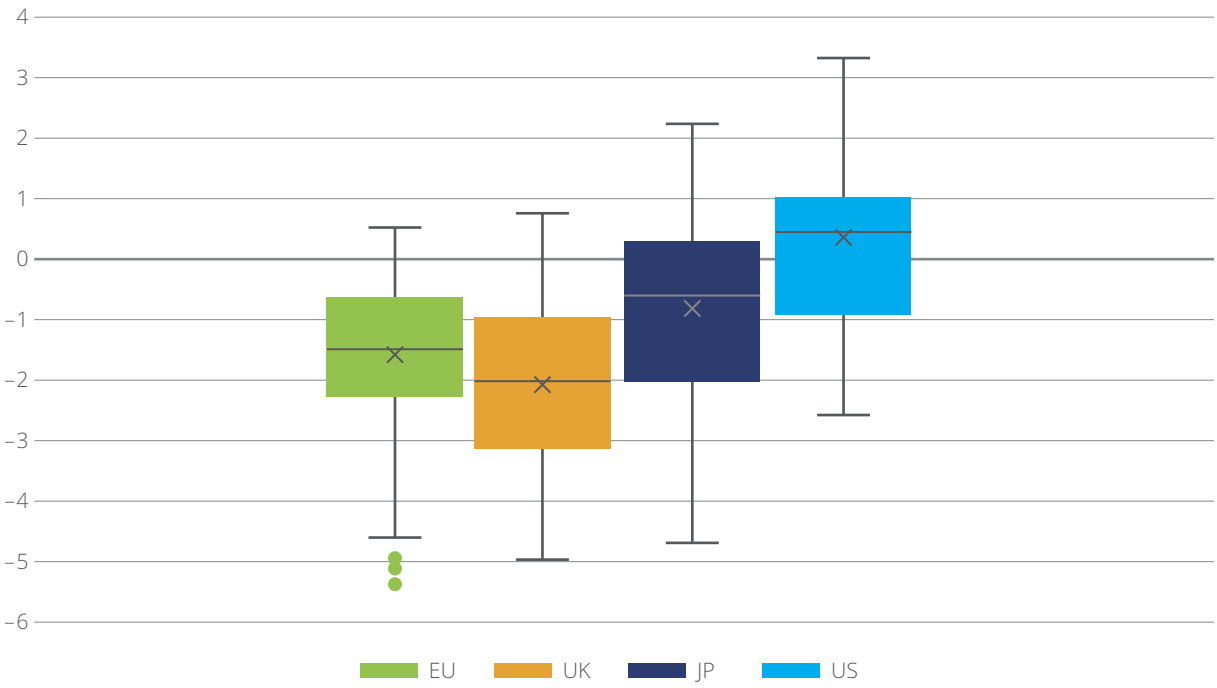
[3] The US term spread is defined as the US Treasury term spread between the 10Y yield and the 6M yield.
The UK term spread is the UK zero coupon government bond term spread between the 10Y yield and the 6M yield.
The EU term spread is the Germany zero coupon government bond spread between the 10Y yield and the 6M yield.
The JP term spread is the Japan zero coupon government bond term spread between the 10Y yield and the 6M yield.

[4] This analysis is denominated in US dollars and covers the period between index inception on February 6, 2019, and May 25, 2022.

Averages can be deceiving, however. While the daily exposures to EU and UK term spreads were consistently negative (apart from a few exceptions in 2019 and 2022), the slightly negative average exposure to the JP term spread was the result of strongly negative 2019–2020 exposures that were not offset by positive exposures in 2021–2022.

The opposite was true for the US, where large positive exposures to the US term spread in 2019 and 2020 were mostly offset by the large negative exposure to the factor since the beginning of 2021. This resulted in a slightly positive average exposure to the US term spread for the period as a whole.

Figure 1: Ranges of exposure to term spreads 2019–2022



Source: Qontigo.

Exposures to macro factors

A fundamental risk model computes exposures to the factors in the model for each asset in the model universe (for example, the earnings yield for each stock). Each factor's exposures are standardized across the model's estimation universe, much like z-scores. An asset's exposure to a factor denotes its sensitivity/beta/loading to that factor. Aggregating the exposures of each asset in a portfolio gives us the portfolio's exposure to the factor. By definition, a market-capitalization weighted average fundamental risk factor score across a broad universe will be close to zero.

In contrast, exposures in a macroeconomic projection model are constructed differently. Macroeconomic factor returns are regressed against industry, country, market and style factor returns (fundamental factor returns), with the result being a beta between each fundamental factor and each macro factor. A company's exposure to a macro factor is the sum of its betas times the fundamental factor exposures. Whereas the average fundamental factor exposure for a broad index will be zero, this will not necessarily be the case for macro factor exposures, since these are not normalized. Therefore, a broad market index will very likely show exposure to all macroeconomic factors.

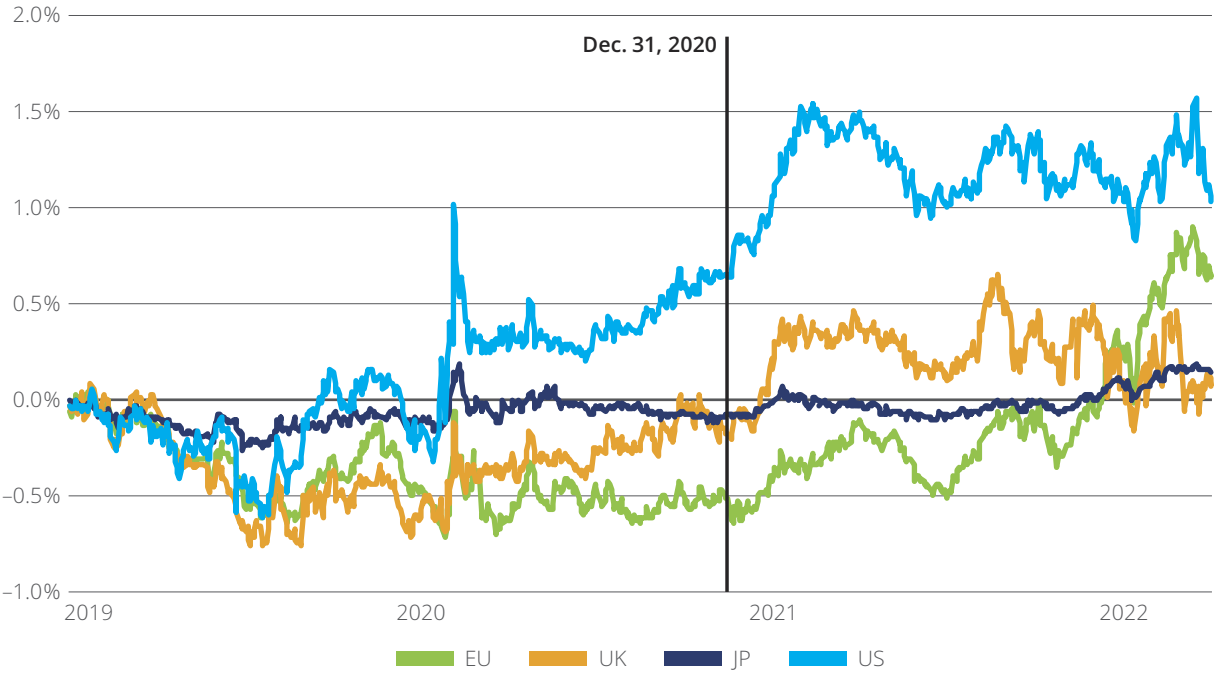
Both short- and long-term government yields fell in 2019, with term spreads falling and reaching a near-term bottom in September 2019.

At the onset of the COVID-19 crisis in early March 2020, liquidity concerns prompted investors to sell even ultra-safe Treasury bonds and rush into the perceived safety of US dollar cash. At the same time, the Federal Reserve (Fed) aggressively slashed interest rates, resulting in a brief spike in the US term premium. However, markets soon calmed down again when the major central banks announced emergency asset purchase programs, and long yields quickly descended once more.

Early 2021 then saw increasing worries about accelerating consumer prices, which translated into a sharp surge in long-term sovereign yields, especially in the US and the UK. Nevertheless, rate setters stuck with their narrative that elevated realized inflation rates at the time were "transitory" and mostly caused by base effects as the economy rebounded from the COVID-19 shock. It was only later in the year – following the Federal Open Market Committee (FOMC) meeting on September 21–22 – that both central bankers and market participants started to gradually adjust their interest rate expectations upward. That said, long yields also continued to climb, meaning that the US term spread factor held on to its positive overall return (Figure 2).

The story was slightly different in the eurozone. Long-term inflation expectations had remained below the 2% central-bank target in 2021, while the European Central Bank itself doused market expectations of a near-term hike in its policy rates. This meant that returns for the EU term spread factor in 2020 and 2021 were much less volatile than for its US counterpart. It was only in the wake of the Russian invasion of Ukraine in February 2022 that inflation expectations burst through the 2% barrier and lifted German Bund yields firmly into positive territory. Short-term interest rates, on the other hand, were once again slower to adapt, resulting in a strong positive return for the EU factor.

Figure 2: Term spreads – Cumulative factor return 2019–2022[5]



Source: Qontigo.

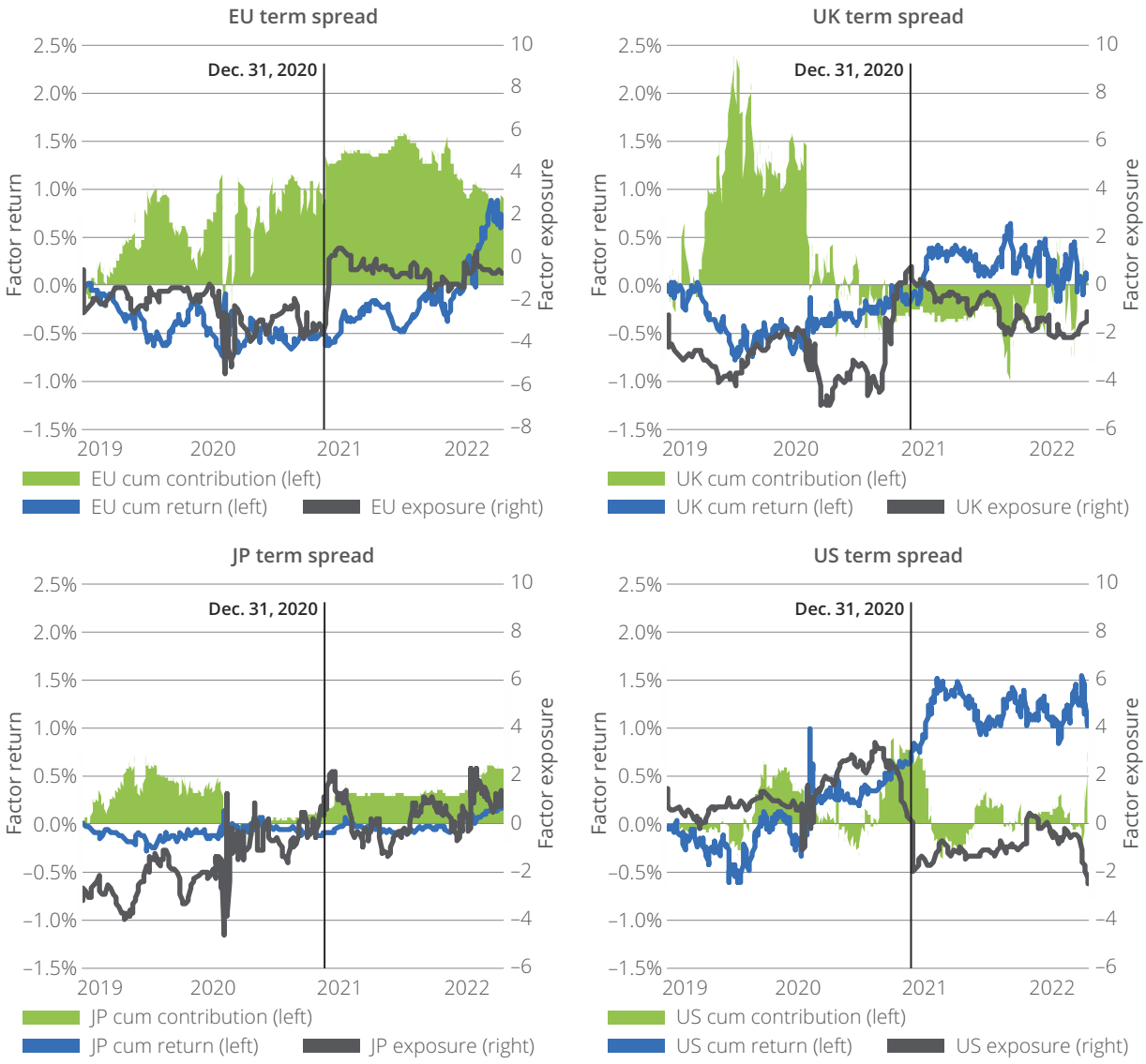
[5] An increase in term spreads, i.e., a steepening yield curve, means that the return for a term spread factor is positive.

The Int'l Real Estate Index's time series of exposures to the EU, UK, JP and US term spread factors, combined with the performance of these factors, give us the contribution of each factor to the index's return.

The analysis is divided into two periods – 2019–2020 and 2021–2022 – based on the different behavior of exposures and term spreads during these two periods. The four charts in Figure 3 show the large shifts in exposures and term spread factor returns between 2019 and 2022.

Especially in 2020, factor exposures in the EU and the UK (the upper two charts in Figure 3) exhibited large fluctuations and several changes in sign, reflecting the opposing forces driving long-term bond yields at the time. Once again, we can see the downward spikes at the onset of the pandemic, as share prices plummeted while yields shot up amid liquidity concerns. The relationship between stock markets and bond yields were then mostly negative over the remainder of the year, as the former started to recover while the latter remained artificially depressed by large-scale central bank purchases.

Figure 3: Term spread exposures, cumulative factor returns, and cumulative factor contributions by region 2019–2022



Source: Qontigo.

The negative return on the EU and JP term spread factors between 2019 and 2020, combined with the index's highly negative exposures to both regional factors, resulted in positive contributions by them to the index's return. In contrast, the UK term spread rose quickly in 2020 at a time of highly negative exposure, contributing negatively to the index return between 2019 and 2020. At the same time, the US also made a positive contribution due to the positive factor return and positive exposure. In combination, the term spreads in the four regions contributed nearly one percentage point (almost 40%) of the index's 2.3% return between 2019 and 2020 (Figure 4).

Subsequently, shifts in term spreads and exposures in each of the four regions in 2021 and 2022 contributed positively to the index's return. The rise in term spreads in Japan had a positive impact on the index, given the latter's positive exposure to the JP factor during this period. The EU term spread exposure – which oscillated from positive to negative at a time when EU spreads were climbing – resulted in the EU term spread making a minor positive contribution. The UK term spread rose in 2021 and fell in 2022. However, the factor still contributed positively to the index's 2021–2022 return, since UK exposure shifted from positive to negative. The interaction of US exposures and the US term spread return resulted in a zero contribution to the index's 2021–2022 return.

Figure 4: Average exposures to EU, UK, JP and US term spread factors and their contribution to index returns 2019–2022

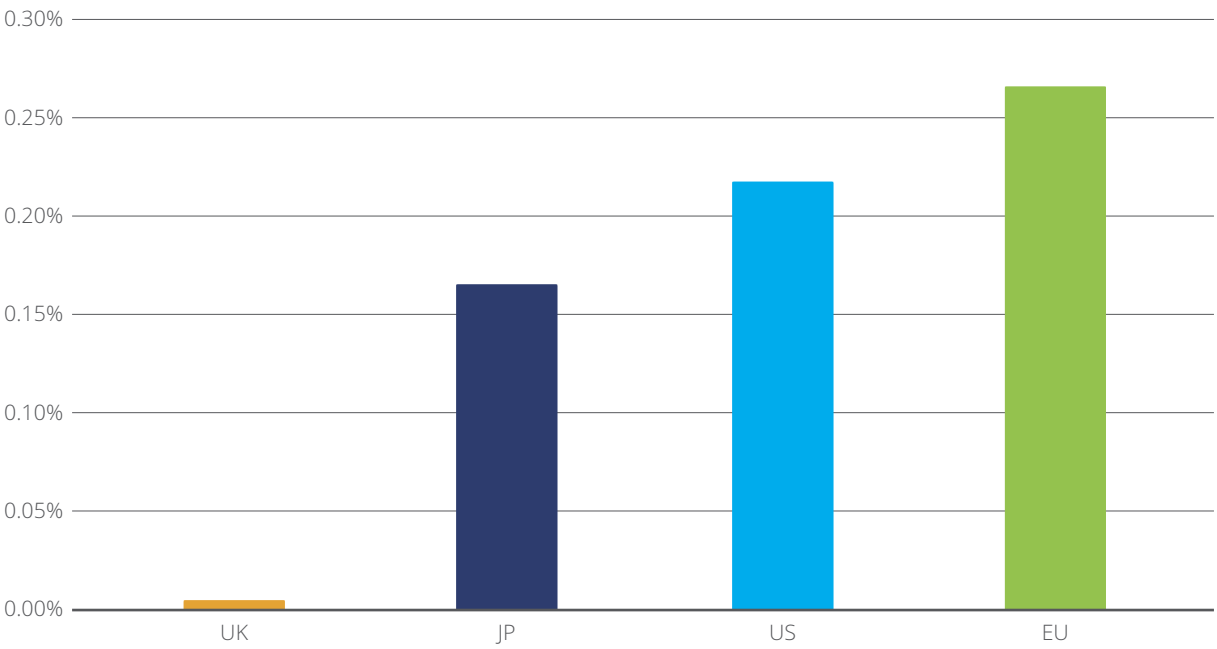
	2019 – 2020		2021– 2022		2019 – 2022	
Term spreads	**Contribution**	**Avg exposure**	**Contribution**	**Avg exposure**	**Contribution**	**Avg exposure**
EU	0.44%	–2.21	0.04%	–0.53	0.27%	–1.50
UK	–0.16%	–2.74	0.22%	–0.99	0.00%	–2.00
JP	0.09%	–1.64	0.27%	0.38	0.16%	–0.78
US	0.38%	1.21	0.00%	–0.88	0.22%	0.32
EU + UK + JP + US	**0.75%**		**0.52%**		**0.65%**	

Source: Qontigo.

In summary, the upward trend in term spreads in the EU, the UK, JP and the US over the past few years, coupled with the "right" exposures, benefitted the Int'l Real Estate Index from 2019 to 2022 (Figure 5). The EU contributed the most, even though the EU term spread factor's cumulative return for the period was lower than that of the US factor. The negative contribution made by the UK term spread prior to 2020 almost completely offset the positive contribution seen in 2021–2022, meaning that the UK had the smallest contribution for the overall period.

The 14% contribution made by the macroeconomic factors in Axioma's Macroeconomic Projection model – one percentage point of which was attributable to the rise in EU, UK, JP and US term spreads – was offset by the country, industry and currency effects on the index. This resulted in a 2019–2022 index return of close to zero.

Figure 5: Term spreads – Contribution to the 2019–2022 index return



Source: Qontigo.

3. Term spread trends and effects on the Int'l Real Estate Index in 2022

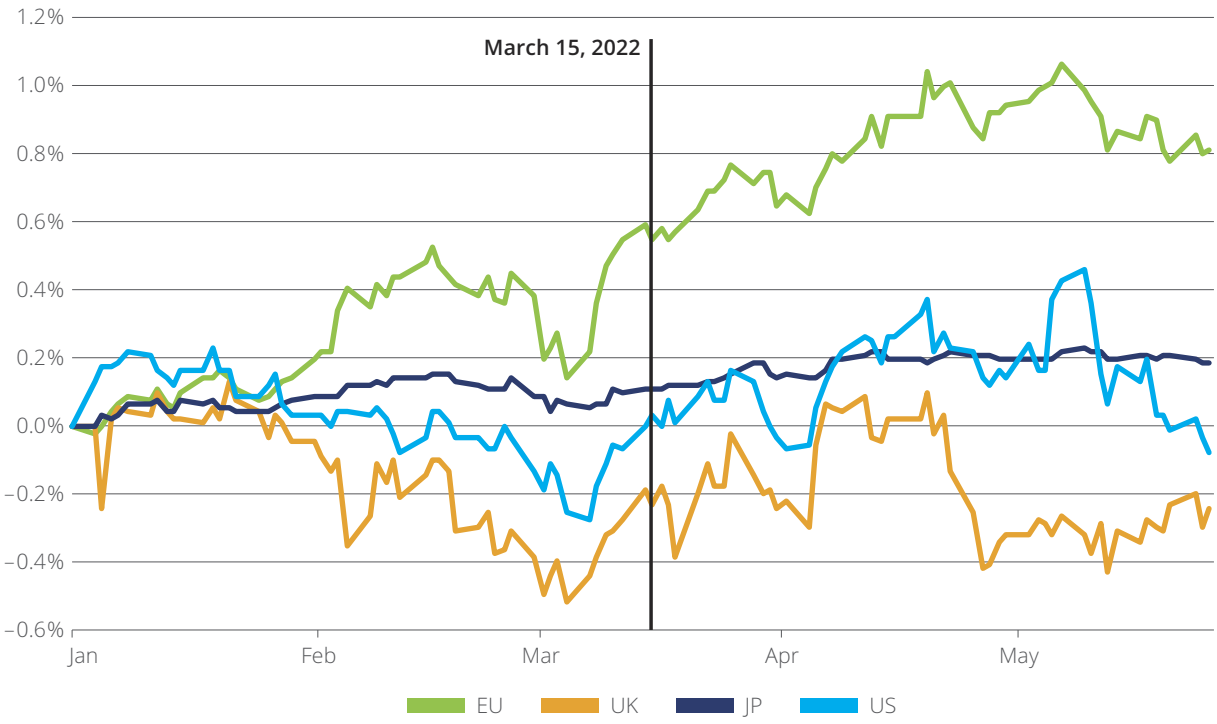
Term spreads have declined in the US and UK so far in 2022 due to the abrupt rise in 6-month yields, as the Federal Reserve and the Bank of England (BoE) have begun raising their policy rates at breakneck speeds (and by increasing magnitudes) to counter rapidly accelerating consumer prices. The cumulative year-to-date returns for the US and UK term spread factors were negative as of May 25, 2022. The year-to-date returns for the EU and JP term factors remained positive, although they also started to decline in May (Figure 6).

The negative 2022 average exposures to the US and UK term spread factors led to a positive effect on the index, due to the decline in term spreads in the US and UK. The EU term spread factor has contributed negatively to the index so far this year, because the year-to-date factor return was still positive while the average exposure was negative.

Japan is the only region that still shows a positive average exposure to term spreads, and combined with the JP term spread's positive return, the factor has had a positive impact on the index's year-to-date return.

Despite the aggregate positive contribution of nearly one percentage point made by term spreads in the four regions, the index is still down 13% so far in 2022, due to the market, and to industry and currency allocations.

Figure 6: Term spreads – YTD cumulative factor return



Source: Qontigo.

4. Potential impact of future changes in term spreads on the Int'l Real Estate Index

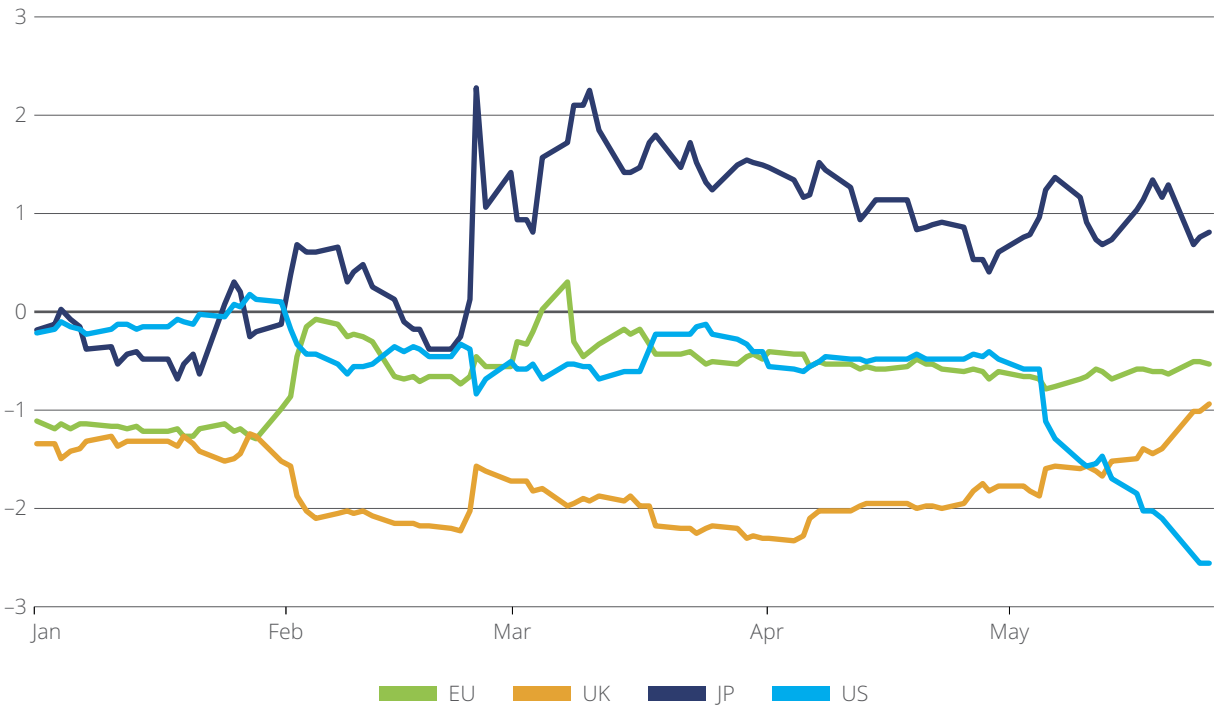
Given the current negative exposures of the Int'l Real Estate Index to EU, UK and US term spreads (Figure 7), further declines in the corresponding factors should continue to have a positive impact on returns. We think this is likely since Western central banks will continue to raise rates aggressively, whereas further rises in long-term yields will be curbed by geopolitical concerns and worries about the impact of higher rates on economic growth.

Although there is hope that US headline inflation has peaked at just above 8%, European consumer prices show no sign of cooling off yet. On the contrary, the BoE expects UK inflation to reach double digits in the final quarter of 2022. At the same time, the OECD has downgraded its 2023 economic growth forecast for the United Kingdom to zero. With long gilt yields currently more than 50 basis points lower than the projected peak of the BoE base rate in mid-2023, a curve inversion (i.e., a negative term spread) seems a distinct possibility.

The probability of short-term rates topping long-term yields seems slightly more remote in the US, but futures markets indicate that the federal funds target rate will have reached the same level as the current 20-year Treasury yield by June 2023. Traders are also pricing in an increasing number of rate hikes by the European Central Bank.

This is in stark contrast to Japan, where the sensitivity of index returns to rising term spreads is now firmly positive. This reflects the different stance taken by the Bank of Japan (BoJ) compared with its Western counterparts. The BoJ has repeatedly stressed that it considers rising consumer prices and a weak currency as beneficial to the country's fragile economy. It has therefore indicated that it has no intention of tightening monetary policy anytime soon, either by raising rates or by scaling back its asset purchases. This means that Japanese term spreads are likely to remain range-bound (i.e., mainly flat), and will probably have little impact on the Int'l Real Estate Index's return in the near future.

Figure 7: The Int'l Real Estate Index's exposure to term spreads in 2022



Source: Qontigo.

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