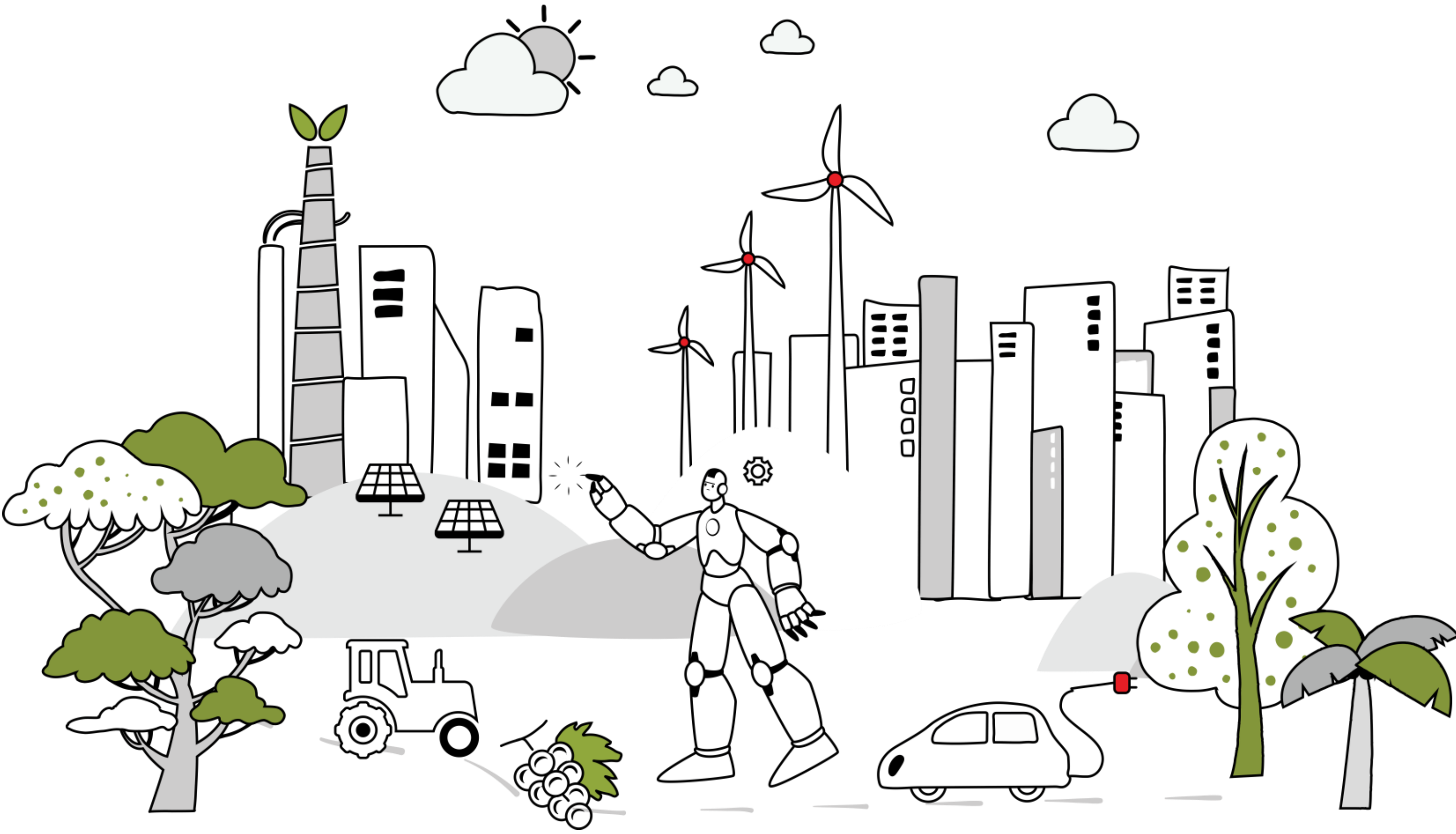
IPM

Our quarterly insights into private markets

Edition May 2023



Content

Dear readers

In 2023, persistent high inflation, volatility across the global banking sector, and continued geopolitical conflicts remain key themes for many investors. Against this backdrop, public equities have performed surprisingly well, with the MSCI World Index in positive territory year-to-date. Markets are finally seeing signs of *disinflation* with the pricing weakness across the commodity complex, more visibility to peak rates, and contagion from recent bank failures seemingly under control.

Despite these silver linings, investors remain cautious around private markets. Private capital only raised USD 243 billion in the first quarter of 2023, the second lowest fundraising quarter since 2016, according to Preqin. Due to weakness across public asset classes in 2022, many institutional investors are already pushing against their private markets allocation targets due to the denominator effect. This limits their appetite for private capital investments in 2023, as capital allocation decisions are typically made one year prior.

However, if the current fundraising weakness is simply due to mathematics, it could be a potential opportunity for those who are willing to deploy capital. Private markets are not homogenous, with various segments and sub-sectors that are driven by widely different fundamentals. Savvy investors could still find attractive investments if they remain disciplined on deal due diligence and execution. The bright side of the current market environment is that there is potentially less capital chasing after the same deals, especially compared to previous years. As you delve into the next pages, we will provide you with our latest investment positioning across different asset classes. We hope you find this edition insightful!

“Silver linings in the macro environment have not been enough to offset investor hesitancy across real assets. However, attractive opportunities remain.”

Alex Leung
Infrastructure
Analyst,
Research & Strategy

Global real estate

Price correction continues

Economies fared well in the first quarter of the year and performed better than expected. China benefited from COVID-19 restrictions being lifted and bounced back strongly, to record growth of 4.5% YoY. Initial data showed the eurozone returned to modest expansion, of 0.1% QoQ, having stagnated in 4Q22, while the US slowed to growth of 1.1% QoQ at an annualized pace. Most of the advanced economies are expected to experience some decline in output during the downturn, which started in mid-22. The US economy is on a slightly different cycle and is expected to slip into recession in the second half of the year. By this time, Europe and Japan are forecast to be in recovery mode.

The economy was buffeted in the first quarter by stress in the banking sector as three US banks collapsed and a take-over of Credit Suisse by UBS in Europe. Banking sector stress calmed in April, though resurfaced at the end of the month as First Republic Bank was rescued by JPMorgan Chase. Tighter lending conditions will impact the real estate sector in three main ways. First, by putting a dampener on the market in terms of new equity being deployed which is looking for debt to accompany it. Second, refinancing existing debt will be more difficult and costly. Finally, more defaults and forced sales are likely, resulting in property coming on to the market which will weigh on prices.

Global real estate investment activity remained subdued in the first quarter as the market continued to adjust to higher interest rates. A wedge remained between the price expectations of buyers and sellers and prevented transactions from happening. Global investment volumes were just USD 131 billion in the first quarter which, after allowing for seasonal weakness, left them broadly unchanged from the low reached in 4Q22. Retail bucked the trend of the other sectors and, after allowing for seasonal effects, investment activity rose across the regions, following a particularly weak 4Q22 for the sector[1]. We expect investment activity to gradually recover as prices adjust and buyers and sellers align.

The market repricing, which started in the second half of 2022, continued into 2023. The pace of adjustment did ease though, and across the more than 300 city-sector markets we monitor globally, yields and cap rates rose in 49% of them in 1Q23, down from 74% reporting a rise in 4Q22. In the bulk of the remainder (48%), yields were unchanged. Hence there is still widespread upward pressure on yields and cap rates, focused on those markets where valuations are adjusting more slowly. We expect yields to continue rising to embody the sharp interest rate rises seen over the past year. Given that interest rates are close to peaking, we expect upward pressure on yields to ease, but to vary by market.

Source: 1 CBRE; NCREIF; PMA; UBS Asset Management, Real Estate & Private Markets (REPM), May 2023. Note: Refers to 309 global city-sector markets.

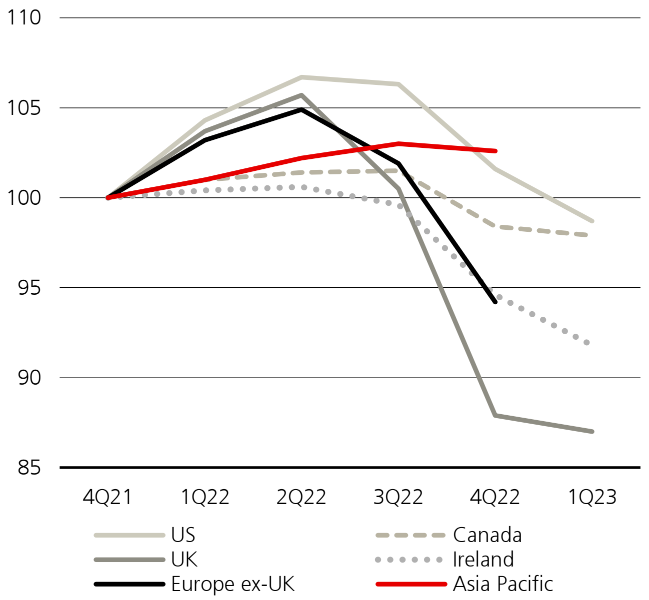
"Stress in the banking sector will weigh on lending against real estate and is likely to delay the recovery. The market has re-priced quickly, albeit at different speeds. As is normally the case, the UK has led the correction, due to its valuation practices and large and liquid market, which looks to be bottoming out."

Fergus Hicks
Real Estate Strategist

Initial data showed that capital values continued to decline in 1Q23, reflecting the rises in yields and cap rates. However, markets have corrected at different speeds. The UK has led the correction, as is normally the case during downturns. Over the second half of 2022 and during the first quarter of 2023, UK capital values fell 18% in total (see Figure 1). However, they showed signs of stabilizing in March, when they rose 0.2% MoM according to MSCI data. The rest of Europe has followed, with a quicker correction in prices than what occurred during the Global Financial Crisis. In Asia Pacific, capital values have been much more stable since Japan accounts for around a third of the market. In Japan, interest rates on hold mean that capital values there have not come under the same downward pressure from rises in yields as they have in other markets.

Listed real estate markets fell in March as stress in the banking sector weighed on investor sentiment due to its potential impact on the real estate sector. However, at the start of May, in USD terms the FTSE EPRA Nareit Developed Index showed global prices still 11% above their trough in October 2022. Overall, we think that stress in the banking sector and tighter lending conditions will delay the recovery in real estate markets and that investors should be careful in deploying capital. However, distressed and discounted opportunities should give investors attractive deal flow while there is uncertainty over when the wider market will bottom out.

Figure 1: Capital value indices (local currency, 4Q21 = 100)



Source: MSCI; NCREIF; UBS Asset Management, Real Estate & Private Markets (REPM), May 2023. Note: Asia Pacific and Europe ex UK data to 4Q22. **Past performance is not a guarantee for future results.**

Link between sustainability and tech in real estate?

Real estate is responsible for approximately 40%[1] of global energy related carbon emissions and sustainability is a major force in this space. The industry is facing heightened regulation and ever-evolving standards to adhere to, with approximately 600 green building certification systems worldwide. As a result, there is a greater focus on ensuring buildings are compliant with these certifications and other regulatory standards.

For example, one sustainability regulation in the real estate sector in the UK is Minimum Energy Efficiency Standards (MEES), which will make it illegal for landlords to sign new leases on commercial properties with Energy Performance Certificate (EPC) ratings of E or lower. An interim target was implemented in April 2023, which prohibits landlords from leasing buildings with an E rating or lower, even on existing leases. From 2027, the regulation will be amended to a rating of C or lower and in 2030, B or lower. Currently, only 23% of inner London commercial properties are rated B or above and therefore MEES compliant. Breaches may include a financial penalty up to a maximum of GBP 150,000 and publication penalty. In this case, the details of the breach are entered publicly into the PRS Exemption Register, a list run by the government on any properties legally required to have an EPC and properties exempt from meeting the minimum EPC standards.

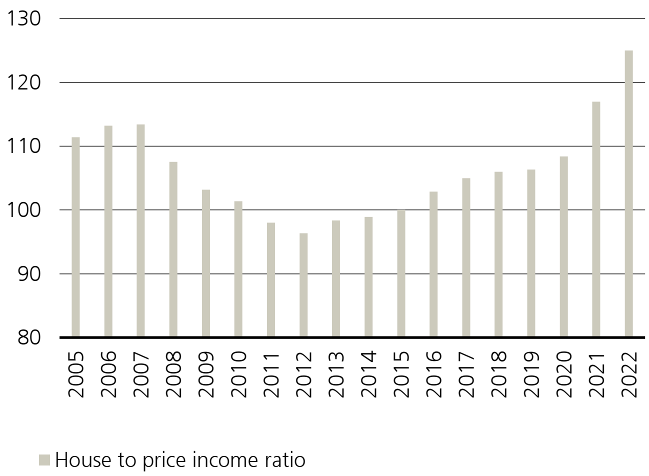
Another example is the Australian requirement for all buildings sold or leased to have a Building Energy Efficiency Certificate (BEEC) as well as a National Australian Built Environment Rating System (NABERS) rating. In the Netherlands, from 2023, all office buildings will, by law, be required to have an EPC rating of C or higher, and in 2030 hold a rating of A. New York's Local Law 97 states that from 2024, buildings over 25,000sqft will be required to meet carbon emission caps with stricter limits coming into effect by 2030.

If real estate managers do not keep up with the changing regulatory environment including net zero target commitments, real estate assets may face transition risk. If a building's future carbon emission trajectory exceeds the 1.5°C pathway, there is the risk that building will become stranded due to obsolescence and write downs in value due to changing market expectations and legal regulations.

These regulatory certifications and standards mainly relate to the environmental factors of buildings. However, there has been a shift in focus towards the social angle in sustainability, which historically has been given lower priority. Social factors include human capital, the impact of buildings on society and the wellbeing of stakeholders etc. A more recent building standard is the WELL Building Standard®, which is a performance-based system focusing on a building's impact on the health, comfort, and knowledge of occupants. This topic is particularly prevalent in today's environment, with high costs of living and levels of rental inflation leading tenants to seek more affordable housing. Additionally, the continuous hikes in interest rates and borrowing costs means that potential first-time buyers are likely to remain confined to the rented sector.

The house price to income ratio in OECD countries has increased (see Figure 2). The ratio is calculated by dividing nominal house prices by housing rent prices. This measure of affordability shows that since 2015 the growth of house prices has exceeded the growth of incomes by 25%, highlighting the challenges for first-time buyers and boosting demand for affordable housing. The UK is set to publish a Renters' Reform Bill, which will plan to remove so-called "no-fault" evictions. Other measures include rental increases limited to once a year with two months' notice and introducing minimum housing standards for the private sector.

Figure 2: Aggregate house price to income ratio in OECD countries (index, 2015=100)



Source: OECD; UBS Asset Management, Real Estate & Private Markets (REPM), May 2023.

[1] World Green Building Council, https://worldgbc.org/advancing-net-zero/embodied-carbon/, May 23.

Despite focusing on sustainability from a regulatory perspective, commercial real estate can also take advantage of new technologies to make buildings more environmentally friendly and efficient, known as PropTech. An example is Building Management Systems (BMS), a software tool which allows real estate firms to monitor and control the physical environment of a building. This includes temperature, lighting levels and air conditioning, which can ensure more efficient resource usage and help detect potential issues before they become serious.

We are also seeing the expansion of accessible AI tools such as ChatGPT, but the question is how these tools can be applied to real estate. Machine learning can be used within property valuation by predicting real estate prices and rental values by analyzing millions of data points. Machine learning combined with BMS can help professionals make more informed decisions about investments and property management. Blockchain is also transforming real estate investments as smart contracts can enable faster and more secure transactions. This technology helps reduce transaction costs and provides a decentralized way to record and transfer ownership of assets.

Unlisted real estate sector performance outlook

	Negative		**Neutral**		**Positive**
US		Office	Industrial	Retail, residential	
Canada		Office	Retail, residential	Industrial	
France		Office, residential	Retail	Industrial	
Germany		Office	Retail	Residential	Industrial
Switzerland			Office, retail	Industrial, residential	Industrial
UK		Office	Residential	Retail	Industrial
Australia			Office	Retail, industrial, residential	
Japan				Office	Retail, industrial, residential
Singapore			Office	Retail, industrial	

Source: Oxford Economics; UBS Asset Management, Real Estate & Private Markets (REPM), May 2023.
Note: Classifications refer to expected total returns over the period 2024-26 versus global all property. **Classifications are not a guarantee for future results.**

Europe real estate

Bid offer gap slows the market

Economy

The European economy is currently defined by a number of contradictory forces. Firstly, the positive. GDP growth has continually surprised on the upside over the past six months. The eurozone economy is now expected to grow by 0.8% in 2024, compared to expectations of around 0% growth at the start of the year. The UK has seen even bigger swings – in November 2022 the BoE was anticipating "the longest recession on record" and a decline in GDP of -1.5% in 2023. In their May 2023 forecasts, this was upgraded to +0.25% growth. The BoE was somewhat of an outlier in the scale of its negative expectations, but other forecasters have generally moved from a modestly negative expectation to between +0.5% and +1% for 2023.

On the face of it, this is good news. However, the surprising strength of the economy is creating a challenge for both the BoE and ECB. One of the key drivers of the better-than-expected economic performance has been the employment market, which remains very tight by historic standards. This means European consumers are still spending money, despite real wages being negative as they have the confidence to draw on savings and / or credit to maintain living standards. In some areas, such as travel, demand remains extremely strong and prices are continuing to rise, exacerbated by expanding profit margins. Inflation has come down since the start of 2023 (eurozone 7% form 9.2%, UK 10.1% from 10.5%), but at a slower rate than expected, particularly in the UK.

The consequence: higher expectations for interest rates. UBS IB now forecast the ECB to peak at 3.75% in 2023, before being cut by 100bps in 2024. Terminal rates in the UK have also been increased to 4.75% with 200bps of cuts coming through in 2024. Forward markets however have stuck with a higher for longer view, with rates peaking even higher than these forecasts, and only coming down gradually over the next five years.

And whilst the economic outlook in Europe has improved, some darker clouds are gathering on the other side of the Atlantic. The health of European banks (with the obvious exception) appears to be robust and there have been no indications of a systemic fallout from that noted exception. In the US the challenges are entrenched within a far wider range of lenders. A downside scenario of tighter lending standards adding further strain to corporate and consumer borrowers already facing higher inflation and interest payments cannot be disregarded. This could potentially lead to a recession with global fallout.

"European markets are still coming to terms with structurally higher interest rates. Yields are moving out, but for some sectors there is some distance before an equilibrium between buyers and sellers can be reached."

Zachary Gauge
Head of Real Estate
Research & Strategy –
Europe ex DACH

Better GDP but at the cost of higher rates

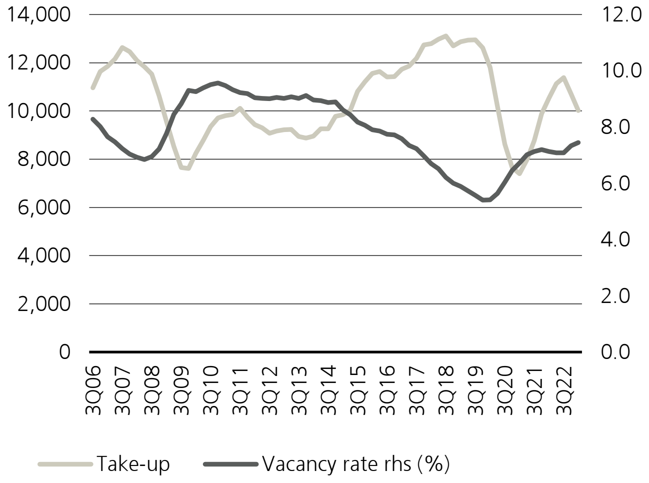
Occupier markets

Despite the improved economic outlook, office occupier dynamics continue to move in the wrong direction (see Figure 1). Take-up in 1Q23 declined for the third consecutive quarter, falling to the lowest level since 2009 with the exception of 2Q and 3Q20 when the market was effectively shut down during the COVID-19 pandemic. The vacancy rate is also increasing, albeit at a relatively modest pace and on an aggregate level it remains at a low level by historic standards. Despite the weak demand, prime rents continued to move up in a few markets including Central London, Munich, Hamburg and Brussels although the vast majority were flat. Grade B rents are under pressure and are forecast to decline by ca. 6% in 2023.

Logistics take-up has fallen away, dropping by 50% in 1Q23 compared to 1Q22. The weaker economy and higher rates are certainly a factor. However, there is also the reversal of some of the COVID-19 trends which saw logistics companies rapidly acquire new warehouses to respond to changing supply chains and a surge in e-commerce shopping. But the supply-side remains very limited – based on markets where data is available the average vacancy rate is just 2.7%. So, we're still seeing strong rental growth and aggregate prime rents in 1Q23 in the eurozone increase by 3.2%. Even at higher rental levels, development appraisals for new warehouses are struggling to stack-up, so despite weaker demand we still see upward pressure on both prime, and secondary space over the medium term.

And there are selectively some positive signs from the retail sector – with some prime high streets now seeing positive rental growth benefiting from a rebound in luxury spending from tourists. And even the Grade B market is showing signs of rental stabilization, with a very small growth forecast for 2023 coming off the back of three years of decline which reduced rents by 22.7%.

Figure 1: Office take-up ('000 sqm) and vacancy rate (%)



Source: JLL, 1Q23.

Significant regional differences in office outlook

Capital markets
The effects of rising interest rates and higher borrowing costs are very obvious in the European capital markets. According to RCA, the annual investment volume in 2022 (EUR 321.9 billion) was around 22% below the previous year's figure. The quarterly investment volume in 1Q23 amounted to only EUR 36.5 billion, which was 62% below the previous year's figure where the first quarter still showed strong at EUR 95 billion. The strongest decline was recorded in the industrial segment, where transactions fell by 76% YoY. This is partly due to the very low levels that yields had reached during the logistics bull-run, but is also partly explained by the low liquidity that the sector showed in general. Yet, also in the residential (-69%) and the office (-64%) segment, transaction volumes reduced significantly.

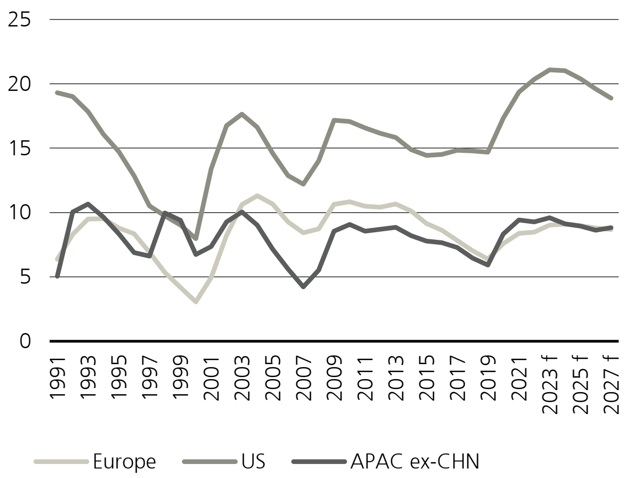
Although the retail segment had a very strong first quarter in 2022, it still recorded a comparatively modest decline of 43% compared to the previous year. Part of the strong reductions in transaction volume stem from the wide gap between where buyers would realistically come into the market and valuations, respectively – prices that sellers would be willing to accept. This becomes evident in the above average transaction levels in the UK, were values corrected significantly in 2022, and liquidity is recovering much quicker than the rest of Europe.

Are offices the new retail – part 2?
At the height of the COVID-19 pandemic, real estate investors tried to quantify the potential impact of a permanent shift to increased home working on the office market. They also aimed to determine if this structural shift would have a comparable effect to the impact e-commerce had on the retail sector. The consensus answer at the time was essentially no, with caveats. And whilst interest rates stayed at exceptionally low levels this by and large held true. Secondary offices with structural vacancy rates of 20% or even 30% could still deliver strong returns over fixed income yields, utilizing low debt costs that were hugely accretive to returns.

Now the paradigm has reversed, things are starting to look very different as those structural challenges lurking below the surface are thrown into the spotlight. Refinancing a building at current interest rates with that structural vacancy is almost impossible. In many ways, the global outlook for offices is bleak.

But it's important to note some significant regional differences. In particular, the structural impact of home working has been far greater in the US, than in Europe or Asia. And whilst occupier demand has come down across the world, it is only in the US that vacancy rates have hit record high levels, and we're seeing numerous examples of office buildings falling into default (see Figure 2).

Figure 2: Office vacancy rates (%)



Source: PMA, May 2023. **Past / expected performance is not a guarantee for future results.**

Peripheral European offices undoubtedly face the same challenges, and vacancy rates are in some cases well above 20% with little sign of recovery. But whilst some US CBDs have become ghost towns, European city centers have remained attractive places to work and are again bustling with tourists, shoppers and (other than Friday) office workers. The permanent home working has not taken off in the same way that it has in the US.

And as build costs, development finance and target returns have all risen at the same time exit cap rates have moved out, an interesting dynamic is developing. It has become incredibly difficult (in some markets impossible), to make office development appraisals stack-up. And even when they do, appetite to fund them is thin on the ground. With replacement costs higher than existing assets, we think the potential for medium to long-term rental growth is underestimated. But if investors turn away from the sector as a whole, entry yields could get to a level where prime European offices offer a very strong risk-adjusted return for investors who are prepared to be counter-cyclical.

APAC real estate

Hitting the pause button

APAC GDP growth is projected to accelerate from 3.1% in 4Q22 to 4.2% 1Q23, according to UBS IB. However, the strong headline number belies a weak showing in a number of countries reported so far. China, Hong Kong and Japan showed strength on the back their late reopening's activity normalization. Beyond that, however, the picture is downbeat. Taiwan's GDP shrank 1.8% QoQ and is in a technical recession after two consecutive quarters of decline. Singapore contracted 0.7% QoQ while South Korea and Malaysia failed to recoup their previous quarter's losses.

Asian exports grew 3.3% QoQ (seasonally-adjusted) in 1Q23 after a high-single digit decline in 4Q22. However, the rebound was almost entirely driven by Chinese exports while most other countries continued to falter. We expect external demand to stay weak in the near-term driven by the ongoing preference for services over goods, semiconductor downcycle and softening global growth.

The slowdown outside China is clear. The sustainability of China's rebound is not. 1Q23 recovery was strong from the late reopening, but momentum seems to have fizzled out in April with softer retail sales, exports and PMI. The property sector is also not out of the woods. Nonetheless, with services output still accelerating, the country is tipped to grow 5.5% in 2023 from a low base, based on forecasts from Oxford Economics.

APAC is in disinflation, after the peak in 4Q22, with CPI YoY falling 0.4ppt QoQ to 4.8% in 1Q23 driven by softening energy and food prices. Core inflation (excluding food and energy) also showed signs of easing in most countries except Japan. Pricing momentum is the weakest in China with headline inflation slowing further to 0.1% YoY in April 2023 amidst slow recovery.

Given the easing price pressure and softening global growth, more APAC central banks have hit the pause button on rate hikes in recent months. South Korea, Singapore, India, Philippines and Indonesia are cases in point. Vietnam went a step further and cut its discount rate by 100bps and refinancing rate by 50bps. On the hawkish side, Australia and New Zealand continued their tightening given the stubbornly high inflation and tight labor market. More could still come but most market watchers believe that the end is near. Oxford Economics forecasts rate cuts to begin only in early-2024. UBS IB is more cautious on the macro slowdown and believes the monetary easing could arrive sooner in 3Q23 starting with South Korea.

"1Q23 economic outcome was mixed and points to a continued weakness. Disinflation endures with more central banks hitting the pause button. Transactional market was lifeless in 1Q23 but shows some signs of bottoming. Opportunities are starting to emerge as sellers lower their expectations."

Wai-Fai Kok
Head of Real Estate
Research & Strategy – Asia Pacific

Grinding to a halt

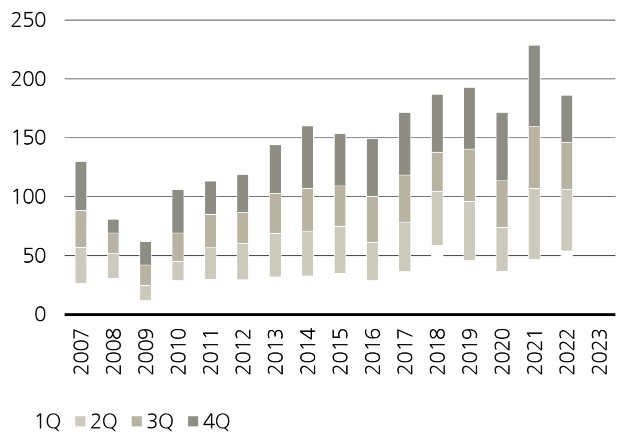
APAC leasing activity softened further in 1Q23 on the back of mounting macro uncertainties. According to CBRE, office net absorption fell 5% YoY, matching 2020's pandemic era levels. Logistics space take-up was down in most countries (except China), but rental growth remained robust. Retail performed better as leasing sentiment improved amidst tourism recovery and rents inched up slightly. The resilient household consumption so far has also supported retail sales. We expect overall leasing sentiment to stay lackluster through 2023 as the economy enters a period of slower growth.

1Q23 was a quarter to forget for transaction activity. It was the slowest start to a given year since the Global Financial Crisis. Pricing adjustments remained sluggish despite sharply higher funding costs and that resulted in negotiation deadlock. Despite accommodative monetary policy, Japan also saw a pullback as investors were spooked (initially) by the surprised tweak to yield curve control in December 2022. In China, the reopening boosted consumption but failed to revive investor sentiment.

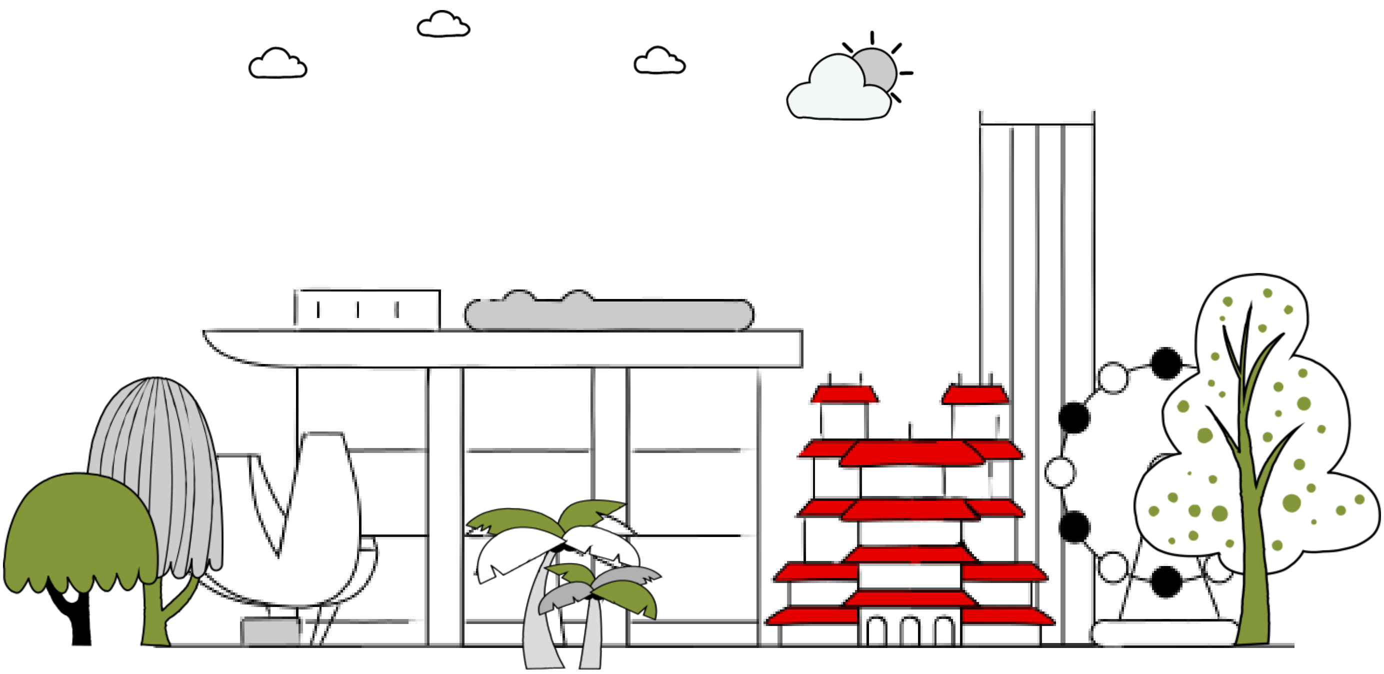
According to MSCI, APAC real estate transactions in 1Q23 plunged 50% YoY to USD 27 billion, undershooting the pandemic low in 2020 and was the weakest first quarter since 2009. Australia (-72%) and South Korea (-78%) tumbled the most given their rich valuations. Japan (-40%) retreated but its solid deal pipeline could drive a rebound in the coming quarters. Singapore (+40%) and Hong Kong (+15%) were the only markets to record positive growth but for different reasons. The former was boosted by Mercatus's large transactions (retail malls) at robust pricing while the latter was led by distressed deals such as Goldin Financial Center.

Cap rate evidence was scarce given the thin transaction volume during the quarter. Nevertheless, real estate brokers' data suggest cap rates have continued to move out. CBRE's indicative prime office and industrial yield in Australia expanded 10-25bps and 15-50bps, while South Korea saw 15bps and 20bps increases. Other countries were largely flat. We expect further expansions in the coming quarters.

Figure 1: Asia Pacific transaction volume (USD billion)



Source: MSCI, May 2023.



Emerging opportunities

The bearish outlook of the US office sector intensified early this year due to regional bank credit concerns and a number of high-profile debt defaults by landlords. This negative sentiment seems to have seeped through to APAC and resulted in more cautious underwritings. Office transactions in the first quarter fell more than half YoY to the lowest since 2010. Listed office REITs have also underperformed. However, we think the fundamentals in this region are much more robust. Leasing demand has weakened in recent quarters but caused more by cyclical drivers than a structural one. Most core markets (except Japan) still delivered positive rental growth in the first quarter, with Seoul the strongest at +3.8% QoQ.

Slow re-pricing has been the key investment hurdle, but opportunities are emerging. Deal activity seems to be picking up again after the first quarter's dry spell. There are signs that potential sellers are starting to lower their expectations. In Australia, for example, several A-grade office assets are in advanced sales negotiations at 15-20% discount. South Korea also witnessed a 10-15% softening, according to JLL. We think such magnitude of adjustments is fair, as opposed to attractive, and reflects the higher interest rate backdrop.

Distressed deals have so far remained limited in most APAC markets but rising in China and Hong Kong. According to MSCI, distressed sales in the two countries amounted to more than USD 2.5 billion in 1Q23, representing about 10% of total volume. This was sharply higher than an average share of 2-4% in the last 4-5 years.

With repricing accelerating, we think the regional office market will soon gain clarity on pricing adjustments required in the coming months. This may also imply that a trough in transactional activity is near. We think the same applies to logistics assets due to their quicker cap rate expansion thus far. That said, this needs not to mean a discounted pricing as rental growth drives yields higher over time.

Australia – policy support for build-to-rent (BTR)

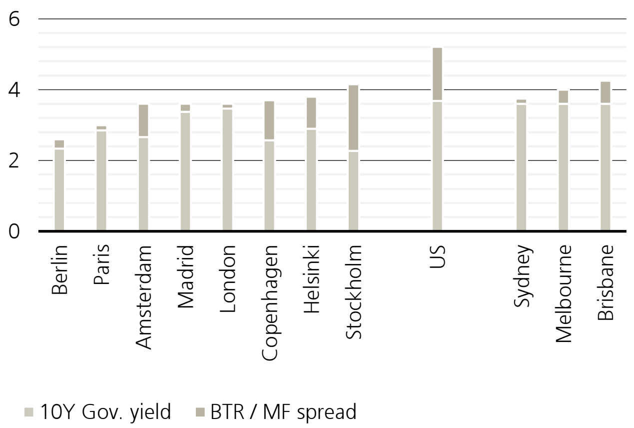
The Australian government announced the long-awaited tax cut for foreign institutional investors in the residential BTR sector. In addition to the halving of MIT withholding tax (from 30% to 15% after 1 July 2024), the depreciation rate has also been increased from 2.5% to 4%, which should further improve the tax profile. This indicates the government's support for the nascent sector as a remedy for the country's undersupply situation. As a trade-off, some restrictions were also put in place including a 10-year ownership period and a lease term of at least 3 years.

Overall, we think the new measures are positive and would aid the formation of another residential play (in addition to Japan) in this region over the long term. Nonetheless, making a strong investment case in the near term may not be as straightforward. Pricing and development risks are among the key concerns on the minds of investors in the current macro environment. A funding structure that lowers construction risks may be preferred.

There has hitherto been little price discovery in this sector given a scarcity of deal flow. As such, the valuation for BTR assets is not well established. Ascribing cap rates in this period of sharply higher interest rates would understandably be a difficult exercise. Based on public information, Savills indicated BTR cap rates at 3.75% in Sydney, 4% in Melbourne and 4.25% in Brisbane as of 2Q22. This is broadly consistent with the developer / operator Mirvac's disclosure of around 4-4.1% for its two completed assets in Sydney and Melbourne. Similar to other asset classes, cap rate expansion has so far been limited unlike the US and Europe which have already experienced an average 75bps expansion since 2Q22.

Based on 1Q23 figures, Australia BTR's 40bps spread over 10-year bond yields is lower than Europe's 80bps and US's 150bps, but higher than the UK's 10bps. They are materially below the 10-year average of 280bps, 290bps and 210bps, respectively. Further cap rate expansions looks likely. Applying a stabilized 10-year bond yield of 3% (Oxford Economic's forecast), the yield spreads above imply a 5.1-5.9% potential cap rate for Australia BTR. That said, we think a comparison to UK is more appropriate given their similar characteristics. Comparison to other European markets may also be complicated by rental cap regulations. Coupled with Australia's stronger demographics and rental growth profile, we think a stabilized cap rate at or below the low-end of the range may be fair.

Figure 2: Global multifamily yield spreads (%)



Source: CBRE; Green Street; Savills; Oxford Economics, May 2023.

US real estate

Growing liquidity concerns

The pace of interest rate increases by the Fed has created cracks in the regional banking system. Bank deposits are dropping and creating additional liquidity concerns over the banking system's capacity for new loans. As approximately USD 1.5 trillion commercial real estate loans will mature between 2023 and 2025 (according to MSCI RCA), tighter and more expensive lending requirements will increase refinancing risk across the commercial real estate industry. However, this risk is expected to be more severe for office owners, as fundamentals deteriorate.

The current refinancing cost for commercial loans made 10 years ago is approximately 200bps higher. Lenders also have stricter loan standards today than they did just a year ago (eg, lending at average LTVs of 10% or lower). These stricter requirements have reduced activity from predominant commercial real estate lenders, like CMBS, and provided more room for regional and local banks. CMBS, which accounts for roughly a quarter of all commercial originations, only accounted for 9% of commercial lending activity in 2022. On the other hand, commercial lending from regional and local banks grew from an average of 17% between 2015 and 2019 to 27% as of 2022.

With private real estate values declining, and capital availability becoming more scarce, regional and local banks will likely be more sensitive to current market conditions. An uptick in deposit withdrawals will force regional and local banks to fully realize their losses through sales to fund requests. With office values down significantly, office owners will feel the impact more severely. According to Green Street Advisor's Commercial Property Price Index, a transaction-based index of high-quality properties that are owned by REITs, office values are down 25% from their recent peak. However, we expect even steeper declines across the broader market.

As capital dries up and the "wall of maturities" approaches, lenders with loans maturing for properties in other sectors may be more likely to provide flexibility via loan extensions and workouts. Distressed sales are likely to increase over the next year or two, but according to MSCI RCA, they only accounted for 1.2% of total sales in 4Q22. In the midst of uncertainty, investors should position themselves defensively, i.e. less leverage and a lower number of value-added activities. Investors can also look out for distressed opportunities at attractive and discounted pricing.

"The pace of interest rate increases by the Fed has created cracks in the regional banking system. Bank deposits are dropping and creating additional liquidity concerns over the banking system's capacity for new loans."

Tiffany B. Gherlone
Acting Head of Real Estate
Research & Strategy – US

Bracing for headwinds

Figure 1: April US real estate return forecasts

Total return (%)	2020	2021	2022	2023 forecast	3-year forecast
Apartment	1.8	19.9	7.1	(6.9)	1.5
Industrial	11.8	43.3	14.6	(5.8)	0.6
Office	1.6	6.1	(3.3)	(9.1)	(1.7)
Retail	(7.5)	4.2	2.5	(3.9)	1.3

***** Office forecasts were taken from PREA. PREA office forecasts are more consistent with UBS Asset Management, Real Estate & Private Markets Research &Strategy's outlook for a slow and steady recovery in the office sector. Oxford Economics forecasts a strong rebound in office returns in 2025, and a 3-year average annual forecast of 0.6%.

Source: Oxford Economics Forecasts for apartment, industrial and retail sectors, as of April 2023. PREA forecasts for office, as of February 2023. Total return: NCREIF, as of March 2023. Data shows unlevered NCREIF Property Index total returns. **Expected / past performance is not a guarantee for future results**.

Apartment

Apartment demand inched closer to positive territory in 1Q23, as a resilient labor market and high mortgage rates gave the renter base a boost. New deliveries slowed during the quarter, but the sector is still challenged with an elevated supply pipeline through 2024. Occupancy rates fell by 30bps over the quarter and 250bps over the year to 95.1%; however, rates remain below the sector's 10-year historical average. Apartment asking rents declined moderately by 0.1% QoQ, but was still 4.5% higher than a year ago. Transaction volume was reduced in 1Q23, down 48.2% from a quarter ago, and 61.0% from a year ago. The apartment sector delivered an annual total unlevered return of -0.4% in the year ending 1Q23, as capital values fell further during the quarter. We expect capital market headwinds to drive further value declines this year before rebounding in 2024.

Industrial

Industrial demand remained resilient during 1Q23 despite economic headwinds. Net absorption came in positive during the quarter, albeit at the lowest quarterly level in 13 years. New deliveries held up at historically high levels and drove the availability rate up by 70bps over the quarter and year to 5.5%. Despite an uptick in availability, landlords were still able to push rents up by a solid 3.4% QoQ and 12.5% YoY. High borrowing costs discouraged transaction activities, as transaction volume declined 52.5% QoQ and 59.1% YoY. The sector's annual total unlevered return moderated to 2.4%, as value declines for the second consecutive quarter dragged performance. We anticipate further declines in returns in 2023, primarily driven by capital markets.

Office

Office fundamentals continued to weaken during 1Q23. Net absorption fell steeply as subleasing activity rose nearly 10% over the quarter. The pace of new deliveries slowed, and the construction pipeline stayed muted amid high construction costs and market volatility. Office occupancy rates fell by 50bps over the quarter to 82.2%, marking the lowest rate since 3Q93. Increasing borrowing costs and sector headwinds continued to weigh on transaction activities. Transaction volumes were down 51.9% from a quarter ago and 72.1% from a year ago. Total annual unlevered returns for the sector fell by 8.7% in 1Q23, driven by a steep annual capital return of -12.7%. We expect office values to continue to fall over the next two years before stabilizing.

Retail

Retail fundamentals remain stable despite a recent pullback in consumer spending. Retail sales, which are not adjusted for inflation, declined for the second consecutive month in March. This decline reflects both slower economic activity and moderating inflation. Even with a decline in retail sales, demand was solid, outpacing new deliveries for the ninth consecutive quarter and boosting occupancy rates by 10bps QoQ and 80bps YoY to 93.2%. Transaction volumes remained slow in 1Q23, down 2.7% from a quarter ago and down 32.1% from a year ago. Total annual unlevered returns moderated to 1.0% as of 1Q23, however, retail is poised to remain relatively resilient over the next three years.

Selected niche sectors – Crossroads

Self-storage[1]
Self-storage fundamentals softened in 1Q23 as seasonal patterns resumed. A slowdown in mobility and a partial return to the office contributed to lower move-in rates. Same-store occupancy for Public Storage (PSA), a self-storage REIT, was 93.2% in 1Q23, down 240bps from a year ago. First quarter results for CubeSmart and Extra Space show a similar seasonal slowdown and return to pre-pandemic levels. However, most self-storage REIT occupancy levels remain elevated. First quarter earnings from PSA showed continued growth in rents. In-place rents grew by 12.5% YoY despite a slowdown in demand. Supply remains the greatest headwind for the sector, but elevated construction costs, supply chain bottlenecks and labor shortages continue to push back the incoming pipeline.

Cold storage[2]
Cold storage operating results beat expectations during 1Q23. Americold, a global cold storage REIT that holds 86% of its inventory in the US, reported a 750bps YoY increase in economic occupancy to 84.6%. A ramp up in food production volume during the quarter boosted demand for cold storage space and propelled occupancy rates upwards. Higher occupancy also assisted same-property (SP) revenue, which grew by 12.3% YoY. At the same time, SP operating expenses moderated to a 7.0% YoY growth rate and drove SP NOI growth up by a robust 26.1%. We expect these strong fundamentals to persist, as moderating inflation eases pressure on expense growth. Strong tailwinds from food production and online grocery consumption will also continue to drive demand for cold storage.

Senior housing[3]
The senior housing sector continued its positive streak in 1Q23. Occupancy rates in primary markets rose for the seventh consecutive quarter by 30bps to 83.2%. Occupancy rates are 540bps above its pandemic low but are still 400bps below pre-pandemic levels. The continued improvement in occupancy rates was driven by solid demand over the quarter, coupled with limited supply. Quarterly net absorption was 0.6% of total inventory, outpacing new deliveries at 0.3%. The supply pipeline has slowed, and during the quarter, the number of senior housing units under construction as a share of total stock reached its lowest rate since 2014. We expect a muted supply pipeline to support further improvements in sector fundamentals.

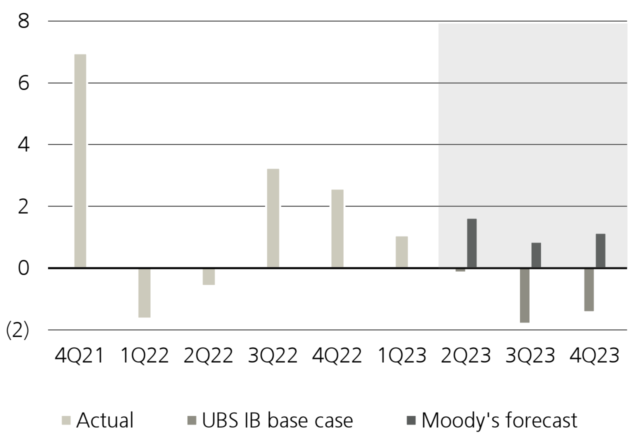
Life sciences[4]
The life sciences sector continues to retract to pre-pandemic levels, but fundamentals remain strong. Venture capital (VC) funding, a major driver of demand, declined to 2019 quarterly levels at USD 3.6 billion. Public funding from the National Institute of Health (NIH) continues to increase, and funding for 2023 is expected to be a record USD 47.5 billion. Vacancy rose by 1.3% over the quarter to 6.7%, but are still below-average falling between 7% and 8% before 2021. The supply pipeline remains elevated with 21.9% of stock currently under construction. Although construction has stalled due to high costs, moderating demand and an elevated pipeline will likely cause a slowdown over the near term, even as long-term tailwinds persist.

Source: **1** GreenStreet, as of May 2023; **2** Americold Company Report, as of 1Q23; **3** NIC Map, as of May 2023; **4** CBRE, as of April 2023.

Cresting wave

Economic viewpoint
Real GDP grew below consensus forecasts at a 1.1% annualized rate during 1Q23 (see Figure 1). The slower-than-expected growth was driven by a decline in private inventory investment and a moderation in non-residential fixed investment, which includes investments in non-residential structures, equipment and intellectual property products. These declines were partially offset by consumer spending, which remained strong and contributed 2.5 percentage points to headline GDP. However, the strength of consumer spending during the quarter was largely due to robust spending in January. Consumer spending in February and March declined, and we expect further weakening in 2023.

Figure 2: Real GDP quarterly annualized forecast (%)



Source: Actual Moody's Analytics, as of 9 May 2023; UBS Investment Bank forecast, as of 5 May 2023. Note: Shaded area indicates forecast data.

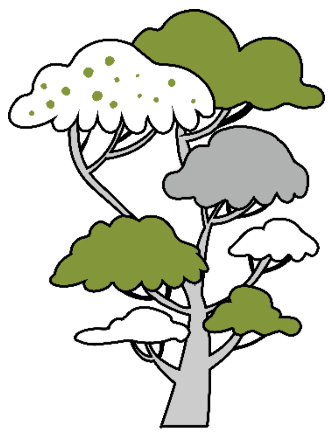
Nonfarm payroll employment posted a 236,000 increase in March, down from its trailing six-month average of 334,000 jobs but in line with consensus expectations. The unemployment rate dipped slightly to 3.5% and the labor force participation rate hit a record high of 62.2%. Although the labor market continued to add jobs, these gains were concentrated in the service sectors, including leisure, hospitality, education and health.

Other industries more sensitive to interest rates, such as construction, manufacturing, retail trade and real estate finance, experienced losses over the month. March's employment report is in line with the Fed's target to slow hiring to combat inflation, which although eased to 4.6% (Core-PCE Inflation) in March, remains elevated.

The Federal Reserve raised interest rates by another 25bps in May, to the highest level in 16 years. Above-target inflation still leaves room for additional hikes, but the stress from the banking crisis will likely lead to a pause as they observe the full impact of the rate hikes over the second half of 2023. The headwinds and strain of higher interest rates, including tightening credit, should be sufficient to push the US into contraction this year.

UBS Investment Bank economists expect the terminal rate to peak at 5.25%. Cumulative GDP is forecast to increase by 0.8% in 2023, but with declines starting in 2Q23 through 4Q23. Job losses are expected to materialize by the end of 3Q23 through 2Q24. Growth is expected to rebound at the beginning of 2024 and continue into 2025, following a reduction in the restrictiveness of the Federal Reserve policy.

In the scenario that UBS Investment Bank lays out, the durability of income in real estate will become key, rather than the more recent focus on shorter lease duration to capture rent bumps. Investors should continue to focus strategies on defensive positioning while economic uncertainties persist. This can include marginal movements around strategy targets, ie, less leverage and a lower number of value-added activities. Investors can also carefully seek out opportunities to expand in strong markets and sectors with long-term tailwinds, at prices that are below what they have been over the past year.



UK life sciences

Reimagining the future

The UK life sciences strategy at UBS offers a window into the importance of the sector – and what its future holds. UBS's strategy, launched in 2021, takes a build-to-core approach and seeks development opportunities in the life sciences sector, with a specific focus on good manufacturing practice (GMP) facilities.

The strategy's opportunities are broadly diversified across laboratory enabled office space, dry lab, wet lab and manufacturing facilities, and it targets well-located schemes within the UK's Golden Triangle of life sciences – London, Oxford and Cambridge.

Medical innovations have the potential to offer significant societal benefits with the ability to enhance and extend human life. Thus, real estate has a key role to play to help facilitate the growth and expansion of the sector by providing buildings to allow research, development and manufacturing to take place.

Healthy start

The pandemic undoubtedly focused attention on the life sciences sector in the UK. But even prior to the pandemic, the sector's importance to the UK economy had been growing, as the presence of leading global research institutions positioned the market to benefit from the wider macro-drivers behind the healthcare sectors. By 2050, 16% of the world's population will be over 65, versus 9 percent in 2019 according to research by Savills, creating a larger patient base for chronic diseases. Growth in disposable incomes in emerging markets is also contributing to a larger global healthcare market, as more of the population has access to health insurance policies.

Underpinning these demographic trends is a sharp increase in R&D spending on new treatments, with global spending on R&D forecast to increase from USD 200 billion in 2020 to USD 250 billion in 2026 according to data analytics provider Evaluate Pharma.

"Medical innovations have the potential to offer significant societal benefits with the ability to enhance and extend human life… real estate has a key role to play to help facilitate the growth and expansion of the sector…"

Olivia Drew
Portfolio Manager, UK Life Sciences

Investment and innovation essential for growth

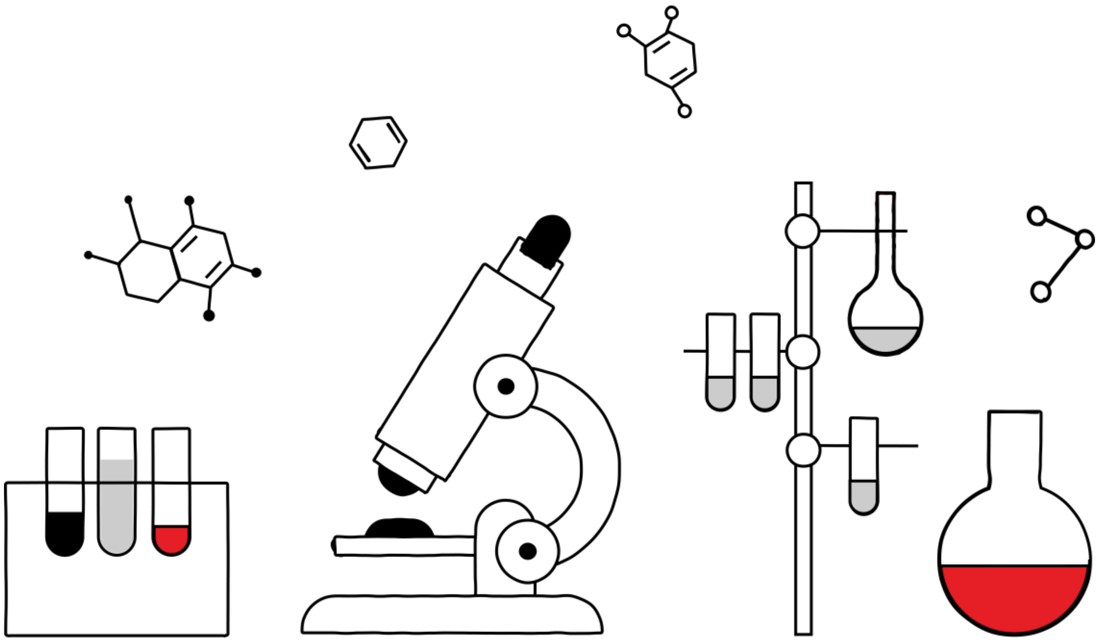
Treating the cause
The social benefits for the life sciences sector are clear, with the major breakthroughs and rapidly improving treatment options for patients that are being developed across the industry. We are seeing a shift from long-term general disease management toward individualized, preventative and curative treatments.

Without the development of specialist facilities, there is a risk of a bottleneck in the sector without the access to space for companies and research to expand. Importantly, by creating this space, we are also supporting growth in employment opportunities for the local and national economy. As these facilities scale up, they require more people to operate them and be trained across a number of skilled roles in the industry. The facilities will deliver an estimated 1.4 million sqft of laboratory, office and manufacturing facilities, providing space for up to 5,000 skilled new jobs.

Other social impacts include the potential for the facilities we construct to significantly reduce the costs of goods for occupiers, passing on savings to end users and patients, and making new and curative therapies more affordable in the market; supporting their viability.

We are working to provide data to look to quantify the social impact we are having across these metrics and provide that to investors throughout 2023, such as the number of skilled jobs created or the percentage of space let to SMEs. On the environmental side, it is true that labs and manufacturing facilities are more energy intensive than offices, for example.

However, throughout the construction and operation of the facilities, we will work with stakeholders to analyze the carbon lifecycle to target net zero emissions during the construction phase and create buildings that have the potential to be operated with market-leading environmental efficiency by the end user in the operational stage.



Infrastructure

A safe haven with secular tailwinds

Private infrastructure really shined in the last several years, despite market volatility, inflationary pressures and rising geopolitical tensions. If anything, many of the same uncertainties that plagued other asset classes have instead become an opportunity for infrastructure.

The asset class's strong performance in the last two years highlighted the fact that it is a relative safe haven that benefits from inflation and higher commodity prices. In addition, infrastructure is exposed to secular trends such as decarbonization, digitalization, and demographic change, adding an attractive *growth* element to what is already a relatively stable asset class.

Despite this positive outlook, we are beginning to see more divergence in performance across different infrastructure assets and strategies. Investors must remember that not all infrastructure is created equal. Private investors can no longer hide behind the benefits of cheap credit, and must become more focused on fundamentals than ever – business moat, pricing power, operational efficiency, management quality, growth execution etc.

Similar to other private assets, fundraising for private infrastructure has been relatively weak in the first quarter of 2023. In fact, it was one of the weakest fundraising quarters in the last 10 years, due to the denominator effect that we had previously discussed in this report.

However, one thing that sets infrastructure apart is that deal flow actually remain relatively strong in the same quarter. It may not be that high compared to the last two years, but it is comparable to the norm we saw before the start of the pandemic.

The combination of weak fundraising and strong capital deployment has a secondary effect – dry powder could actually start decreasing after remaining high for so many years. Some investors may view the shrinking dry powder as a negative sign for the industry, but we disagree.

If anything, infrastructure fundamentals for the most part are still robust, while the secular trends that we discussed all remain intact. The only major change is that there is now less competition for deals and potentially cheaper valuations – both unequivocal positives.

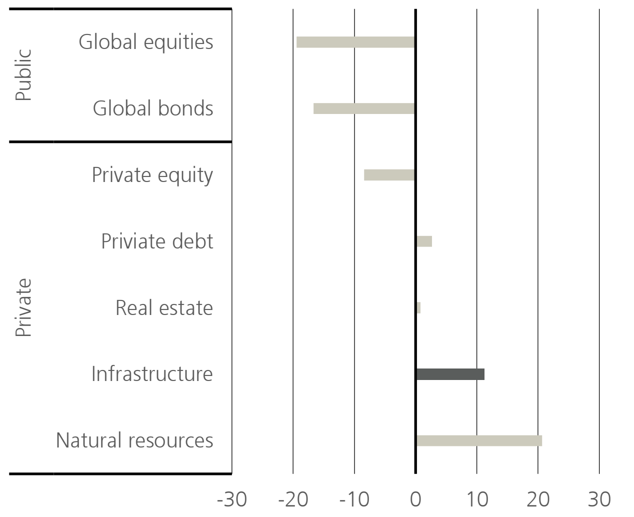
"For the first time in many years, we may actually see a decline in infrastructure dry powder – we view this as a positive especially for capital deployment, as there is less competition for deals."

Alex Leung
Infrastructure Analyst,
Research & Strategy

2022 was a good year for the private infrastructure industry. Performance remains strong with 11% returns according to Burgiss (see Figure 1), and slightly lower at 9.5% according to MSCI. Regardless, it handily outperformed many other asset classes, especially the public markets.

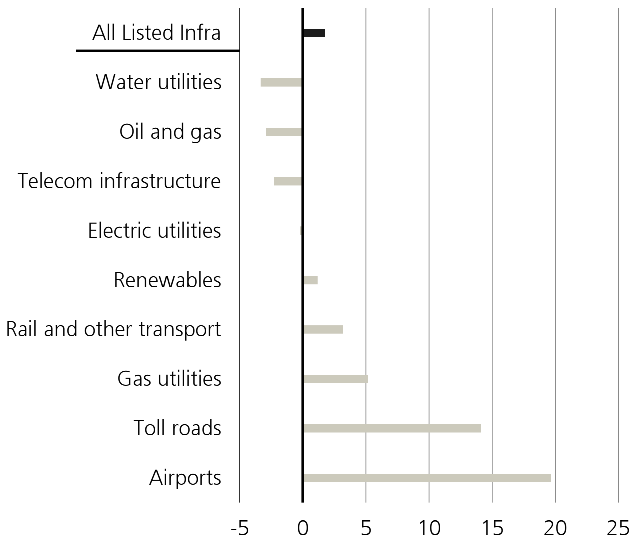
When we look at public infrastructure performance, which we use as real-time proxies for infrastructure fundamentals and sentiment, we are seeing a divergence across the various sectors this year (see Figure 2).

Figure 1: 2022 performance by asset class (%)



Source: Burgiss, May 2023. **Past performance is not a guarantee for future results.**

Figure 2: Listed infrastructure YTD performance (%)



Source: Bloomberg, May 2023. **Past performance is not a guarantee for future results.**

The industry attributed last year's strong performance to one fundamental strength – infrastructure assets provide essential services to society, which means it is less sensitive to changes in the economic environment, and has the pricing power to pass on inflation. Infrastructure has therefore developed a reputation of being a safe haven during times of market volatility.

In addition, infrastructure is also exposed to the secular investment themes mentioned above, through investments such as renewable energy, telecom infrastructure, public-private partnerships. This gives it a growth tailwind that is not commonly found in relatively stable asset classes that are considered safe havens.

But not all infrastructure is created equal. Although the asset class has performed well overall, there is now a divergence in performance across assets and sectors. For example, despite the overall strength of the industry, water infrastructure assets were -6% in 2023 according to MSCI.

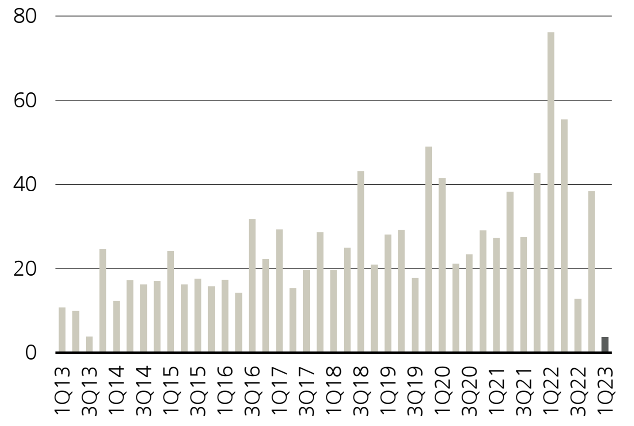
This once again reinforces the fact that performance can vary, and also highlights the importance of a diversified portfolio even within infrastructure.

Similar to what we are seeing across other private asset classes, fundraising has been lackluster in 1Q23. Despite a record fundraising year in 2022 driven by mega funds, institutional investors have slowed down their capital allocation to private markets due to the denominator effect. 1Q23 private infrastructure fundraising was the weakest quarter in 10 years (see Figure 3).

One interesting question is whether this trend would reverse, especially if public markets remain positive in 2023. However, even if it does, we likely will not see the impact until 2024, as most capital deployment decisions will be made closer to the end of the year.

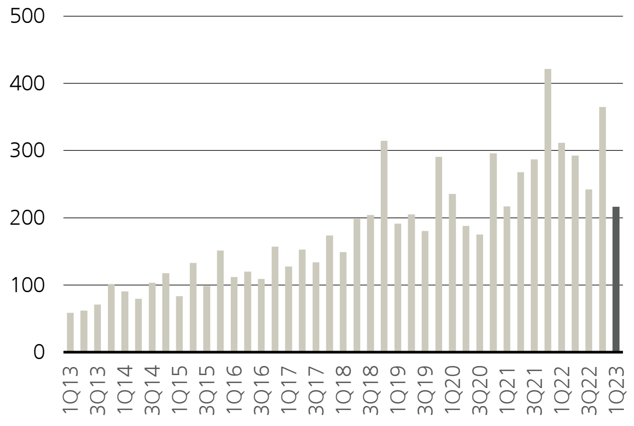
Another unexpected conversation around weak fundraising is what it means for the overall infrastructure market. For years, robust capital raising meant that industry dry powder kept increasing from year to year, putting an upward pressure on deal valuations.

Figure 3: Quarterly private infrastructure fundraising (USD billion)



Source: Preqin, May 2023.

Figure 4: Quarterly private infrastructure transactions closed (USD billion)



Source: Inframation, May 2023.

Infrastructure deal flows in the first quarter actually remained relatively strong – although low compared to the last 2 years, it is still in line with the level of investments before the pandemic (see Figure 4). This combined with weaker fundraising should help drawdown the ~USD 300 billion of dry powder that the private infrastructure industry has.

This opens up opportunities for investors who are willing to deploy capital now. Infrastructure fundamentals have, for the most part, remained strong. The secular trends that we previously discussed still remain intact. Savvy investors should be able capitalize on the decreased competition for deals and jitters around the broader economy, and find attractive opportunities in the current market.

Private infrastructure sector performance outlook

	Negative		**Neutral**		**Positive**
Europe		Oil & gas, utilities	Toll roads, ports, conventional power	Airport, railroads, fiber, telecom towers, data centers	Energy transition
US		Utilities	Oil & gas, toll roads, ports, conventional power, data centers	Airport, railroads, fiber	Energy transition, telecom towers

Source: UBS Asset Management, Real Estate & Private Markets (REPM), May 2023. Assessment informs top-down perspectives by sectors and regions. REPM will weigh the perceived relative attractiveness using a scale of "positive", "neutral" and "negative" ratings. The ratings do not reflect exclusionary or inclusionary investment screening, but imply more risk premium to be applied to sectors with "negative" ratings and less risk premium for sectors with "positive" ratings, based on our latest views. These ratings are the opinion of REPM and may not necessarily provide an accurate reflection of the ultimate success or potential return of a given strategy. **Past / expected performance is not a guarantee for future results.**

Infrastructure

Value creation in an evolving landscape

In the past few years, UBS adjusted its strategy and approach to investing in infrastructure. Could you walk us through the direction UBS took?
We started as a global, diversified core-focused business. As the industry has matured, the best investors have become increasingly specialized, and we have followed suit. We've been focusing on building specific capabilities in infrastructure sectors we think are the most attractive, and in the past five years, that has been in the digital and energy transition in the two largest markets – North America and Europe.

Our business remains committed to the small- and medium-sized enterprise part of the market, where we believe competition is lower, valuations are more reasonable and returns are attractive.

Our focus on control investments has increased, avoiding consortium deals where decision making can be difficult in an increasingly complex environment. In tandem, we have evolved our teams' capabilities and processes to enable us to execute more complex value-creation plans, while always making sure our infrastructure portfolio companies deliver stable and predictable cash flows as they mature.

Finally, we have the research capability to support the business and help us have a stronger understanding of the underlying fundamentals of our focus sectors, supporting strategy and underwriting calibration. This evolution of our business and capabilities has allowed us to carve out a relevant niche and has translated into better investment success.

How is UBS seeking to address the evolving needs of increasingly sophisticated investors?
As large investors' allocations to infrastructure have matured, they are thinking about how to complement their existing portfolio construction decisions. Typically, this is more control over where capital is deployed, be that markets, sectors or even individual asset selection, and the asset-risk profile.

For example, there has been a proliferation of single-asset continuation funds, where seed assets give investors the chance to appraise the assets in which they will invest.

We've sought to work with large investors, providing them a more tailored approach through customized mandates where they can design and implement a bespoke investment strategy. It's a different style of relationship and requires upfront effort and a clear joint understanding to manage successfully over time.

"The depth and breadth of expertise and capital now represented by the sector make the infrastructure market crucial to our collective goal of building a more resilient, sustainable low-carbon future for our economies and future generations."

Andrew Morris
Head of Infrastructure Equity

How has UBS found value in an increasingly competitive market?
By being focused on sectors where we have developed deep expertise and have conviction. Those sectors have strong tailwinds and strong regulatory and supportive legal regimes. Our active asset-management and value-creation focus has also given the team a clear understanding of how we add value and the levers to pull in each portfolio company we buy.

We typically create value by deploying capex to expand or build new infrastructure. For example, we have been building new data centers and tower assets, expanding and densifying fiber networks, and at our renewable-energy assets, building new wind and solar power plants. Another strategy is to look for different entry points into an asset, an example being where we have repowered a wind farm portfolio and extended its useful economic life.

By staying in the mid-market space, where there is less competition and we feel valuations are more reasonable, we can support the growth and make a material difference to these SMEs through investing, as well as improving their operations, controls and management.

With many investors targeting digital infrastructure, can we consider this sector a bubble?
Digital infrastructure has been a focus for many investors, and the pandemic increased the importance of these assets and of having a digitally connected economy. This demand has increased deal flow and driven up the price of assets. Today, with higher interest rates, inflation and lower projected economic growth, there is arguably limited room for further multiple expansion, and we may have seen the top of the market. Back in the third quarter of 2022, public market valuations for towers and data center businesses had already materially declined, and at this point, investors seem to be cautious on further digital exposure.

Is the performance of digital infrastructure justifying the high valuations paid for these assets?
As we move to a full-fiber world, this will provide a long tailwind of growth opportunity. However, not all digital-infrastructure businesses will benefit equally, as different subsectors mature, and there are common trends impacting future performance that investors should be thinking about.

First, can these businesses, over an extended period, increase prices to their customers? In the UK, we've seen double-digit increases to retail prices, which is not sustainable. While that might provide short-term benefits to investors, there may be longer-term negative effects as customers look to save money.

Second, with significant growth pipelines and capex planned, does cost inflation impact projected returns on growth investment? Investors take full capex-cost risk in many digital businesses, and the historically benign inflation and interest-rate environment have masked this underlying risk.

Finally, with all the projected build, there is risk of overcapacity and infrastructure competition leading to price erosion or lack of usage.

There is evidence of these issues affecting digital businesses across different markets, a clear example being the challenges in the altnet sector in both the UK and Germany.

Energy transition requires significant capital. How is UBS addressing this megatrend?
Energy transition and sustainability are key focuses for UBS Asset Management and our infrastructure franchise, where we have already developed subsector-specific strategies. In the power sector, we have been investing in renewable energy and have developed specific capabilities in the utility-scale battery-storage sector with a dedicated team.

Similarly we are focusing efforts on the decarbonization of transport needs. Our research team is assessing the different clean-energy technologies and solutions, such as hydrogen, renewable natural gas and carbon capture, utilization and storage (CCUS), and EV charging to help us identify which emerging business models will be sustainable and successful longer term. Identifying the right entry point is a challenge, and we are looking for opportunities that are economically competitive, provide market solutions and are not overly reliant on subsidies.

Our commitment to sustainability isn't new. In 2017, we were one of the first to develop an Article 8 strategy, and our energy-storage strategy was Article 9. Today, much of the market has now moved on to launching Article 8 strategies. We have continued to push the boundaries in terms of how we can differentiate ourselves as an investor and demonstrate that our investing activities are having a beneficial impact on society.

We are still at the very beginning of what needs to be done to decarbonize our economy and the sources of power and energy. There is a long way to go, and this sector will continue to present interesting opportunities for investors and will be a key focus for our business going forward.

One of infrastructure's key attractions has been inflation protection. How are you seeing this play through assets?
Infrastructure's key premise is to provide long-term, stable returns with inflation protection. But as the definition of infrastructure has expanded, the direct inflation link in underlying businesses has, to some extent, been diluted. Investors are digging in to understand how inflation is affecting revenues, costs and capex. In core infrastructure, assets typically have contractual revenue streams that allow investors to pass on inflation. But when you're running at high inflation levels for a prolonged period, you need to be sensitive to the impact on customers and other key stakeholders, which is likely to mean some *give and take* in any pricing decision.

In the core-plus market, businesses typically have more flexibility to set their own prices, but in a more competitive market with higher price elasticity of demand consequences. Inflation is well understood in the energy markets, and merchant exposure has benefited business during this period of higher inflation. In digital, inflation is less understood, and the sector is going to be tested through a period of slower growth and higher inflation. It appears that certain types of digital businesses and markets are likely to provide better inflation protection.

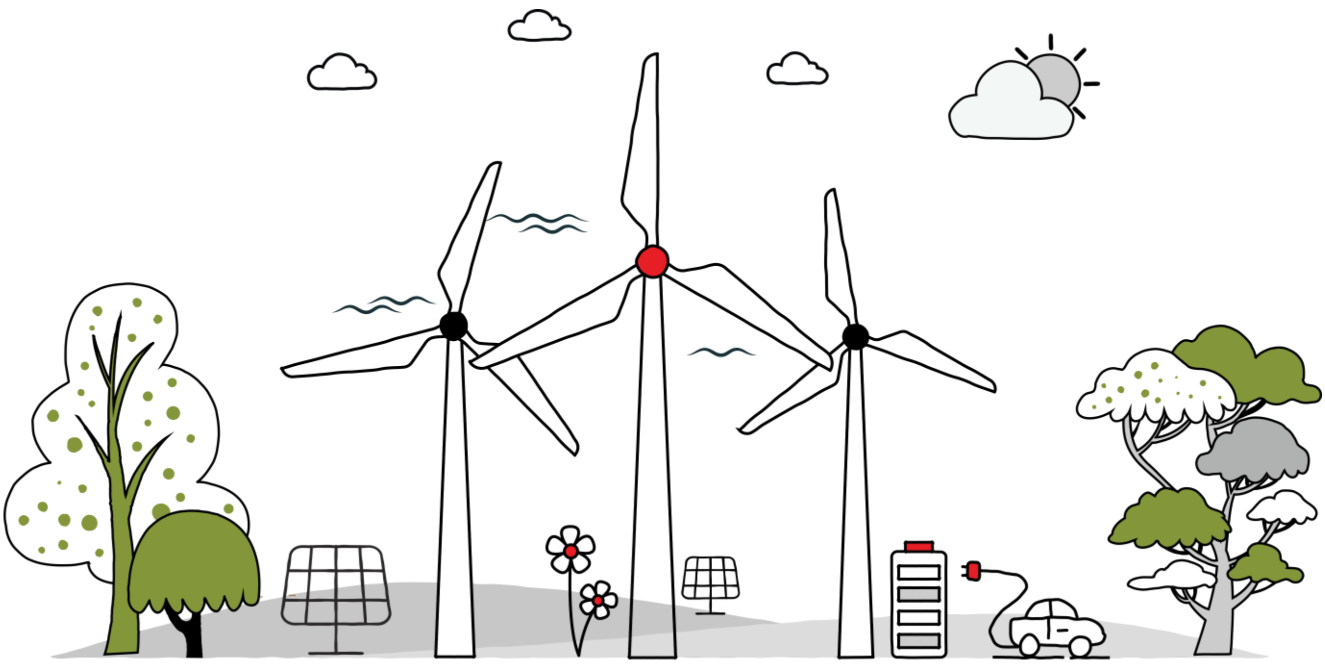
As interest rates have risen, have you seen valuations reflect a changed cost-of-capital environment?
The rise in rates impacting investors' portfolios has led to a slowdown in decision making and taken momentum out of the market.

The fundraising environment is harder and transactions are taking longer to close, as bid-ask spreads are emerging between buyers and sellers, indicating cost of capital is resetting.

Fixed income now presents an attractive proposition for institutional investors. Infrastructure has benefited during the past low-rate decade as a yield-replacement strategy, and that dynamic has now flipped. Infrastructure still offers diversification benefits, but it is likely investors will start to expect higher returns from infrastructure.

We've seen valuations reset in public markets, and relative-return institutional investors typically move first to adjust their cost of capital to changing economic fundamentals. In the meantime, the dry powder raised the past few years may support valuations as that capital gets deployed. The rising cost of debt, however, will reduce the leverage available and may put downward pressure on valuations.

We believe the outlook for the asset class remains positive, and high-quality businesses should deliver sustained performance through the ups and downs of the economic and financial cycle. The depth and breadth of expertise and capital now represented by the sector make the infrastructure market crucial to our collective goal of building a more resilient, sustainable low-carbon future for our economies and future generations, and UBS intends to play a leading role making this happen.



Farmland

From record-breaking to profit pivot

Per the US Department of Agriculture's 2023 Farm Sector Income Forecast, net farm income is forecast to decrease following two years of strong growth, including a projected record-high in 2022. In 2023, net farm income is forecast at USD 136.9 billion, a decrease of USD 25.9 billion (15.9%) relative to 2022 in nominal dollars. After adjusting for inflation, 2023 net farm income is forecast to decrease USD 30.5 billion (18.2%) relative to 2022. Despite this expected decline, net farm income in 2023 would be 26.6% above the 20-year average (2002–2021) of USD 108.1 billion in inflation-adjusted dollars if realized.

Overall, 2023 cash receipts from the sale of agricultural commodities are forecast to decrease USD 23.6 billion (4.3%) to USD 519.9 billion from a projected record high of USD 543.3 billion in 2022 in nominal dollars. Of this, total crop receipts are forecast to decrease USD 8.9 billion (3.1%) from 2022 to USD 276.9 billion lead by lower soybean and corn receipts. Soybean receipts are expected to decline USD 5.2 billion (8.1%), primarily due to lower forecasted prices. Corn receipts are forecast to decrease USD 4.1 billion or (4.5%) as higher quantities sold are not expected to offset lower expected prices.

Total production expenses in 2023 are forecast to increase USD 18.2 billion (4.1%) to USD 459.5 billion. When adjusted for inflation, production expenses are forecast to increase 1.3% from 2022 and remain below the record-high level of 2014. Fertilizer-lime-soil conditioner expenses, the second largest expense category, are projected to have reached a record high in 2022 of USD 42.5 billion.

These expenses are expected to remain high at USD 42.2 billion in 2023, decreasing by USD 0.3 billion (0.8%) compared to 2022. Interest expenses are expected to see the largest increase in production expenses, rising USD 6.2 billion (22.4%) to USD 33.8 billion in 2023 following a projected increase of USD 8.2 billion (42.%) in 2022. This reflects expectations that debt levels for the farm sector as well as interest rates will continue to increase in 2023, albeit at a slower rate than 2022. Fuel and oil expenses are expected to decline USD 3.0 billion (14.9%) to USD 17.1 billion in 2023. When adjusted for inflation, the 2023 level of fuel and oil expenses is forecast to match the 20-year average.

Despite the forecasted decrease in net farm income in 2023, farm sector equity is forecast to increase USD 3.5 trillion (5.0%) relative to 2022 in nominal terms. Farm sector assets are forecast to increase 5.2% to USD 4.0 trillion, primarily due to expected increases in the value of farm real estate assets. Farm sector debt is forecast to increase 6.2% in 2023 to USD 535.1 billion. When adjusted for inflation, farm sector equity, assets, and debt are forecast to increase by 2.1%, 2.3%, and 3.3%, respectively.

Source: US Department of Agriculture, Economic Research Service. Farm Sector Income & Finances: Highlights from the Farm Income Forecast, 7 February 2023.

"Despite the forecasted decrease in net farm income in 2023, farm sector equity is forecast to increase USD 3.5 trillion (5.0%) relative to 2022 in nominal terms."

Manisha Bicchieri
Sustainability and Research Analyst,
Food & Agriculture

Food & Agriculture

Building resilience collectively

With the war in Ukraine, COVID-19 and rising commodity prices, are the threats to food security multiplying?
The consequences of COVID-19 triggered global concern around food security. Even developed countries such as the UK worried about food shortages during the global lockdown because borders were basically closed. In some regions, such as the Middle East, there were concerns about the potential political unrest due to shortages and rising food prices. While the pandemic is a distant memory for some, the Ukraine war has brought food security front and center again.

Many have forgotten that Ukraine is a large, low-cost food producer and considered the breadbasket of Europe. The US, on the other hand, has less to worry about given the size and the scope of its food market. That is not the case for people in a lot of countries that depend more on importing food, including G7 countries. The war in Ukraine has once again created a worry in places such as the Middle East and Africa. A good example is Egypt. Egypt is a primary importer of Ukrainian grain, so that is not only a worry for the local Egyptian government, but for the region, as well. Ukraine's export markets include China, Europe and Africa.

What role can the private sector play in alleviating food-security challenges from farm to table?
In my view, the private sector is a key catalyst to supporting food security. Growth capital has a role in investing and promoting new food ideas. For example, protein-based food alternatives such as Beyond Meat – a plant-based, vegan meat – are typically initially funded by the *venture community*.

The venture community also invests in food technology, such as agriculture technology, drones and robotics on the farm, or water technology. Infrastructure capital, however, is really the most important capital source here, and I think that is not reported as much because growth equity capital typically invests in *cooler* ideas. Growth equity and venture capital are investing in very innovative type ideas, but for many cases, innovations don't work well. Infrastructure capital is what brings size and scope, has long-term impact and brings down costs. Long term, it is this type of infrastructure capital – not growth equity – that will bring down the cost of food in scale.

Food investing only works when there is an endgame that supports scale and lower costs. Investing in a new apple variety or a citrus variety only works if there is enough demand for it that it brings down its unit costs. Consequently, the cost goes down and can be competitive from a production perspective.

"Infrastructure capital is what brings size and scope, has long-term impact and brings down costs. Long term, it is this type of infrastructure capital – not growth equity – that will bring down the cost of food in scale."

Darren Rabenou
Head of Food & Agriculture

This is where I think the venture community miscalculated around some exciting areas like vertical farming. The challenges faced today by vertical farming have more to do with the sector's lack of ability to produce food at a low cost and the lack of the ability to attract cheaper cost of capital to fund that. Infrastructure capital is cheaper than growth equity capital, and that is what is going to be the driver. If vertical farming 1.0 or 2.0 is going to work, it has to bring in more stable capital long term because they are competing with how farmers fund themselves. Vertical farming needs a growth plan that incorporates a light at the end of the tunnel where you can basically finance a facility as competitively as a farm.

This is the main reason we pursued cold storage versus vertical farming as a business. Like vertical farming, cold storage is capital intensive, but here is the difference: With cold storage, I can find a long-term tenant with long-term contracts, which makes this investment more readily able to be financed and have better risk-return dynamics. These investment types address sustainability in a different way and both use a lot of energy, but we think cold storage has a bigger impact using that energy by reducing the cost of food production and indirectly reducing food waste. We are one of the largest managers of institutional farmland in the US, managing approximately 300,000 acres, so cold storage was a natural business to evolve out of that work, leveraging off our expertise in food and our expertise in real estate.

How are food systems influencing and being affected by climate change?
This is a challenging question because many people might say efforts such as organic farming are the answer to reducing climate change, but there are unintended consequences of just converting to organic farming versus conventional. For one, food prices would explode because organic farming is almost always more expensive and less productive than traditional farming methods. In terms of sustainability, organic farming might check the box on the environmental side, but the social impact on lower-income people would be devastating.

What we can do is encourage traditional farmers to use more sustainable farming practices in their businesses that have less impact on the environment. We believe you can align farmers with the needs of the environment. Our tenant farmers, for example, are very good stewards of the land because it is good for their business. If farmers are utilizing good sustainable practices, it is a benefit for the environment, but it is also good for their pocketbook. That becomes a balancing act we as stewards of capital need to think about when putting money to work with our farmers.

What can policymakers, scientists and citizens do to transform food systems?
Unique collaboration from all three is required to transform the food system. You need well-thought-out government policy first. Here is an example: California is critical to US food security because it produces around 40% of perishable fruits and vegetables for US consumption, not to mention nuts (according to California Department for Food and Agriculture). California has drought issues, but in 2023, it has seen record precipitation. One would think record snow and record rainfall would be a quick fix to the state's water needs.

Instead, around 80% of California's recent precipitation (according to California Department for Food and Agriculture) will be deposited in the ocean, and the reason for that is the state hasn't built a major reservoir in more than 50 years to support both their growing population and their farmers. There are policy decisions that can be implemented to address California's water-security issue, and governments can address this by supporting the financing, which is where the private sector comes in to play.

Science and technology also have a huge role. US farmers can be viewed, in general, as among the most productive farmers in the world because they have adopted new technologies. They have also been able to afford new technologies. It is critical technology being implemented in places like the US and then transported to developing countries. Think about the impact drones could have on farms in Africa, measuring crop health as they do in the US. This technology transfer will make these developing countries more efficient and cost competitive.

On the consumer side, the average citizen has a large role here, too. Think about what the impact on food waste would be if consumers changed some of their behaviors. Much of food waste, especially fruit, results from consumer demand to purchase only perfectly shaped fruit, and US consumers are an example of this. Supermarkets will only buy 12-inch pineapples, for example. Most pineapples are not 10-12 inches, but if you go to a US store, you will see only perfectly measured pineapples. The same thing applies to avocados.

While some of the rejected fruit can be processed, much gets wasted. But both the consumer and the retailer have a responsibility to change perceptions. An organization called Imperfect Foods is trying to promote buying the crooked carrots and misshapen onions, but you need the big retailers to adopt these types of practices before you can have impact.

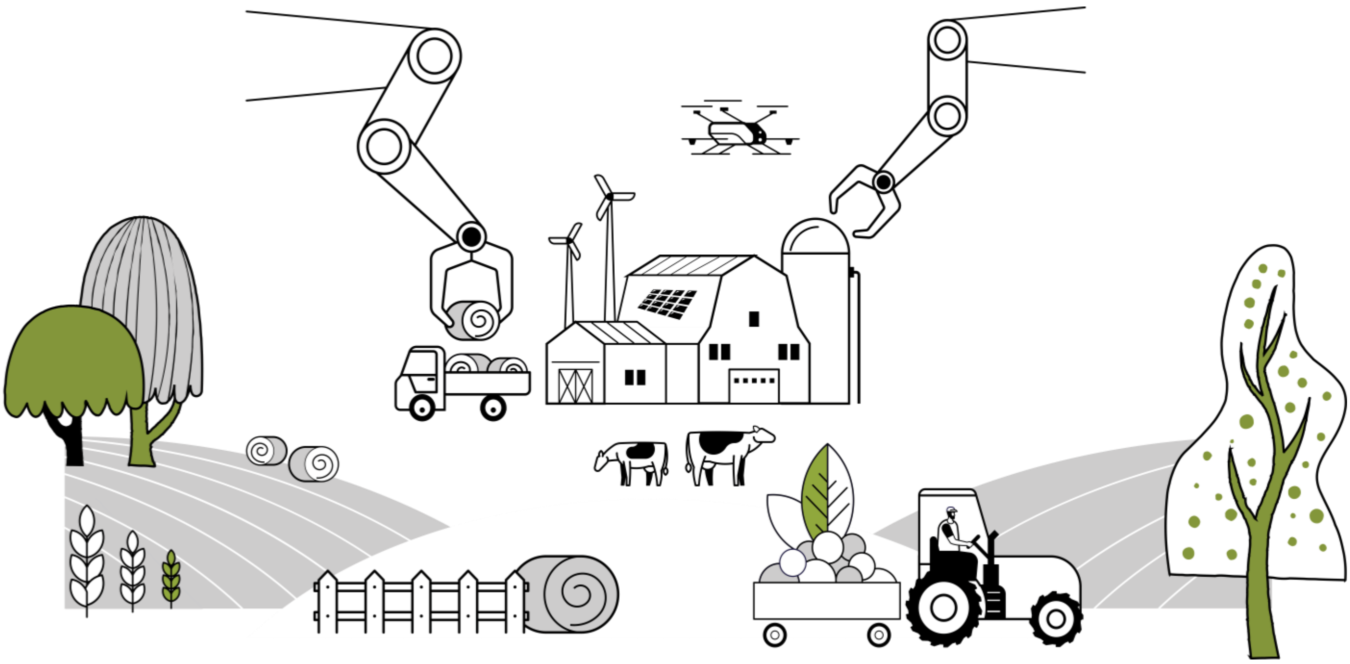
Do you think plant-based products will play an increasing role in food security?
Yes, but it is still early. Plant-based food version 1.0 has had mixed results. Producers need to go back to the drawing board and think about product taste and have a clearer vision of how they are going to bring down costs. Growth equity plays a role in the innovation side of this, but there also needs to be a vision of how we bring those costs of production down. The success of almond milk is a good example. Innovators were able to create something that became an alternative to traditional milk, and they have produced it in scale and, in general, brought its cost of production down so it is literally an alternative. They need to do that in other areas.

What challenges are food companies facing in terms of sourcing and supplying?
One of the main challenges food companies face regarding sourcing and supplying is ensuring sustainability through the supply chain, which includes sourcing raw materials in a way that incorporates more sustainability standards.

As managers and owners of farmland, we encourage our farmers to adopt more sustainable standards. We are a founding member of a newly developed sustainability standard for farmland portfolios called Leading Harvest, designed to optimize sustainable farmland management as part of a comprehensive assurance program.

Leading Harvest promotes farmers to use better farming practices that are, first, good for their crops, but also have sustainable characteristics. This is an independent organization that is it is good for the farmer and good for the companies that are buying resources. We think it is good for us as investors too, because this type of collaboration will ultimately create more value in the land that we own. Companies are very focused on creating a sustainable food chain, and as they are sourcing those resources, they are going to be willing to pay for making sure those food sources are sustainable.

But if you are Kellogg’s or Nestlé, you need to source in scale, so they need to create a balancing act of sustainability with cost. By encouraging farmers to be more sustainable and through systems like Leading Harvest, we are aligned with the farmers and aligned with companies creating incentives for farmers to enhance sustainability practices.



Private equity

A steady market into midyear

Venture capital weathers banking crisis
Private equity enters mid-2023 in remarkably stable shape given a shaky start to the year. Venture capital funds and venture capital-backed companies were rattled by the March collapse of Silicon Valley Bank (SVB), which kicked off a US banking crisis. Many of these funds and companies were caught off-guard when investor panic led to a run on SVB which was left without sufficient liquidity to cover its deposits. In the end, US regulators stepped in to backstop deposits and the worst of the market panic dissipated in a few days.

Still, US regional banks have suffered in the months since, and First Republic Bank became the second large bank serving the startup community to be wiped out when it was closed and sold to JP Morgan Chase by US regulators in May. Venture funds and companies have acted quickly to diversify their banking exposure and have not had their balance sheets affected. A larger concern will be how the crisis has affected the availability of startup banking and venture debt in the medium term, which could have broader implications for the early-stage ecosystem.

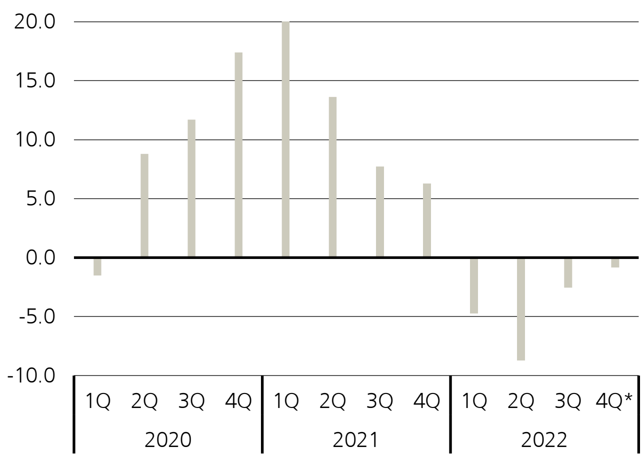
Near-term challenges for venture capital
Venture capital has struggled over the past year, hurt by markets pulling back from both technology sector companies (the NASDAQ composite fell 33% in 2022, compared to a 19% drop for the S&P 500). In addition, investors have placed a greater focus on fundamentals, which has more broadly reduced the value of high-growth, low-profitability businesses. Venture capital-backed companies, many of which are on the wrong side of both of these trends, have done particularly poorly over the last year (see Figure 1).

We view the pullback in venture capital as a moderate market cycle in an asset class which has delivered impressive performance over the past decade. Some companies and even some funds will suffer, particularly those deployed near the top of the market or
having lost focus on the amount of cash-on-hand or the path to profitable unit economics. Still, venture capital remains an exciting asset class with plenty of long-term potential, and one in which we are convinced investors with a steady hand, consistent allocations, and access to top managers will be rewarded.

"Private equity, with operational improvement at its core, remains well positioned to help investors exceed their return targets. For experienced private equity managers with the ability to manage through cycles, we believe this cycle has extended realization timelines, but in most cases should not create an excessive drag on returns."

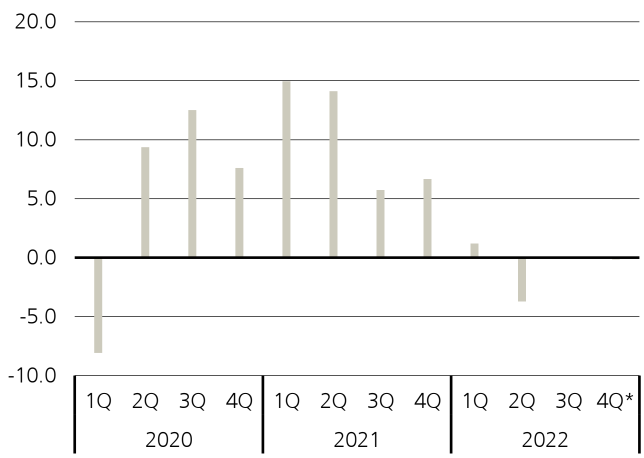
James Pilkington
Multi-Managers Private Equity
Portfolio Manager

Figure 1: Venture capital quarterly fund returns (%)



Source: Pitchbook, May 2023.(* denotes preliminary data). **Past performance is not a guarantee for future results.**

Figure 2: Private equity quarterly fund returns (%)



Source: Pitchbook, May 2023. (* denotes preliminary data). **Past performance is not a guarantee for future results.**

Cycle has extended realization timelines

Private equity (the market for leveraged buyouts) has faced headwinds the past year, following in the footsteps of public equity. Existing investments faced a lost year of growth and estimated returns for 2022 are negative (see Figure 2). We believe this trend is unlikely to repeat itself absent a severe economic recession or a public market correction as in 2022. Many companies have now completed their repositioning for an environment of uncertainty and potentially slower growth (eg, leaner cost structures, and excess inventory mistakes unlikely to be repeated).

Private equity, with operational improvement at its core, remains well positioned to help investors exceed their return targets. For experienced private equity managers with the ability to manage through cycles, we believe this cycle has extended realization timelines, but in most cases should not create an excessive drag on returns.

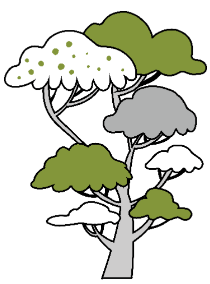
Conversely, capital entering private equity funds during a market cycle has historically made strong returns, with some of the best coming in the quarters following the GFC and the coronavirus-induced market cycle in 1H20.

Managers taking a careful approach to entry valuations, and employing discipline in vintage year diversification and use of leverage, stand to do well in today's market.

Denominator effect weighs on fundraising

Fundraising by general partners (GPs) that manage private equity funds has cooled significantly over the past two years, with several contributing factors. Limited partners (LPs) are facing a *denominator effect*, where portfolios are being reset to match investment allocation guidelines. In most cases, this has required a rotation out of outperforming private equity to re-balance public equity positions, which have been battered over the last year. LPs are also facing more demands for capital from existing relationships than they can manage.

They are paying more attention to GPs' vintage year diversification and pushing back on funds which are being deployed in under two years. Additionally, LPs have received below-average distributions from their private equity portfolios over the past year, leaving them less capital to reinvest. The good news is that these conditions are temporary. LPs have overwhelmingly shown that they plan to increase or maintain private equity allocations as a matter of policy, and we expect the fundraising market to recover in 2024 as rebalancing effects loosen. In our portf olios, we see the softer fundraising environment as an opportunity to add top manager relationships which can then be sustained in the long term.



Secondaries market in full swing

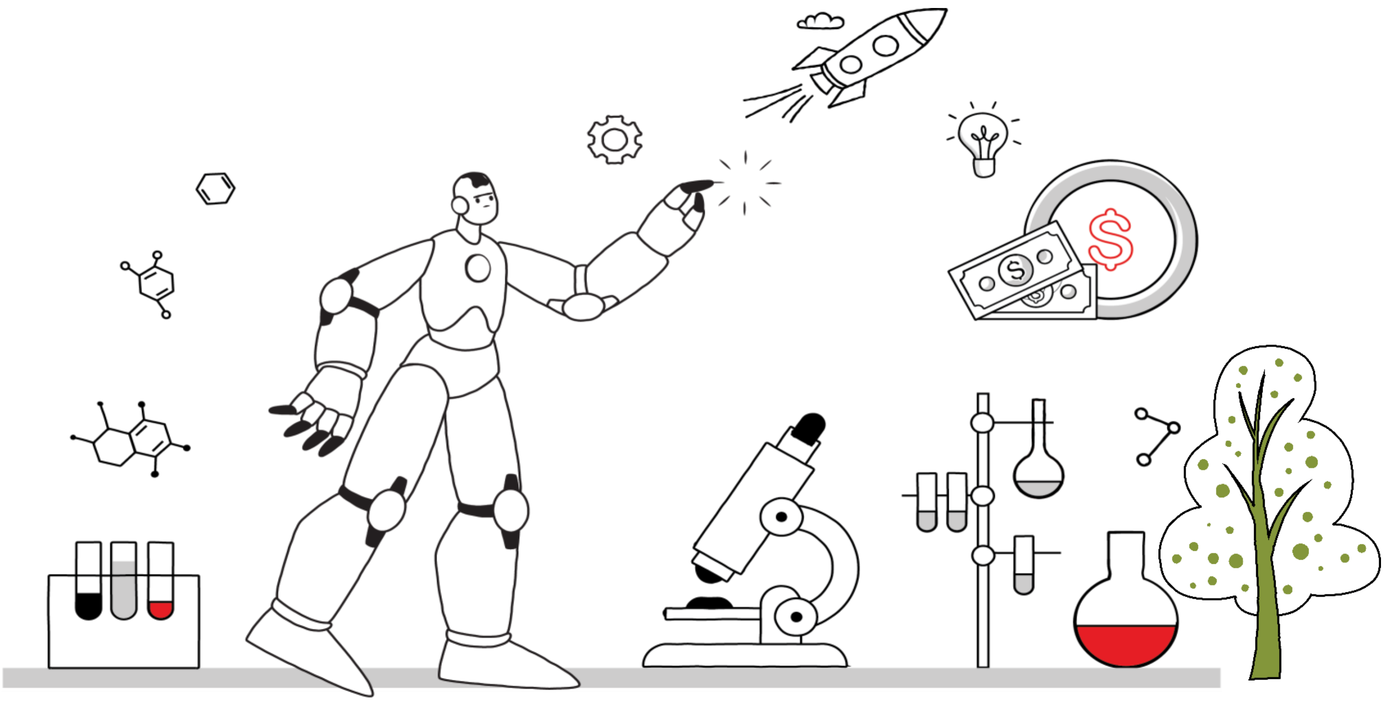
Exits are expected to recover in 2024, a combination of a gradual unfreezing of IPO markets and sponsors coming under increased pressure to deliver distributions to LPs (rather than continuing to wait for market conditions to improve). There is upside to this possibility should a recession not materialize – in that case, we would expect to see strategic acquirors returning to growth mode in earnest, bolstering another important exit path.

In the meantime, with LPs seeking alternative sources of liquidity, we see an active market for private equity secondaries, both in the form of LP-led sales and GP-led continuation fund processes. Continuation fund vehicles have become common in recent years as the market for private equity secondaries continues to mature, with thoughtfully designed transactions offering attractions to sellers, buyers, and fund managers.

Private equity sector performance outlook

	Negative		Neutral		Positive
Americas			Venture capital	Growth equity, buyouts	
Europe			Growth equity	Venture capital, buyouts	
Asia			Venture capital	Growth equity, buyouts	

Source: UBS Asset Management, Real Estate & Private Markets (REPM), May 2023. Assessment informs top-down perspectives and strategy allocation. REPM will weigh the perceived relative attractiveness of these strategies using a scale of "underweight", "neutral" and "overweight" ratings. These ratings are the opinion of REPM and may not necessarily provide an accurate reflection of the ultimate success or potential return of a given strategy. **Past / expected performance is not a guarantee for future results.**



Private credit

Upbeat tone despite market turmoil

Within private credit, one segment that has recently received increased investor attention is mortgage servicing rights (MSRs). After a mortgage is originated by either a bank or non-bank originator, a servicing entity will provide administration services for the mortgage in exchange for a regular monthly fee. These services include collecting payments, forwarding cashflows to the lender, maintaining correspondence with the borrower, collecting taxes and potentially working out loans.

As part of the mortgage origination process in the US, MSRs are typically stripped from the mortgage, and offered as a separate cash flow stream, which is often purchased by specialty servicer entities or investors that then enjoy the regular cashflows from fees on servicing.

Investing in MSRs is a capital intensive, specialty business with significant barriers to entry, including both legal as well as specialty operational and investment expertise. MSRs investors will typically operate a special servicer entity or outsource the servicing to a third party. Typical investors in MSRs include REITs, private credit funds, financial institutions and other specialty real estate lenders / services.

MSRs characteristics

As a real estate-related asset, MSRs derive their servicing fees on the cashflows from mortgages, and their ultimate pricing is based on the net present value of those cashflows through the life of the mortgage. However, unlike most real estate assets and securities that are impacted by rising interest rates, the value of MSRs are negatively correlated to interest rates. As interest rates rise, borrower prepayment activity typically slows, which extends the life of mortgages, and thereby extends the life, cashflows and ultimate value of the MSRs contract.

As the fees on MSRs are also not directly market-driven, the asset class also typically provides consistent, steady cashflows with limited mark-to-market, while not bearing the risks of directly owning mortgages (such as default or loss of principal). The largest risk to MSRs is the potential for prepayments, which shorten the life of the mortgage servicing and thus total cashflows from fees. However, this risk can be partially mitigated by a recapture program.

Given this unique dynamic, MSRs provide both an attractive, uncorrelated source of yield, as well as a viable method to hedge broader real estate interest rate exposure. For those looking to curtail prepayment risk of MSRs, investors will typically hedge by owning US Treasuries, Agency MBS, and other interest rate instruments.

"…MSRs provide both an attractive, uncorrelated source of yield, as well as a viable method to hedge broader real estate interest rate exposure."

Joseph Sciortino
Head Multi-Managers
Private Credit

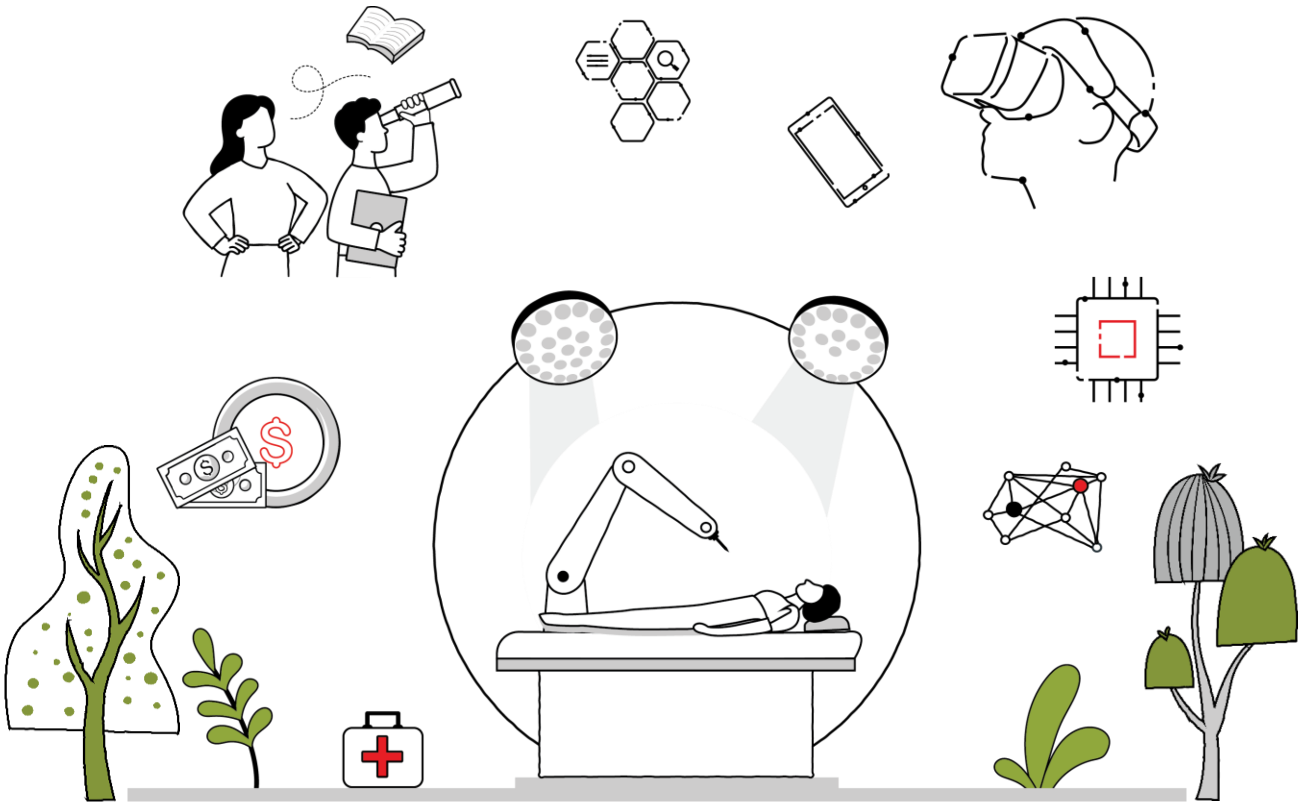
Setting the stage

Over 2022-2023, the Fed has embarked on their most aggressive rate hiking program in the last 40 years, which has resulted in a material slowdown in new mortgage origination activity as mortgage unaffordability has reached near historical highs.

Following COVID-19, there was a surge of new mortgage origination and MSRs. These MSRs were originally retained on balance sheet by many bank and non-bank specialty mortgage originators and servicers. In 2022, as the Federal Reserve embarked on their most aggressive rate hiking program in the last 40 years, new mortgage origination activity largely stopped, as mortgage affordability subsequently reached near historical highs.

This has in turn resulted in originators, particularly those with business models that rely on constantly originating, being forced to sell assets off their balance sheets in order to raise cash and supplement the decline in earnings from the origination business.

This has resulted in an increase of MSRs being sold into the secondary market. In the banking sector, continued retrenchment and regulatory capital requirements are also forcing banks to shed their real estate and MSR businesses.



Over the coming year, the supply of MSRs is expected to significantly increase, as specialty originators, as well as institutional banks have signaled their intent to offload exposure. This has already caused spreads on MSRs to widen as the market has been flooded with new supply, despite MSRs having strong underlying fundamentals.

From a fundamental perspective, the Fed's aggressive interest rate policy has also bolstered the intrinsic value of MSRs. As mentioned above, rising interest rates have resulted in a significantly slowed prepayment speed, ultimately extending the life of the mortgage servicing requirements.

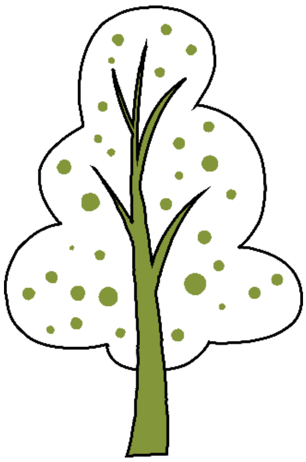
Additionally, mortgage forbearance and default activity continues to improve from the spikes during the pandemic, while the average LTVs and embedded home equity value for mortgage borrowers remain strong.

The stage is now set for MSRs, as a weak macro backdrop and tailwinds from both technical and fundamentals may provide investors with attractive, consistent net yields of 10-12%[1] with limited market beta and negative correlation to interest rates.

Private credit sector performance outlook[1]

	Negative		Neutral		Positive
Americas	Special situations		Corporate	Commercial real estate	Residential real estate
Europe	Special situations		Corporate	Commercial real estate	Residential real estate

1 Source: UBS Asset Management, Real Estate & Private Markets (REPM), May 2023. Assessment informs top-down perspectives as well as bottom-up strategy and manager selection. REPM will weigh the perceived relative attractiveness of these strategies using a scale of "underweight", "neutral weight" and "overweight" ratings. These ratings are the opinion of REPM and may not necessarily provide an accurate reflection of the ultimate success or potential return of a given strategy. **Past / expected performance is not a guarantee for future results.**



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