Infrastructure

2024 Outlook

Answering five tough questions from infra-skeptics

Are valuation concerns overdone?

Hidden complexities of secular trends.

UBS

Executive summary

Private infrastructure had a challenging 2023. Although performance remained relatively stable, fundraising is at the weakest level in 10 years, while deal volumes have fallen 40% year-on-year due to wide bid-ask spreads. High interest rates, mixed economic outlook, and geopolitical tensions continue to weigh on the industry.

In our infrastructure outlook last year[1], we were relatively cautious about the asset class due to uncertainties in the macro environment. But with most of 2023 behind us, we now wonder whether markets have actually become too bearish. Infra-skeptics often express disbelief around infrastructure's current valuations and performance, and suggest that it is best to remain on the sidelines before the eventual correction.

Other skeptics also point to sector-specific issues, including concerns about the notable secular tailwinds that we previously highlighted[2]. For example, on deglobalization, they question whether onshoring is actually real, since global trade volumes are still rising. On digitalization, cynics are wary of the hype around artificial intelligence (AI), especially since digital infrastructure has seen a pullback in investor expectations. On decarbonization, they worry about the backlash against clean energy, given the growing number of negative headlines about anti-renewable policies and project cost inflation.

In our view, some of these questions are valid, but the negative sentiment also appears overdone. The evolution and development of private infrastructure has never been a straight line. Looking into 2024, we see silver linings for the asset class.

1 Infrastructure Outlook – Lessons learned for 2023; November 2022 *Link*
2 Infrastructure Investing – The myths and realities; July 2023 *Link*

Macro backdrop

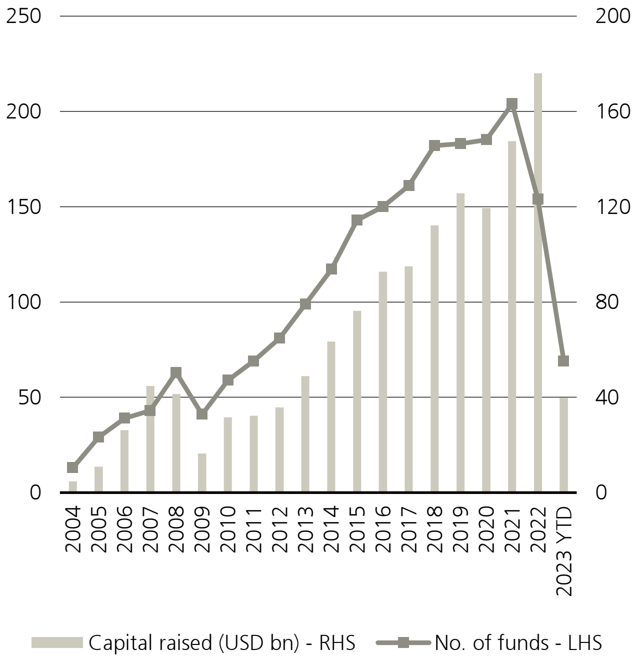
How 2023 played out compared to our expectations

This is the sixth edition of our infrastructure outlook. In past editions, we highlighted important trends and tailwinds experienced by an asset class that had seen almost uninterrupted growth for a decade, even during the height of the global pandemic in 2020.

But last year, cracks began to emerge. With higher rates and rising market volatility, we flagged in our previous outlook that investors were underestimating risks around fundraising, valuations and political uncertainty, and also highlighted the importance of fundamentals and active asset management as mitigants.

Some of these concerns turned out to be well founded. After record fundraising in 2022, the industry saw the weakest fundraising environment in 10 years with USD 50 billion raised year-to-date (see Figure 1).

Figure 1: Private infrastructure fundraising
(USD billions, no. of funds)

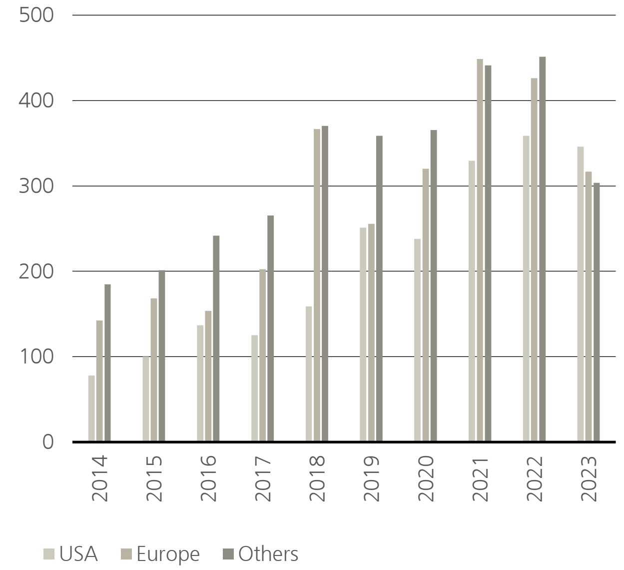


Source: Preqin, November 2023.

Private infrastructure deal volumes have fallen across all geographies in 2023, as buyers and sellers remain extremely cautious (see Figure 2). Even though the industry has over USD 300 billion of dry powder, buyers are hoping to find bargains yet sellers are unwilling to part with assets at significant discounts, leading to wide bid-ask spreads.

Interestingly, US deal volumes have exceeded European deal volumes for the first time in history – a reflection of how the asset class in the US is catching up to Europe in terms of maturity.

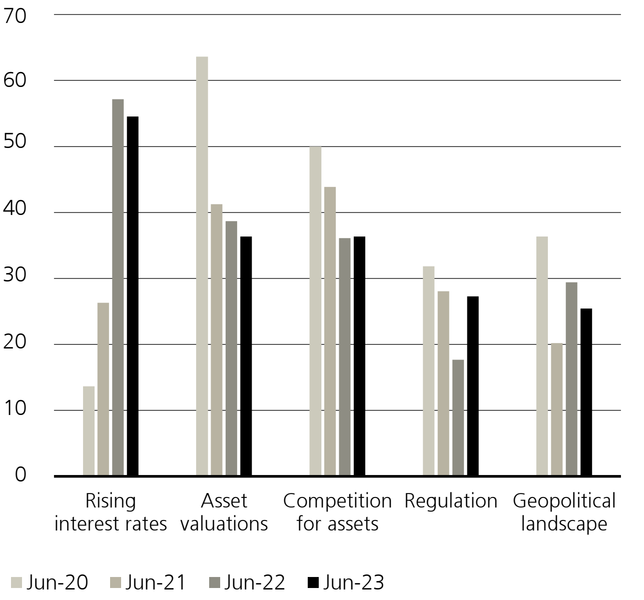
Figure 2: Private infrastructure deals closed
(USD billions)



Source: Inframation, November 2023.

Preqin's recent investor survey showed that investors still remain focused on interest rates (see Figure 3). Since infrastructure assets tend to be highly levered, investment performance can be sensitive to interest rates if the asset does not have strong cost passthrough. Asset valuations and the competition for assets are the second and third main concerns for investors.

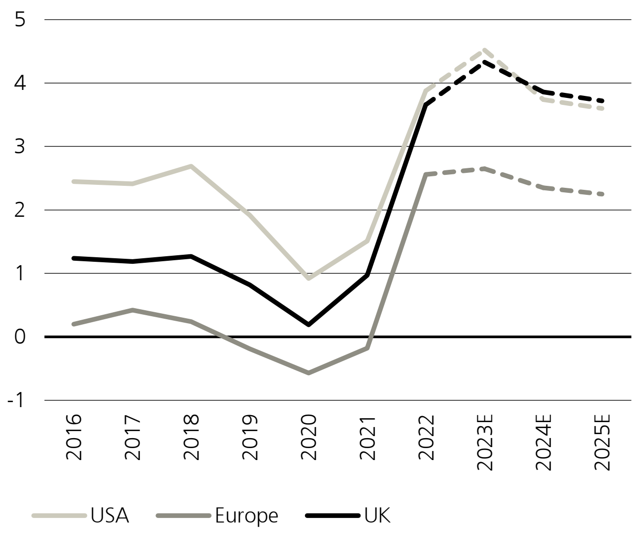
Figure 3: Private infrastructure investor survey – key challenges for returns in the next 12 months
(% of respondents)



Source: Preqin, August 2023.

Looking on the bright side, as inflationary pressures continue to subside, central banks will have more room to start cutting interest rates. Consensus estimates expect 10-year bond yields in some markets to begin declining in 2024 (see Figure 4), which should bring some relief to those concerned about high financing costs.

Figure 4: 10-year government bond yields (%)



Source: Bloomberg, November 2023.

Infrastructure investors tend to have long term investment horizons, and their investments also have long asset lives, which means it is more important to focus on long term macro trends, rather than fixating on short term volatility.

Forward inflation expectations implied by the swap markets have actually been relatively stable despite the recent uptick (see Figure 5). This is a sign that long-term interest rate impact on infrastructure assets may be limited despite the near term volatility.

Figure 5: 5-year forward inflation expectations (%)

Note: Reflects the 5-year average inflation beginning 5 years from now.
Source: Bloomberg, November 2023.

The infrastructure sector continues to benefit from secular tailwinds such as the 4 Ds – decarbonization, digitalization, deglobalization, and demographic change. As we move beyond the inflation and interest rate shock in 2022-23, market expectations will reset, and we are cautiously optimistic that deal activity will pick up, especially since the long term investment themes remain intact.

In addition, global listed equities are up 15% YTD in 2023, which would lessen the impact of the "denominator effect"[3] that has plagued fundraising this year, as the hands are tied for many investors.

In the following sections of this report, we will explore 5 popular questions that infra-skeptics have raised this past year. The questions are centered on the overall valuations and performance of the asset class, as well as concerns about specific sectors.

At the end of this paper, we highlight other interesting developments across both infrastructure equity and infrastructure debt markets.

[3] Weak public markets in 2022 indirectly increased the share of private assets in investors' portfolios, thereby limiting their ability to allocate more capital to private markets in 2023

1 Valuations

Is infrastructure's resilience too good to be true?

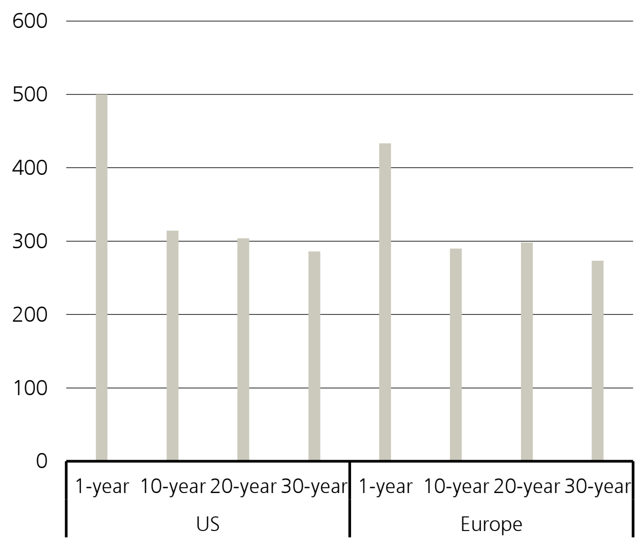
Private infrastructure equity was up ~10% in 2022, and is currently up ~4% in 1H23, according to both MSCI and Burgiss. However, the resilient performance has only attracted some skepticism around valuations.

Critics argue that under the current interest rate pressures, infrastructure discount rates should also adjust upward, which means valuations should come down. Yet recent performance remains positive, and the asset class has not seen widespread write-downs.

In our view, investors are currently too focused on the dramatic increase in the front end of the yield curve. For example, they often point out that 12-month US treasury yields have widened by 500bps.

However, infrastructure assets are long-term investments, with stable cash flows, and useful lives of 20 years or more. This means longer-term rates are more relevant to Infrastructure assets as a gauge on cost of capital, and these term rates have not increased as dramatically as short-term rates (see Figure 6).

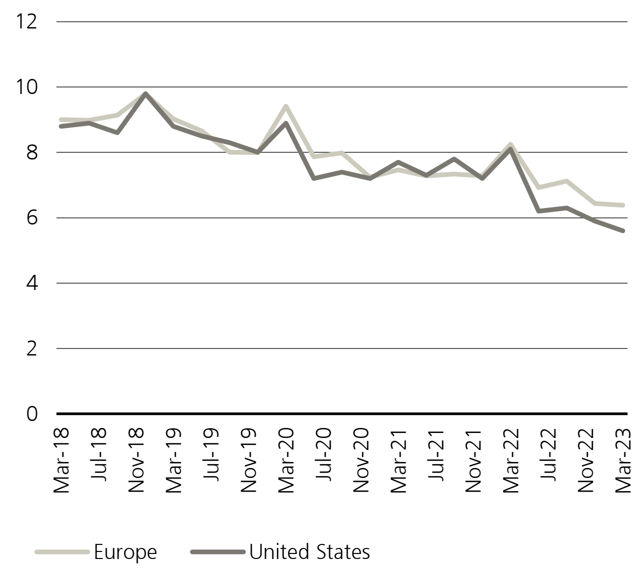
Figure 6: Change in government bond yields since December 2021 (bps)



Source: MSCI, November 2023.

Base rates are only one part of the discount rate equation. The other piece is the equity risk premium[4]. Using public markets as a proxy, implied equity risk premiums have actually trended lower even in public markets, according to UBS Global Research's fundamental analytics team (see Figure 7). This helps lower an all-in cost of equity despite rate hikes.

Figure 7: Public markets equity risk premium (%)



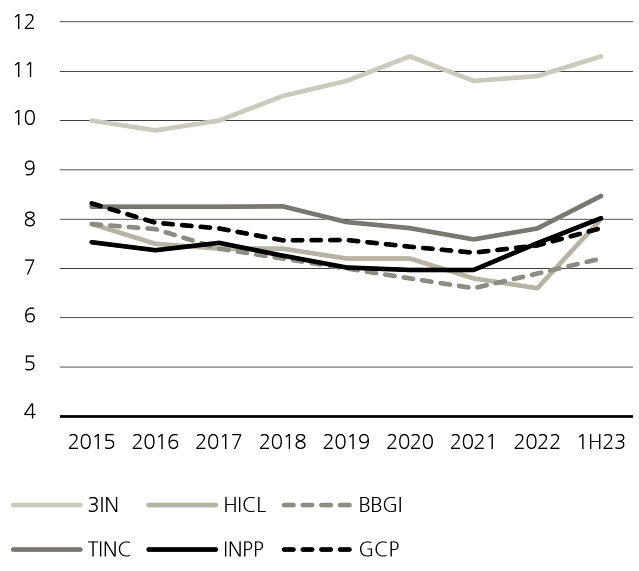
Source: UBS IB Fundamental Analytics research, September 2023.

A natural question is, why have public market equity risk premiums declined? The answer generally revolves around low earnings volatility, markets stability and general strength of underlying fundamentals – factors that would resonate with infrastructure investors.

Skeptics may argue that the decline in public market equity risk premiums are not warranted, but that debate is beyond the scope of this report. We are simply highlighting what is currently being priced into public markets, and using that as a read across for private infrastructure.

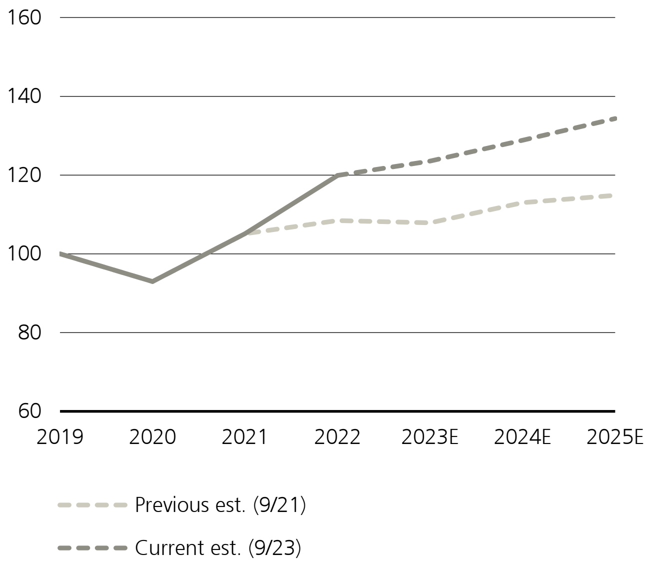
[4] Cost of equity = risk free rate + equity risk premium

Figure 8: Public infrastructure investment trust reported discount rates (%)



Source: Company reports, UBS Asset Management, Real Estate & Private Markets (REPM), November 2023.

Figure 9: Listed infrastructure revenue forecasts (indexed to 2019)



Source: Bloomberg, UBS Asset Management, Real Estate & Private Markets (REPM), September 2023.

Overall, given long term rates have increased by ~300bps (see Figure 6) and equity risk premiums have declined by about ~200bps (see Figure 7), we would expect ~100bps increase in cost of equity.

This is consistent with what we can observe in the markets. Although private infrastructure funds typically do not disclose their hurdle rates, discount rates published by listed infrastructure investment trusts[5] have only increased by ~50-100bps since 2021 (see Figure 8). Regulations require these investment trusts disclose their discount rates, which they use to calculate Net Asset Values (NAVs) in their period financial statements.

Higher discount rates do not impact valuations much when the underlying assets are also making more money.

When looking at asset valuations, discount rates only tell one part of the story. The other part are free cash flows, and that is where infrastructure has shined. Infrastructure fundamentals remain healthy, due to robust post-pandemic recovery, strong inflation passthrough, policy support, and the fact that most infrastructure investments are unique assets that provide essential services and have pricing power.

Looking at the consensus estimates of over 100 listed infrastructure companies as proxy, 2023-2025 revenue estimates have been revised upward by an average of ~15% in the last two years (see Figure 9). Higher discount rates do not impact valuations much when the underlying assets are also making more money.

However, every investment is different, and it is important to go back to basic business fundamentals; this means focusing on barriers-to-entry, pricing power, growth plans, capital structures, and management teams. Active asset management also increases the resiliency of infrastructure assets, as operational and financial levers can be adjusted under different economic environments to maximize value.

[5] Public infrastructure investment trusts are typically listed in the UK, and invest in similar assets as private infrastructure funds; their published discount rates are therefore good proxies for private infrastructure

2 Market timing

Should we wait for the correction to buy the dip?

Private infrastructure performed remarkably well in 2022, up 10% while global listed equities were down 20%. In 1H23, private infrastructure was up 4%, while global equities have seen a strong 15% rebound. In some ways, infrastructure became a victim of its own success, as its stable performance has also attracted some disbelief.

… not having to worry about market timing is an underrated feature of infrastructure

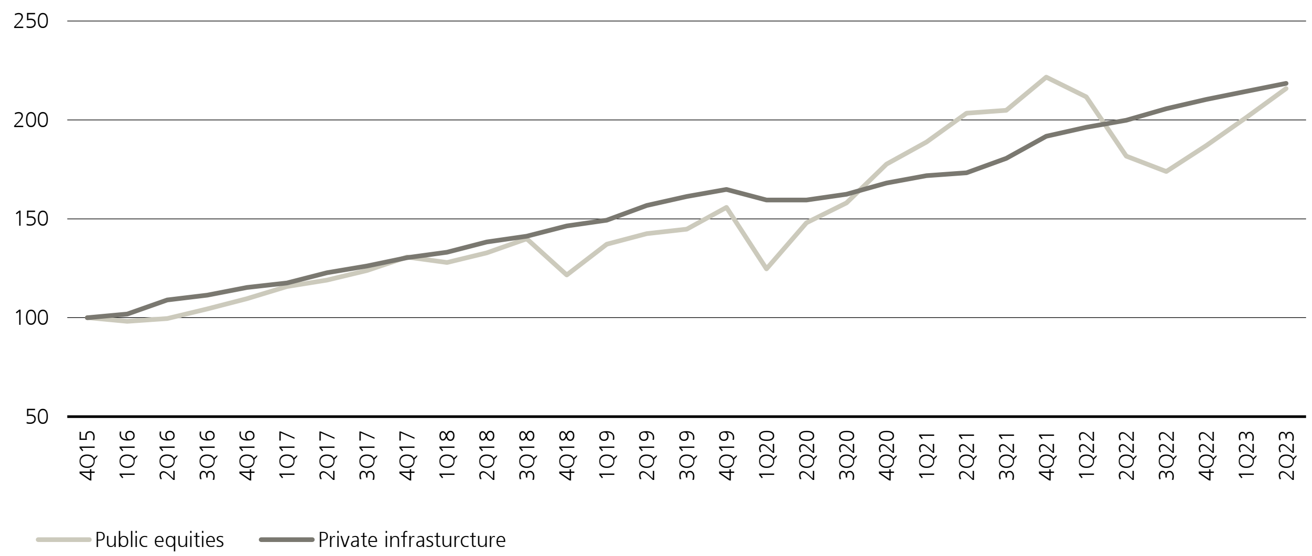
Given there is already a lot of skepticism around private infrastructure valuations, as discussed in the previous section, some investors are waiting by the sidelines hoping for a better entry point. They look at the large drawdown and rebound in listed equities in the last 2 years as an example of how profitable it is to get the timing right.

We have also seen other non-infrastructure strategies pointing to recent drawdowns as unique buying opportunities for their asset classes. As much as there is some marketing appeal in pitching the same story about infrastructure, that is simply not the point of investing in the asset class. One of the main value propositions of private infrastructure is that it has historically displayed low volatility and low correlations compared to other asset classes.

Looking at recent data, we have not seen any major drawdowns in private infrastructure, even though public equities were highly volatile during the same period (see Figure 10). This means that compared to public markets, the upside of getting the timing right is limited, while the downside of getting the timing wrong is also muted.

We believe that not having to worry about market timing is an underrated feature of infrastructure – considering market timing is notoriously difficult even in other asset classes.

Figure 10: Private infrastructure performance vs. global listed equities (Indexed to 2015)



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

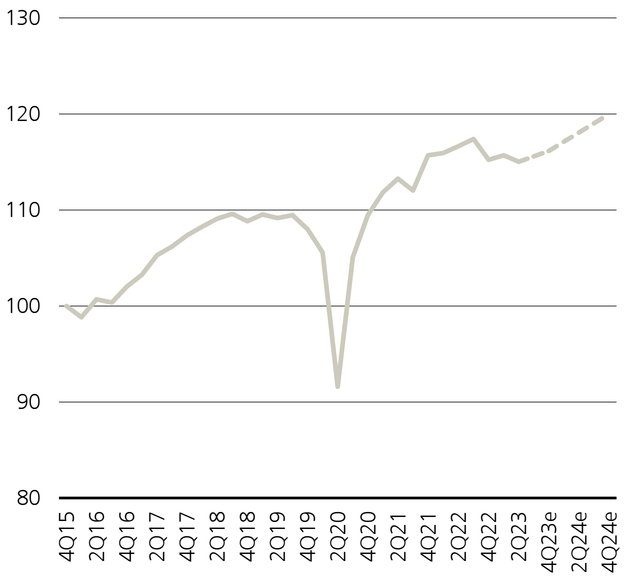
3 Deglobalization

If this is real, why are trade volumes still rising?

Earlier this year, we highlighted "deglobalization" as an important megatrend that will support private infrastructure investments (*Link*). However, some skeptics are pushing back on this argument, since trade volumes are growing in 2023 and is expected to further accelerate in 2024 according to World Trade Organization latest estimates in October 2023 (see Figure 11).

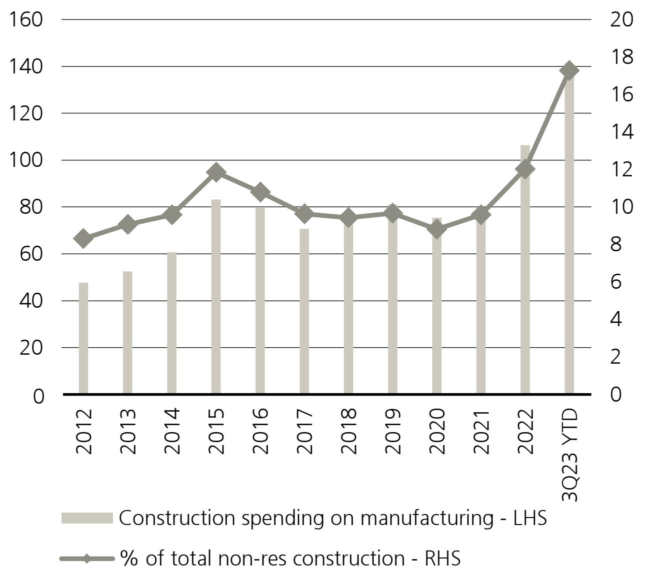
The macro data is beginning to reflect this trend. US construction spending for manufacturing reached a record high of over USD 100 billion in 2022, after being stagnant for six years. In the first nine months of 2023, manufacturing investments have already reached USD 140 billion, a 70% YoY increase and accounting for 18% of total construction (see Figure 12).

Figure 11: Volume of world merchandise trade, 4Q15- 4Q24e (USD billion)



Source: World Trade Organization, October 2023.

Figure 12: US construction spending in manufacturing and share of total non-res spending (USD billion)



Source: US Census Bureau, October 2023.

However, 2023 world trade volumes are expected to only grow by 0.8%, compared to the earlier estimates of 1.7% in April 2023, and original estimates of 3.4% forecasted in April 2022. The WTO also said that the share of intermediate goods in world trade is trending lower, suggesting further fragmentation of the supply chain.

Deglobalization used to carry a negative connotation within the business community, but this is no longer the case. Onshoring of manufacturing capacity and increased focus on energy security will require significant investments. Many of the new facilities are also located in previously overlooked rural areas, thus opening up new markets for infrastructure investors.

Government policies have a big role to play here. The US Inflation Reduction Act (IRA) and the Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act have incentivized the build out of the domestic clean energy and semiconductor plants.

Many large corporates across the technology and industrial sectors have already announced multi-billion-dollar manufacturing facilities in the US in the last two years (see Figure 13). The list below is by no means comprehensive, as the US government is tracking almost USD 500 billion of private sector manufacturing investments.

Figure 13: New US manufacturing projects announced since 2021

Company	Location	Investment (USD billion)
TSMC	Phoenix, AZ	40.0
Texas Instruments	Sherman, TX	30.0
Intel	Chandler, AZ	20.0
IBM	Hudson Valley, NY	20.0
Micron	Clay, NY	20.0
Intel	Licking County, OH	20.0
Samsung	Taylor, TX	17.0
Micron	Boise, ID	15.0
Texas Instruments	Lehi, UT	11.0
Hyundai Motors, LG	Pembroke, GA	7.6
Stellantis, Samsung	Kokomo, IN	6.3
Nacero	Penwell, TX	6.0
HIF Global	Matargorda, TX	6.0
Ford, SK Innovation	Glendale, KY	5.8
LG Energy	Queen Creek, AZ	5.6
Ford, SK Innovation	Stanton, TN	5.6
Rivian	Madison, GA	5.0
Hyundai Motors, SK	Bartow County, GA	5.0
Wolfspeed	Pittsboro, NC	5.0
Pier Wind	Long Beach, CA	4.7
Air Products	Ascension Parish, LA	4.5
Applied Materials	Sunnyvale, CA	4.0
Panasonic Energy	De Soto, KS	4.0
GM	Orion Township, MI	4.0
VinFast	Chatham, NC	4.0

Source: White House, Press Releases, UBS Asset Management, Real Estate & Private Markets (REPM), November 2023.

… this will be a greener form of industrialization, as new manufacturing facilities will source cleaner energy and focus on efficiency and sustainability

This is not just a US phenomenon. Europe is tracking over USD 200 billion of electric vehicle and battery manufacturing investments, and over USD 100 billion of semiconductor investments. Maros Sefcovic, who is leading the efforts behind the EU green deal, recently said that the EU will take on a more assertive approach in promoting "made in Europe" green industries , as a response to the pro-manufacturing policies set out by the US IRA.

One issue that is often associated with reshoring is the environmental impact, as the word "industrialization" may evoke the image of smoke, soot, and grime of the Victorian era. However, we believe that this will be a greener form of industrialization, as new manufacturing facilities will source cleaner energy, focus on efficiency and sustainability.

Most of the large corporations highlighted in Figure 13 that have also made net zero commitments. For example, Intel, which is looking to invest over USD 100 billion in chip-making plants, has pledged to achieve net zero in its operations by 2040. TSMC, another major chip maker, has committed to reaching net zero emissions by 2050.

Reshoring accelerates the economic and population growth across previously overlooked areas. Large tech companies simply will not commit billions of dollars to build a new plant, without certainty around energy supply, transportation networks, utility services, and high-speed internet. These tailwinds support infrastructure investments across all sectors.

4 Digitalization

Is AI just another fad for digital infrastructure?

The COVID-19 pandemic highlighted the importance of digital infrastructure, as high speed internet became essential with the accelerated adoption of remote work and education, and the popularization of high-definition video conferencing. Digital infrastructure deal volumes set a high-water mark of almost USD 200 billion in 2022.

Since then, deal volumes have declined significantly. Just as public market investors began scrutinizing growth-oriented technology stocks, private infrastructure investors have also become cautious about digital infrastructure investments, especially those that were underwritten using overly optimistic debt-fueled growth assumptions.

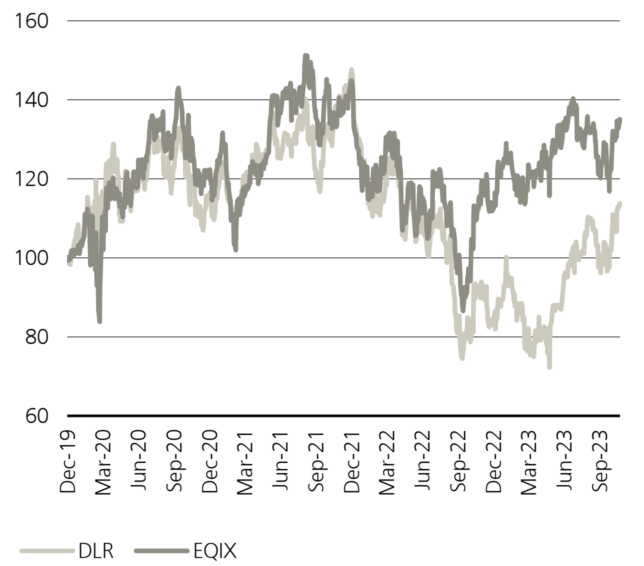
The hype around ChatGPT and generative AI earlier in 2023 brought a sudden jolt of energy to the sector. Publicly traded data center companies such as Digital Realty (DLR) and Equinix (EQIX) have seen their stocks increase by 20% this past year, after experiencing severe declines of up to 50% from their peaks in 2021 (see Figure 14).

Some investors immediately became skeptical about the hype, which in this case, we were sympathetic to at first, since digital infrastructure investors have seen similar stories play out before.

For example, 2 years ago, cryptocurrency was supposed to accelerate data center investments due to crypto miners' unsatiable demand. Some of those projects have since been abandoned. The metaverse was also supposed to drive the adoption of decentralized "edge" data centers and internet-of-things (IoT). That also has not happened.

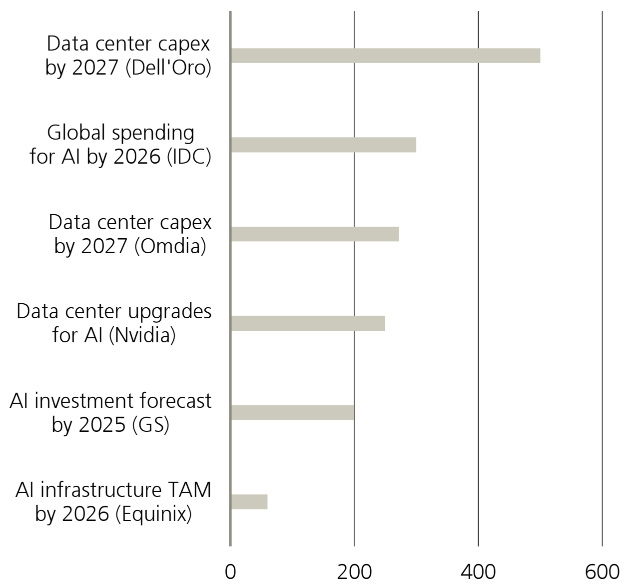
At the same time, investors should not be too dismissive of this opportunity, and take a more balanced approach. Unlike crypto mining, AI is championed by large and credible hyperscale companies, who are also some of the most important data center customers. They will therefore take the lead in determining whether new infrastructure investments are actually needed or not. Based on estimates from various sources, the total spend on AI and AI related infrastructure could be enormous (see Figure 15).

Figure 14: EQIX and DLR stock performances
(Indexed to 2019)



Source : NASDAQ, November 2023. **Past performance is not a guarantee for future results.**

Figure 15: AI and data center investment forecast
(USD billions)



Note: Dell'Oro revised forecast upward by USD 100bn in July 2023
Source: Dell'Oro Group, IDC, Omdia, Nvidia, Goldman Sachs, Company reports, January 2023.

Within digital infrastructure, AI will therefore benefit hyperscale data centers the most. The opportunity for colocation data centers is less obvious, as hyperscalers are driving the adoption of generative AI, although this can change in the future.

… sophisticated investors can still find opportunities as long as they can separate commercial behavior from hype, and focus on infrastructure characteristics

Despite many large numbers being thrown around, the actual infrastructure investment opportunity will likely be in the tens of billions, as pointed out by Equinix (see Figure 15) and McKinsey (see Figure 16). Keep in mind that enterprise spending such as software and equipment (servers, routers etc.) are often lumped into AI investment estimates, even though are typically spent by customers, rather than by the infrastructure provider.

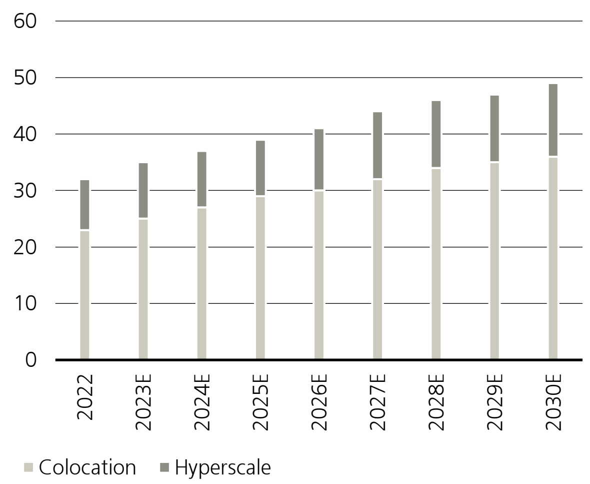
The impact on other digital infrastructure assets such as fiber, towers and small cells will be longer term, as current AI learning models can be trained at data centers in remote locations without the need for high connectivity or low latency (akin to sending your child to a remote university to avoid distractions).

Technologically, AI-focused data centers use GPU chips that consume up to 4x more electricity per rack than traditional data centers that use CPUs, which raises concerns about carbon emissions. This requires a rethink of data center design, including the incorporation of cheap and cleaner energy sources, and the use of advanced cooling equipment (e.g. liquid cooling). Obsolescence therefore becomes a bigger risk for AI-focused data centers, especially if new equipment or chip designs[6] emerge.

Geographically, since AI training does not require much fiber connectivity, data centers beyond traditional markets such as Northern Virginia and FLAPD (Frankfurt, London, Amsterdam, Paris and Dublin) with access to cheap renewable electricity will become more attractive (e.g. Texas or the Nordics). This trend is already evident based on the recent investment announcements, as none of these projects are located in traditional data center markets (see Figure 17).

Although it is good to have a healthy amount of skepticism, sophisticated investors can still find opportunities as long as they can separate commercial behavior from hype, and focus on infrastructure characteristics. This includes having high quality counterparties, long-term contracts, access to clean energy, minimal technology risk, and avoiding speculative capex.

Figure 16: Global data center construction capex excl. equipment and enterprise spend (USD billions)



Note: Excludes enterprise spending and non-construction spending (i.e. equipment). Source: McKinsey, January 2023.

Figure 17: Recent data center capex announcements

Date	Company	Location	Capex (USD bn)
Nov-23	Microsoft	Wisconsin, USA	1.0+
Oct-23	Microsoft	Australia	3.2
Aug-23	Google	Ohio, USA	1.7
Jul-23	Coreweave / Nvidia	Texas, USA	1.6
Jul-23	QTS / Blackstone	South Carolina, USA et al.	8.0
Jun-23	Microsoft	Finland	n/a

Source: Company reports, press releases, November 2023.

[6] For example, Google is developing TPU chips that are designed for AI and could be significantly more energy efficient and cost effective

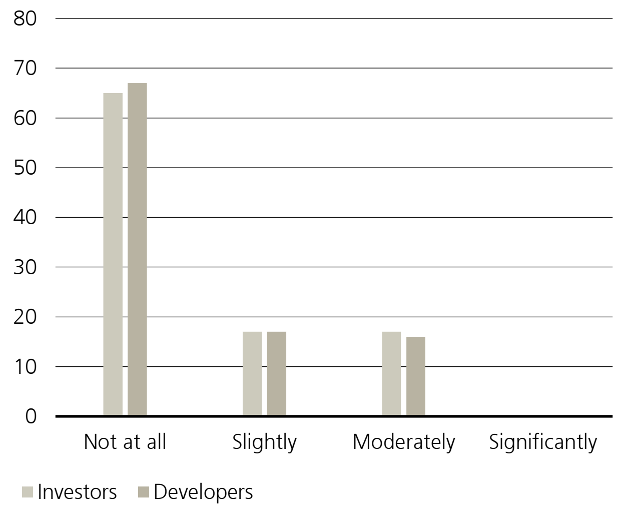
5 Decarbonization

Are we underestimating the clean energy backlash?

Clean energy is a staple investment across the portfolios of many infrastructure funds. The industry benefits from technological improvements, political support, and stable economics. There are also emerging decarbonization investments beyond renewables, especially in sectors such as industrial, transport and buildings, which we highlighted in a recent white paper[7].

The decarbonization investment theme receives widespread support. However, we are seeing more negative headlines this past year about the pushback against green energy. Most renewable investors and developers remain unfazed based on a recent industry survey (see Figure 18). But skeptics are questioning whether we are underestimating the risk from the backlash.

Figure 18: Impact of anti-ESG political actions on plans in the U.S. renewables sector (survey)



Source: American Council on Renewable Energy, June 2023

Some of these fears are understandable since 2024 is an important election year in the US and Europe (followed by the UK in early 2025). For example, Former President Donald Trump has already vowed to repeal the IRA if he is elected again, despite the IRA mainly benefitting more conservative "red states". Similar rhetoric will almost certainly increase in the next few months.

[7] Future green investments - Emerging energy transition infrastructure beyond renewables; October 2023 *Link*

Local politics are also becoming more contentious. Recently, voters in Texas approved the establishment of a USD 10 billion Texas Energy Fund that subsidizes new gas-fired power stations, eroding the project economics of renewables. Earlier in May, state politicians also attempted to pass a bill that imposes (ironically) more stringent environmental permitting rules on wind and solar projects.

This backlash is also happening in progressive "blue states". There are grassroot protests against offshore wind projects in New Jersey and Maryland citing issues such as ecological impact and visual pollution. High profile cost overruns and project cancellations also add to the public distrust, as they validate negative preconceived notions.

Europe is not immune to these negative headlines either, especially on the back of a cost of living crisis and renewable project cost inflation. In the UK, Prime Minister Rishi Sunak announced in September 2023 that he plans to roll back the UK's climate commitments. Germany and Italy are also pushing back on energy efficiency initiatives.

In our view, investors need to focus on the big picture. The evolution of clean energy has never been linear, and we have always faced various uncertainties. Despite the recent headlines, IEA forecasts USD 1.7 trillion of global green energy investments in 2023. In many markets, renewables are still cheaper than other traditional forms of electricity generation. Like any industry, it is up to managers to separate the good investments from the bad ones.

We therefore remain optimistic on the decarbonization trend. In addition, there are some powerful mitigants that offsets some of these headline risks:

- **Industry adaptability:** The clean energy industry has shown remarkable resilience this past decade, adapting to changing regulations and other unforeseen challenges with technological innovation, creative financing solutions, new market expansion, and supply chain diversification.

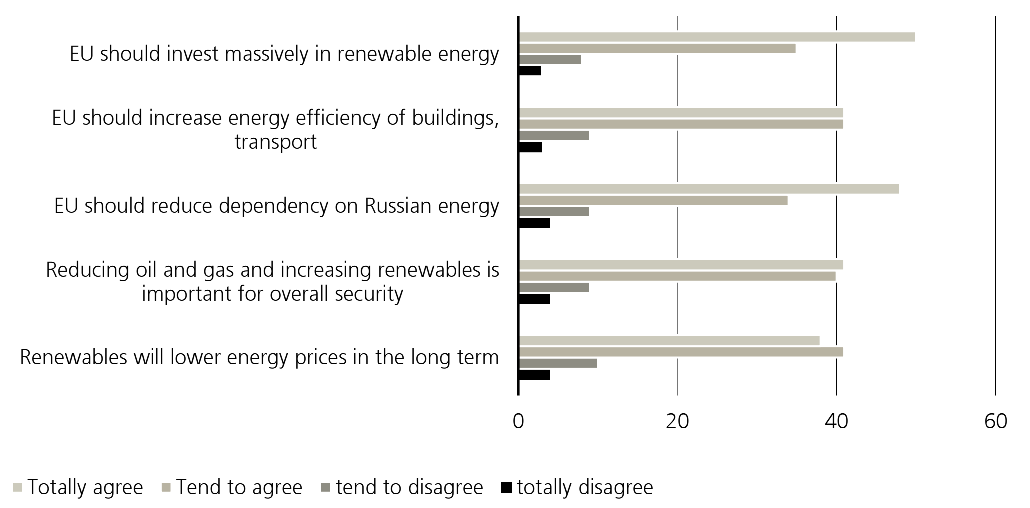
- **Underwriting assumptions:** An investment is only as risky as the accuracy (or inaccuracy) of the underlying underwriting assumptions. Policy and project execution risks can be mitigated by conservative forecasting, especially around variables that are dependent on government support (e.g. subsidy amounts, contract renewals, state-sponsored clean energy credit prices).

– **Corporate support:** Corporate demand is also a strong driver of green investments. Many large corporations with aggressive net zero targets are willing to pay a premium to obtain clean attributes, offsetting some policy uncertainties. For example, they can provide offtake contracts to support different types of decarbonization projects, from traditional renewables to emerging fuels like hydrogen.

– **Public support:** Clean energy still receives widespread support around the world (see Figure 19 and Figure 20). As highlighted by responses in the US survey, there may be speed bumps here and there, but the likelihood of a complete U-turn on clean energy policy is unlikely. In addition, legislations like the US IRA and the EU Green Deal have been around long enough that local populations should already be seeing the benefits from new investments. This makes further community outreach and political advocacy easier.

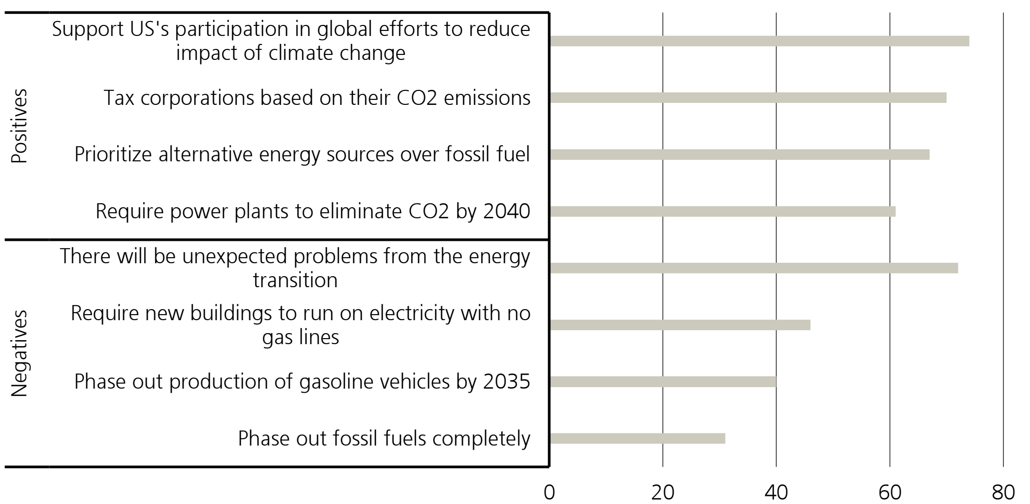
… there may be speed bumps here and there, but the likelihood of a complete U-turn on clean energy policy is unlikely.

Figure 19: Eurobarometer energy transition survey
(% of respondents)



Source: European Commission, July 2023

Figure 20: US Pew Research Center survey on climate change-related issues
(% of respondents)



Source: Pew Research, June 2023

Market update

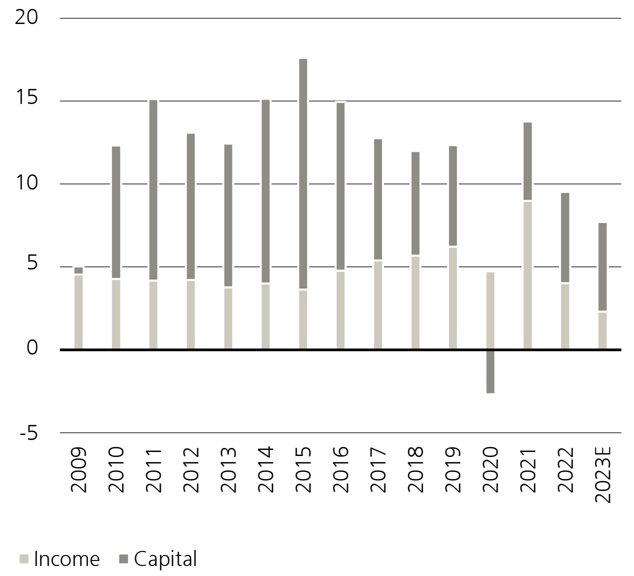
A review of infrastructure equity and debt markets in 2023

In this section we highlight other interesting developments within infrastructure equity and debt markets in 2023 that we have not touched on, including sentiment, fundraising, deal flows, and valuations.

Infrastructure equity

Infrastructure performance has been relatively stable this past decade. Performance in 1H23 was up 4%, or 8% on an annualized basis (see Figure 21). Although this would make 2023 the third weakest annual performance since 2009, in the grand scheme of things, it is relatively humdrum compared to the negative sentiment out there.

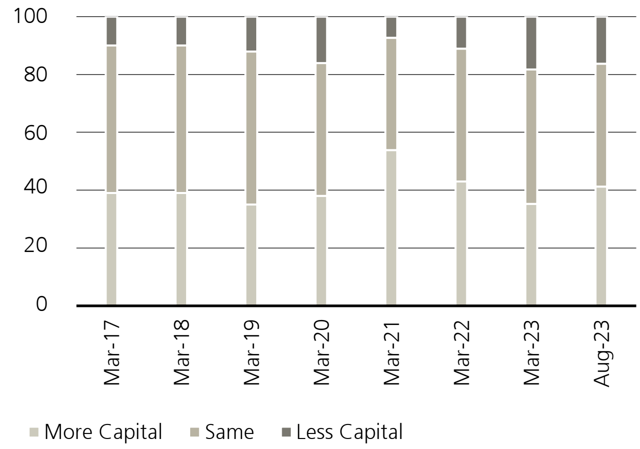
Figure 21: Infrastructure performance
(gross total return %, local currency)



Source: MSCI Global Private Infrastructure Index, October 2023
Note: 2023E based on annualized 1H23 data. **Past performance is not a guarantee for future results.**

Preqin's 2H23 investor outlook published in August also showed that 41% of investors surveyed are looking to commit more capital to private infrastructure in the next 12 months, a slight improvement from the 35% in the 1H23 survey published in March (see Figure 22). A sign that fundraising could improve in 2024.

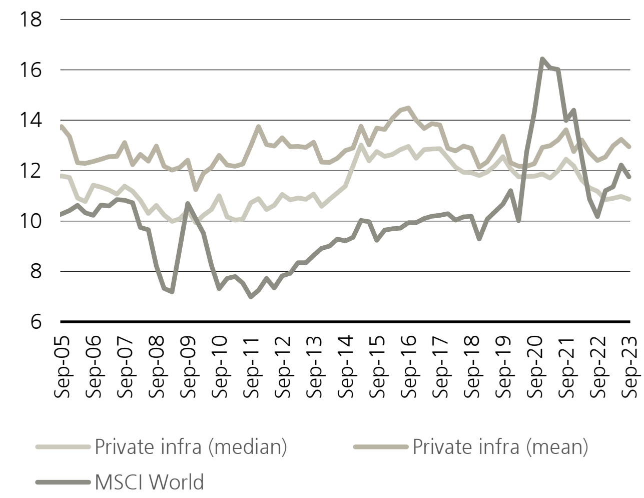
Figure 22: Investors' expected capital commitments to private infrastructure in next 12 months



Source: Preqin, August 2023.

Private infrastructure valuations have been relatively stable compared to public markets (see Figure 23). Based on EDHEC's estimates, median valuation multiples for private infrastructure have actually been on a slight downtrend, although the decline is not as dramatic as what we observed in the public markets.

Figure 23: Private infrastructure valuations
(EV/EBITDA multiples)



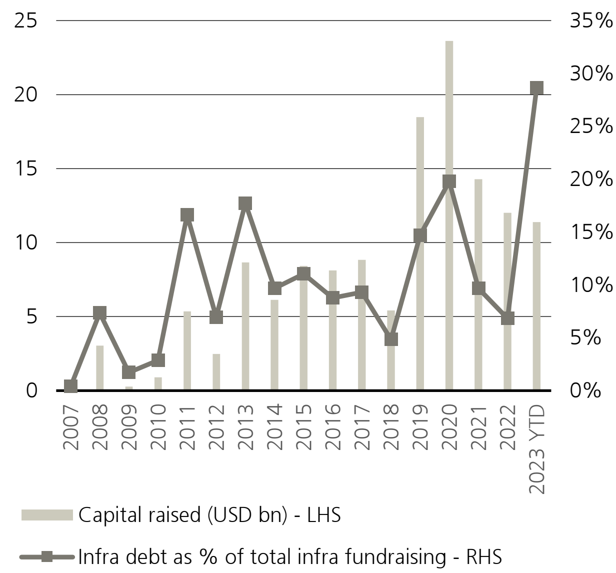
Source: Bloomberg, EDHEC, UBS Asset Management, Real Estate & Private Markets (REPM), September 2023.

Infrastructure debt

Compared to infrastructure equity, the sentiment for infrastructure debt has been more positive. Rising base rates and spreads increased the relative attractiveness of infrastructure debt especially compared to more core infrastructure equity strategies on risk-adjusted returns.

This can be seen in fundraising activities – although the absolute dollar amount raised for infrastructure debt in 2023 is almost flat versus 2022, infrastructure debt accounted for almost 30% of all infrastructure funds raised, a historical high (see Figure 24). This is not surprising, given Infrastructure Investor's LP Perspectives Study from the beginning of the year already highlighted infrastructure debt as the most in-demand infrastructure strategy.

Figure 24: Infrastructure debt fundraising



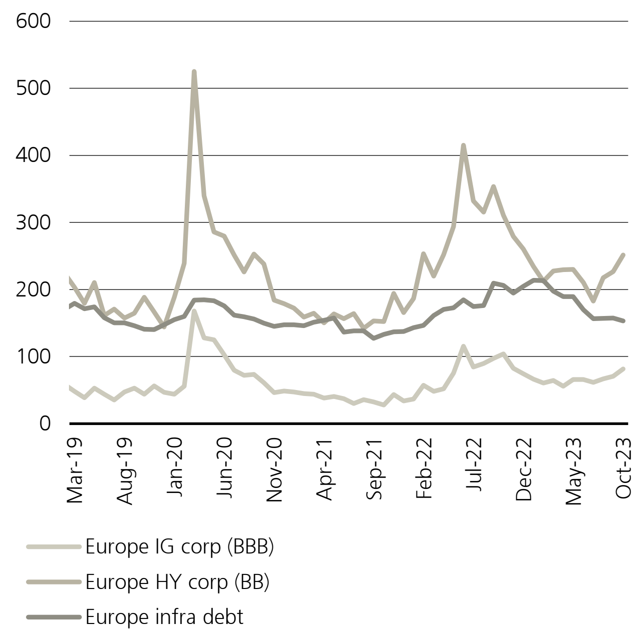
Source: Inframation, November 2023.

Public market spreads for European BBB and high yield non-financial credit have been relatively flat from the end of December after declining throughout most of 2022. Since private market spreads adjust to reflect public markets with a lag, we have seen a 60bps decline in infra debt spreads (see Figure 25), following the trends set by public markets 6-9 months prior.

Similar to 2022, the higher cost of debt continues to impact transaction volumes (see Figure 26) as more borrowers reduce their financing needs. Sponsors can no longer rely on cheap debt to fuel aggressive growth plans, and are adjusting their capex to adapt to this new reality.

Despite weaker volumes, activity was particularly strong in the energy transition and telecommunication sectors, as investments exposed to secular trends such as decarbonization and digitalization still remain popular.

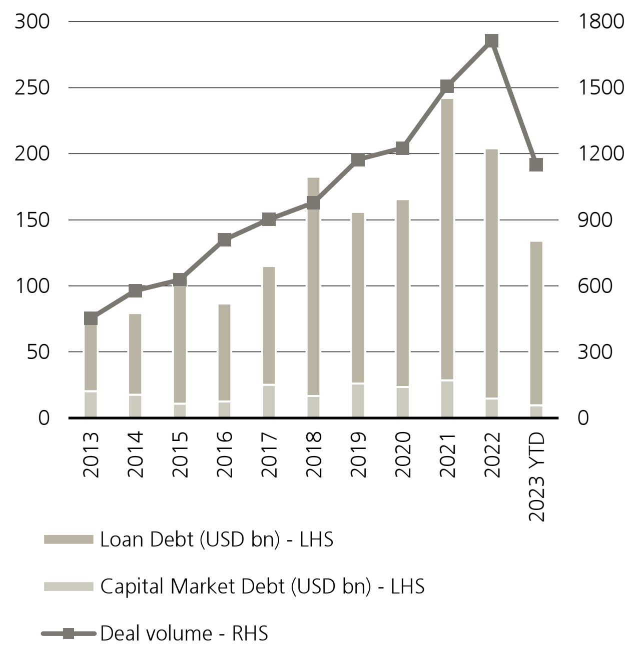
Figure 25: Spreads on private infrastructure debt
(basis points)



Source: Bloomberg; EDHEC Debt Indices (Europe); UBS Asset Management, Real Estate & Private Markets (REPM), November 2023.

Looking into 2024, as inflation and interest rates have stabilized, we could potentially see a recovery in lending activity, especially for borrowers who have delayed their financing plans. As previously discussed, infrastructure fundamentals remain strong, which means transaction volumes should pick up now that risks from this new normal is better understood.

Figure 26: European infrastructure debt (USD billions)



Source: Inframation, November 2023.

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