

Executive summary



EXECUTIVE SUMMARY

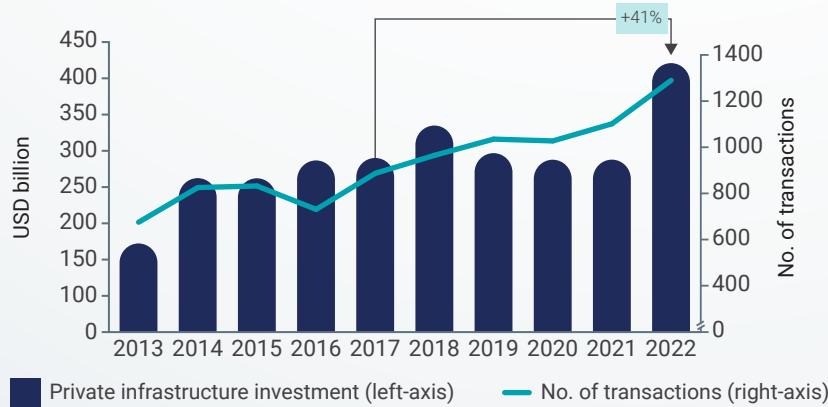
After a decade of stagnation, in 2022, private investment in infrastructure projects in primary markets recovered, and in some sectors, exceeded pre-COVID-19 levels. Transactions increased by 29%, with an overall value that was 41% higher than the five-year average.

- In 2022, after eight years of stagnation, private investment in infrastructure experienced a significant resurgence. Primary markets saw a substantial increase in transactions and overall value, marking a 29% rise in transactions and a 41% increase in value compared to the five-year average (2017–2021).
- This significant increase was the result of a post-COVID-19 recovery back to 2015–2019 levels (as a % of GDP), stronger growth in energy transmission and digital infrastructure, and a set of large airport transactions that pushed the level above their pre-pandemic averages. Renewables, especially solar energy, remained strong, with a clear shift toward cleaner energy across income groups. The secondary market also performed strongly due to growth in acquisitions. However, a single year of data is insufficient evidence to indicate a lasting shift in the trend.

- It should be noted that – compared with previous years’ reports – the analyses draw on a bespoke new dataset developed in partnership with Realfin which has a more comprehensive coverage of transactions, particularly in developing markets. This new dataset almost doubles the value and number of transactions from previous GI Hub *Infrastructure Monitor* reports. Other datasets accessible to the GI Hub also show strong – albeit lower – growth.

Private investment in infrastructure projects in primary markets

(USD billion, number of transactions, and % growth in value compared to five-year average)

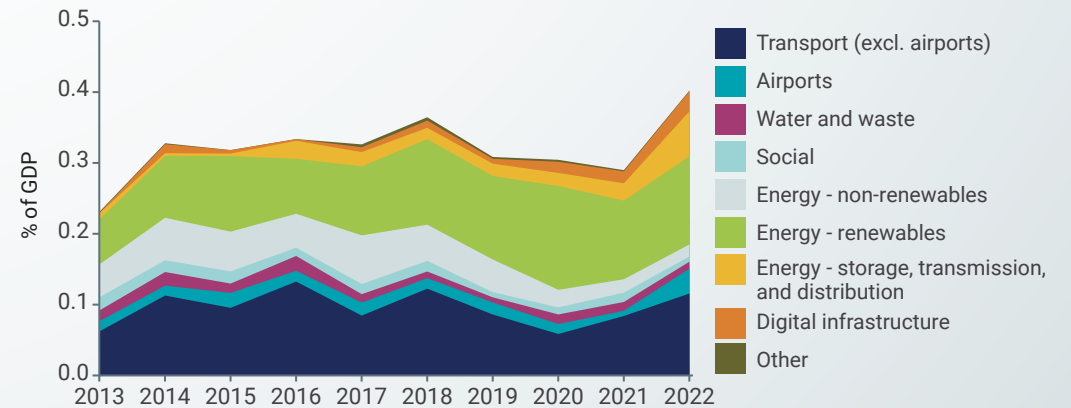


Source: Global Infrastructure Hub based on Realfin data.

Note: Throughout this report, 'private investment in infrastructure projects' refers to private sector investment in infrastructure projects in primary markets (financed by private and public financiers) including greenfield and brownfield infrastructure, as well as privatisations, unless otherwise specified. Investment values represent commitments made at the financial close of investment and not executed investment.

Private investment in infrastructure projects by sector

(% of GDP)



Source: Global Infrastructure Hub based on Realfin data.

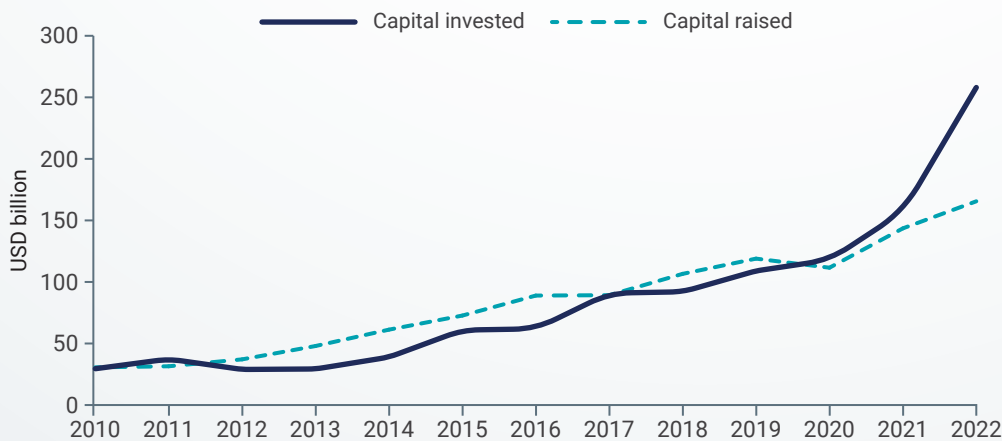
Note: 'Other' includes environment and infrastructure (general) sectors.

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In 2022, the private infrastructure capital invested significantly outpaced the capital raised. Most of the private infrastructure capital raised and invested by funds has been concentrated in North America and Europe.

- In 2022, for the first time, private infrastructure capital invested grew by 64%, significantly outpacing the growth in private infrastructure capital raised (15%). The vast majority of capital raised (91%) and invested (78%) by funds in 2022 was concentrated in North America and Europe.
- Private capital raised for all asset classes including infrastructure had consistent growth before the COVID-19 pandemic before dropping in 2020 and recovering in 2021.
- With rising inflationary pressures and risk aversion coupled with intensified government plans for infrastructure investments, the private capital raised for infrastructure increased sharply to a record level (USD166 billion) in 2022, while the aggregate capital raised for all asset classes declined.

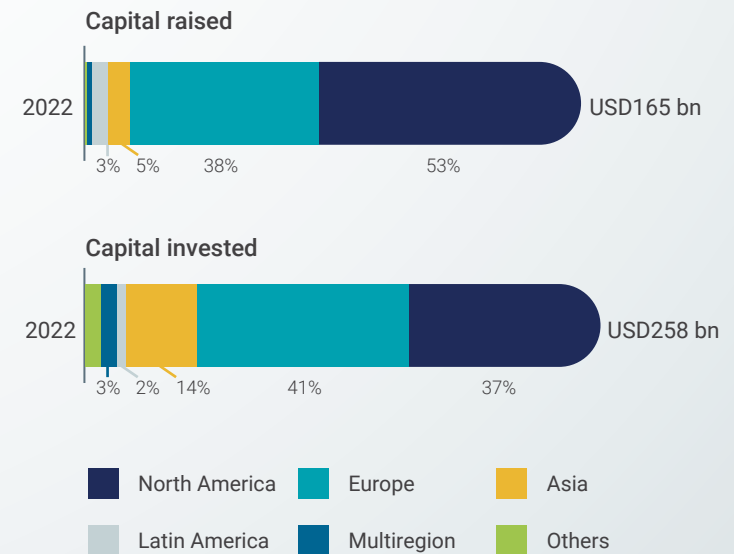
Annual private infrastructure capital raised and invested by funds
(USD billion, 2010–2022)



Source: Preqin data as of 13 October 2023.

Note: Capital invested is measured by the annual capital called by the fund manager for investment in the infrastructure asset class.

Private infrastructure capital raised and invested by funds by region in 2022
(% of total)



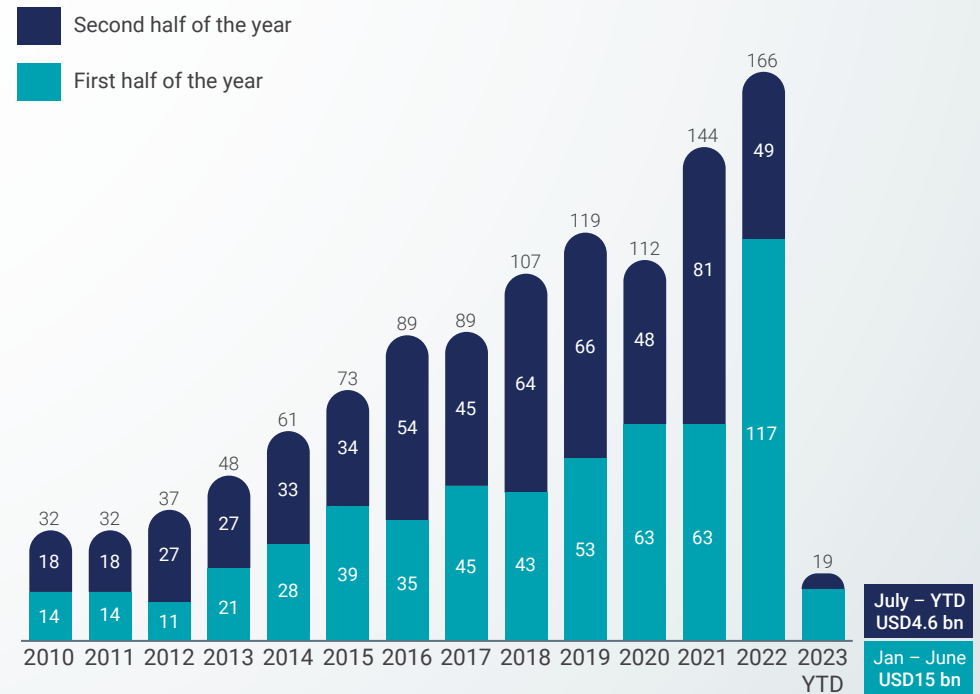
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In sharp contrast, 2023 has recorded the lowest levels of capital raised in a decade.

- While 2022 saw a record-high in infrastructure capital raised by funds, 2023 has shown a significant decline, highlighting the dynamic nature of private capital and the influence of economic conditions and global events.
- By July 2023, there was a decrease in dry powder, mainly due to the low funds raised and increased funds invested. This decrease, notably in North America, contrasted with rising dry powder in developing economies, signifying lower levels of private capital mobilisation and investment in these regions.
- The majority of private infrastructure capital raised and invested by funds, excluding 2023, concentrates in North America and Europe. Renewable energy ranks second after diversified funds, accounting for 16% of infrastructure capital raised in 2022. However, investments within the renewables sector often target low-risk opportunities that are categorised as secondary investments rather than greenfield projects.
- Interestingly, 70% of the private infrastructure capital raised by funds aims for lower-risk strategies while investing in the infrastructure asset class. This trend indicates a preference for lower-risk investment options within the infrastructure domain.

Private infrastructure capital raised by funds

(USD billion, 2010–2023)



Source: Preqin data as of 13 October 2023.

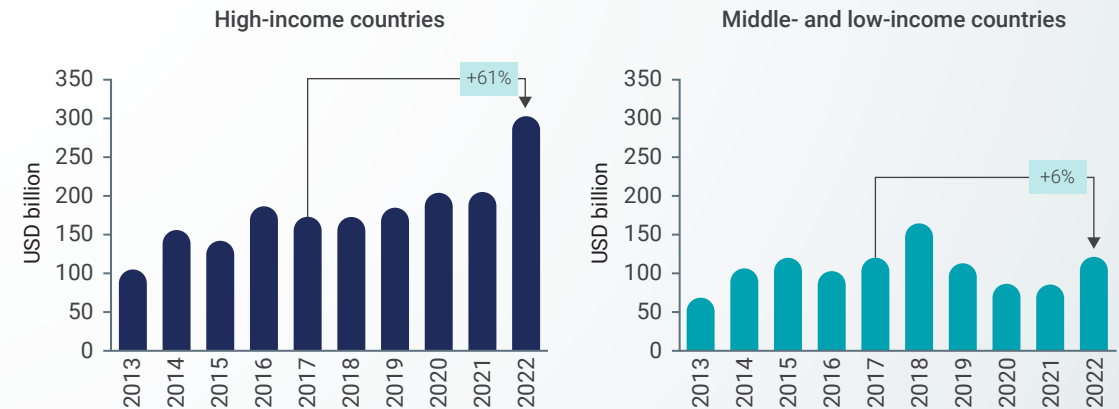
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The disparity between high-income and middle- and low-income countries persists as high-income nations continue to attract a much larger share of global infrastructure private investment.

- While high-income nations attracted the lion's share of global private infrastructure investment, middle- and low-income countries also experienced growth in 2022, albeit only 6% above their five-year average.
- Prior to 2022, private investment in infrastructure projects was on broadly similar levels in North America, Western Europe, and Asia. However, this was not the case in 2022. While investment increased globally in all regions except Oceania, growth was particularly strong in North America (up by 92%) and Western Europe (up by 89%).
- In North America, growth was fuelled by the transport sector with several large projects, notably airports in the US and light rail in Canada, reaching financial close. This significant increase may be related to strong policy support for infrastructure by the current US administration, such as the *Infrastructure Investment and Jobs Act (2021)*, which opened up investment opportunities in the US.

Private investment in infrastructure projects by income group

(USD billion and % growth compared to five-year average)



Source: Global Infrastructure Hub based on Realfin data.

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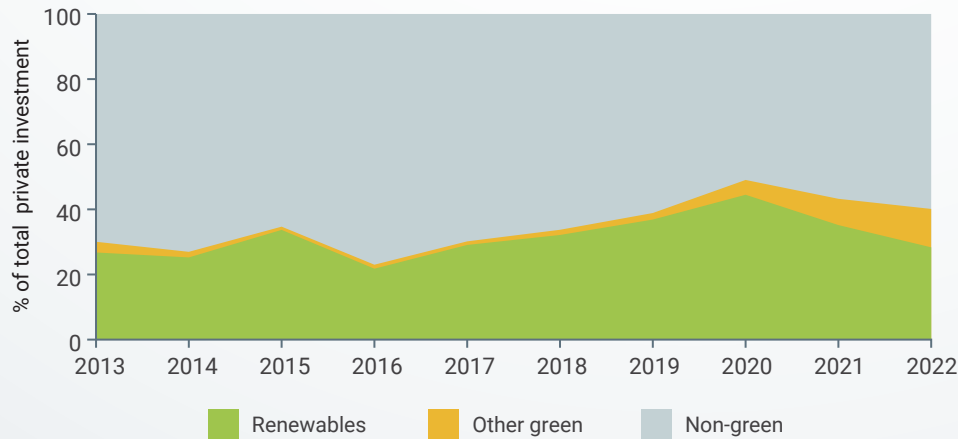
The share of green investment has plateaued in recent years, but sustainable financing is increasingly being used to finance private investment in infrastructure.

- Debt remains the primary source of financing for infrastructure projects, with sustainable financing gaining traction in both income brackets, particularly in North America and Western Europe. In 2022, their use increased in both income groups, with North America and Western Europe still leading the way. Banks played a significant role in financing, with the public sector's share rising after years of decline.
- Overall, the share of green private investment in infrastructure has increased since 2016, aligned with the global clean energy transition. However, it has declined since 2020, when it was particularly high due to continued growth in renewables during the pandemic, while

investment in other sectors - most notably transport - saw a significant drop. In 2022, non-green investment grew significantly (54%) outpacing growth in total green investment (35%).

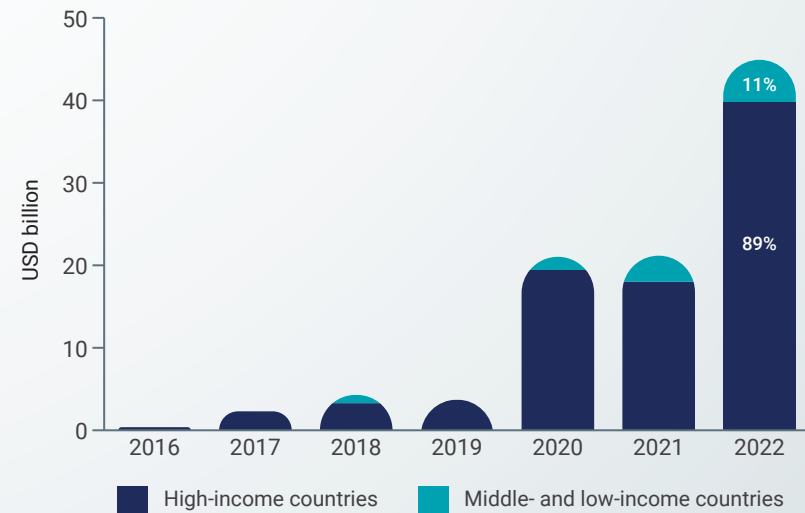
- While green investment typically represents renewable energy generation projects, in 2022, growth in sectors outside renewables (Other Green) outpaced growth in renewables. This growth in Other Green primarily reflects energy transmission and battery storage projects.

Green and non-green private investment in infrastructure projects
(% of total private investment in infrastructure projects)



Source: Global Infrastructure Hub based on Realfin data.

Sustainable financing of private investment in infrastructure projects
(USD billion, by income group)



Source: Global Infrastructure Hub based on Realfin data.

Note: Includes only transactions for which instrument details are available.

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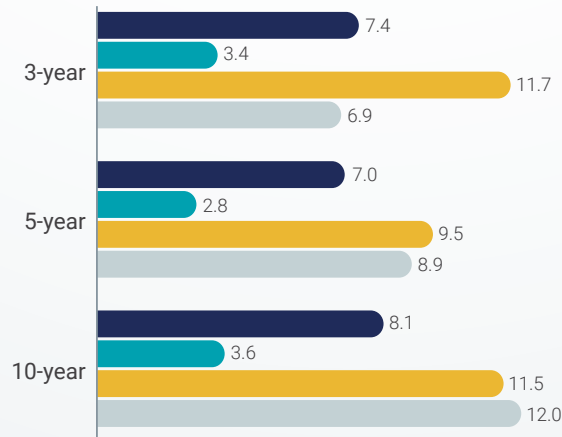
Recent shocks have affected returns for all equities, but unlisted infrastructure has proven much more stable than global equities.

- Infrastructure equities provided increasing returns to private investors for the decade prior to the COVID-19 pandemic. Unlisted infrastructure equities provided higher risk-adjusted returns to investors compared to other equities, including global listed equities.
- Annual returns on global infrastructure equities – listed and unlisted – declined from highly attractive levels in 2019 to nearly zero in 2020 due to the COVID-19 lockdowns. As the world recovered from the pandemic in 2021, so did infrastructure equities.
- The multiple crises of 2022 – rapid inflation, sharp interest rate hikes, supply chain shocks, and the Russia-Ukraine war – impacted global listed markets more severely than unlisted infrastructure equities.
- Infrastructure assets generally offer protection from inflation, but the sensitivity to interest rate changes varies by sector depending on the revenue model.
- Unlisted infrastructure equities demonstrate better downside protection and exhibit risk parameters similar to bonds, particularly from project finance structures as opposed to corporate structures. They provide attractive returns in both developed and emerging markets.

Annualised returns by type of equity

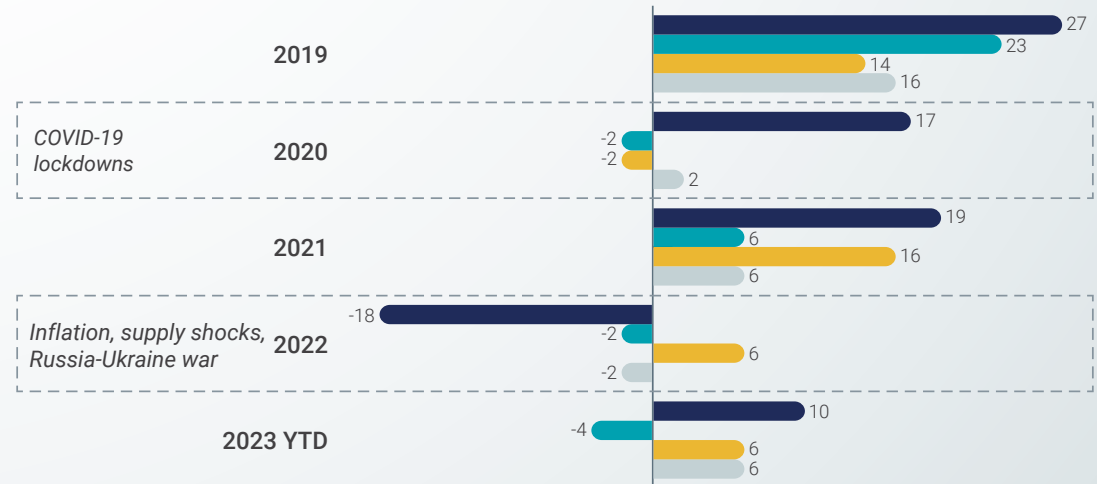
(%)

- Listed global equities
- Listed infrastructure equities
- Unlisted infrastructure equities
- Green unlisted infrastructure equities



Annualised returns by type of equity

(%)



Source: MSCI and EDHECInfra (2023a) as of 30 September 2023.

Note: Annual returns are based on monthly gross returns data in a calendar year. The indices present aggregate performance levels. Global equity performance is measured by the MSCI All Country World Index (MSCI ACWI). Listed infrastructure equity performance is measured by the MSCI ACWI Infrastructure Capped Index (MSCI ACWI-IC). Unlisted infrastructure equity performance is measured by the EDHECInfra Infra300 equity index. Green unlisted infrastructure equity performance is measured by the EDHECInfra InfraGreen index.

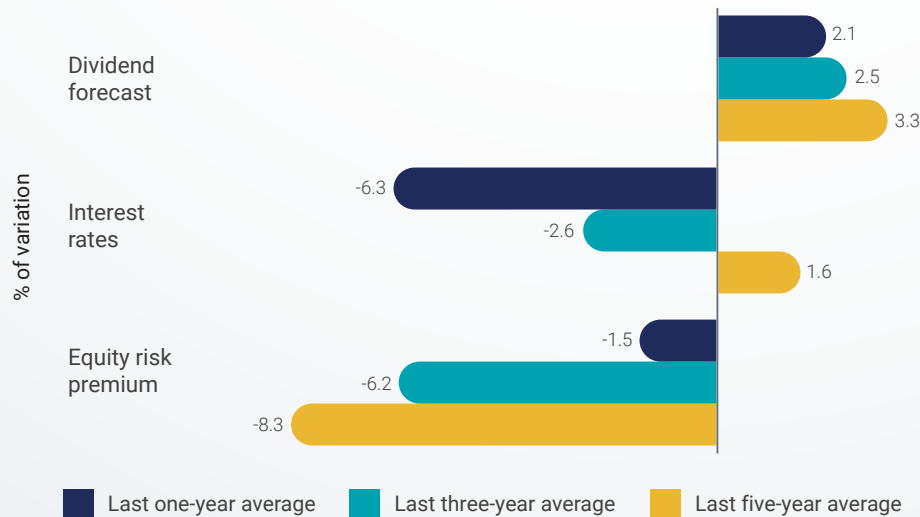
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Infrastructure valuations face downward pressures from multiple shocks including a high risk premium during the COVID-19 pandemic, rapid interest rate hikes, and climate change.

• The net value of an infrastructure equity is negatively impacted by increases in the risk premium and interest rates. In 2021, the COVID-19 pandemic increased the risk premium from 665 basis points in 2019 to 770 basis points in 2021 – a level last seen in 2011. As the world recovered from the pandemic, the risk premium on infrastructure equities began to decline. However, it is still above the 2019 level. Currently, the valuation is being severely impacted by rapid interest rate hikes.

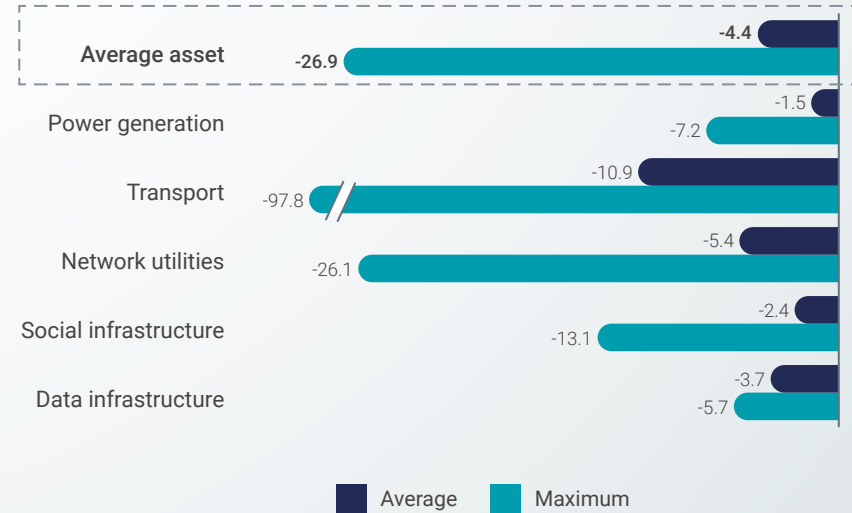
• Climate change poses a significant threat to infrastructure, as rising sea levels, extreme weather events, and increased temperatures can lead to the deterioration of infrastructure. Under existing climate scenarios, the potential consequences for infrastructure are significant. By 2050, the net value of an infrastructure asset is expected to reduce by 4.4% on average, and by 26.7% in the worst case, due to the increasing physical risks of climate change.

Average change in net asset value of global infrastructure equities due to increase in:



Source: EDHECInfra (2022a). Based on InfraMetrics 2022 data.

Potential infrastructure losses due to physical risks of climate change by scenario by 2050 in the current policy scenario (% of net asset value loss by type of infrastructure asset)



Source: EDHECInfra (2023b).

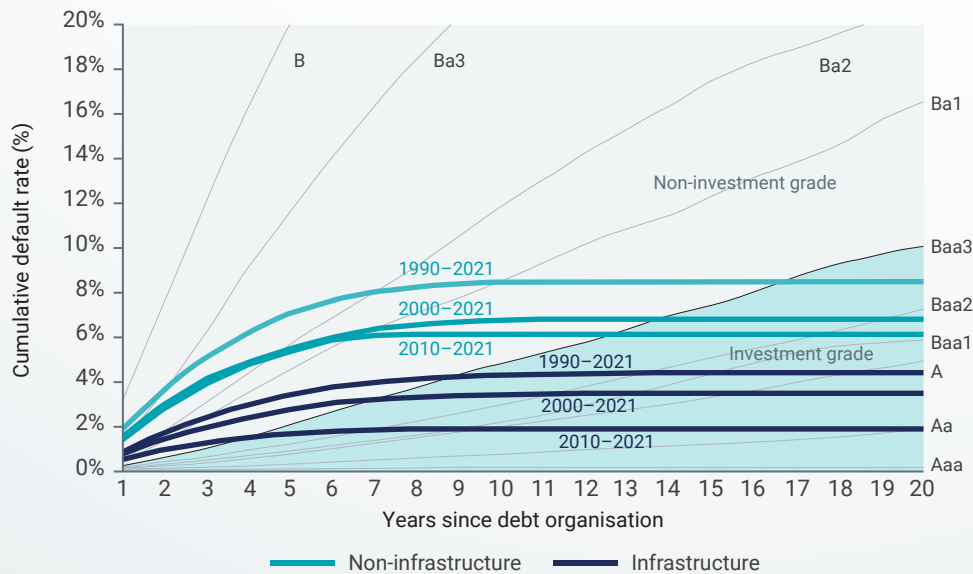
Note: The analysis is based on a representative sample of 700+ companies for which asset-level climate risk estimates are available in the EDHECInfra InfraMetrics platform. Portfolio loss was estimated by creating thousands of random portfolios using hundreds of assets for which net asset value loss was estimated.

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Infrastructure loans consistently maintain lower default rates compared to non-infrastructure loans. With global recovery from the COVID-19 pandemic in 2021, the default rates reduced across all regions and sectors.

- With lower default and higher recovery rates, the average expected loss on infrastructure loans represents only a quarter of that for non-infrastructure loans, a trend observed in both high-income and middle- to low-income countries.
- Default rates on infrastructure loans have historically decreased in most regions, with the exception of Eastern Europe and Latin America. Notably, in 2021, default rates dropped across all regions. The default rates also reduced for all infrastructure sectors in 2021. Strong government support to prevent defaults during the COVID-19 pandemic played an instrumental role in reducing default rates for infrastructure projects.

20-year cumulative default rate by sector and origination year



Source: Moody's (2023a). Data as of 2021.

20-year cumulative default rates by origination year and region (%)

Loan origination years:	1983-2019	1983-2020	1983-2021
Infrastructure	5.4	5.0 ↓	4.5 ↓
Africa	1.1	1.8 ↑	1.1 ↓
Middle East	1.2	2.2 ↑	2.0 ↓
Western Europe	4.6	4.0 ↓	3.6 ↓
Asia	5.9	5.2 ↓	4.7 ↓
North America	6.8	6.6 ↓	5.4 ↓
Oceania	7.3	10.1 ↑	9.2 ↓
Latin America	10.3	10.5 ↑	10.1 ↓
Eastern Europe	11.8	11.8	11.2 ↓

Source: Moody's (2023a). Data as of 2021.