PRIVATE INFRASTRUCTURE AND SUSTAINABILITY: DOES PRIVATE EQUITY PROMOTE FIRMS' SUSTAINABLE PERFORMANCE?

Third event of the five-year partnership

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Ladies and Gentlemen, Dear Colleagues, Dear Students,

It is a real pleasure to welcome you all to the third-year event of the renewed Antin IP-Bocconi University strategic partnership. I am particularly proud to say that today we have XXX attendees logged onto this online event, a growing number compared to last year, evidence of the fact that this has become *the* annual appointment for discussing infrastructure investing and financing. The huge number of participants connected today is also proof of the constant attention the financial community, academia and policymakers are giving to infrastructure.

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Last year, we were coming out of a difficult period for alternative investments, but at least there was hope that, in response to a normalization of interest rates in developed economies, the mood would swing in a positive direction.

Fast forward one year and, for reasons we are going to discuss later in the event, we are now facing an even more uncertain scenario. Geopolitics and the disruption of the international order are taking a toll on investment decisions worldwide;[1] capital markets and advisory have come to a standstill, waiting for better times; and alternatives are not immune from the unpredictability of the future. With this *'new normal,'* our approach to market tactics, investment strategies, and value creation levers must change.

As I've always done in the past editions of the event, I'll concentrate the first part of my introductory speech on the results of the third year of the strategic partnership. More precisely, I'll focus on:

1. The preliminary results of the 2-year research track on *'ESG investing and fiduciary duty: evidence from private equity.'*
2. The *Antin-Bocconi Case Study Collection* and the completion of the second case of the series.
3. The *Observatory on Infrastructure Asset Pricing*, now in its fourth edition.

After summarizing the work we've done, I'll move to the outlook for infrastructure investing and financing. The scenario, as we will see, is still weak but there are also signals of a rebound. This on the backdrop of a situation where, in any case, infrastructure is going to play a pivotal role in the long term. In the final part of the speech, I'll present some reflections on key topics that are emerging in the infrastructure investment space.

1. The results of the third year of the renewed partnership

Let me start with the research track.

The years 2025 and 2026 of the Strategic Partnership are dedicated to an ambitious research project focused on the relationship between sustainable investment principles and fiduciary duty in the context of private equity investments.

If we concentrate on infrastructure private equity, we must remember that infrastructure is by nature a sector subject to sustainability scrutiny. The United Nations estimates that infrastructure generates

[1] See MetLife Investment Management (2025), *Tariff Impacts and Infrastructure Debt's Resilience*, 29 April.

about 79% of total global GHG emissions and is expected to represent about 90% of the global climate adaptation costs to 2050. Furthermore, infrastructure is increasingly subject to disruptions due to climate change and related economic losses.[2]

So it comes as no surprise that in the last few years, sustainable fundraising has been constantly climbing, reaching a peak of $1.1 trillion in 2022. Behind this trend, there are a number of factors explaining the growing importance of sustainable infrastructure investments, among others escalating crackdowns from regulators, the need to avoid possible litigation from environmental campaigners as well as reputational damage, evolving stakeholder expectations and growing investor scrutiny.

Against this backdrop, the integration of sustainable investment principles into investment decisions has recently ignited a policy debate about the role of finance in addressing global challenges and balancing financial performance with broader societal impacts. The pushback against the adoption of ESG principles in investment mandates has been particularly intense in the USA. (This is not limited to infrastructure, of course.) A recent survey of more than 300 institutional investors worldwide shows that only 23% of North American respondents currently consider climate change in their investment policy – partly as a reaction to political pressure. This percentage is 62% for Europe and Asia Pacific investors.[3]

Academic research is not conclusive on whether sustainable investing is compatible with the fiduciary duty of financial advisors, fund managers and institutional investors to act in the best interest of their clients. Available literature is split into two camps. Some authors find that sustainable investing creates value for investors by delivering superior risk-adjusted financial returns in the long-term. Others, instead, get opposite results, showing that achieving non-monetary environmental, social and governance objectives clashes with financial returns. Consequently, these aims contradict the principles of fiduciary duty.

Another limitation of the existing literature is that it almost exclusively centres on investments in listed companies; as such, it is incapable of discerning the impact that the prolonged holding period of a private equity investor, coupled with active involvement in company management, may have on portfolio companies. This active involvement can readily transform a business with a low starting score on ESG into a virtuous firm commanding higher exit prices and bigger capital gains at the end of the holding period. In contrast, investors in listed equity, given their short-term attitude, tend to interpret ESG investing in terms of exclusion criteria that avoid investments with low ESG scores, with little direct impact on the environmental footprint of publicly owned companies.

Based on these premises, the research my colleagues Professor Bruno and Professor Chiarella will be presenting at the end of my introductory speech aims at answering three key questions:

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[2] See OECD (2021), *Towards a global certification framework for quality infrastructure investment* and OECD/G20 (2024), *G20/OECD report on approaches for financing and investment in climate-resilient infrastructure*.

[3] See Robeco (2025), *2025 Global Climate Investing Survey Balancing risk, return and sustainability in turbulent times*, June and Pensions&Investments (2025), *'Fragmented regulation' and political pressure lead managers to rethink how they disclose ESG data*. It is interesting to note that 56% of the interviewed investors in the Robeco survey thinks that President Trump's energy policies will put a temporary stop to the achievement of net-zero transition objectives.

Q1: What is the role of PE ownership in shaping climate-related ESG performance at portfolio companies?

Q2: Does ownership by PE firms adopting responsible investment principles improve climate-related ESG performance at portfolio companies?

Q3: What is the role of fiduciary duty in shaping climate-related ESG performance in PE-backed firms?

These three questions lead to our research hypotheses based on the observation that PE can affect ESG policies at portfolio companies in two opposing ways. On the one hand, improved ESG performance can reduce the cost of capital and increase firm value together with reputational and social capital. All this should incentivize PE firms to prioritize ESG goals, within their fiduciary duty obligations. On the other hand, transition to sustainability is often costly. The trade-off between extra costs and investment profitability could lead to a simple value maximization to the detriment of long-term ESG improvements, leading to potential cutbacks in ESG initiatives.

Understanding which of these two forces is the dominant one is an intriguing empirical question highlighting a central ambiguity in sustainable investing: whether it represents a means of achieving superior financial performance, or a redefinition of the very purpose of investing. Our starting hypothesis is that value-driven ESG adoption dominates cost-driven reductions, acting either as source of competitive advantage or as a strategy for managing regulatory and reputational risks.

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Let me now turn briefly to the second output of the year, the Antin-Bocconi Case Study Collection. This year, we completed the draft of the second case of the series. The idea we explored with the Antin team was to develop a case in the sector of value-added investments to study how Private Equity investors can optimize the financial structure of portfolio companies after acquisition. The candidate deal chosen for the purpose was Hippocrates Holding, the Italian pharmacies chain Antin bought in 2021. The case was designed with two learning goals: i) to quantify the financial resources needed to back-up the expected growth projections of the acquired company, and ii) to identify pros and cons of each financing alternative under several different criteria (characteristics, main financial T&C (Terms & Conditions), timing and process).

This second case, accepted for publication in the Case Centre Collection, together with the first one on the Antin IPO, cements Bocconi in its role as a world class competence centre in the field of teaching infrastructure financing and investing at a worldwide level.

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Lastly, some final words on the Observatory on infrastructure asset prices. This year our focus has been the impacts of climate change on the value of infrastructure investments. Like in previous editions, the results of the Observatory draw upon the estimation of an ad-hoc asset pricing model that uncovers the long-term equilibrium relationships – essentially, the common stochastic trends- between risk-factor prices and infrastructure prices.

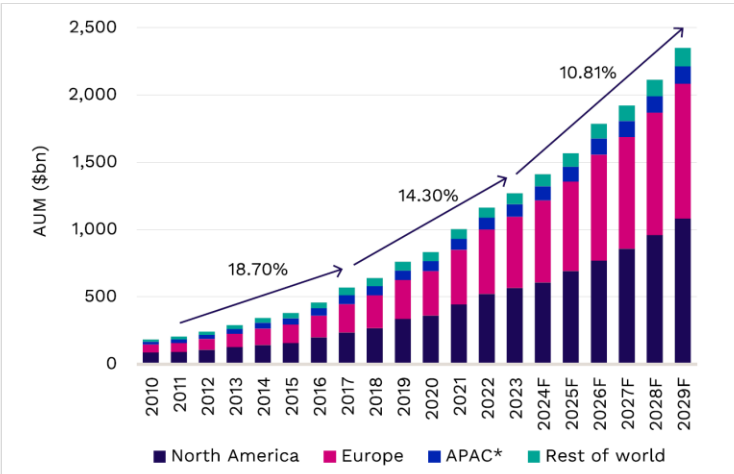
The analysis reveals many insights that we will explore in greater detail later in the session. It starts with a study of pricing anomalies across climate-sorted infrastructure portfolios reflecting different exposures to physical and transition risk, suggesting that climate change is emerging as a new risk factor in asset pricing. Then, we extend our infrastructure asset pricing model by incorporating climate-related risk factors, which allow us to quantify how investors in infrastructure are pricing climate change risk; and we track down the underlying drivers of the climate change risk premium by linking these risk factors with fundamental climate trends, such as long-term shifts in rainfall and temperature.

2. *The status of infrastructure investing and the challenges ahead*

Let me now move on to the second point of my speech.

At the end of 2024, the AuM for unlisted infrastructure assets (equity and debt) totalled about $1.4 trillion worldwide, up from $1.3 trillion in 2023 with Europe and North America representing each 43% of the total. The progression of the asset class since 2010 has been remarkable: in 2024, the global AuM was 7.7x higher than the $182 billion in 2010. In comparison, in the same period, private equity registered much smaller 4.26x growth.

Asset Under Management (AuM) by region focus: actual and forecasted volumes 2010-2029 ($ Bn)



Source: Preqin (2025)

The future also looks good. Projections for the next five years indicate that – despite a slowdown in fundraising in 2023 – the asset class is going to grow to more than $2.3 trillion by 2029 at a Compounded Annual Growth Rate of 10.7%.[4] This CAGR is only second to private equity (13.2%) and above private debt (10.2%) and real estate (9.22%)

[4] Preqin (2025), *The Future of Alternatives 2029*.

Forecast Asset Under Management (AuM) growth by asset class, 2024-2029F

	AuM 2024	AuM 2029F	Delta % 2029/2024	CAGR 2024-2029
Private Equity	6.428,88	11.965,88	86,1%	13,23%
Private Debt	1.619,81	2.640,56	63,0%	10,27%
Hedge Funds	4.839,96	5.731,35	18,4%	3,44%
Real Estate	1.708,72	2.656,23	55,5%	9,22%
Infrastructure	1.410,67	2.348,59	66,5%	10,73%
Natural resources	243,51	291,58	19,7%	3,67%

Source: Preqin (2025)

Turning to fundraising, 2024 saw an improved environment compared to the rock bottom value of 2023 with $102 billion. What's more, H1 2025, growth continued and the amount raised ($113 billion) was higher than the full year 2024. This is brilliant performance compared to other alternative investments. In comparison, between end 2023 and end 2024, private equity and real estate fundraising dropped by 23% and 24% respectively. However, these figures must be taken with a grain of salt. Given the new scenario of *'higher for longer'* interest rates and the high leverage used in infrastructure, fundraising is exposed to an intense degree of uncertainty in the years to come.

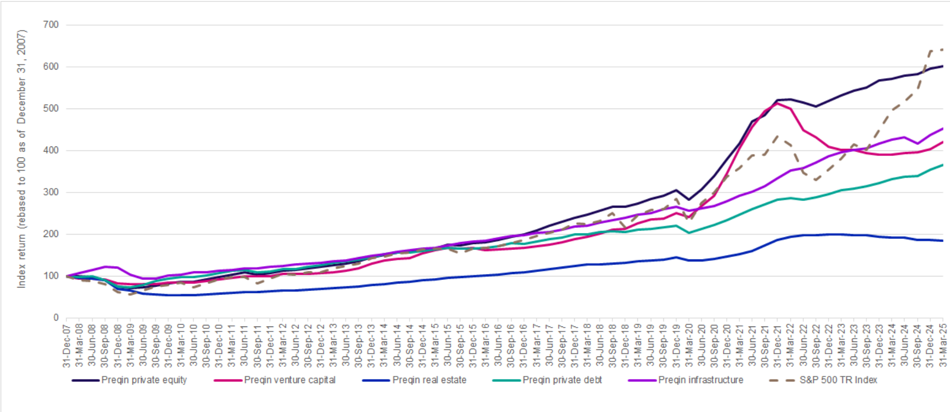
On the investments flow side, global infrastructure deal value stood at $236 billion at the end of Q2 2025 with a growth of +70% compared to the first half of 2024. This number must be read in light of -2.3% in private equity and -1% in real estate. The only asset class that matched such growth was private debt with +63%. Again, this is further proof of the resilience of the asset class even in very unfavourable macroeconomic scenarios.[5]

Also, the performance of the asset class confirms the resiliency of infrastructure in the face of growing uncertainty in capital markets. The Preqin infrastructure index kept rising even in unfavourable market conditions, reaching 451 in March 2025 (+26 points from March 2024, slightly below the +31 points of Private Equity).[6] Inflation hedge, low correlation with other asset classes and portfolio volatility reduction properties of the asset class are still the key factors driving investors into the asset class.

[5] See Preqin (2025), Deal Flow Monitor: Q2 2025.

[6] Data reported in the text are normalized to 31 December 2007=100; by looking at annual performance, infrastructure reported the best performance among all alternatives (9.2%), above private debt (8.8%) and private equity (7.6%). See Amhed S. (2025), *Trending Data: How Infrastructure led performance in 2024*, Preqin Insights+, May and Lai A. (2025), Performance Pulse H2 2025, Preqin Insights+.

Performance of infrastructure vs other private capital and public benchmarks 2007-March 2025



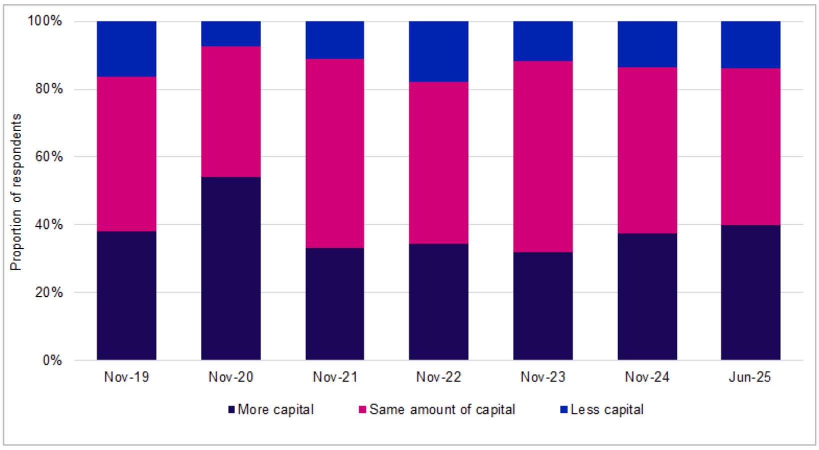
Source: Preqin (2025), Global Infrastructure Report and Preqin (2025) Performance Pulse Q2 25

All in all, improved fundraising trends and sustained performance tell us that infrastructure has overcome the negative phase of 2023 and is in a good position to reinforce its status as a long-term asset, well positioned to benefit from secular megatrends like energy transition, digitalization, climate change and demographic trends.[7]

Long-term investors are well aware of these trends and confirm their appetite for the asset class in terms of asset allocation targets. The interest rate cuts in US and Europe and the progressive phase-out of the *'denominator effect'* have helped to improve investor sentiment. On the one hand, the Hodell Weill's 2024 Institutional Infrastructure Allocation Monitor shows that 58% of the investors interviewed are underallocated to listed and unlisted infrastructure. On the other hand, and as a natural consequence of underallocation, the August 2025 Preqin survey tells us that investors are willing to augmenting commitments in the short term, with the percentage of those interested in keeping or increasing commitments to infrastructure raised from 82% of November 2022 to 86% in June 2025. These intentions are confirmed for longer term investment horizons. In fact, 94% (up from 89% in November 2022) say they want to maintain or expand the allocation and only 6% plan to invest less.[8] (This figure was 11% in 2022.)

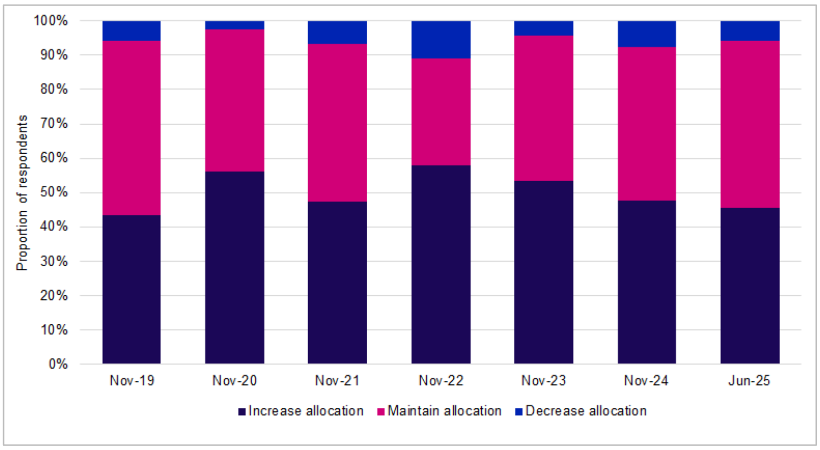
[7] See Nuveen (2025*), Megatrends and their impact on investment strategies*; UBS (2025), *Infrastructure Outlook 2025* and UBS (2025), *The Red Thread*, May.
[8] See Hodes Weill and Associates (2025), *Institutional Infrastructure Allocations Monitor*; Cohen and Steer (2025), *Private and listed infrastructure: The case for a complete portfolio*. Regarding underallocation, see Preqin (2025), Investor Outlook – Alternative Assets – Q1 2025 (April) and Q2 2025 (August) where it is estimated that North America and European investors show underallocation compared to the median target allocation of 1.7% and 0.8% respectively.

Short-term commitment plans (allocation plans for the next 12 months compared to the previous 12 months), 2019 - June 2025



Source: Preqin (2025), Investors' Survey H2 2025

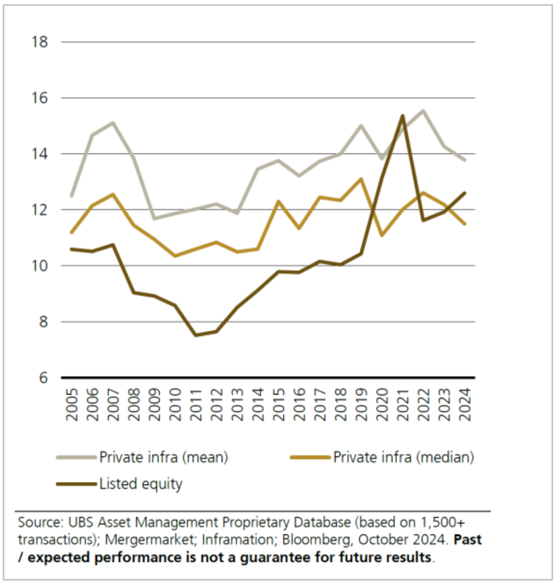
Investors' intentions for their infrastructure allocations over the longer term, 2019 - June 2025



Source: Preqin (2025), Investors' Survey H2 2025

The intentions of investors are supported by a moderation in infrastructure valuations in the past two years.

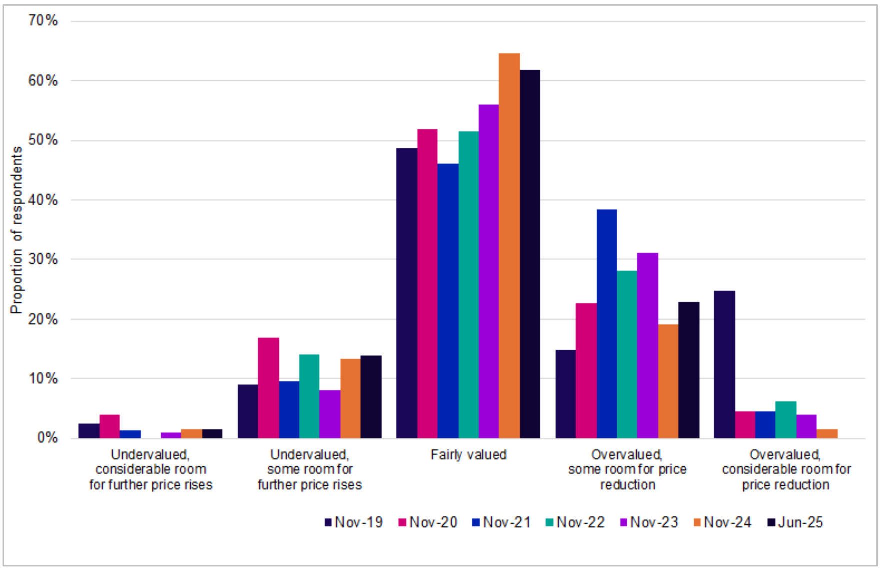
Private and listed EV/EBITDA multiples – 2005-2024



Source: UBS (2025), Infrastructure Outlook 2025)

While listed equity has seen higher valuation multiples, 62% of investors judge current price values as fair, up from 52% at the peak of the market in November 2022. Conversely, only 23% of them consider the asset class to be overpriced. (The percentage was 28% in 2022.)

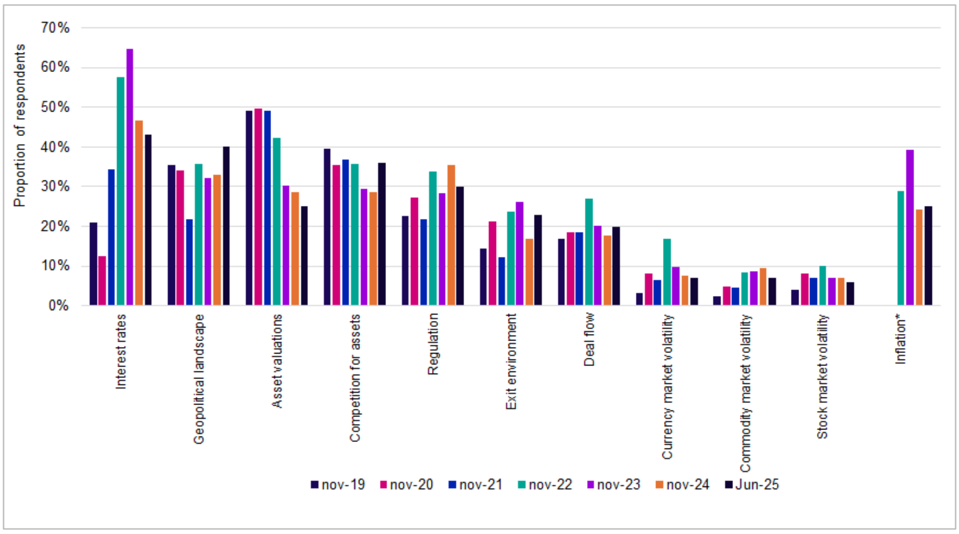
Perception of investors in terms of level of fairness of current prices of infrastructure assets 2019-June 2025



Source: Preqin (2025), Investors' Survey H2 2025

As I've said, valuations are considered fair, which explains why 36% of investors consider the competition for good assets as one of the main concerns in the next 12 months. On the macroeconomic side, interest rates and inflation are still considered key challenges for the months to come by 43% and 25% of investors respectively, although with lower intensity than in 2024. However, other risks are perceived as critical, particularly those that fall outside the control of asset managers and capital markets. Unsurprisingly, geopolitical landscape and regulation (bearing in mind the 'national security' status of infrastructure) are cited by 40% and 30% of investors who were interviewed, percentages that are at peak values for the entire 2019-2024 period.

Key challenges for return generation in the next 12 months



Source: Preqin (2025), Investors' Survey H2 2025

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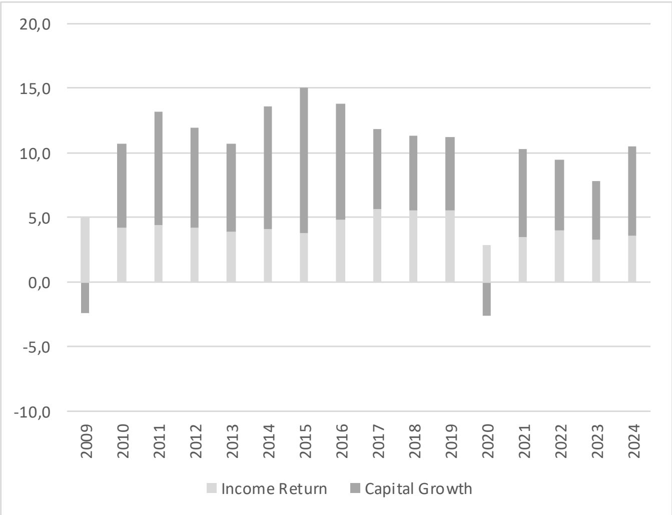
Let me now move on to the challenges that infrastructure investments are going to face in the near future.

If we quickly look at the trend of returns of the MSCI Global Quarterly Private Infrastructure Index (gross return in local currency) we can easily observe that 1) the performance of the asset class has been fairly stable across the entire period from 2009 to2024, and 2) returns have been increasingly dominated by the capital gain component. The latter effect is clearly due to a progressive shift of investor appetite towards core+ and value added/opportunistic segments, where capital appreciation is the key factor for value creation.[9] Value added and opportunistic investments are now counting almost 30% of the total with the percentage expected to remain stable to 2029.

[9] See Preqin (2025), *Alternatives to 2029*.

Infrastructure performance (gross total return %, local currency)



Source: MSCI Global Quarterly Private Infrastructure Index, author's elaboration

From here, the first challenge. In a scenario where the *'new normal'* is higher for longer interest rates, core infrastructure is going to lose its appeal for risk-averse investors vis-à-vis traditional fixed income assets. The need to recapture lost fundraising requires infrastructure asset managers to be more creative in the value-added segment, finding new investment opportunities that, somehow, 'stretch' the concept of infrastructure outside traditional boundaries towards Next-Generation infrastructure or 'theme investing' approaches, where opportunities to capitalize on growth, development and operational excellence can be maximized.[10]

A second challenge has to do with the goals of this year's research activity. We are all observing the intensifying effects of climate change and the dramatic consequences of natural disasters on key infrastructure like water systems, electricity transmission and roads and rails disrupted by uncontrolled flooding. Despite visible impacts of climate change, policymakers are pushing back against net-zero emission targets with varying intensity across the globe. Yet, long-term investors are well aware that these effects can have important negative consequences on their portfolio risk-return profile. In this new scenario, the creative approach of infrastructure asset managers towards the concept of "resilient" infrastructure, the use of ESG as a lens to assess long term risks and opportunities and the activism in working with portfolio companies to improve their ESG profile will all become key competitive factors to create sustainable long-term value.

[10] See Gatti S. & Chiarella C. (2020), *The future of infrastructure investing*, in Gatti, S. & Chiarella, C. (editors), *Disruption in the Infrastructure Sector*, Springer Nature, Cham. and Boston Consulting Group (2024), *Creating value through Operational Excellence*.

The third challenge involves the progressive polarization of the infrastructure market: on one side, consolidation is responsible of an M&A wave by big platforms in search of volumes and stabilization of their annual stream of management fees.[11] This strategy is going to create a top-tier market segment where ultra large transactions will become an almost exclusive monopoly of these platforms, often with syndication strategies among them. On the other hand, is creating new opportunities for '*Alpha generators*', pure-players in infrastructure investments able to focus on specialized market niches, specific segments of the infrastructure market (for example mid-market deals) or unique value propositions.

The last challenge is the progressive shift many alternative asset managers are promoting towards fundraising from private wealth/HNWI and retail investors. Reportedly, at Blackstone 20% of total inflows in 2024 (equivalent to $23 billion) was directed to semi-liquid products. Apollo Global Management launched a 'wealth solution business' in 2021 and this channel generated $12 billion of inflows in 2024.[12] Larry Fink, Blackrock's CEO has pushed the boundaries even further in his 2025 Annual Chairman's letter to investors, advocating the need of '*democratization of investing*': enabling retail investors to access alternative investments. My personal view (but, please, take it for what it is, a *personal* view) is that retail should not be a target market for alternative investments, even if asset managers set up mechanisms to ease the access of retail to structurally illiquid investments. It is a question of systemic financial stability. Clearly, this challenge does not involve asset managers only, it has to do with the way regulators consider the risk-return combination of these investments and their suitability to a retail portfolio.[13] The real question is: *are we really sure retail knows exactly what it is signing up for?* In all honesty, my answer is a plain 'No'.

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Let me conclude this introductory speech with my personal thank you to all the people who worked on the Antin IP-Bocconi partnership this year.

Thank you to Angelika Schoechlin, Antin IP senior partner, for her opening speech today. She is an invaluable partner in guiding our research activity. She also had a direct role in revising the Hippocrates case study. Angelika, really, thank you very much.

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[11] BCG has mapped the deals that took place between 2022 and 2024 by traditional asset managers, private equity houses and financial institutions buying specialized infrastructure asset managers. Motivations behind the deals go from the search for complementary product offerings, diversification of geographic span and entry in new market segments. An undeclared objective, particularly for traditional asset managers, is to counter the progressive threat posed by passive investments and a compression of their fee income. See Boston Consulting Group (2025), *Infrastructure Strategy 2025 – How Investors Can Gain Advantage as the Asset Class Matures,* and Dunkley, E. (2025), *Legal&General acquires real estate investor in private asset push*, Financial Times, 19 May.

[12] See Murgatroyd, G. and Libby Fennessy (2025), *Private capital's big push for private wealth*, Preqin Insights+, 7 May and Schmitt, W. (2025), *Launches of private asset ETFs raise concerns in funds industry*, Financial Times, 27 March.

[13] In the USA, the wave of deregulation triggered by President Trump has already impacted SEC decisions regarding the possibility to offer private market products to retail investors. See Croce, B. (2025*), SEC's Atkins eyes expanding access to private markets*, Pensions&Investments, 19 May.

The second acknowledgment goes to Antin's Nathalie Kosciusko-Morizet and Luca Mazzolatti, Senior Partner and Investment Director, respectively. Nathalie and Luca have been Antin interface for the Bocconi research team, helping us refine and improve all our research production. Their constant constructive feedback was fundamental to enhance the quality of the papers and align them for use by a broader audience of professionals and not only academics and scholars.

Third, let me thank Alex Kesseler, Antin's Partner for Performance improvement, for his participation to the discussion session. Alex helped us organize the playbook of the roundtable, and he provided us with useful perspectives and examples as to how Antin is working to make sustainability and sustainable long term value creation possible.

On the Bocconi side, let me thank the colleagues who contributed to the research activity: Carlo Chiarella and Brunella Bruno (for the two-year research track); Carlo Chiarella for preparing the fourth edition of the Observatory on Infrastructure Asset Pricing; and, again, Carlo Chiarella and Francesco Ceprano for working on the Hippocrates case study.

Lastly, a final thank you to Bocconi Rector Professor Billari and Bocconi Managing Director, Dr. Taranto, for their opening and closing remarks, a constant and very much welcomed presence during this annual event.

Thank you very much.