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Introduction to Infrastructure

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We expect infrastructure investing to continue expanding in the coming decades, but access can be challenging for many investors. Most liquid alternatives that seek to act as a proxy for the performance of this asset class are imperfect, with a high equity beta that renders them unsuitable to park “dry powder.” An ETF provides a potential solution to these challenges.

Introduction

Investors should consider an allocation to infrastructure as part of their portfolio, with its potential of long-term, steady returns and predictable cash flows. However, many investors don't have the scale to invest in unlisted infrastructure or directly into debt securities, making it difficult for smaller investors to gain exposure to the infrastructure asset class.

The SPDR Morningstar Multi-Asset Global Infrastructure UCITS ETF seeks to address this challenge by offering a regulated, open-ended vehicle to access the asset class. The ETF also helps larger investors who are able to access direct infrastructure by offering a temporary home for committed, but uncalled, capital.

An ETF structure does not offer a like-for-like substitute for long-duration infrastructure exposure, but low capital requirements and high liquidity and diversification make it a relatively attractive part of the infrastructure tool kit in any portfolio.

The SPDR Morningstar Multi-Asset Global Infrastructure UCITS ETF is one of a kind in the infrastructure space. Traditionally, ETFs have been concentrated, equity-only strategies, investing in the listed equity of companies that own and/or operate infrastructure. This ETF, however, offers combined exposure to both equities and bonds from companies in the infrastructure universe.

This approach allows investors to benefit from a risk-adjusted returns profile that resembles direct investment in the underlying asset, but without the liquidity and cost issues otherwise associated with direct infrastructure investment. In this paper, we take a closer look at the infrastructure opportunity and the various routes investors can take to access this exciting market segment.

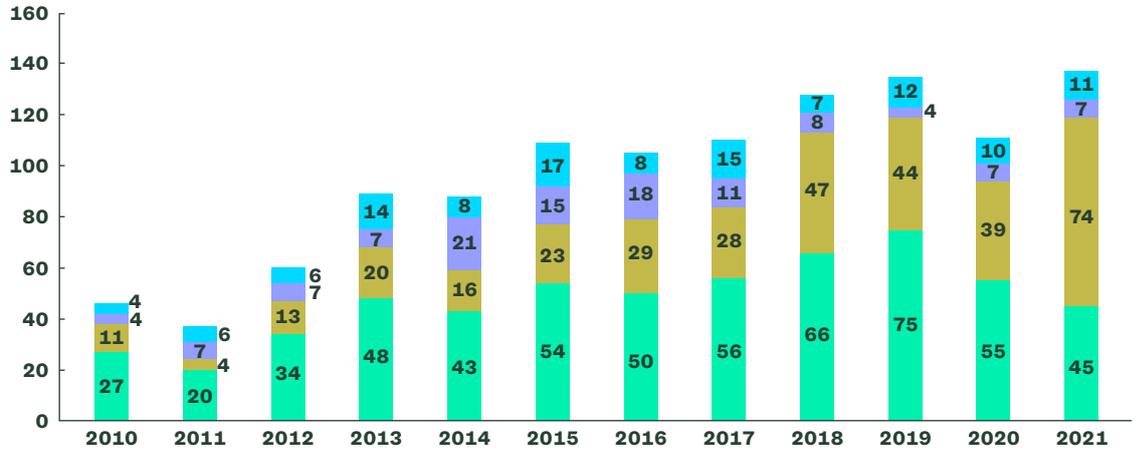
Future Infrastructure Investment Requirements

Infrastructure assets are the basic physical systems of a nation and vital to a country's economic development and sustainable growth. However, the deep disruptions caused by COVID together with the upcoming threat of recession and political instability has contributed to an increase in the imbalance between needs and funding.

According to the World Bank, gaps in the quantity of infrastructure per capita are remarkable in many countries. For instance, power generation capacity per person in developing countries is one-fifth that of advanced economies.¹ Nevertheless, many countries often lack sufficient fiscal capacity and domestic savings to address the infrastructure gap. Even with programs such as the U.S. Infrastructure Investment and Jobs Act and the European Union's NextGenerationEU plan, as of March 2022, the G20's Global Infrastructure Outlook initiative estimates that current investment will leave the world with a \$15 trillion infrastructure funding gap by 2040.²

Figure 1
Global Infrastructure and Natural Resources Fundraising by Region (\$ in Billions)

North America
 Europe
 Asia
 Rest of the World



Source: Preqin, McKinsey & Company, McKinsey Global Private Markets Review 2022. Excludes secondaries, funds of funds, and co-investment vehicles to avoid double counting.

Given the scale of resources needed to address the estimates gap in investment, much of this financing has been mobilised by the private sector (see Figure 1). Furthermore, global private infrastructure AUM is estimated by Preqin to likely double over the next five years, reaching \$1.9 trillion and overtaking real estate as the largest real asset class. For private investors, infrastructure assets have a number of characteristics that make stepping up to this funding void potentially beneficial (see Figure 2).

Figure 2
Infrastructure Investment Attributes

Attribute	Investment Benefit	Industry Example
Monopolistic	High barriers to entry: initial capital outlay and strict regulations Revenue streams are protected	Toll roads, airports, railroads Regulated utilities: electricity, gas, water Oil & gas pipelines Satellites
Inelastic Demand	Less sensitive to business cycle	Electricity, gas, water Towers, satellites Social infrastructure
Predictable Long-Term Returns	Assets are long-lived Steady user demand Reliable cash flows	Toll roads Regulated utilities: electricity, gas, water Oil & gas pipelines
Inflation-Linked	Real assets: long-term asset appreciation, in line with inflation Concessions permitting rent escalations linked to inflation	Toll roads, airports, railroads Regulated utilities: electricity, gas, water

Source: State Street Global Advisors.

Infrastructure as an Asset Class

Infrastructure as an asset class may be underdeveloped but it is not new. Infrastructure — alongside hedge funds, real estate and private equity — is part of the growing pool of alternative assets moving their way into normal investor allocations.

Infrastructure investment has a number of key benefits: it has low correlation with traditional assets, is less sensitive to business cycles, and is long duration and inflation linked. This could be particularly interesting for UK pension funds where there is an inadequate supply of inflation-linked assets to meet the demand. In many cases — for example, toll roads — infrastructure also offers predictable long-term returns with stable cash flows.

Morningstar, the index provider of this ETF, defines the infrastructure asset class as such:

The infrastructure asset class generally has long-duration assets that elicit stable and predictable cash flows. High entry barriers and monopolistic business models, paired with inelastic demand for essential services provided by infrastructure companies, result in predictable revenue that is often indexed to inflation.

Furthermore, the two main revenue drivers, pricing and volume, have particular characteristics within this space.

Prices are generally tied to long-term contracts and/or regulation and are often adjusted with inflation. Volume tends to grow steadily because of inelastic demand, efficiencies of scale, and increasing GDP.

Hence, in periods of rising inflation, infrastructure investments act as a real asset. Additionally, in times of economic contraction, such businesses tend to have defensive characteristics, since they are relatively insulated due to stable demand irrespective of the economic cycle.

The Infrastructure Bond Market

Infrastructure bonds include traditional corporate debt issued by the owners and operators of infrastructure, and also asset-backed bonds backed by revenue of the asset or specific project which offers more direct exposure. This relies on the cash flow generated by the asset or project rather than the company itself.

The creation of a well-functioning market for asset-backed infrastructure bonds seems like the obvious next step. One fundamental setback to the growth of this market could be regulation. Uncertainty and confusion will be a hindrance to the evolution of infrastructure as a more viable asset class — for the market to advance, the call for cooperative and transparent legislation must be met.

The Europe 2020 Project Bond Initiative was introduced to create an established debt capital market for infrastructure projects. Although this can be used to secure crucial funding, the credit-boosting facility makes the yield less attractive for many investors. This initiative has also been a catalyst for the development of a green bond market which helps finance necessary projects to meet environmental objectives in the long run.

Figure 3
**Sector Breakdown
of Morningstar
Global Multi-Asset
Infrastructure Index**

Sector	Bond (%)	Equity (%)	Total (%)
Communication & Telecom Assets	4.44	2.14	6.59
Cell Towers & Satellites	0.00	2.14	2.14
Communication Equipment	4.44	0.00	4.44
Energy	0.00	4.57	4.57
Oil & Gas Midstream	0.00	4.57	4.57
Social Infrastructure	4.64	2.29	6.94
Education	0.70	0.00	0.70
Managed & Long-Term Care Facilities	0.16	0.00	0.16
Medical Care	3.78	0.00	3.78
Medical Care Facilities	0.00	2.29	2.29
Transportation & Infrastructure	15.92	19.31	35.23
Airports & Air Services	2.94	0.93	3.86
Engineering & Construction	0.00	3.26	3.26
Highways & Toll Roads	3.12	0.00	3.12
Infrastructure Operations	0.58	0.77	1.36
Integrated Shipping, Logistics & Land Transport	1.76	5.50	7.26
Railroads	6.12	6.72	12.84
Shipping, Ports & Marine Transport	1.41	1.83	3.24
Construction & Engineering	0.00	0.00	0.00
Utilities	24.99	21.69	46.68
Diversified Utilities	0.00	2.33	2.33
Electric Utilities	16.71	14.03	30.74
Gas Utilities	7.20	2.07	9.28
Waste Management	0.00	2.28	2.28
Water Utilities	1.08	0.95	2.03
Grand Total	50.00	50.00	100.00

Source: Morningstar as of 30 September 2023.

How Investors can Access Infrastructure Investments

There are various investment vehicles that can be used to access infrastructure. Figure 4 provides a brief overview of the major routes. Generally, the main trade-off is between the perceived volatility and liquidity of the different routes.

Direct investment into specific projects is only possible for the largest of investors, for example sovereign wealth funds or very large pension funds. With direct investment, investors gain control, transparency and capital structure discretion, and do not need an asset manager as an intermediary. It is also possible to get similar direct exposure via infrastructure funds, whether closed-ended or unlisted equity funds.

Indirect exposure is associated with listed equity, and a number of European mutual funds have successfully raised significant assets in this space. These funds are active but are solely invested in listed equity and so will carry high equity beta.

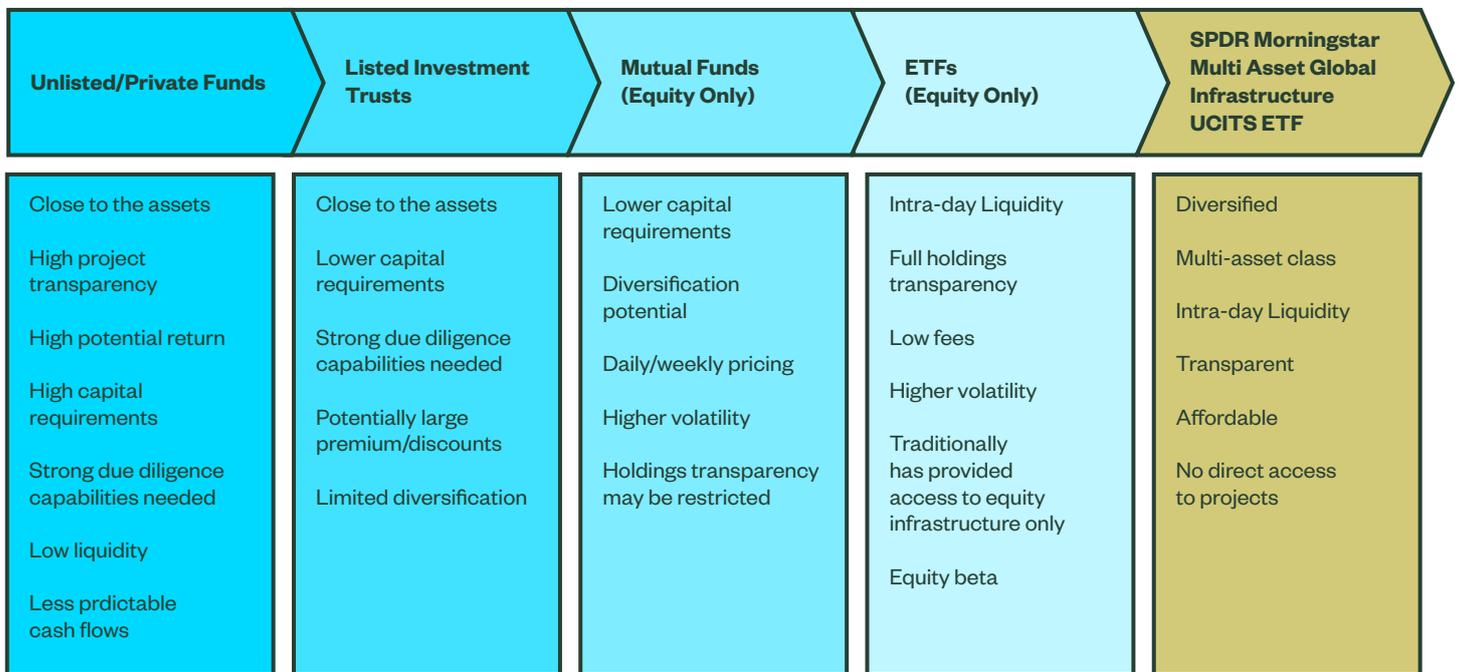
There are no fixed income infrastructure ETFs in Europe and many investors buy infrastructure bonds directly. However, many investors do not have the scale or systems to invest in unlisted infrastructure or directly into debt securities, making it difficult for smaller investors to get exposure, let alone reach portfolio diversification.

ETF investment brings an investable solution for smaller investors by offering a regulated, open-ended vehicle through which to access the asset class. The ETF also helps larger investors who have an allocation to direct infrastructure by offering a temporary home for committed, but uninvested capital.

An ETF structure is not a pure substitute for long-duration infrastructure, but low capital requirements and fees make it an attractive option as part of the infrastructure toolkit.

While each approach to infrastructure has its benefits, there are also drawbacks to each method of access. The main benefit of direct and/or unlisted infrastructure investment is direct access to the underlying asset, but this approach requires large capital allocations and on its own lacks diversification. In the case of equity-only ETFs and mutual funds, there is better diversification and transparency, although the return on investment has depended on the performance of infrastructure companies and, most notably, their share prices.

Figure 4
Accessing Infrastructure Through Different Investment Vehicles



Source: State Street Global Advisors.

A Multi-Asset Approach to Infrastructure

Investors can also access infrastructure through a multi-asset vehicle. Such an approach can provide a transparent, diversified portfolio of liquid securities that would have less volatility compared to a listed equity infrastructure exposure, while producing returns that approximate an unlisted investment. For example, the Morningstar Global Multi-Asset Infrastructure Index targets the full capital structure — equities and debt — of infrastructure investments. The index is split between 50% equity and 50% bonds, and is widely diversified with c. 560 equity and c. 2,000 bond investments.

In one trade, the index provides investors with access to the full, publicly available infrastructure universe of 18 sectors. The largest exposures are electric utilities, railroads, gas and diversified utilities, airport and air services and communication equipment. The addition of the bond exposure lowers the volatility (and equity beta) compared to existing equity-only mutual funds and ETFs, while providing returns that resemble an unlisted investment.

Why Use a Multi-Asset Exposure?

Direct infrastructure investment offers a combination of potential value appreciation (like an equity) and a regular income stream (like fixed income, albeit slightly less predictable). This hybrid nature is key to what makes infrastructure a relatively attractive asset class, and also why accessing it through a multi-asset index makes sense.

The inflation-linked nature of infrastructure projects can offer a degree of portfolio protection against a potential resurgence of inflation. The equity component of the Morningstar index includes companies that will be able to hedge revenues and pass on the cost of inflation through increased tariffs (for example toll roads and bridges), putting them at an advantage over companies that do not have this leverage.

Figure 6 shows the cumulative performance of the Morningstar Global Multi-Asset Infrastructure Index and compares it with pure equity and fixed income global exposures. As the infrastructure index is composed of an equally weighted proportion of equities and bonds, we compare it with a 50/50 composite of the MSCI World Index and the Bloomberg Global Aggregate Bond Index.

We can see that while the correlation of performance remains high, it exhibits lower drawdown and performance volatility over the long run. These are the characteristics that make infrastructure relatively attractive in a total asset allocation framework. Meanwhile, the index also exhibits a lower beta to pure equity portfolios or existing solutions.

Recently, the index (4.02%) underperformed the global equity market (MSCI World Index 8.16%), mainly explained by the non-existence of Technology (5%), in particular in the equity leg, while Technology has been a big driver of performance, especially YTD (see Figure 5). Furthermore, the index exhibits a particular sector breakdown with long exposures in utilities (47%) and transport and infrastructure (35%), which have lagged YTD. However, in a context of higher market volatility, infrastructure is an important allocation in portfolios as a defensive type strategy, and one which we would expect to continue to provide both regular income and potential of capital appreciation.

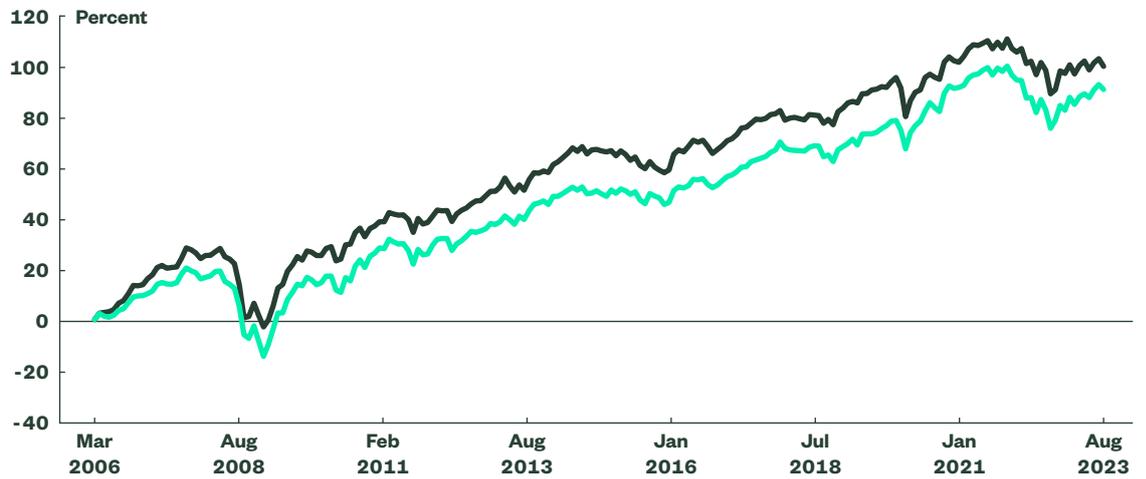
Figure 5
Performance and Risk History

	Return (%)					Standard Deviation (%)			
	YTD	1 Year	3 Years	5 Years	10 Years	1 Year	3 Years	5 Years	10 Years
Morningstar Global Multi-Asset Infrastructure Index	-1.35	6.62	-0.58	2.42	3.69	12.38	12.52	12.35	9.77
50-50 MSCI World-Bloomberg Agg Index	4.35	11.82	0.50	3.15	4.10	11.23	12.01	11.52	9.05
MSCI World Index	11.10	21.95	8.08	7.26	8.26	15.58	17.65	18.49	14.67
DJ Brookfield Global Infrastructure Composite Index	-4.46	4.50	5.79	2.97	4.20	16.21	16.84	17.97	14.57
Bloomberg Global Aggregate Bond Index	-2.21	2.24	-6.93	-1.62	-0.44	8.68	7.87	6.94	5.79

Source: Morningstar as of 30 September 2023. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income as applicable.

Figure 6
**Equity-like Returns
without the
Associated Volatility**

■ Morningstar Gbl Mult-At
Infra GR USD
■ 50-50 MSCI
World-Barclays Agg TR



Source: Morningstar Direct as of 31 August 2023.

The Morningstar Global Multi-Asset Infrastructure Index

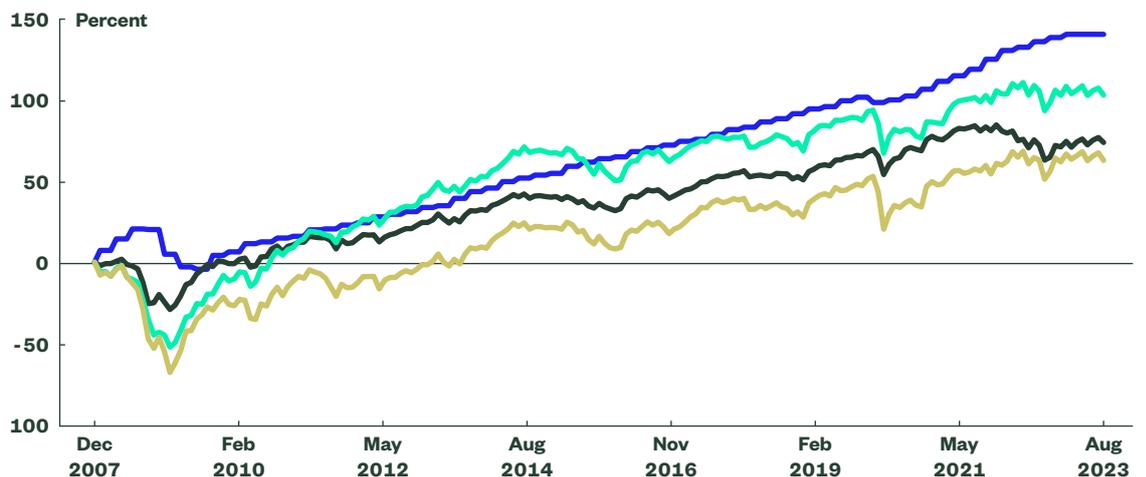
As we have seen, accessing to the infrastructure universe can be complex. The Morningstar Global Multi-Asset Infrastructure Index seeks to serve as a proxy for direct investment (as closely as reasonably possible).

Preqin is a data and intelligence company that tracks the largely undisclosed infrastructure universe (alongside other alternatives such as private equity and hedge funds) with a database of projects and closed funds. Using this information, and quarterly valuations, Preqin has built an index that can be used to compare and contrast other approaches to infrastructure investment.

Figure 7 shows the cumulative performance of the Preqin and Morningstar indices since common inception (December 2008). Given the less liquid nature of the infrastructure universe of funds, only quarterly data points exist and they are published with some lag (up to six to nine months).

Figure 7
**Morningstar vs. Preqin
Index — Cumulative
Performance**

■ Morningstar Gbl Mult-At Infra
GR USD
■ DJ Brookfld Glb Infra Comp
TR USD
■ Preqin Infrastructure Index
■ S&P Global Infrastructure
NR USD



Source: Morningstar Direct as of 31 August 2023.

It is worth noting that, since the Preqin index is only published quarterly, this will dampen the effect of intra-quarter volatility on this index's performance. We also note that valuations may lag and that drops and recovery in the Preqin index price may be slightly misaligned with markets on which the Morningstar index is based. Figures 5 and 6 show that the valuation lag was apparent during the Global Financial Crisis.

For investors used to investing in infrastructure funds, one of the issues they face relates to where and how to park 'dry powder,' or committed but uncalled capital. Equities are too volatile, and cash provides too low a yield. As we can see from Figures 5 and 6, the accuracy of the Morningstar Global Multi-Asset Infrastructure Index as a proxy to direct infrastructure is relatively high and proves the closest match among the existing universe of liquid solutions.

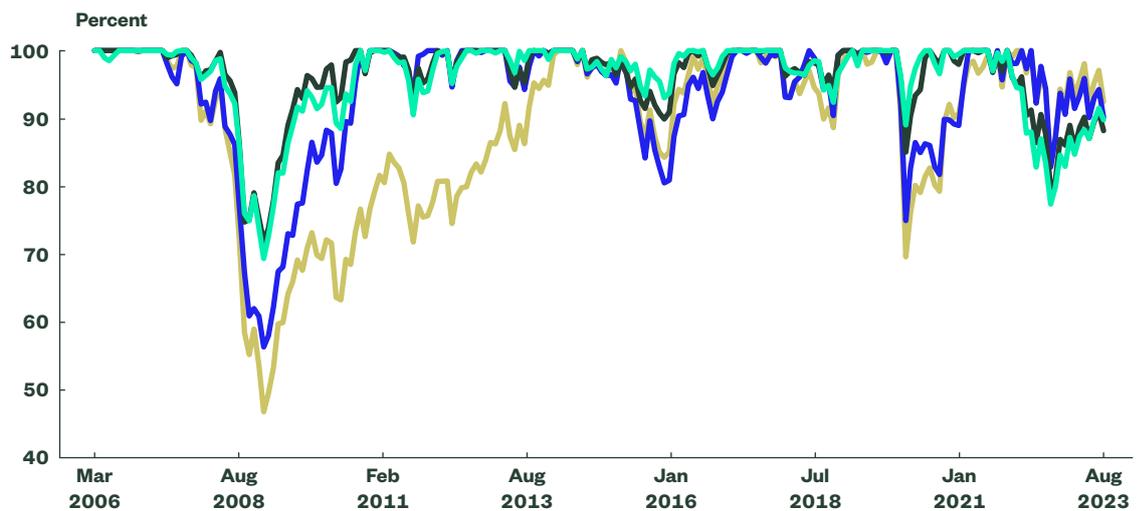
It is also worth emphasising that infrastructure investment is commonly sought out for its low performance volatility. The stable nature of infrastructure income generation tends to exhibit lower drawdowns in market selloffs. As Figures 5 and 6 demonstrate, the Morningstar Global Multi-Asset Infrastructure Index shares these characteristics.

During the Global Financial Crisis, the index exhibited a lower drawdown than a 50/50 global equity and bond composite. On a monthly basis, the maximum cumulative drawdown during the past 10 years would have been -20.4% versus -22.6% for a 50/50 MSCI World/Barclays Global Aggregate portfolio (see Figure 8). Drawdowns for other equity-only indices were also much poorer in the Global Financial Crisis, at -45.2% for the Dow Jones Brookfield Global Infrastructure Index and -53.2% for the S&P Global Infrastructure Index.

More recently, we observed market volatility picked up into the end of 2019, hit above-average levels during the Covid Crisis, and eased to more normal levels in 2021. With increased geopolitical conflict, inflation at 40-year highs, rising interest rates and negative equity and bond market returns, volatility rose sharply again in 2022. In this context, the index continued to exhibit the lowest drawdown levels (for a 5-year timeframe).

Figure 8
**Monthly Drawdowns
 Since Index Inception**

- Morningstar Gbl Mult-At Infra GR USD
- 50-50 MSCI World-Barclays Agg TR
- DJ Brookfld Glb Infra Comp TR USD
- S&P Global Infrastructure NR USD



Source: Morningstar Direct as of 31 August 2023.

Using a Multi-Asset Infrastructure UCITS ETF in a Portfolio

Investors can benefit from multi-asset ETF exposure in three ways:

1. As a core allocation to infrastructure. The SPDR ETF can be used to gain core exposure to the infrastructure asset class. It is suitable for clients that do not meet minimum investments, cannot invest for liquidity reasons or do not have the research capability for unlisted investments.
2. For targeted asset allocation purposes. Based on a survey run by ETF Risk and State Street Global Advisors during the launch of this ETF, we observed that both intermediary and institutional investors have varying degrees of allocation to infrastructure. Weights range from 0% to more than 20% but the average target allocation is around 10% of the portfolio. While the ultimate goal for a long-term infrastructure investor is to be invested directly, we have noted the potential barriers that exist, in particular size and eligibility. This leads to a less than perfect ability to generate the strategic asset allocation benchmark returns. Studies conducted by specialists like Preqin have shown that investors are often underweight versus their strategic allocation target. Based on the previous analysis versus the Preqin index, the SPDR Morningstar Multi-Asset Global Infrastructure ETF is a potential solution to allocate strategically to the universe. It can also be used to tactically adjust the exposure depending on the prevailing market environment, for example if an allocation model signals it is appropriate to do so.
3. Temporary home for 'dry powder'. Investors waiting for a capital call can benefit from the intraday liquidity offered by the ETF structure, while keeping their cash working as part of their infrastructure allocation.

Summary

Infrastructure investing is expected to continue to expand over the next few decades, but access can be challenging for the majority of investors. Most liquid alternatives that seek to represent a proxy for the performance of this asset class are imperfect, with a high equity beta that renders them unsuitable to park 'dry powder', or committed but uncalled capital, from project investments.

The SPDR Morningstar Multi-Asset Global Infrastructure UCITS ETF provides a potential solution to the existing challenges. With an AUM greater than \$1.9bn*, the fund aims to serve as a proxy of Infrastructure while offering greater liquidity to investors.

The fund also provides multiple exposure to equities and bonds from different companies which are involved in the infrastructure business. It is well diversified both on the equity and the bond leg, with more than 500 stocks and 1,500 bonds. Thanks to this mix of bonds and equities, MAGI has performed better than many other pure equity infrastructure ETF. The fund has then the potential to provide both regular income and capital appreciation.

In conclusion, MAGI can serve for different purposes. The fund can be used to efficiently implement a tactical asset allocation, a core allocation, or to gain temporary liquid and transparent exposure to this exciting market segment.

Figure 9

**SPDR Morningstar
Multi-Asset Global
Infrastructure
UCITS ETF Standard
Performance (Net)**

	1 Month (%)	3 Month (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	Inception (%)
SPDR Morningstar Multi-Asset Global Infrastructure UCITS ETF	-3.80	-5.29	-1.87	5.93	-1.25	1.77	2.47
Morningstar Global Multi-Asset Infrastructure Index	-3.75	-5.16	-1.35	6.62	-0.58	2.42	3.08
Difference	-0.05	-0.13	-0.52	-0.69	-0.67	-0.65	-0.61

Inception Date: 14 April 2015.

Source: State Street Global Advisors, as of as of 30 September 2023.

Net performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. The performance data do not take account of the commissions and costs incurred on the issue and redemption, or purchases and sale, of units. Visit spdrs.com for most recent month-end performance. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. The performance is calculated in US dollars. Performance returns for periods of less than one year are not annualized.

Figure 10

**SPDR Morningstar
Multi-Asset Global
Infrastructure
UCITS ETF**

Launch Date	14 April 15
AUM	\$1.7 billion
UCITS	Yes
ISIN	IE00BQWJFQ70
Xetra Ticker	ZPRI GY (EUR line)
LSE Tickers	MAGI LN (USD line) / GIN LN (GBP line)
TER	0.40%
Replication	Physical — Optimised (Equity) Physical — Sampled (Fixed Income)
Income Treatment	Distributing March & September

Source: State Street Global Advisors, SPDR ETFs, as of as of 30 September 2023.

Endnotes

- 1 Jobst, Andreas A.. 2018. Credit Risk Dynamics of Infrastructure Investment : Considerations for Financial Regulators. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/29540> License: CC BY 3.0 IGO.
- 2 Source: Infrastructure Outlook, Forecasting Infrastructure Investment Needs and Gaps, <https://outlook.gihub.org/>.

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* Pensions & Investments Research Center, as of December 31, 2022.

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For Investors in Luxembourg: The Companies have been notified to the Commission de Surveillance du Secteur Financier in Luxembourg in order to market its shares for sale to the public in Luxembourg and the Companies are notified Undertakings in Collective Investment for Transferable Securities (UCITS).

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