



Infrastructure

WHITE PAPER

Kempen

MAY 2018

Contents

Introduction	3
What is infrastructure?	5
For which investors is infrastructure potentially an interesting asset class?	10
Historical return	12
Risks	15
How can you invest in infrastructure?	19
Responsible investment	24
Conclusion	26
Bibliography	27

Kempen Private Infrastructure

If you have any questions or wish to learn more about investing in infrastructure at Kempen, please send us an E-mail or visit www.kempen.nl



RICHARD JACOBS
Richard.Jacobs@Kempen.nl



MARVIN DE JONG
Marvin.dejong@Kempen.nl



WOUTER VAN DER STEE
Wouter.vanderstee@Kempen.nl

Introduction

Infrastructure comprises all the facilities that are crucial to the proper functioning of the economy and society. This includes toll roads, airports and ports, but also drinking water systems, power stations and wind farms. This makes infrastructure a highly diverse asset class. Compared to listed equity investments, for example, it is also a relatively defensive asset class. This is due to the stability of infrastructure assets and the essential nature of the related services.

In the wake of the 2008/2009 financial crisis, many countries invested too little in infrastructure due to the severe austerity measures introduced by the individual governments. They are now trying to make up for this. According to McKinsey¹, about USD2,500 billion was invested worldwide in transport, electricity, water and telecom networks in 2016. Yet this study claims that USD3,300 billion is needed in annual investments in order to maintain the standard of roads, installations and networks. This investment deficit means that there is a risk of inhabitants and companies losing or not having proper access to essential, high-quality infrastructure services. This has potential consequences for future economic growth and the quality of life. We will increasingly see pictures of choked-up roads, cordoned-off bridges, failing school buildings and polluted water, even in the most developed economies.

We anticipate the burgeoning population, growing middle class and urbanisation placing increasing pressure on new investments in infrastructure. On top of this, there is the transition from traditional to renewable energy sources with a view to combating climate change. Moreover, we are seeing exponential growth in digitisation driven by all kinds of innovative trends. This all serves to give an idea of how much capital is needed to finance all these investments. The gigantic developments in mobility, energy and data use are creating long-term opportunities for private investors. This is because a great deal of private capital will be required in the long term, with the potential for interesting returns.

The specific investment characteristics of infrastructure mean that many major institutional investors have already become accustomed to allocating this asset class a place in their portfolios². Yet the advantages also need to be weighed up against the disadvantages and issues that require attention, as listed below. This white paper examines these advantages, disadvantages and issues that require attention in more detail.

¹ *Bridging Global Infrastructure Gaps, McKinsey Global Institute, June 2016*

² *Pension Fund Investment in Infrastructure: Lessons from Australia and Canada, George Inderst, Rotman International Journal of Pension Management, Volume 7, Spring 2014*

ADVANTAGES

- Attractive historical return with stable cash yield³
- Potential protection against future inflation, as the underlying, long-term contracts are often inflation-linked, or have an indirect link to inflation.
- Option of tangible implementation of sustainable investment policy, e.g. investment in wind farms
- Potential attractive addition to existing traditional investment portfolios, especially due to alternative sources of return and the long-term nature of the cashflows.

DISADVANTAGES

- Highly restricted liquidity due to long-term nature of non-listed investments
 - Higher fees compared to more traditional asset classes, such as listed equities or real estate
 - Not all infrastructure investments are totally sustainable or in all respects. This needs to be measurable and made transparent.
 - Not suitable for all investors due to complexity or minimum initial investment
-

As is the case with real estate, investment in infrastructure may be made directly or indirectly via funds. Investors who wish to invest directly in infrastructure need a huge amount of capital (in this asset class alone a minimum of hundreds of millions of euros of available capital) and a specialist, dedicated team that can source and manage these investments. This is the exclusive territory of the very largest pension funds or sovereign wealth funds.

In our experience, most investors opt to invest in infrastructure via specialist investment funds. These funds in turn invest in individual infrastructure assets. Here, a distinction can be made between funds that invest in listed companies and those that invest in non-listed infrastructure assets. In this white paper, we focus on non-listed infrastructure.

³ The value of your investment may fluctuate. Past performance provides no guarantee for the future.



What is infrastructure?

Definition of infrastructure asset class

Infrastructure can best be described as a real asset class. It typically involves heterogeneous, tangible assets that are essential to the functioning of the economy and/or society.

Demand for infrastructure is generally inelastic. This is due to the essential nature of the services infrastructure assets provide, meaning that changes in the economic cycle have a smaller impact than in other asset classes. Furthermore, infrastructure assets often occupy a natural monopoly or oligopoly position due to the high entry barriers (such as high initial capital requirements and location), which leads to lower competition (or the threat of it). Regulation can boost this position even further. One example is the highly-regulated infrastructure in the utilities sector.

Infrastructure typically involves long-term contracts⁴ with reliable counterparties who use the assets in question. Moreover, infrastructure assets often have a long life. Combined with long-term contracts, this creates greater predictability and/or certainty about future cashflows. An inflation component is often included in the contracts or concessions, which provides (partial) protection against future increases in inflation.

⁴ These contracts vary in length from 10 years to as many as 99 years, as is the case with the Eurotunnel. A contract for 99 years is the exception rather than the rule, however.

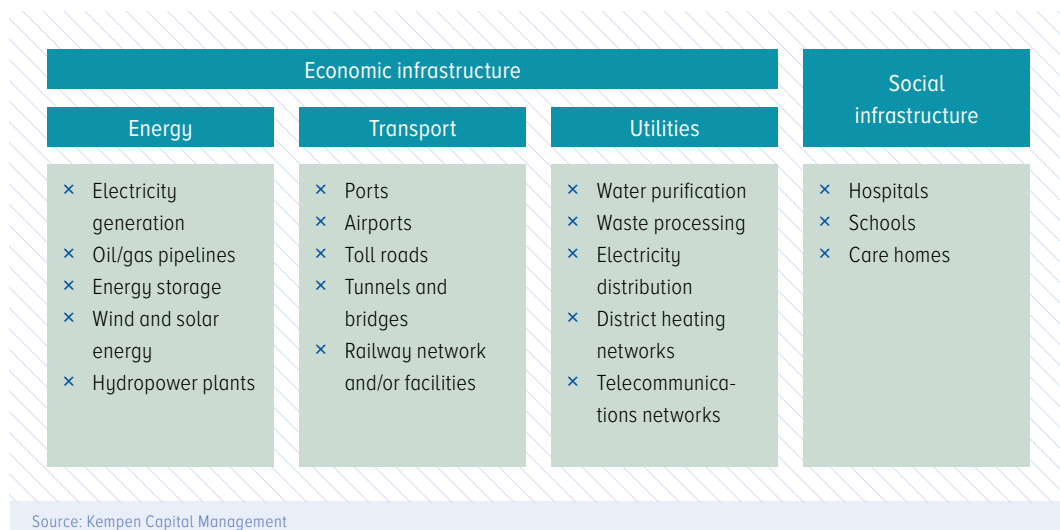
Classification of infrastructure investments

Infrastructure investments can be classed according to sector, risk profile and income protection. We explain this in more detail below.

Sectors

Infrastructure can be further broken down into economic or social infrastructure. Economic infrastructure relates to assets that facilitate the normal economy. These can further be split into energy, transport and utilities infrastructure. Communication assets (satellites, TV masts, internet cable networks etc.) sometimes form a separate class within economic infrastructure. Social infrastructure involves public or social buildings, such as schools, prisons and hospitals⁵. In general, the return potential of economic infrastructure is higher than that of social infrastructure, because the risk profile is also higher. The chart below contains the different sub-classes of the infrastructure universe.

FIGURE 1 Sub-classes of the infrastructure universe

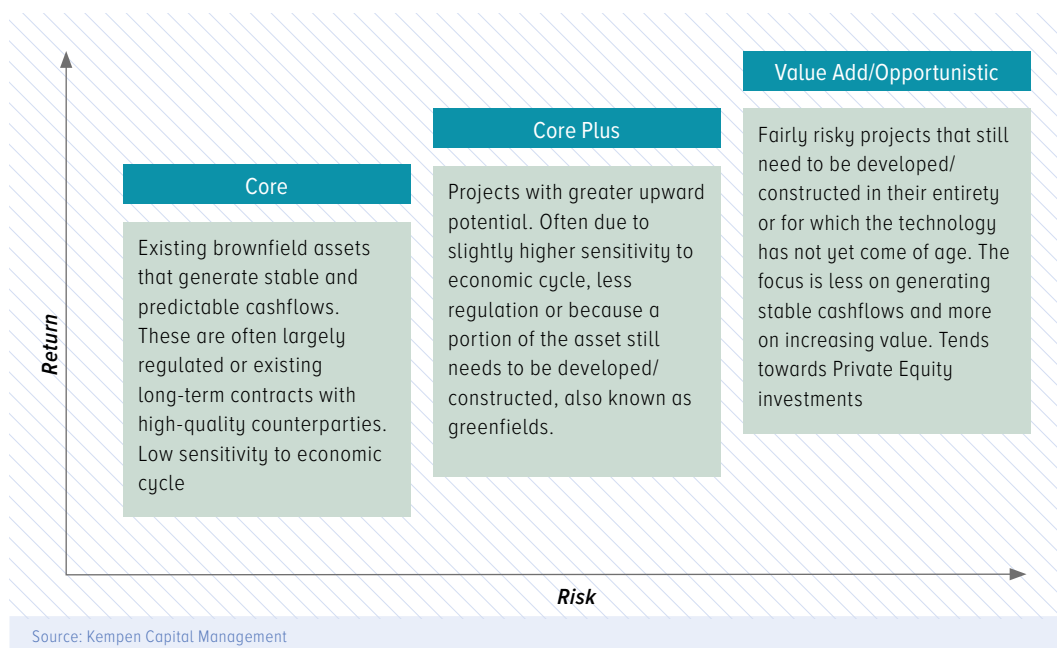


⁵ The difference from non-listed real estate is that social infrastructure involves essential buildings with a public function, for which a long-term contract exists with a government institution that guarantees future cashflows in the long term.

Risk profiles

Investments in infrastructure are usually classed in one of three risk segments: Core, Core Plus and Value Add/Oppportunistic.

FIGURE 2 Infrastructure risk segments



1. Core infrastructure assets are existing, fully-operational projects that display the purest infrastructure characteristics. One example is a privatised drinking water company. Core infrastructure assets often hold a monopoly position, have inelastic demand, typically involve long-term contracts with reliable counterparties (such as semi-public institutions and/or are fully regulated). As a result, these assets have fixed and predictable cashflows, giving them a relatively low risk profile. This type of existing, operational asset is also known as a brownfield infrastructure asset.
2. Core Plus infrastructure assets also involve a high degree of certainty with respect to cashflows, but may be slightly riskier and are more sensitive to the economic cycle than pure Core assets. Core Plus assets may also be partly unregulated. Examples include airports, for which landing rights are regulated, but cashflows also depend on the number of aircraft landing there. Moreover, a portion of the yield is unregulated, such as retail space rentals and parking fees. Economic growth in the area in which the airports are situated consequently affects their cashflows.

Core Plus may also include greenfield assets. These are infrastructure assets with a construction risk. There is generally no development risk (permission has already been granted) and the risk of delays and budget overrun is usually laid down in the contracts with commercial construction companies. Once the construction phase has been completed and the assets are fully operational and generating stable cashflows, the risk profile is reduced and they can migrate to the Core asset class. One example is the construction of a new wind farm, for which permission has already been granted and for which it is clear which party will buy the power and at what price as soon as the farm is operational. Only a small portion within Core Plus can be invested in greenfield projects in order to control the risk.

3. The third segment within infrastructure comprises Value Add/Oppportunistic strategies. The assets that come under this class involve a greater level of risk and higher upward potential. The focus is mainly on growth and increasing the value of the underlying assets and less on stable cashflows. The assets are often in unregulated markets and are more reliant on economic growth. A substantially larger portion may be invested in greenfield projects in this segment. An example of an opportunistic infrastructure investment with a high risk profile is an investment in a commercial company that is developing new technology for the efficient storage of (renewable) energy. In this segment we are also seeing investments in traditional US energy projects, such as oil or gas extraction and/or electricity generation. This type of project involves volume risk and commodity price risk and/or there is a direct dependence on electricity prices. These projects often overlap with the Private Equity asset class.

It is important to understand that two similar assets from the same sector can come under different risk profiles. For instance, an operational brownfield toll road can be classed in either the Core or Core Plus risk segment. What matters is how the toll road's revenue profile is structured. If the owner of the toll road receives payments on a concession basis that comprise a fixed indexed amount for keeping the road usable (in good condition), then we class this asset as Core. If the yield depends on the volume of traffic (predictable or otherwise) that uses the road during a year and pays the toll to do so, then there is a direct link to the economic cycle. In this case, we class the toll road as Core Plus. If no data are available on the volume of traffic because the project involves the construction of a new road or new section, we class the toll road as Value Add.

Income protection

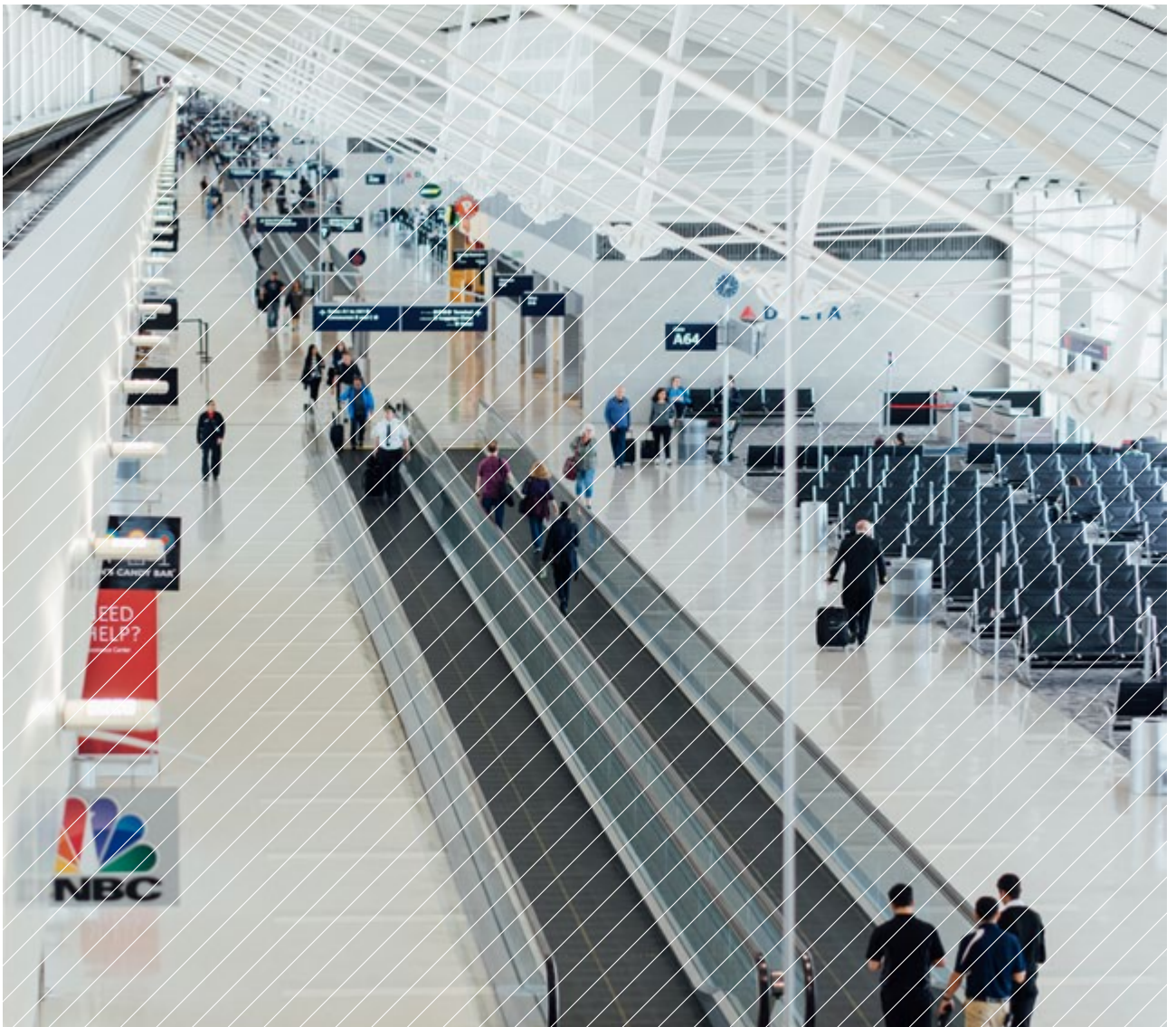
The risk/return characteristics of infrastructure as an asset class correspond largely to the level of protection of the underlying assets, creating entry barriers.

There are several variants of the level of protection:

- × Under a **fully-regulated model**, such as water purification companies, sewage systems and electricity distribution (please note: not electricity generation), the regulatory authority determines to a great extent the return on the assets. For instance, Ofwat is the regulator for UK water companies. The tariff, or yield, is laid down in long-term concession agreements. The tariff itself is subject to review at set times (usually in cycles of five or eight years);
- × Under a **partially-regulated model**, infrastructure managers may operate independently of intervention from the regulator. This is on the proviso that the owner of the assets does not abuse its competitive position by charging excessive prices. Examples include toll roads or airports;
- × **Non-regulated** infrastructure assets are situated in environments in which they are not subject to regulation. Market forces determine returns here rather than the regulator. In large parts of the world this is the largest component. A distinction can be made between contracted assets and non-contracted assets. Energy or mobile data providers conclude long-term contracts with creditworthy, commercial counterparties which no longer wish to be dependent on traditional utility companies. We are also frequently seeing markets and assets undergo a transition from regulated to contracted environments, or vice versa. In the European wind energy market, regulation and subsidies are playing an ever smaller role due to the growth in scale. Nowadays, wind energy can operate almost entirely independently. Yet wind farm operators still prefer not to be exposed to a volatile wind energy price. As a result, they opt for contracts with buyers such as McDonald's or Google, which are willing to pay a set annual price for a reliable and sustainable energy supply.

What do we not class as infrastructure?

In order for something to be classed as infrastructure, it must involve physical assets that fulfil an essential role in (enabling) the functioning of the economy or society. For instance, we do not consider telecom companies to be infrastructure. These are commercial companies that aim to maximise their profits: they experience a great deal of competition and are highly sensitive to the economic cycle. Yet telecom companies use essential infrastructure networks, such as masts, which we do class as infrastructure. To give another example: we count airports as infrastructure (regulated, partial monopolies, reasonably stable incomes), but not airlines (unregulated, cyclical income, risky). Other examples are ski lifts or football stadiums. We do not include these assets in the infrastructure asset class.



For which investors is infrastructure potentially an interesting asset class?

Infrastructure can serve as an attractive alternative for investors who are struggling to achieve their return objectives for the long term, seek capital retention, wish to participate in a growing economy and/or protect themselves against potential increases in inflation. However, infrastructure is an illiquid asset class and therefore not suitable for all investors. Nevertheless, a growing number of investors is recognising the attractive characteristics of infrastructure, as can be seen from recent trends in institutional allocations and fundraising activities⁶. We are convinced that infrastructure as an asset class will play an ever more prominent role in the portfolios of professional investors.

Not only the supply of capital, but the number of infrastructure assets which can be invested in will increase over the next few years⁷. We expect these assets to include both brownfield (operational) and greenfield assets (development and construction). Many new, highly capital-intensive infrastructure projects are likely to see the light of day in the next ten years⁸. Furthermore, national and regional governments and large utility companies will attempt to remove existing infrastructure assets from their balance sheets or privatise them in order to release funds for new projects.

According to data from data provider Prequin, assets under management in private infrastructure amounted to about USD418 billion as of mid-2017⁹. USD150 billion of this is dry powder, i.e. capital that is ready to be invested. This represents more than double the amount of dry powder in 2012, when it stood at USD73 billion¹⁰. In spite of this strong growth in available private capital over the past few years, the available capital would still seem to fall short of what needs to be invested. In order to support international trade, population growth, the energy transition, urbanisation and other potential social trends, the OECD report “Infrastructure to 2030”

6 Prequin (2017). *Global Infrastructure Report*

7 *Bridging Global Infrastructure Gaps*, McKinsey Global Institute, June 2016

8 *Bridging Global Infrastructure Gaps*, McKinsey Global Institute, June 2016

9 Prequin (2018). *Prequin Special Report: Infrastructure Fund Manager Outlook H1 2018*.

10 Prequin (2017). *Quarterly Update Infrastructure Q3*

estimates that infrastructure investments worth a total of about USD53,000 billion are required for the period between 2010 and 2030¹¹. This is many times the capital that is currently available for infrastructure investment. We believe this gap between the available and required capital to be to the advantage of capital providers, i.e. investors, in this asset class. To put this capital to work, a series of new initiatives is required – such as Donald Trump’s infrastructure plan in the US or the Chinese “One belt, one road” project – and there is a need for continued public and political will for private capital to be used in public projects.

Another reason for the sharp rise of infrastructure as an asset class over the past few years is the potential diversification benefits, thanks to its low correlation to other asset classes¹². Infrastructure may be much less liquid than normal equity or bond investments, but it has a completely different underlying exposure. At underlying asset level, it involves individual, separate, tangible and physical assets with contracted or regulated cashflows, which do not move one-on-one with the sentiment on the global markets. Compared to other asset classes, such as listed equities, infrastructure enjoys slightly lower volatility and lower sensitivity to the economic cycle¹³. Of course infrastructure is not entirely separate from other asset classes. If sentiment on the global markets undergoes a reversal, infrastructure will certainly also be affected¹⁴.

¹¹ OECD (2007). *Infrastructure to 2030: Mapping Policy for Electricity, Water and Transport*

¹² Preqin (2018). *Preqin Special Report: Infrastructure Fund Manager Outlook H1 2018*

¹³ *Past performance provides no guarantee for the future.*

¹⁴ For more details please see “Investment Europe (2017). *Infrastructure Investing: Diversifying Portfolio with Stable Cash Flows*”. JP Morgan Asset Management – Global Real Assets Group

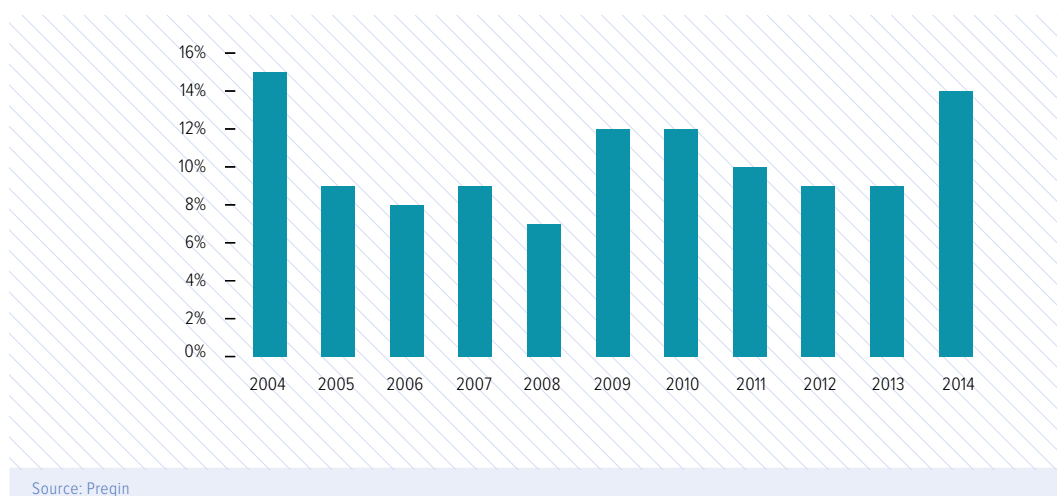


Historical return

Measurement of the return on infrastructure is conducted using different methods from the usual time-weighted returns we usually use for normal listed asset classes, such as global equity funds or trackers. Like private equity, infrastructure investments are generally made via closed-end fund structures¹⁵. The timing and size of the cashflows from the investor to the fund vary, as do the distributions in the opposite direction. As a result, the invested capital may vary considerably from year to year. A simple time-weighted return would then yield a distorted picture of the returns. In practice, therefore, a money-weighted internal rate of return (IRR) is often used from the fund's inception in order to analyse the returns on infrastructure investments.

Data providers such as Preqin often group IRR data from all infrastructure funds that were started in the same year (known as a vintage year). Figure 3 contains the historical IRR data for infrastructure managers over the past ten years. The IRR amount is the weighted average return earned throughout the duration of the funds by all funds started in that specific vintage year. We have used data from the abovementioned benchmark provider Preqin here¹⁶.

FIGURE 3 Average IRR of all infrastructure managers per vintage year (Preqin)



Historically, infrastructure has earned attractive absolute returns. Even those funds that were started in difficult vintage years such as 2007 (just before the credit crisis) on average ultimately earned respectable positive net returns. In our opinion, the significant differences between vintage years underline the importance of sound diversification with respect to managers and vintage years.

¹⁵ For more details, please see Chapter 6: "How can you invest in infrastructure?"

¹⁶ Based on Preqin data consulted on 18 December 2017. The vintage years 2015, 2016 and 2017 are not included due to the short duration of these funds so far, resulting in their performance for these vintage years offering little insight. Past performance provides no guarantee for the future.

If we examine returns in the two main regions (North America and Europe), there are no significant differences. The relative returns in these regions can diverge sharply in the short term and exchange rates can potentially greatly affect the returns for investors with a different base currency. Although the differences in return are substantial in some vintage years, market timing is tricky with respect to geographical allocation and individual market segments. One of the reasons for this is that it is difficult to act based on up-to-date market information (such as differences in valuation). After all, closed-end infrastructure funds invest the capital committed to them in underlying physical assets over a period of three to five years. This means that the actual date of investment is not the same as the date of the investment decision.

Comparison to liquid equities

In contrast to other asset classes, such as (listed) equities, in general little academic study has been conducted into the historical returns on infrastructure as a separate asset class¹⁷. This may be due to the relatively brief history of this asset class (until 2004, infrastructure investments and funds were still classed under Private Equity). Furthermore, historical data are not publicly available free of charge, creating a shortage of high-quality quantitative data for analysing the return characteristics of infrastructure investments¹⁸. For this reason, we advise caution when interpreting the available data.

Figure 4 compares the cumulative performance of the Preqin Infrastructure index¹⁹ with that of the MSCI World Index, which contains the most traded listed global equities from developed economies. The cumulative graph shows that infrastructure has earned a higher return than the MSCI World Index over the relevant period²⁰. It can also be seen from the graph that on balance the infrastructure index has displayed less volatile results than the listed equity index. This is chiefly visible in volatile periods, such as December 2007 to June 2009 (global financial crisis) and in 2011 (challenging climate for European equities). It should be stressed that the volatility of infrastructure seems lower than is really the case, as funds only publish their Net Asset Values (NAVs) quarterly. The latter is due to the underlying assets only being valued quarterly or sometimes even less frequently (also known as return smoothing), while listed equities in the MSCI World Index show return results every day.

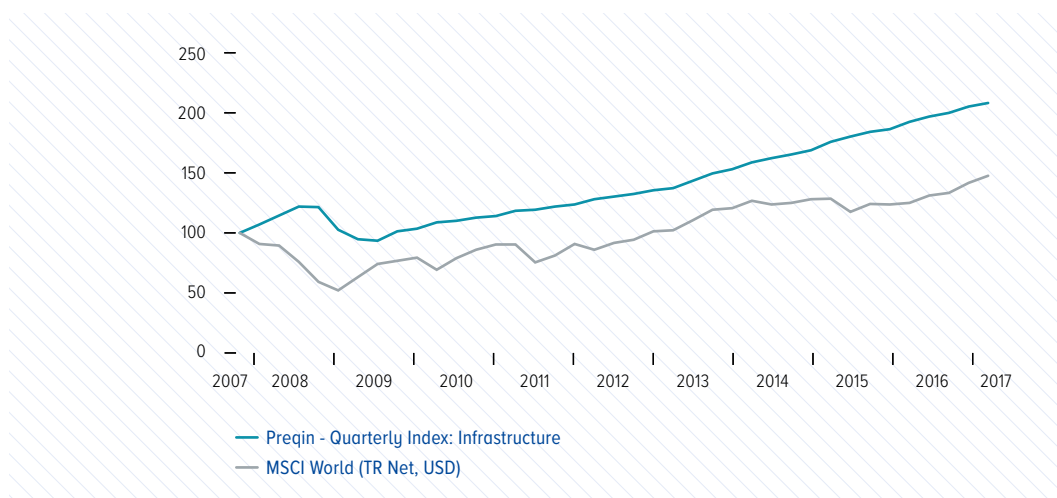
¹⁷ *Infrastructure as an asset class*, George Inderst, EIB papers Volume 15, 2010

¹⁸ OECD (2015). "G20 Topics: Report on Risk and Return Characteristics of Infrastructure Investments in Low Income Countries"

¹⁹ The Preqin Infrastructure index contains the returns on all non-listed infrastructure funds that report to the database and is therefore a proxy for the returns on this asset class. Please be aware of potential biases in this data, such as a self-reporting bias.

²⁰ Past performance provides no guarantee for the future.

FIGURE 4 Historical cumulative net return on infrastructure



Source: Preqin

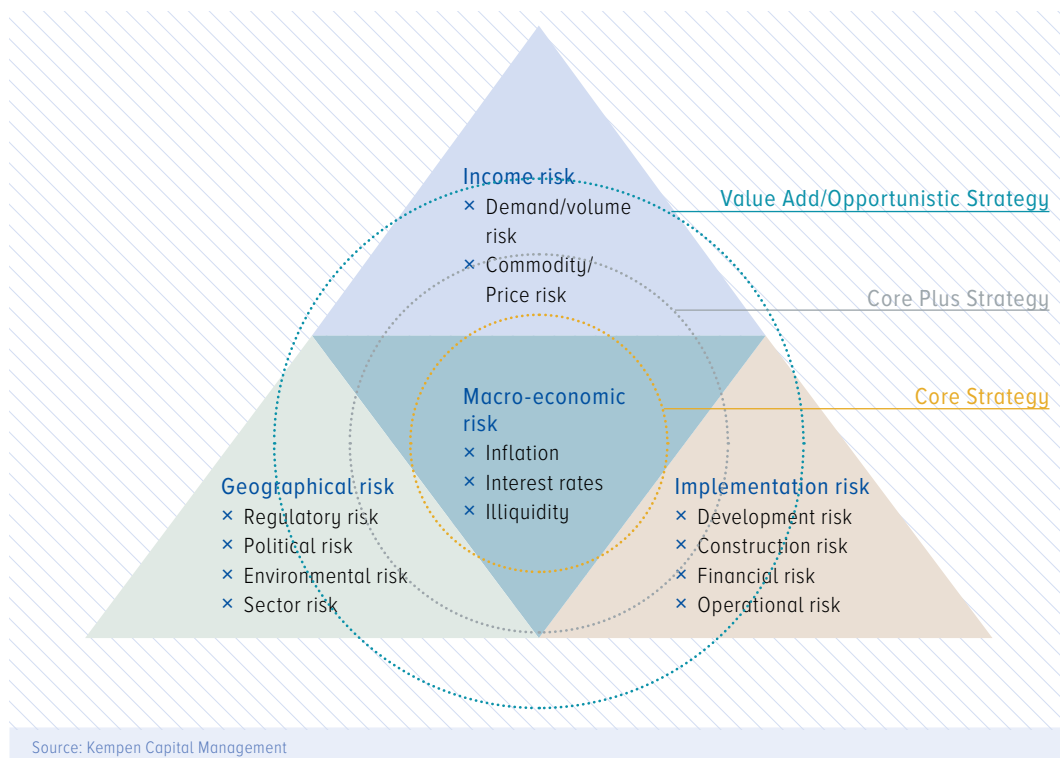
Dispersion of returns

The underlying assets in infrastructure are highly heterogeneous, have no broadly diversified shareholder base and there are no benchmarks that can be used for investment purposes. In addition, infrastructure funds are considerably more concentrated (usually about eight to twelve investments) than normal equity funds or broad benchmarks, such as the MSCI World Index, and in general involve a higher proportion of leverage. Returns on investments also vary sharply, especially for smaller assets. Finally, the peer groups contain different types of managers: from global core managers right up to sector-specific risky Value Add funds. For this reason, the returns on infrastructure funds that are similar in terms of vintage year and strategy can vary considerably. The dispersion in returns is therefore substantially higher than is the case for listed investments. This means that manager selection in this asset class can have a significant impact on the ultimate realised returns. This is one of the risks of investing in infrastructure, but diversification allows investors to mitigate the risk somewhat. In the next chapter, we look in more detail at the principal risks involved in this asset class.

Risks

In the first chapter, we divided infrastructure assets into three main risk profiles: Core, Core Plus and Value Add/Opportunistic. Yet infrastructure assets do not always fall precisely within a single risk profile. This is due to the many factors that affect the ultimate risk profile. For this reason, in this chapter we take a closer look at the various risks that are used to determine the main risk profile of the asset. The greater the exposure to the individual risk factors, the further the infrastructure asset shifts from Core to Core Plus and to Value Add/Opportunistic. The diagram below depicts this in simple terms and divides the individual risk factors into four groups: (i) macro-economic risk, (ii) geographical risk, (iii) revenue or income risk and (iv) implementation risk.

FIGURE 5 Individual risk factors



Macro-economic risk

Macro-economic risks, such as changing inflation forecasts and interest rates, are embedded in infrastructure and cannot be mitigated (in the long term). Moreover, illiquidity is inherent to this non-listed asset class.

Inflation

The income derived from assets can often be directly or indirectly linked to inflation. Regulators (such as the UK's Ofwat for water purification companies) sometimes set the permitted return based on inflation levels or forecasts. Inflation consequently affects the expected income. Inflation of course differs from country to country and exchange rate effects can also play a part, but in practice there is always an inflation risk.

Interest rates

Interest rates have a direct impact on the financing costs and a significant effect on the cost of the infrastructure assets. This is due to the large amount of leverage commonly used in infrastructure. Furthermore, interest rates are often included in the discount rate for valuing assets. Higher interest rates can therefore squeeze the value of an asset, as the future expected cashflows are discounted at a higher interest rate.

Illiquidity

Restricted liquidity is inherent to this asset class. Infrastructure assets only change owner once every five, ten or more years and the liquidity profile of infrastructure funds is aligned with the restricted liquidity of the underlying assets²¹. Investment in this asset class in principle therefore involves a certain illiquidity premium.

Geographical risk

This type of risk usually relates to regulatory risk, political risk, environmental risk and sector risk.

Regulatory risk and political risk

Regulatory and political risks are unique to each individual country, or even to specific states and/or provinces within certain countries. In particular in jurisdictions with a relatively brief history of regulation governing infrastructure there is greater uncertainty for investors.

Restricting political risk is usually possible by only investing in OECD countries with stable regulatory systems and by diversifying portfolios in terms of geography and sectors.

²¹ *In underlying terms, the assets cannot be traded and are usually sold after a holding period of about seven years. In the next chapter we explain how investment can be made in infrastructure. There is a difference in fund structures and corresponding liquidity.*

Sector risk

Specific sectors are also subject to their own risks in addition to those listed above. Mitigation of sector-specific risk can be achieved by diversifying across regions and sectors.

Income risk

This risk relates to the source of income from the underlying assets. Certainty about future income depends on several factors. A fixed amount may be laid down in a contract. One example of this is prices set by the government for the long term, e.g. for drinking water or toll fees. This type of contract involves a longer term combined with greater certainty and therefore a lower income risk. There is certainty about the price, but there may still be a volume risk (in the abovementioned examples, the quantity of purchased drinking water and the amount of traffic on the toll road). Availability-based income is also related to contracts with governments or other creditworthy parties. Here, parties receive income in exchange for making facilities available for use throughout the year, whereby there is no volume risk.

Credit risk

The concentrated portfolios mean that there is counterparty risk, as not all projects have been initiated or guaranteed by a (semi-)public body. In particular projects with contracts with commercial parties (e.g. utility companies or construction companies) involve credit risk.

Commodity/price risk

Commodity risk is mainly present in Value Add and Opportunistic investments, such as US energy projects aimed at extracting oil or gas and/or electricity generation. Income then largely depends on oil, gas or electricity prices.

Implementation risk

Implementation risk relates to the construction, development, financing and running of assets. These typically occur in greenfield investments. Development projects involve construction risk and greater uncertainty with respect to demand than mature brownfield assets. This uncertainty can be restricted via contractual agreements with suppliers and contractors, ultimately only leaving counterparty risk. A less reliable partner poses a threat to the completion or proper maintenance of a greenfield construction project. The creditworthiness of the counterparty is therefore of great importance. The inclusion in contracts of sanctions on delays, reserve commitments for cost overrun and other measures to mitigate risk is an option for protecting investors against unexpected setbacks.

Financing risk

This relates to the leverage applied to the underlying assets. It is common for two-thirds or even three-quarters of infrastructure assets to be financed via loans. This depends on the stability and reliability of cashflows, the creditworthiness of the counterparty and the allocation of risk among stakeholders. Fully-operational brownfield assets with highly creditworthy counterparties often involve a higher amount of leverage, while leverage is lower for assets with a higher economic risk. The loans are often fixed for the entire duration of the underlying assets, but if this is not the case there is also refinancing and interest rate risk. An excessive amount of leverage can lead to bankruptcy, as has happened in the case of major toll roads in the US.

Valuation risk

This risk derives from the assumptions used by fund managers and can have a substantial impact on the ultimate return on funds. Independent, external specialists value assets on a regular basis in order to mitigate this risk and guarantee objectivity when it comes to valuation. It is also common to analyse in greater detail the assumptions and valuation models used by managers prior to investing in a fund.

How can you invest in infrastructure?

Infrastructure funds exist in both open-end and closed-end structures, similar to the structures of investment funds in other alternative asset classes, such as private equity and non-listed real estate. Closed-end funds are usually set up for a fixed term of e.g. twelve years and have no external liquidity in the interim (although participants may sometimes be able to trade among themselves). There is a one-off period of about a year in which the fund raises capital, after which it closes to new investors. The fund buys assets during the initial years, i.e. the investment period (usually five to seven years). The assets are sold again as the end of the fund's term approaches.

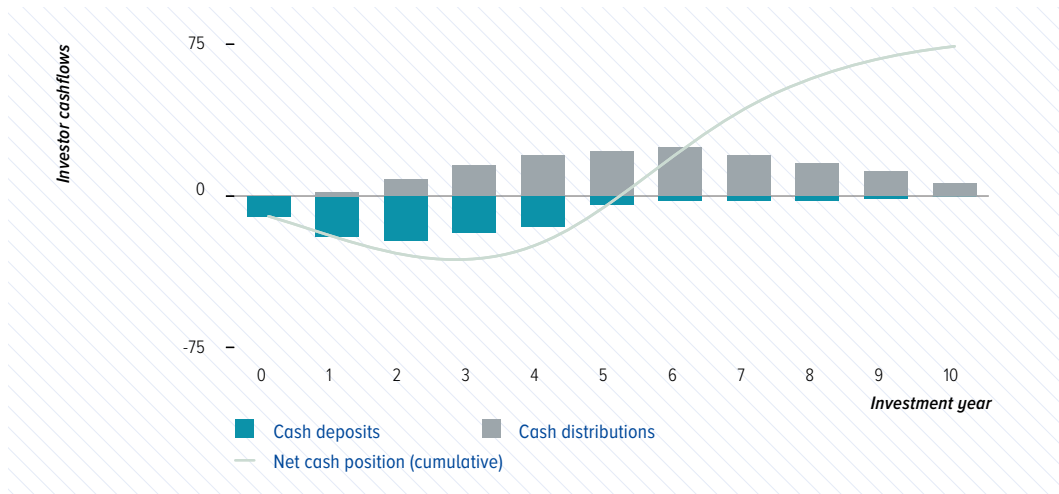
Open-end funds have no fixed term and in fact can continue indefinitely. Investors can invest in and withdraw from them at any time under normal market conditions (obviously depending on specific restrictions, given that the underlying assets are illiquid). If new investors wish to buy into the fund, the fund managers seek new assets to acquire. Conversely, the fund managers will try to sell assets in order to create liquidity if investors wish to withdraw their investments. We must stress that there is no guarantee of liquidity in open-end infrastructure funds (this works on a best effort basis) and among other things it depends on the equilibrium between the number of investors that wish to withdraw at the same time and the liquidity of the underlying assets.

The most common structure for infrastructure funds is a closed-end fund structure with a term of about twelve years (with the option to extend it for three years). This term comprises an investment period of five years and a remaining period for managing and selling assets. As with private equity, there is usually a commitment structure, in which investors commit to investing a specific amount. On average this is a minimum of EUR10 million per investor. Funds gradually acquire these amounts during the investment period via capital calls so that they can then buy assets.

On average, closed-end funds effectively hold assets in the portfolio for a period of seven years²² and investors receive initial distributions from the fund after a few years, partly from the cash yields from the assets. After some time has elapsed, these distributions will be larger than the deposits required to buy assets and investors will start to receive net cash from the fund. This process is also known as the J-curve effect (see Figure 6). It is important to realise that liquidity is low or zero during the term of the fund. This is because (in contrast to private equity) the secondary market for infrastructure funds is not yet highly developed.

²² Open-end funds generally hold infrastructure assets for a much longer period as they have no fixed term. Cash payments are made in the form of dividend payments to investors.

FIGURE 6 The J-curve effect



Source: Kempen Capital Management

Open-end funds are most suited to buy-and-hold strategies (common in the Core and Core Plus infrastructure risk segments), as there is no fixed end date on which the assets need to have been sold. Open-end funds enjoy certain advantages over closed-end funds. In our experience, for instance, they often apply lower management fees, potentially enjoy immediate exposure to assets (via an existing portfolio, although sometimes after a certain waiting period) and better liquidity than closed-end funds. Both open-end and closed-end funds are subject to valuation risk and market timing risk. Investors in closed-end funds are also confronted with higher vintage year risk²³.

The advantage of closed-end funds is that it is clear in advance when the capital will be repaid to the investor. The management teams are also generally more stable, as they may receive a bonus at the end of the fund's term if they achieve a sound return.

In short, both structures have advantages and disadvantages in our opinion. In general, we would recommend closed-end fund structures to investors who aim for higher returns. Open-end funds are more appropriate for cost-aware investors with low return ambitions and who want to invest in Core infrastructure assets for the longer term and investors who want the option of adjusting their allocation to infrastructure in the interim.

²³ Vintage year risk relates to investing all the capital in a single year, which in retrospect turns out to have been a poor investment year.

Global versus regional funds

Global funds invest in several continents, usually with a clear diversification objective. Regional funds focus on a specific continent or country. A global fund may provide geographical diversification, which can reduce the overall political risk. Moreover, global funds have the flexibility to avoid e.g. over-priced markets and respond if geographical criteria change. These funds typically have large teams that know the local markets well and enjoy good sector relationships that allow them to make deals. Regional funds offer the option of using more in-depth knowledge in specific regions and are perhaps better able to build up a good network in sectors. This is mainly relevant in more fragmented sectors, such as renewable energy. In this sector, for instance, onshore wind farms are highly fragmented at local level.

Sector-diversified versus sector-specific

Although investing in infrastructure is a very localised activity that requires bottom-up analysis, a top-down view can add a great deal of value to important sectors. The largest funds in the market are diversified across different sectors. They examine each region to decide which type of infrastructure is becoming abundant or surplus to requirements and where capital will flow next. Sector-specific funds can profit from supporting sector trends by emphasising specific sectors. Sectors related to energy and electricity generation have seen the highest growth over the past few years²⁴. An important aspect here is the energy transition, which is still in its early days. The European Union has set a renewable energy target of 20% of total energy consumption in 2020, while there is a proposal to increase this target to 27% in 2030. At the same time, a significant number of asset managers are investing for the first time in assets for specialist renewable energy funds. Given the increase in opportunities for investment and the fragmentation in the energy sector referred to above, there are good grounds for investing in a specialist fund in this sector.

Fees and commissions

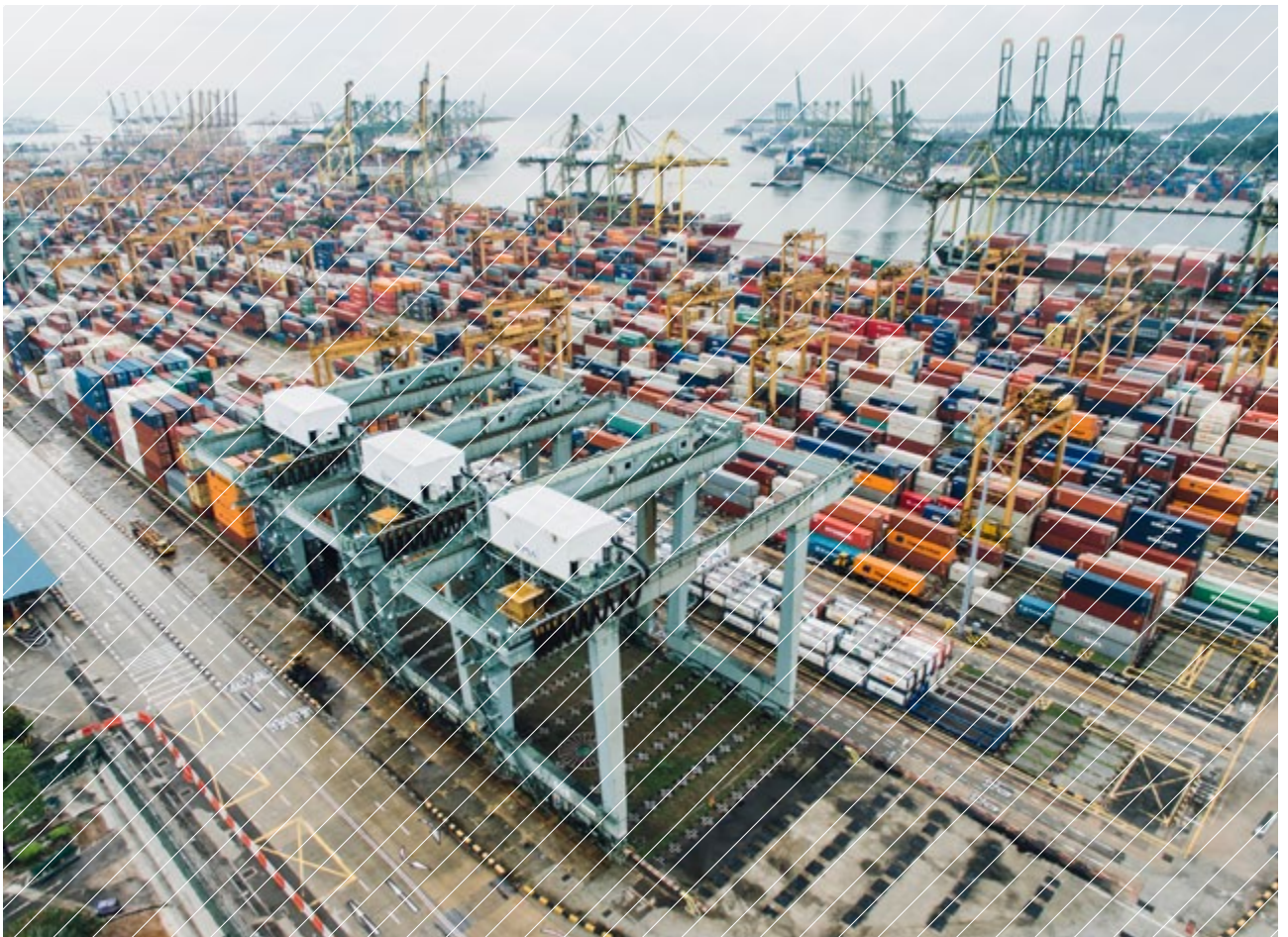
Fees charged for infrastructure investments were originally just as high as private equity fees, but fees and fund terms and conditions have mostly become slightly friendlier to investors over the past few years. Yet total fees are still high compared to more liquid asset classes, such as equities. The management fee depends on the size of the holding and is often between 0.75% and 2% per year, depending on the outcome of negotiations with the fund manager. The management fee also depends on the date of subscription: investors often receive a discount if they subscribe to a fund at an early stage. In addition to the management fee there is often a performance fee (carried interest) as soon as the fund earns a return above a fixed limit (hurdle) per year. In most cases this is 20%, but some managers have since cut this to 17.5% or 15%. Other fees include transaction, deal break-up and administrative fees. These vary per fund and also depend on the fund size.

24 Preqin (2017), *Global Infrastructure Report*

Specific requirements for pension funds and insurance companies

Other aspects need to be taken into account by institutional investors, such as pension funds and insurers, before they can invest in infrastructure. For example, they invest from the perspective of their total balance sheet (whereby they need to take account of their liabilities) and there are additional requirements relating to governance. Take the requirements that De Nederlandsche Bank (DNB) in its capacity as supervisory authority can demand of pension funds with respect to illiquid investments. Investments in infrastructure are more complex than most liquid investments, creating additional requirements for decision-making, selection, monitoring and reporting. Prudent person aspects are also important. Pension funds need to examine the following, among other things:

- × The valuation model: do the parties use a valuation model that is appropriate for the underlying risk?;
- × Insight into exposure and risk: is there insight into the actual underlying exposure and main risks?;
- × Illiquidity: a high degree of illiquidity can lead to a pension fund's balance sheet being incorrectly valued due to the lack of transparent market prices;
- × Leverage: is leverage used and is there clear insight into this?;
- × Control: does the pension fund board possess sufficient knowledge, experience and insight to be able to analyse this asset class and does the fund apply adequate internal control mechanisms?



Pension funds and insurers need to structure the control and valuation of infrastructure investments properly, i.e. in line with the legal requirements. A specialist fiduciary manager can assist in this.

At pension funds, investments need to be aligned with strategy policy and there is a limit to the risk involved in investment in a quantitative sense compared to pension liabilities due to the risk profile (via the strategic Required Own Funds) and any risk budget. The addition of any infrastructure investments to the portfolio will need to fit in with these aspects. An independent fiduciary manager can advise on this. At insurers, the basic principles arising from Solvency II²⁵ for calculating the capital lock-up have a huge influence on any investment in infrastructure.

There are also aspects relating to benchmarking and reports that are important to both pension funds and insurers. As with private equity, the heterogeneous nature of the asset class means there is currently no good-quality, representative benchmark available for infrastructure investments that can be used to gauge the performance of selected funds. Solvency II lays down additional requirements for insurers for the available investment data; this needs to be taken into account in advance.

Finally, cost and transparency also deserve attention as the DNB (for pension funds), AIFMD²⁶ and MIFID II²⁷ set additional requirements for infrastructure investments for institutional investors, such as pension funds and insurers.

25 *The Solvency II directive comes under EU legislation and prescribes the capital that European insurers need to hold in order to mitigate insolvency risk.*

26 *The Alternative Investment Fund Managers Directive (AIFMD) is an EU directive governing alternative investments.*

27 *The Markets in Financial Instruments Directive is an EU directive for protecting investors and achieving greater transparency.*

Responsible investment

Investing in infrastructure and responsible investment go hand in hand

The large scale on which infrastructure fund managers operate and society's intensive use of the services that are related to infrastructure assets can result in infrastructure having a considerable impact on the environment and the surrounding area. Take the effect on the surrounding area of a new toll road or pollution caused by the traffic that uses this road. Another example is airports, which are not permitted to cause too much nuisance for the immediate surrounding area or emit excessive amounts of CO₂. Combating unwanted effects also yields opportunities for minimising the impact on the environment and surrounding area and in doing so improving the financial performance of infrastructure assets. For instance, a private water company can make more profit if the company loses less water via leaks when supplying drinking water to households. The major investments made by infrastructure funds in wind farms and solar parks are examples that contribute to lower CO₂ emissions. As infrastructure funds are often the only or largest shareholder in the underlying assets, they can directly implement changes and improvements. Environmental aspects are of course not the only ESG (Environmental, Social and Governance²⁸) issues in infrastructure. Social and governance issues are also important in this respect.

External fund managers generally have a specific ESG policy to which they adhere strictly and which any independent asset manager that selects fund managers should examine. The managers need to apply disciplined selection criteria when they analyse assets for the portfolio and ESG criteria are an essential part of this.

The themes most commonly examined by managers relate to the environment, terms and conditions of employment, safety, local job creation and communications with stakeholders on the implemented projects. Several infrastructure fund managers have signed up to the PRI²⁹ (or intend to do so) and report annually on all ESG aspects in a special annual responsible investment report. Some managers have a Responsible Investment Committee comprising experienced professionals that meets regularly to ensure effective implementation of the PRI. Ideally, ESG is not a separate component or department at an infrastructure fund manager but in fact fully incorporated into the investment process.

Many managers recognise that ESG aspects affect the long-term performance of their assets. In practice, we see that infrastructure fund managers devote varying degrees of attention to ESG factors. This is why we underline in this respect the importance of sound fund selection. In our view, managers that ignore ESG factors do not meet the criteria for good and engaged shareholdership in the long term.

²⁸ Also often called SRI, or Socially Responsible Investment

²⁹ The Principles for Responsible Investments (PRI) are United Nations guidelines for (institutional) investors governing Socially Responsible Investment.

The first step selected infrastructure managers can take is to integrate ESG into their investment process, including due diligence on the underlying infrastructure assets. The exclusion of controversial countries and companies is an essential component of this. Take arms manufacturers, in which investment is of course not an option. The main goal in integrating ESG into the due diligence process is that infrastructure managers clearly map out the risks and sensitivities with respect to ESG and take these into consideration in their investment decisions. At the same time, fund managers can formulate policy for minimum standards, for instance in relation to terms and conditions of employment, the environment and workers' rights.

The incorporation of ESG factors does not cease once the investment has been made. In fact that is often just the start. As mentioned earlier, infrastructure fund managers often hold a majority interest in the underlying infrastructure assets. As a result, they can exert direct influence with respect to ESG (more so than in the case of e.g. listed equities) and really make a difference. Infrastructure fund managers can exchange best practices between the management teams of the individual assets in the portfolio, for instance. Where many fund managers explicitly include ESG factors in the due diligence process we see major differences in the second phase. After all, in some cases ESG factors can be at odds with financially-motivated factors. Yet we are seeing a growing realisation among infrastructure fund managers that a responsible ESG policy at the companies held in their portfolios is an advantage. The wishes of end clients (in particular institutional investors, such as pension funds) are playing an ever greater role here.

ESG case

A large global infrastructure fund manager owns a portfolio containing power stations and heat distribution networks in four large cities in Poland. In the past, these power stations and networks chiefly used coal to generate power and heat. The fund manager paid for the high CO₂ emissions via the EU Emissions Trading System (EU-ETS). However, the fund manager decided it wanted to use less coal and increase the use of biofuels. An environmentally-friendly technological solution was also worked on to use the thermal energy released during electricity generation to supply heat (co-generation). This cut CO₂ emissions drastically and reduced costs as the heat generation is more efficient (dual use) and the payments via the EU-ETS are lower. Moreover, biofuels are of course less harmful to the environment than coal. This therefore had both a positive effect on the environment and on the return for investors in the infrastructure fund. We see this as a best practice in which financial and ESG aspects go hand in hand.

Conclusion

In this white paper, we give an overview of the various aspects of non-listed infrastructure as an asset class. We also examine the opportunities and challenges currently offered by the infrastructure market, as well as the fees and ESG aspects involved in infrastructure investment.

Infrastructure has matured as an asset class and can constitute a sound addition to a more general investment portfolio. The infrastructure market offers plenty of opportunities for creating a globally-diversified portfolio, with potentially attractive returns. However, parties that are considering investing in infrastructure do first need to think carefully about the long-term composition and implementation of a consistent policy in order to achieve the desired portfolio.

Infrastructure is a highly diverse asset class that provides a range of fund types and can involve high fees. The illiquid nature of infrastructure means that it is only suitable for investors with a long-term investment horizon. Furthermore, manager selection exerts a great deal of influence in this asset class, something which investors need to take fully into account when deciding to invest.

The aim of this white paper is to contribute to the careful weighing up of a potential allocation to infrastructure. We look forward to hearing from you if you have any questions on the content of this white paper or require further information.

Bibliography

- × McKinsey Global Institute (2016). *Bridging Global Infrastructure Gaps*.
- × Principles for Responsible Investment (2011). *Responsible investment in infrastructure*. UNEP Finance Initiative.
- × OECD (2007). *Infrastructure to 2030: Mapping Policy for Electricity, Water and Transport*.
- × Investment Europe (2017). *Infrastructure Investing: Diversifying Portfolio With Stable Cash Flows*. <http://www.investment-europe.net/opinion/infrastructure-investing-diversifying-portfolios-with-stable-cash-flows/>. JP Morgan Asset Management – Global Real Assets Group.
- × JP Morgan (2015). *Infrastructure Investing: Key Benefits and Risks*. <https://am.jpmorgan.com/blobcontent/1383271579721/83456/Infrastructure-Investing-Key-benefits-and-risks.pdf>.
- × *Pension Fund Investment in Infrastructure: Lessons from Australia and Canada*, George Inderst, *Rotman International Journal of Pension Management*, Volume 7, Spring 2014
- × *Bridging Global Infrastructure Gaps*, McKinsey Global Institute, June 2016
- × Preqin (2018). *Preqin Special Report: Infrastructure Fund Manager Outlook H1 2018*.
- × Preqin (2017). *Quarterly Update Infrastructure Q3*.
- × Preqin (2018). *Preqin Special Report: Infrastructure Fund Manager Outlook H1 2018*
- × Preqin (2017). *Global Infrastructure Report*.
- × *Infrastructure as an asset class*, George Inderst, *EIB papers Volume 15*, 2010

Kempen
Asset Management

Beethovenstraat 300
1077 WZ Amsterdam
The Netherlands

P.O.Box 75666
1070 AR Amsterdam
The Netherlands

T +31 (0)20 348 8700
F +31 (0)20 348 8750

www.kempen.com

COMMERCIAL REGISTER AMSTERDAM 33181992
KEMPEN CAPITAL MANAGEMENT NV IS
PART OF VAN LANSCHOT KEMPEN



Office address Paris
28 Cours Albert 1er
75008 Paris
France

T +33 18375 6273

Office address London
Octagon Point
5 Cheapside
London EC2V 6AA
United Kingdom

T +44 203 636 9400

Office address Edinburgh
Kempen Capital Management (UK) Ltd.
41 Melville Street
Edinburgh EH3 7JF
United Kingdom

T + 44 131 226 6985

www.kempen.com

